

## Criminal Histories of Sex Offenders Identified Through DNA "Cold Hits"

Colleen McCue, Ph.D.; Georgia L. Smith, B.A.; Robyn L. Diehl, B.A.; Deanne F. Dabbs, M.F. .S.; James J. McDonough, Ph.D.; Paul B. Ferrara, Ph.D.

From the Criminal Justice Research Center (McCue, Smith, Diehl, and McDonough), Division of Forensic Sciences (Dabbs and Ferrara), Virginia Department of Criminal Justice Services, Richmond; and the Departments of Surgery and Emergency Medicine, Virginia Commonwealth University's Medical College Hospitals (McCue).

Address correspondence to:

Paul B. Ferrara, Ph.D.  
Virginia Division of Forensic Science  
Richmond, VA 23219  
(804) 786-2281  
FAX (804) 786-6857  
pferrara@dfs.state.va.us

## ABSTRACT

**Objective.** -To characterize the criminal histories of suspected sex offenders identified through DNA matches.

**Design and Setting.** -Retrospective review of suspected sex offenders (n = 40) selected from all DNA matches in the Commonwealth of Virginia from August 1993 through October 1999 (n = 61).

**Subjects.** -Offenders identified through DNA matches (n = 61). Forty of the suspects (65%) identified through DNA matches were linked to a sex-related offense (rape, sodomy, indecent exposure). In addition, seven (18%) of the offenders were suspected of a concomitant violent offense, including murder (n = 6) and assault (n = 1). The suspected sex offenders were 100% male, 80% African American and 20% white.

**Results.** -Sixty-five percent (n = 40) of the offenders reviewed were identified by DNA matches for a sex offense (rape, sodomy or indecent exposure). Of these suspected sex offenders for whom offense histories were available (n = 37), 60% had at least one identified sex or violent offense documented in their criminal history, while 24% had a property offense (burglary or larceny) without any identified sex or violent offense.

**Conclusions.** -These results suggest that approximately 40% of the DNA "cold hits" for sex offenses identified during the sampling frame may have been missed were the database confined to violent or sex offenders. Therefore, the present findings possess significant policy implications for other states establishing or reevaluating inclusion criteria for DNA databanks.

## ***Introduction***

The stranger rapist is one of the most sinister of criminal offenders, and often proves to be one of the most difficult to apprehend. The Bureau of Justice Statistics has shown that approximately one-third of the rapes in the U.S. was committed by someone unknown to the victim. {Sex Offenses and Offenders, 1997} This frequently leaves the police with no identifiable suspect, and as a result they often must rely on physical evidence as the primary means for identifying the perpetrator. In addition, there is a high prevalence of habitual criminal behavior among sex offenders. For example, research indicates that twenty-four percent of those offenders incarcerated for rape in state prisons were on probation or parole at time of the latest assault. {BJS Criminal Offenders Statistics, 1991} These two factors underscore the need for new methods that can enable police to identify and apprehend these very elusive offenders, and prevent additional assaults.

State and federal lawmakers have responded to this problem in the last decade by turning to advances in science and technology for assistance in criminal justice investigation. Since 1989 all of the states in the U.S. have enacted laws allowing for the collection and storage of DNA (deoxyribonucleic acid) sequence information, or "profiles" from offenders convicted of serious crimes. These efforts have enabled the identification unknown offenders through "cold hits," or DNA matches obtained by the analysis of physical evidence recovered from unsolved cases and comparison to offender DNA databases. The ability to bring individuals to justice who are responsible for crimes that would have otherwise remained unsolved highlights the utility of the offender DNA databases in criminal investigation.

The establishment of DNA databases is not wholly supported in the criminal justice community, however. Several reservations have been raised concerning the utilization of DNA profiles in criminal identification efforts. One of the most frequent arguments cited is the belief that obtaining offender DNA for future analysis violates an individual's Fourth amendment protection against illegal search and seizure. {Burk and Hess, 1995} Supporters of this argument believe that the justice system does not have sufficient probable cause to obtain samples from offenders strictly based on the possibility that these individuals may offend in the future. There also have been legal challenges of offender DNA databases grounded on the premise that DNA collection constitutes an invasion of an individual's right to privacy. These criticisms are based

on the idea that an individual's genetic material should remain private unless the individual chooses to relinquish it for examination. Other critics recognize the utility of the DNA databases in criminal investigation efforts, yet express concern regarding the potential for the genetic material to be used for more intrusive purposes. {Finn, Newsweek, 1997} For example, the continuing advancement of technology may enable these offender DNA databases to be used for more specific genetic research that could potentially reveal individual characteristics, predispositions to illness, or perhaps even the genetic roots of criminality. As a result of these concerns, special protections have been considered and enacted in an effort to ensure that the use of these databases will be confined to criminal investigations and identification purposes only.

Ultimately, these reservations have done little to slow the progress of offender DNA database legislation and implementation in the U.S. The Commonwealth of Virginia established the first offender DNA database in the nation in 1989, while the use of DNA databanks has been strongly supported at both at the federal and state levels. In 1994 the U.S. DNA Identification Act was passed, allowing state, federal, and local law enforcement agencies to create DNA databases of persons convicted of crimes (42 USC Sec. 14132). In addition, offender DNA databases in several states have been challenged unsuccessfully in local and federal courts by offenders identified by DNA matches (*Rise v. State of Oregon*, 1994; *Shaffer v. Saffle*, 1997; *Jones v. Murray and Ferrara*, 1992). These challenges have failed due to the judicial consensus that the government interest in establishing offender DNA databases was greater than the interests of the petitioning individuals. {ref} Moreover, the fact that these individuals were convicted felons entitled them to less privacy than "free persons," especially for a procedure which was only "minimally intrusive." {*Rise v. State of Oregon*, *Shaffer v. Saffle* }

In an attempt to minimize the aforementioned privacy issues, however, several states have restricted the collection of genetic material to only those offenders convicted of a felony that is violent or sexual in nature. This decision was based on the premise that these patterns of offending pose the greatest threats to public safety, and that prior offending may serve as the best predictor of future assaults. In fact, in a dissenting opinion in the *Jones v. Murray* (1992) case, Circuit Judge Murnaghan stated that there is "an extremely tenuous link connecting persons convicted of non-violent felonies to the commission of future violent crime .." and that

there is "nothing to substantiate a theory that DNA testing of non-violent felons would assist in the solution of future crimes." {ref}

The Commonwealth of Virginia, on the other hand, established broad inclusion criteria; collecting DNA from all convicted felony offenders (Va Code 19.2 310.2). Despite the heated debate regarding the establishment of offender DNA database inclusion criteria, the relationship between inclusion criteria (narrow or broad) and subsequent DNA matches has not been evaluated. Therefore, the goal of this study was to analyze the criminal histories of sex offenders identified through DNA matches in an effort to evaluate the decision to include all felony offenders in offender DNA databases. Sex offenders were selected for this study given their high frequency among the DNA matches identified to date, as well as the significant public safety implications related to this *very* serious pattern of offending.

## **Methods**

### *Subjects*

The subjects for the present study were suspects identified through DNA matches in the Commonwealth of Virginia from August 1993 through October 1999. Virginia maintains the oldest offender DNA database in the nation, established in 1989. 104,563 offenders had been profiled and entered into the database by the end of the sampling frame selected for the present study (31 October 1999). To date, Virginia has recorded the most DNA matches. Through 31 October 1999, 78 DNA matches had been made. (Ed. Note: As of July 1, 2001, Virginia's DNA Databank had registered 428 matches) These matches included 10 case-to-case matches and the identification of 64 individual suspects. Two of the suspects were linked to multiple cases (range = 2-4 cases), while three of the matches did not solve the crimes to which they were linked and were excluded from the final analysis. This resulted in a sample of 61 suspects identified through DNA matches in the Commonwealth of Virginia through 31 October

---

Although all of the subjects in the present study were, by definition, convicted felons, they were only identified as *suspects* in the crimes associated with the DNA matches, at the time the match was made. Therefore, the term "suspect" is used throughout the paper, despite the fact that several of the "suspects" identified by DNA matches have subsequently been convicted of these crimes.

1999. The resulting sample was exclusively male, 75% African American and 25% Caucasian. Forty of these offenders (65%) were linked to sex-related offenses through DNA matches to forensic evidence collected at the crime scene. These suspected sex offenders were 80% African American and 20% Caucasian.

The offense histories were compiled from the automated version of the offender Pre/ Post Sentence Investigation (PSI) report. The PSI report is maintained by the Virginia Department of Corrections, and contains detailed information outlining current as well as prior offenses for which the offender has been convicted.

### *Results*

The subjects were suspects identified through DNA matches in the Commonwealth of Virginia from August 1993 through October 1999 (n = 61). Forty of these offenders (65%) were linked to sex-related offenses. The sex-related offenses included rape (n = 36), sodomy (n = 4), and indecent exposure (n = 1). This total exceeded the sample size as one subject was linked to more than one sex-related offense (rape and sodomy). Seven (18%) of the suspected sex offenders were linked to a concomitant violent offense, including murder (n = 6) and assault (n = 1).

Prior offense history data were available for 37 (92%) of the subjects. As can be seen in Table I, approximately 60% of the suspected sex offenders had at least one prior conviction for a sex or violent offense documented in their offense history. Conversely, 40% of the suspected sex offenders in the present study had no documented convictions for a prior sex or violent offense: This finding suggests that approximately 40% of the DNA matches in the present study may have been missed were the database confined exclusively to sex and violent offenders.

Further analysis of the data reveals a high prevalence of property crimes in the criminal histories (Table 2). More than half (54%) of the suspected sex offenders in the present study had at least one property crime in their offense history, which was only slightly lower than the prevalence of a sex or violent offense (59%). Of those offenders with ~1 previous property crime in their offense history, 55% had at least one burglary offense; a pattern of offending linked previously to rape. {Warren & British studies, etc.}

## *Comment*

The goal of the present study was to review the criminal histories of suspected sex offenders identified through DNA matches in an effort to evaluate the decision to include all felony offenders in offender DNA databases. The results indicated that approximately 60% of the suspected sex offenders identified through DNA matches in the present study had at least one prior sex or violent offense in their criminal history. Consequently, approximately 40% of the DNA matches may have been missed were the offender database confined exclusively to offenders convicted of sex or violent offenses. Further study revealed a relatively high prevalence of prior property crimes, most notably, burglary.

The relationship found between sex offending and non-violent criminal behavior is not surprising; it has been documented in several other independent studies. For example, Weinrott and Saylor (1991) found that convicted rapists reported a high degree of non-sexual criminal activity during the year prior to their incarceration. Further evidence of the relationship was provided through a study by Cantor and Kirby (1995), which reported that the criminal histories of a sample of convicted child molesters contained large numbers of prior convictions for theft and burglary. An additional study by Warren, Hazelwood, and Reboussin also found that convicted serial rapists reported chronic stealing and shoplifting, acts which frequently occurred during the break-in of homes within their neighborhood.

These findings raise additional questions concerning the nature of the relationship between property crimes and sex offenses. Several potential explanations have been proposed. For example, some investigators have suggested these offenders may be characterized as "opportunistic rapists," striking in instances when the victim happens to be present in a burglarized residence, rather than initiating a planned sexual assault (ref). In contrast, Warren, Hazelwood, and Reboussin (ref) describe the early property offenses as a form of criminal escalation, characterizing these burglaries as attempts by the rapist to educate himself and acquire the skills necessary to enter a private residence. The prior burglary convictions may represent "near misses" for the sexual offender where the break-in was actually an incomplete or aborted sexual assault.

Although difficult to interpret, the nature of the relationship between sex and property crimes

offers significant policy implications for the inclusion criteria of DNA databases. If these patterns do represent an escalation in criminal offending or "near miss" sexual assaults, additional expansion of the codes to include certain non-felony offenses should perhaps be considered. For example, the crime of trespassing, while a misdemeanor offense, was noted within the criminal histories of the stranger rapists in our sample. This type of intrusive behavior could represent escalation of criminal behavior or the development of stalking techniques for a potential sex offender. The early identification and inclusion of these potentially dangerous individuals in offender DNA databases could aid in both the solution and prevention of future, more serious offenses.

Obviously, not all burglars will progress to violent and sex offenses during their criminal career. However, the serious nature of the crimes discussed warrants stronger examination of the relationship between property crimes, especially burglary, and subsequent sex offending. A strong illustration of the utility of this information exists in the case of Timothy Spencer, which served as the seminal case for the use of DNA evidence and was instrumental in the creation of an offender DNA database in Virginia. Spencer, referred to as the "Southside Strangler," was a serial killer convicted of the sexual assault and murder of four women in Richmond, Virginia in the mid-1980' s. His criminal record included convictions for burglary and trespassing, but lacked any violent or sex offenses. His offense history highlights the importance of obtaining DNA samples from all known felons, rather than restricting the database to offenders convicted of violent or sexual crimes. Under several current state statutes, offenders like Spencer would not be included in DNA index systems, and as a result their criminal escalation would remain undetected. Therefore, broader inclusion criteria for offender DNA databanks may serve to prevent many additional assaults, ultimately saving lives.

The importance of early identification of serious offenders has been effectively utilized in the United Kingdom, whose DNA database serves as a striking example of the effectiveness of expanded DNA profiling. Their national index system, established in April, 1995, allows for DNA profiles to be obtained for all recordable offenses. From this large group of offenders the police preferentially obtain samples from perpetrators of violent crimes, sexual crimes, and burglaries (Walsh, 1998). This system is remarkably innovative, both in its allowance of broad inclusion criteria and its recognition of the significance of burglary within the context of the criminal



career, and has resulted in 6,032 identifications; 4,461 offender-to-scene and 1,571 scene-to-scene matches (Walsh, 1998).

Although a similar expansion of U.S. codes has been discussed, this action would incite strong controversy within the legal and criminal justice communities. As discussed previously, legislative supporters of DNA database expansion have confronted a myriad of constitutional issues regarding the collection of genetic material. Several of the ethical issues raised concerning the intrusive nature of the database, however, have been addressed through a refinement of the DNA sequencing process. For example, the genetic material used for the DNA profile is not known to code for any genetic trait, thus rendering it ineffectual for the purpose of obtaining medical or personal information about the donor. In addition, the procedure has become extremely non-invasive, requiring only that the donor have the inside of his or her mouth swabbed, rather than submitting a blood sample. Both of these advances serve to alleviate some of the controversy concerning invasions of Fourth amendment and implied privacy rights, and could potentially pave the way for an expansion of this technique.

In conclusion, our findings indicated that approximately 60% of the suspected sex offenders identified through DNA matches in the present study had at least one prior sex or violent offense in their criminal history. This analysis suggests that 40% of the matches for sex-related offenses may have been missed were the database confined exclusively to violent or sex offenders. Therefore, the results from the present study support the inclusion of all felony offenders in DNA databases. Finally, the relationship between property offenses, burglary in particular, and subsequent sex offending noted in the present study, has been described previously. { ref} This issue merits further study as offender DNA inclusion criteria are examined and reevaluated, particularly given the very serious nature of this pattern of offending and the significant implications for public safety .

#### ***Acknowledgments***

**The authors thank the Commonwealth of Virginia Department of Corrections for assistance with data collection.**

**Table I.**  
N and (% row total)

| <b>Suspected Offense</b> | <b>Prior Sex or Violent Offense</b> |           | <b>Total</b> |
|--------------------------|-------------------------------------|-----------|--------------|
|                          | <b>Yes</b>                          | <b>No</b> |              |
| <b>Indecent Exposure</b> | 1 (100)                             | 0         | 1            |
| <b>Rape</b>              | 15 (58)                             | 11 (42)   | 26           |
| <b>Rape/ Assault</b>     | 1 (100)                             | 0         | 1            |
| <b>Rape/ Murder</b>      | 3 (100)                             | 0         | 3            |
| <b>Rape/ Sodomy</b>      | 1 (33)                              | 2 (67)    | 3            |
| <b>Sodomy</b>            | 1 (50)                              | 1 (50)    | 2            |
| <b>Sodomy/ Murder</b>    | 0                                   | 1 (100)   | 1            |
| <b>Total</b>             | 22 (59)                             | 15 (40)   | 37           |

**Table 2.**  
N and (% row total)

| <b>Suspected Offense</b> | <b>Prior Offense*</b> |                 |                 | <b>Total</b> |
|--------------------------|-----------------------|-----------------|-----------------|--------------|
|                          | <b>Sex or Violent</b> | <b>Property</b> | <b>Burglary</b> |              |
| <b>Indecent Exposure</b> | 1 (100)               | 0               | 0               | 1            |
| <b>Rape</b>              | 15 (58)               | 13 (50)         | 9 (35)          | 26           |
| <b>Rape/ Assault</b>     | 1 (100)               | 1 (100)         | 0               | 1            |
| <b>Rape/ Murder</b>      | 3 (100)               | 2 (67)          | 1 (33)          | 3            |
| <b>Rape/ Sodomy</b>      | 1 (33)                | 2 (67)          | 1 (33)          | 3            |
| <b>Sodomy</b>            | 1 (50)                | 1 (50)          | 0               | 2            |
| <b>Sodomy/ Murder</b>    | 0                     | 1 (100)         | 0               | 1            |
| <b>Total</b>             | 22 (59)               | 20 (54)         | 11 (30)         | 37           |

**Property crimes include burglary and larceny.**

**\*Totals may exceed 100% as some offenders may have engaged in more than one pattern of offending.**

**\*\*Burglary is a subset of total property crimes.**

