
THE COST OF NOT TESTING SAFE KITS IN KENTUCKY: AN ECONOMIC HARM STUDY

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A REPORT FOR THE SEXUAL ASSAULT RESPONSE TEAM ADVISORY COMMITTEE

By Stephenie Hoelscher, SSH Consulting

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FOREWARD

In a perfect world, one with infinite resources, this exercise wouldn't be necessary. But we live in an imperfect world and a Commonwealth with limited resources, where tough decisions must be made to prioritize spending on vital public services.

The purpose of this exercise is to help policymakers in that process by demonstrating the economic cost to crime victims and taxpayers of not previously testing more than 3,000 Sexual Assault Forensic Evidence (SAFE) kits. And the study goes further, taking an early look at the real threat to public safety rapists posed to Kentuckians when those SAFE kits went untested.

In short, this exercise makes clear that it would cost victims and taxpayers less to test all SAFE kits swiftly upon collection than to shelve kits and allow perpetrators to commit new crimes. Legislation passed in 2016 now requires all kits to be tested, but how quickly that happens will always be contingent upon lawmakers adequately funding the Kentucky State Police (KSP) Forensic Laboratory.

This report looks at the first one-third of SAFE kits that were analyzed with a one-time grant awarded to KSP. It finds that the crimes those individuals committed after the assaults in which the kits originally went untested cost victims and taxpayers \$4.2 million. This figure represents direct economic losses suffered by crime victims, including medical care costs, lost earnings, and property loss/damage, as well as costs to Kentucky's criminal justice system. That includes the money spent on police protection, legal and adjudication services, and corrections programs, including incarceration.

The biology section of the KSP Forensic Laboratory, by comparison, needs \$3.5 million annually to test all DNA evidence – not just from sexual assaults – in a timely manner.

At a time when policymakers are trying to rein in spending on Kentucky's criminal justice system, and specifically its prisons, it would be prudent to examine the costs we incur by missing opportunities to catch serial criminals in their tracks. We *know* that rapists are often serial criminals. Someone willing to commit violent, intimate crimes against another person poses the highest risk to other persons and property. Investigating and prosecuting these individuals to the fullest extent possible improves public safety and saves money.

Two of the nearly 1,000 offenders examined in this report went on to commit and be convicted of manslaughter and reckless homicide, each costing victims and taxpayers more than \$1 million. When DNA from the offender convicted of manslaughter was entered into CODIS last year, it hit to an unsolved murder in Missouri and the recently-tested SAFE kit. DNA evidence solves crimes.

Twelve sexual assaults were committed *after* the sexual assaults in which the kits went untested. Thirty-five aggravated assaults and five robberies were committed. These are crimes on which offenders were convicted. We will never know all the crimes they committed.

This study also finds that about half the offenders who went on to commit crimes after the sexual assaults in which the kits went untested were not known suspects at the time. Some of these DNA profiles immediately would've matched to named offenders, potentially aiding authorities in pursuing an arrest and prosecution. In one case, an offender was convicted of sodomy 15 years before the sexual assault in which the SAFE kit went untested. He is awaiting *three* trials on *two* separate murder cases and an assault case. Had the SAFE kit been tested immediately, the DNA evidence in the kit would have immediately matched to this serial criminal. And, it's possible that he would not have had the opportunity to commit some of the crimes for which charges are currently pending.

Additionally, the exercise has thus far identified at least 13 serial rapists, with some having committed sexual offenses prior to the assaults in which the kits went untested, and some having committed sexual offenses after.

Going forward, KSP expects another 1,000 of the previously untested kits to produce DNA profiles that are eligible for upload into the crime databases. It is anticipated that the costs of crimes these perpetrators went on to commit will increase, and more serial offenders will be identified.

This initial exercise, as expected, supports the call for increased funding for the KSP Forensic Laboratory. Kentucky's forensic analysts are the lowest paid in the country. In practical terms, that has meant a 40 percent, five-year turnover rate of analysts who Kentucky spends between six months and two years training at a significant economic cost to taxpayers. The turnover creates significant delays in processing *all* forensic evidence, not just that from sexual assault cases.

Adequately funding the Forensic Laboratory would ensure SAFE kits and all other DNA evidence are tested in a timely manner, aiding law enforcement in identifying suspects and building cases for prosecution. Taking even a few more of these high-risk, high-level offenders off the streets would improve public safety and save taxpayer dollars.

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Special Thanks

The following individuals contributed to this report:

KSP Forensic Laboratory Director Laura Sudkamp

KSP DNA Database Supervisor Regina Wells

KSP Laboratory Supervisor Whitney Collins

Cuyahoga County Prosecutor's Office Special Investigations Chief Rick Bell

University of Louisville Assistant Professor Brad Campbell

KASAP Executive Director Eileen Recktenwald

KASAP Staff Attorney Laela Kashan

BACKGROUND

Senate Bill 63, known as the SAFE Act, passed by the General Assembly and signed into law in 2016, charges the Sexual Assault Response Team Advisory Committee (SART-AC) with the following:

By January 1, 2018, report to the General Assembly on the results of the analysis of previously untested sexual assault examination kits submitted to the Department of Kentucky State Police forensic laboratory ... including whether analysis of those kits led to the identification and prosecution of suspects and the cost to society of the offenses committed by the suspects identified.

The Kentucky Association of Sexual Assault Programs (KASAP) advocated for the inclusion of the mandate based on a recommendation in the 2015 state Auditor's special report on untested sexual assault kits in Kentucky, as a way to demonstrate the need for sustained, adequate funding for the Forensic Laboratory. It was anticipated that such a study would demonstrate that the cost of crimes committed by these sexual assault perpetrators is far greater than the cost of providing sufficient annual funding to the Forensic Laboratory and ensuring offenders are caught and prosecuted in a timely manner.

The concept of an economic harm study came from the Cuyahoga County (Cleveland) Prosecutor's Office, which studied the costs of crimes committed by individuals identified and indicted as a result of Cleveland's massive effort to clear its rape kit backlog. Out of 525 defendants, the total cost of their crimes had surpassed \$455 million. Crimes committed by one individual alone, who murdered a police officer and committed other crimes, are estimated to have cost society \$12 million. These crimes, including the murder, occurred after a sexual assault in which the kit went untested.

Cuyahoga County has used this data to encourage the county government to provide the funding it needs to analyze these kits and investigate and prosecute these crimes. Officials with the Cuyahoga County Prosecutor's Office believe their figures are conservative because they've only looked at individuals indicted as a result of the backlog effort. Kentucky's Senate Bill 63 charges the SART-AC with assessing the cost of crimes committed by offenders identified from hits to DNA databases during the backlog effort.

Data Collection

As of October 25, 2017, KSP had submitted 3,173 previously untested SAFE kits to Sorenson Laboratory in Utah for analysis as part of a \$1.9 million grant Kentucky received from the District Attorney of New York (DANY). Analysis had been completed for 3,173 kits, with 340 DNA profiles entered into state and national DNA databases and 144 hits to either offender or forensic profiles in those databases.

In preparation for the statutorily-mandated report to the General Assembly, the KSP Forensic Laboratory provided data on offenders who have matched DNA profiles generated from

analyzed DANY kits. KSP estimates that the data analyzed represents one-third of the 3,173 total kits tested with DANY grant funding.

The following data was provided:

- Offender number
- Qualifying offense mandating CODIS entry
- Date DNA was collected for CODIS entry
- Date of offense from the DANY kit
- Number of convictions subsequent to the DANY offense, as well as the specific charges and county of conviction
- Whether the offender was a suspect in the DANY offense, or whether the offender's identity was unknown
- Additional relevant notes

This analysis focuses on offenders whose DNA profiles have matched DNA submitted as a result of the DANY grant effort to test Kentucky's untested sexual assault kits (SAKs). Criminal offenses these perpetrators were convicted of subsequent to the DANY-related offense were analyzed. The DANY offenses, most of which have not been charged as of this writing, have not been calculated, nor have crimes committed prior to the DANY offenses.

Data Assessment

To calculate the cost of crimes in Cuyahoga County, researchers utilized a 2011 National Institute of Health study, which assigned tangible and intangible costs to 13 criminal offense categories:

- Murder
- Rape/sexual assault
- Aggravated assault
- Robbery
- Arson
- Motor vehicle theft
- Stolen property
- Household burglary
- Embezzlement
- Forgery and counterfeiting
- Fraud
- Vandalism
- Larceny/theft

The NIH definitions of those criminal offense categories are outlined in Appendix 1.

Cost of Crime

The NIH study calculated the tangible and intangible costs by analyzing the following components:

- Victim costs: Direct economic losses suffered by crime victims, including medical care costs, lost earnings, and property loss/damage.
- Criminal justice system costs: Local, state, and federal government funds spent on police protection, legal and adjudication services, and corrections programs, including incarceration.
- Crime career costs: Opportunity costs associated with the criminal's choice to engage in illegal rather than legal and productive activities.
- Intangible costs: Indirect losses suffered by crime victims, including pain and suffering, decreased quality of life, and psychological distress.

According to the NIH study, by combining the tangible and intangible cost estimates, a total per-offense societal cost of crime was calculated for each crime category. The NIH study avoids double counting risk-of-homicide costs, so attempts to manually add the tangible and intangible costs will not match NIH intangible and tangible cost totals, which this analysis relies on.

To calculate the cost of crimes committed by offenders identified through Kentucky's DANY grant effort as of October 25, 2017, KSP assisted in matching Kentucky criminal charges to the NIH-defined charges. *Appendix 2* lists the Kentucky criminal charges that fit the NIH descriptions.

Table 1 shows the tangible and intangible per-offense costs.

Table 1 – Tangible and Intangible Costs of NIH-Defined Offenses in 2008 Dollars

Offense	Tangible Cost	Intangible Cost	Total Cost
Murder	\$1,285,146	\$8,442,000	\$8,982,907
Rape/Sexual Assault	\$41,252	\$199,642	\$240,776
Aggravated Assault	\$19,472	\$95,023	\$107,020
Robbery	\$21,373	\$22,575	\$42,310
Arson	\$16,429	\$5,133	\$21,103
Motor Vehicle Theft	\$10,534	\$262	\$10,772
Stolen Property	\$7,974	N/A	\$7,974
Household Burglary	\$6,169	\$321	\$6,462
Embezzlement	\$5,480	N/A	\$5,480
Forgery/Counterfeiting	\$5,265	N/A	\$5,265
Fraud	\$5,032	N/A	\$5,032
Vandalism	\$4,860	N/A	\$4,860
Larceny/Theft	\$3,523	\$10	\$3,532

Source: NIH Report

OBSERVATIONS

Observation 1: Eighty-seven offenders identified in the analysis of nearly 1,000 previously untested SAFE kits in Kentucky were convicted of crimes that occurred after the incidents in which the SAFE kits were collected but not analyzed. This represents one-third of the kits analyzed with DANY grant funding in Kentucky.

Of the 3,173 kits submitted to a private laboratory and analyzed with DANY grant funding, KSP had completed the technical review of 974 reports – each report representing one kit – by mid-October 2017. From those 974 reports, KSP entered 340 DNA profiles into CODIS, and generated 144 hits to offender and forensic DNA profiles.

An analysis of this DANY grant data provided by KSP identified 87 offenders (60.4 percent) who were convicted of felony and misdemeanor crimes in the Commonwealth after the incidents from which the SAFE kits were collected but not analyzed. It is reasonable to question whether testing the kits immediately would have helped authorities identify and prosecute unknown suspects, thereby reducing the opportunity for these individuals to commit additional crimes. In cases in which the suspect's identity wasn't in question, it is reasonable to ponder whether testing the kits could have bolstered the case for prosecution and/or assist law enforcement in solving other unsolved crimes.

What we know with certainty is that these 87 offenders presented a heightened threat to public safety in Kentucky. Testing all kits immediately is the first step toward reducing the threat to public safety in Kentucky.

KSP estimates that data provided as of October 25, 2017 represents one-third of the kits analyzed with DANY grant funding. Sorensen Laboratories in Utah completed analysis on all 3,173 kits in the summer of 2017, but the KSP laboratory has been delayed in its technical review process due to the length of time it has taken to recruit and train additional laboratory analysts. KSP expects that, upon full review of the remaining kits this spring, an additional 1,000 test results will be eligible for entry into CODIS.

Observation 2: Fifty-seven offenders (39.5 percent) who matched profiles generated from DANY kits were convicted of NIH-defined crimes subsequent to the date of offense from the DANY kit.

These crimes, as listed in Table 1 above, represent some of the most serious crimes against persons and society. These offenders committed two murders, 12 sexual assaults, 34 assaults, and five robberies.

Another 30 offenders were convicted of crimes subsequent to the DANY offense, but those crimes did not match any of the 13 crimes to which NIH has assigned tangible and intangible costs. These offenders committed 36 different misdemeanor and felony crimes in the Commonwealth. Table 2 shows the crimes and the number of charges on which these individuals were convicted.

Table 2 – Non-NIH-Defined Crimes Committed by DANY Case Suspects

bail jumping	2
bribery of public servant	1
burglary/attempted burglary	20
carrying concealed weapon	2
criminal mischief	6
criminal trespass	4
custodial interference	1
disorderly conduct	4
DUI	2
EPO violation	5
escape/attempted escape	11
failure to comply/register as sexual offender	7
flagrant non support	4
fleeing/evading/attempted fleeing/evading	7
harassment/harassing communications	4
knowingly exploit adult	1
manufacturing methamphetamines	2
menacing	3
PFO	1
possession of anhydrous ammonia to manufacture methamphetamines	1
possession of controlled substance	20
possession of a firearm by felon	8
possession of marijuana	29
possession of paraphernalia	15
promoting contraband	4
stalking	2
tampering with a monitoring device	1
tampering with physical evidence	7
terroristic threatening 3	9
trafficking in controlled substance	17
trafficking in marijuana	4
trafficking near school	2
unlawful Imprisonment	3
unlawful transaction w/minor	1
wanton endangerment	12
wanton endangerment of police	1

Source: KSP data, analyzed by report author

Observation 3: The tangible and intangible cost of crimes committed by the 57 offenders referenced in Observation 2 was \$25.16 million.

The total tangible cost of those crimes is \$4.2 million. Tangible costs represent direct economic losses suffered by crime victims, costs to the criminal justice system and opportunity costs associated with the offenders' choice to engage in illegal rather than legal activities.

The total intangible cost of those crimes is \$22.6 million. Intangible costs include indirect losses suffered by crime victims, including pain and suffering, decreased quality of life, and psychological distress.

The costliest NIH-defined crime is murder. Two offenders were convicted of murder-related crimes that KSP believes fit the NIH definition of murder. The tangible cost of the crimes committed by each of the two offenders convicted of reckless homicide and manslaughter, respectively, was \$1.29 million, and the total tangible and intangible cost was \$8.9 million.

Incidentally, KSP has learned that the offender convicted of manslaughter committed a different murder (in Missouri) before the sexual assault in which the kit went untested. Upon his manslaughter conviction last year, KSP entered his DNA profile into CODIS. It hit to both the unsolved murder and sexual assault.

The KSP Forensic Laboratory biology section, which tests DNA evidence from all crimes, not just from sexual assault, needs about \$3.5 million annually to operate efficiently and swiftly. This report shows that the tangible cost of crimes committed by just the first one-third of these offenders far exceeds the amount the lab needs to test sexual assault evidence.

This study demonstrates that *beyond* testing SAFE kits as a function of public safety and bringing justice to victims, the actual cost of testing sexual assault evidence in a timely manner is far less than the cost of the crimes these perpetrators go on to commit. A portion of the tangible costs includes costs to the criminal justice system, including law enforcement protection, prosecution and adjudication, and corrections programs. Kentucky's taxpayers are footing the bill when these perpetrators are not identified and go on to commit subsequent crimes. Kentucky cannot afford not to test DNA evidence in a timely manner.

Table 3 shows the offenders identified during the DANY grant analysis as of October 25, 2017, the crimes they have been convicted of subsequent to the DANY offense and the tangible and intangible costs to society.

Table 3 – Cost-Per-Crime Calculations For the First 1/3 of Kits Analyzed in Kentucky

Offender	NIH Offenses	Tangible Costs	Intangible Costs	Tangible + Intangible Costs
173562	manslaughter	1,285,146	8,442,000	8,982,907

151250	rape (2 counts), sodomy (2), assault, theft by unlawful taking-shoplifting	188,048	893,601	1,070,134
089489	attempted criminal possession of a forged instrument, attempted receiving stolen property (2), assault (2)	60,157	190,046	235,253
119095	facilitating robbery, assault, receiving stolen property (2)	56,793	117,598	165,278
13256	assault (2), fraudulent insurance acts, theft by unlawful taking (2)	51,022	190,066	226,136
11384	sexual misconduct	41,252	199,642	240,776
093746	rape	41,252	199,642	240,776
1311904	sexual abuse	41,252	199,642	240,776
1323112	assault (2)	38,944	190,046	214,040
05643	receiving stolen property over \$300, theft by unlawful taking, theft by failure to make disposition, assault	34,492	95,043	122,058
061430	theft by unlawful taking, stolen property, assault	30,969	95,033	118,526
1514094	assault, receiving stolen property	27,446	95,023	210,017
09898	theft by unlawful taking, assault	26,518	95,043	114,084
158149	robbery, theft by unlawful taking	24,896	22,585	45,842
148254	assault, theft by unlawful taking	22,995	95,033	110,552
091364	robbery	21,373	22,575	42,310
132276	robbery	21,373	22,575	42,310
169669	assault under extreme emotional duress	19,472	95,023	107,020
087883	assault	19,472	95,023	107,020
04618	assault	19,472	95,023	107,020
1316886	assault	19,472	95,023	107,020
101521	receiving stolen property under \$500 (2), theft by unlawful taking	19,471	10	19,480
05862	unauthorized use of a motor vehicle, receiving stolen property	18,508	262	18,746
03994	criminal possession of a forged instrument, theft by unlawful taking (3)	15,834	30	8,797
134934	unauthorized use of a motor vehicle, false statements to receive benefits	15,566	262	15,804
1112249	theft by unlawful taking (2), assault	15,020	20	15,038
101949	theft by unlawful taking, receiving stolen property	11,497	10	11,506
168362	criminal possession of a forged instrument, theft by unlawful taking	8,788	10	8,797
1415643	criminal possession of a forged instrument	5,265	N/A	5,265
1112308	fraudulent Use of ID Card	5,032	N/A	5,032
129627	reckless homicide	1,285,146	8,442,000	8,982,907
0914669	rape, sodomy, sexual abuse, theft by unlawful taking	127,279	598,936	725,860
123355	rape, sodomy	82,504	399,284	481,552
121311	theft by unlawful taking (4), assaults (2)	53,036	190,086	228,168
128015	receiving stolen property, assault (2)	46,918	190,046	222,014
1324428	assault (2), theft by unlawful taking	42,467	190,056	217,572

0814337	assault (2)	38,944	190,046	214,040
12974	assault, theft by unlawful taking, receiving stolen property	30,969	95,033	118,526
121109	receiving stolen property under \$10,000, assault	27,446	95,023	114,994
1317059	theft by unlawful taking-shoplifting, robbery	24,896	22,585	45,842
085226	assault, theft by unlawful taking-shoplifting	22,995	95,033	110,552
1324850	receiving stolen property under \$500, fraudulent use of credit card	20,980	N/A	20,980
116234	assault	19,472	95,023	107,020
098004	assault	19,472	95,023	107,020
1210109	assault	19,472	95,023	107,020
154792	assault	19,472	95,023	107,020
16767	assault - probation/police officer	19,472	95,023	107,020
168453	assault	19,472	95,023	107,020
0814389	criminal possession of a forged instrument, theft by deception, receiving stolen property - handgun	16,762	10	16,771
158723	receiving stolen property - firearm, receiving stolen property under \$500	15,948	N/A	15,948
129446	receiving stolen property under \$10,000, theft by unlawful taking-shoplifting	11,499	10	11,506
112595	receiving stolen property under \$500	7,974	N/A	7,974
164869	complicity to receiving stolen property	7,974	N/A	7,974
167584	criminal possession of a forged instrument	5,265	N/A	5,265
1613106	fraudulent use of credit card under \$500	5,032	N/A	5,032
123026	theft by unlawful taking	3,523	10	3,532
129464	theft by unlawful taking	3,523	10	3,532
	Totals	\$4,204,709	22,624,195	25,160,981

Source: KY data provided by KSP, calculations conducted by author

Observation 4: Roughly half the offenders identified in the DANY analysis were previously unknown to law enforcement. The tangible cost of the NIH-defined crimes these individuals committed in Kentucky totals \$2.2 million.

The offenses include two murders, seven sexual assaults, 18 assaults, and four robberies. It is not possible to say with the review of this data whether immediately acquiring the test results would have led to prosecution, and whether it would have deprived them of the opportunity to commit these subsequent crimes.

What we do know is that testing for the presence of DNA is an integral part of solving cases today. As cities and states test thousands of old SAFE kits and upload profiles into CODIS, and as more states are beginning to collect DNA upon felony arrest and even misdemeanor conviction, the crime databases are expected to become even more powerful tools for connecting offenders with all their crimes, leading to more prosecutions and reducing the ability for serial criminals to remain on the streets.

Observation 5: The DNA of 50 offenders had already been collected by authorities and uploaded into crime databases when the SAFE kits were collected. Twenty-three of these offenders were not known suspects in the DANY cases when the kits were collected.

What this means in simple terms is that in 23 sexual assault cases, the unknown offender would have been identified immediately upon testing the evidence in the kit and uploading it into CODIS because the offenders' DNA was already in the crime databases due to having committed prior offenses.

One previously unknown DANY case offender was convicted of sodomy and had his DNA profile entered into CODIS in 2000, 15 years before the DANY assault in which the kit went untested. Between his initial sodomy conviction and the DANY assault, he was convicted of robbery and possession of a firearm by a felon. He also is awaiting *three* trials on charges of complicity to commit murder, complicity to commit burglary, and being a persistent felony offender in a 2012 case; solicitation to commit murder, bribing a witness, and solicitation for witness tampering in a 2015 case; and assault in a 2016 case. Had the SAFE kit been tested immediately, the DNA evidence in the kit would have immediately matched to this rapist. And, it's possible that he would not have had the opportunity to commit some of the crimes for which charges are currently pending.

Another previously unknown suspect was convicted of sodomy and had his DNA profile entered into CODIS in 2003, nine years before the 2012 DANY assault in which the SAFE kit went untested. This individual has remained on the streets for six years and is currently facing new sexual offense charges with two new victims in Jefferson County. He is the first individual to be indicted as part of the push to analyze previously untested kits.

Another previously unknown offender was convicted of rape and had his DNA profile uploaded into CODIS in 2010, three years before the 2013 DANY assault in which the SAFE kit went untested. Had the SAFE kit been tested immediately, the DNA evidence in the kit would have immediately matched to this rapist. Instead, this individual has remained on the streets, free to commit additional crimes, for the past five years.

Another unknown suspect in a 2012 DANY case was in the crime databases for a 2003 murder conviction. In between the 1988 murder and DANY assault, he got out of prison and was arrested four times for marijuana trafficking. The kit from the 2012 sexual assault wasn't tested and law enforcement didn't have any suspects in that case. Two years later, in 2014, he was arrested for rape, robbery, and imprisonment, but the charges were dismissed.

It is clear in these cases that the opportunity to utilize CODIS to identify suspects in sexual assaults was missed. It also seems plausible that given the offenders' prior convictions on sexual assault charges, authorities might have been more inclined to charge and prosecute the DANY cases.

Observation 6: Initial data has identified at least 11 serial sexual offenders, with three committing sexual assault prior to the DANY assaults, seven committing sexual assault after the DANY assaults, and one committing sexual assault before and after the DANY assault.

From the 11 identified serial sexual offenders, one offender was convicted of rape and had his DNA profile entered into CODIS in 1999, 13 years before the DANY offense in which the kit went untested. This offender's identity was known to law enforcement. It's unclear why the kit wasn't tested to confirm the suspect's DNA was present.

One offender, as described in the previous observation, was convicted of sodomy and had his DNA profile entered into CODIS in 2003, nine years before the 2012 DANY assault in which the SAFE kit went untested. This individual has remained on the streets for six years and is currently facing new sexual offense charges.

Another seven offenders committed sexual assault after the DANY assaults in which the kits went untested. Two are represented in the previous observation as they were unknown suspects in the DANY cases, yet had been previously convicted on various charges and had their DNA profiles entered into CODIS.

One previously unknown DANY assault suspect was convicted of wanton endangerment and had his DNA profile entered into CODIS in 2010, two years before the DANY assault. The offender has since been convicted for separate incidents of sexual misconduct and escape.

Another previously unknown DANY assault suspect was convicted of possession of a controlled substance and had his DNA profile entered into CODIS in 2010, six years before the DANY assault. The offender has since been convicted for a separate rape.

The DANY grant effort has so far matched DNA profiles from two previously unknown suspects and one known suspect to three convicted rapists. Two of the SAFE kits were collected in 1981 and 1997, prior to when Kentucky began testing DNA evidence to solve crimes. This demonstrates the value in testing all old SAFE kits that were reported to law enforcement.

Conclusion

The data provided by KSP for this analysis represents only the first one-third of the kits tested with DANY grant funding. Analysts at KSP are working to evaluate the results and upload qualifying DNA profiles into state and national crime databases for the remaining DANY kits. The tangible and intangible costs are expected to grow as all the DANY kits are analyzed and all qualifying DNA from those kits are matched to offenders' DNA.

It is anticipated that the final total tangible costs of these crimes will be significantly higher than the lab's annual budget.

We also know from the number of offenders whose DNA was already in DNA databases that testing sexual assault evidence immediately could have accelerated perpetrator identification, possibly bolstering the case for prosecution and preventing future crimes. Testing sexual assault

evidence is a vital function of public safety and delivering justice to victims. On top of those reasons, the cost to society of the crimes these offenders go on to commit can now be demonstrated as another reason to test this evidence in a timely manner.

Appendix 1

Criminal Offense Categories and Definitions

Offense	Definition
Murder	The killing of one human being by another, through either a willful act (nonnegligent manslaughter) or negligence (negligent manslaughter)
Rape/Sexual Assault	Forced sexual intercourse (vaginal, anal, or oral penetration) involving psychological coercion and physical force, as well as attacks or attempted attacks general involving unwanted sexual contact between victim and offender.
Aggravated Assault	Attack or attempted attack with a weapon, regardless of whether or not an injury occurred, and attack without a weapon when serious injury results.
Robbery	Completed or attempted theft, directly from an individual, of property or cash by force or threat of force, with or without a weapon, and with or without injury.
Arson	The unlawful and intentional damage, or attempt to damage, any personal property by fire or incendiary device.
Larceny/Theft	Completed or attempted theft of property or cash without personal contact, including theft or attempted theft of property or cash directly from the victim without force or threat of force, purse snatching, and pocket picking.
Motor Vehicle Theft	Stealing or unauthorized seizure of a motor vehicle, including attempted thefts.
Household Burglary	Unlawful/forcible entry or attempted entry into a residence, usually involving theft.
Embezzlement	The unlawful misappropriation for profit of money, property, or some other article of value entrusted to the care, custody, or control of the offender.
Fraud	The intentional perversion of the truth for the purpose of inducing another person or entity to part with something of value or to surrender a legal right.

Stolen Property	The reception, purchase, retail, possession, concealment, or transportation of any property with the knowledge that it has been unlawfully taken.
Forgery and Counterfeiting	The unauthorized altering, copying, or imitation of an article with the intent to deceive or defraud by passing off the copy as the original or the selling, buying, or possession of an altered, copied, or imitated article with the intent to deceive or defraud.
Vandalism	The willful destruction or damage of real or personal property without the consent of the owner or the individual in custody or control of it.

Source: National Institutes of Health Public Access Author Manuscript, "The Cost of Crime to Society: New Crime-Specific Estimates for Policy and Program Evaluation," 2011.

Appendix 2

Matching Kentucky Statutorily-Defined Criminal Offenses to NIH Criminal Offense Categories

NIH Criminal Offense Category	Kentucky Criminal Offenses DANY Grant-Identified Suspects
Murder	Reckless homicide Manslaughter, first degree
Rape/Sexual Assault	Rape Sodomy Sexual Assault, first degree Sexual Abuse, first degree Sexual Misconduct
Aggravated Assault	Assault, second degree Assault, third degree Assault, fourth degree Assault Under Extreme Emotional Duress
Robbery	Robbery, first degree Robbery, second degree Facilitation of Robbery, first degree
Arson	None
Larceny/Theft	Theft by Unlawful Taking Theft by Unlawful Taking – Shoplifting
Motor Vehicle Theft	Unauthorized Use of a Motor Vehicle
Household Burglary	Burglary in the second degree Attempted burglary in the second degree
Embezzlement	None
Fraud	Fraudulent Use of a Credit Card Under \$500 False Statements to Receive Benefits Greater than \$100 Fraudulent Insurance Acts Fraudulent Use of ID Card or Electronic Code for Benefits
Stolen Property	Receiving Stolen Property Under \$500 Receiving Stolen Property Receiving Stolen Property Under \$10,000 Receiving Stolen Property - Firearm
Forgery and Counterfeiting	Criminal Possession of a Forged Instrument, 1st degree Criminal Possession of a Forged Instrument, 2 nd degree Facilitating Forgery, second degree
Vandalism	None

Source: Kentucky State Police, Kentucky Revised Statutes