

Analysis of Cuyahoga County's Procedures for Alleviating the Backlog of Sexual Assault Kits

## Cost Savings and Cost Effectiveness of the Cuyahoga County Sexual Assault Kit Task Force

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*Sexual assault is a crime that underreported (approximately 2/3 are not reported), under-investigated, under-prosecuted, and just generally under-prioritized. These findings provide further evidence of the cost the victims and the community have suffered because of the under-prioritization.*

## Key Findings

The following includes the cost savings and cost effectiveness of the Cuyahoga County Sexual Assault Kit (SAK) Task Force. Our findings are based upon the number of unsubmitted SAKs that had been tested as of January 1, 2016, and therefore, reflect cost savings and cost effectiveness only as of January 1, 2016. The Task Force will incur additional cost savings upon completion of the project. Estimates presented here should be interpreted as conservative estimations of cost.

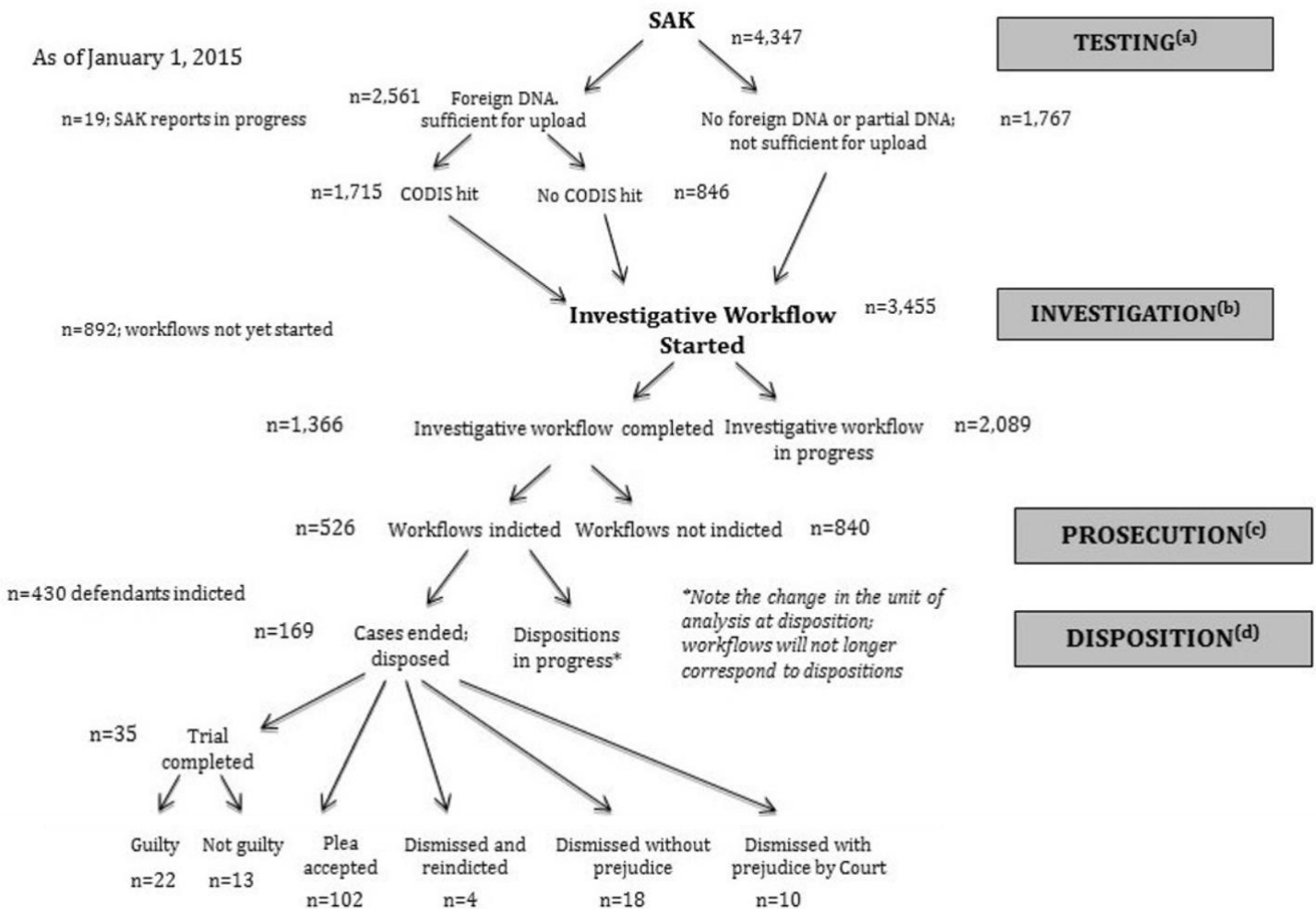
### Our key findings:

- From the 4,347 SAKs tested as of January 1, 2016, we project a total of 1,290 indictments and 948 convictions, which represent 21.8% of all tested SAKs—a rate much higher than previously expected and higher than most other jurisdictions testing their unsubmitted SAKs
- The total tangible and intangible costs to the victims associated with the unsubmitted SAKs tested as of January 1, 2016 is \$885.8 million dollars.
- The total cost of testing and investigating the unsubmitted SAKs is estimated to be \$9.6 million dollars.
- The total cost of future sexual assaults averted due to the SAK Task Force as of January 1, 2016 is \$48.3 million dollars.
- Therefore, the SAK Task Force is projected to produce a net savings of \$38.7 million dollars to the community in addition to 1,290 indictments and 948 convictions of sexual offenders.

## Effectiveness

Figure 1 (below) details the Task Force processing of a SAK from testing to disposition, with four main phases to this process: Testing, Investigation, Prosecution, and Disposition. As a SAK proceeds through the process it (potentially) changes from a SAK, to an investigation, to a prosecution, and to a final disposition. We base our estimations of effectiveness on the numbers presented in this Figure.

Figure 1. Cuyahoga County’s Sexual Assault Kit Task Force Testing Process



## Indictments

As of January 1, 2016, 1,366 investigations have been completed by the SAK Task Force resulting in 526 indictments<sup>1</sup>. We project the rate of indictment will be reduced by a function of 1.5 for the remaining investigations as the Task Force will not likely be indicting as many no CODIS hit and no DNA cases (i.e., it will take 1.5 times as many investigations to produce the same number of indictments).

Based on current practices, we estimate:

- Current number of investigations per indictment: 2.6 ( $1,366 \div 526 = 2.6$ ).
- Projected number of investigations per indictment for remaining cases: 3.9 ( $1.5 \times 2.6$ )
- Total number of additional indictments from investigations that have not yet been completed: (a total of 2,981 cases yet to have completed investigations as of January 1, 2016,  $2,981 \div 3.9 = 764$ )
- Total number of indictments from the 4,347 SAKs: 1,290 ( $526 + 764$ )

## Convictions

Figure 2. Number of SAKs, Testing to Conviction as of January 1, 2016



As of January 1, 2016, 169 cases (of the 526 indictments) have been completed, with 124 convictions (22 guilty verdicts, 102 pleas).<sup>2</sup>

- Total number of completed cases that resulted in convictions to date: 73.4% ( $124 \div 169 = 73.4\%$ ).

<sup>1</sup> These numbers are derived from JusticeMatters and presented in the Cuyahoga County Prosecutor's Office Scorecard.

<sup>2</sup> An offender can be associated with more than one SAK, and there can be multiple offenders in a single SAK.

- Total number of indictments to be completed from the initial 1,366 completed investigations: 357  
(526 – 169 = 357)

We expect a steady rate of conviction for the 1,366 completed investigations. As presented above, the Task Force's current conviction rate (guilty verdicts and pleas) for all completed cases is 73.4%. Additionally, as detailed in Figure 1, 22 out of the 169 completed cases (13%) were dismissed without prejudice or dismissed and re-indicted, thereby allowing for future prosecution. *Thus, a 73.4% conviction rate is a conservative definition of a conviction rate.*

- Total number of convictions predicted from the remaining 357 indicted cases: 262 ( $357 \times .734 = 262$ )
- Total number of convictions from the 1,366 investigations to date: 386 ( $124 + 262 = 386$ )
- Total number of investigations per conviction from the initial 1,366 completed: 3.7 ( $1366 \div 386 = 3.5$ ).

However, for those cases that do not have completed investigations we estimate that the conviction rate will be reduced by approximately 1.5 times, as the conviction rate will likely be lower for no CODIS hit and no DNA cases (i.e., it will take 1.5 times as many investigations to produce the same number of convictions).

- Total number of investigations per conviction: 5.3 ( $1.5 \times 3.5 = 5.3$ ).
- Total number of additional convictions from investigations that have not yet been completed: 240 (a total of 2,981 cases yet to have completed investigated as of January 1, 2016;  $2,981 \div 5.3 = 562$ ).
- Total number of convictions from the SAK Task Force: 948 ( $386 + 562 = 948$ ).
- A conservative estimate of the total percentage of SAKs that will result in a conviction: 21.8% ( $948 \div 4,347$ )—a rate much higher than previously expected and higher than most jurisdictions that are testing, investigating, and prosecuting their unsubmitted SAKs.

## Costs Associated with the SAKs<sup>3</sup>

Below we detail costs for three aspects of the SAK process:

- Cost prior to the testing and investigating of SAKs (e.g., costs to victim)
- Cost of testing and investigating the SAKs (e.g., DNA testing, cost of investigating)
- If convicted, cost of future crimes averted (e.g., costs to victim)

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### Cost Prior to the Testing and Investigating of SAKs

The cost incurred prior to the testing and investigating of SAKs is primarily the cost to the victim. This is slightly conservative, as it does not include the police cost in the original handling of the case when the SAK was not tested.

Tangible and intangible costs of sexual assault provided below are based upon those provided by McCollister, French, and Fang (2010).

#### Tangible Cost: Cost to the victim

Tangible costs include the direct cost of crime, including medical expenditures, cash losses, property theft or damage, lost earnings due to injury, and other victimization-related costs. Costs are based on survey-based research. The costs do not factor in long-term reduced income from interrupted education and long-term mental health issues, such as Post-Traumatic Stress Disorder or increased rates of substance abuse or suicide.

Total tangible cost of the sexual assault per victim: **\$5,556**

Total cost for all SAKs tested as of January 1, 2016:  
\$24,151,932 (\$5,556 per victim \* 4,347 victims = \$24,151,932).

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<sup>3</sup> These estimates ignore the cost of actual prosecution since this is part of society's decision that these cases should be prosecuted, and the convicted offender incarcerated. This is with the knowledge that incarceration is expensive and the offender when incarcerated will not be working, so there is some loss of productivity.

## Intangible Cost: Pain and Suffering

Intangible costs of sexual assault include indirect losses suffered by crime victims, including pain and suffering, decreased quality of life, and psychological distress and are based on jury awards. Cost of premature mortality is not included since none of the victims in the untested SAK kits were killed in the attack.

Total intangible cost for the sexual assault per victim: **\$198,212**

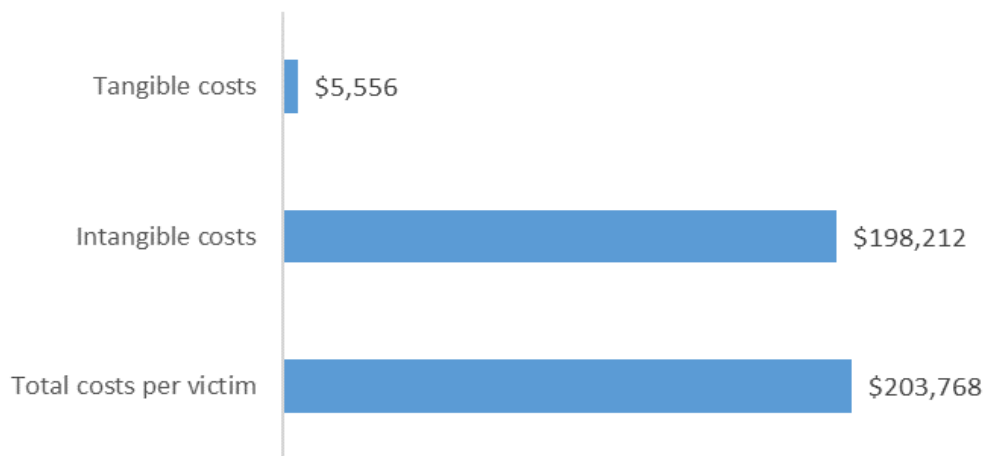
Total cost for all SAKs tested as of January 1, 2016:  
\$861,627,564 ( $\$198,212$  per victim \* 4,347 victims = \$861,627,564)

Total Cost: Tangible Cost + Intangible Cost

Total cost of the sexual assault per victim:  
**\$203,768** ( $\$5,556 + \$198,212$ )

Total cost for all SAKs tested of January 1, 2016:  
\$885,779,496 ( $\$203,768 * 4,347$  victims = \$885,779,496).

**Figure 3. Number Cost of Sexual Assault per Victim**



## Cost of the DNA Testing

The Ohio Bureau of Criminal Investigations (BCI) tested Cuyahoga County's unsubmitted SAKs. According to the BCI, the cost per DNA test:

Supplies: \$435 per SAK  
Lab scientist: \$514.29 per SAK  
( $\$720,000$  for 10 scientists per year,  
approximately 1,400 SAKs tested per year,  
 $720,000 \div 1,400 = \$514.29$ )

Total DNA testing cost:  $\$949.29$  per SAK ( $\$514.29 + \$435 = 949.29$ )

## Cost of Investigating

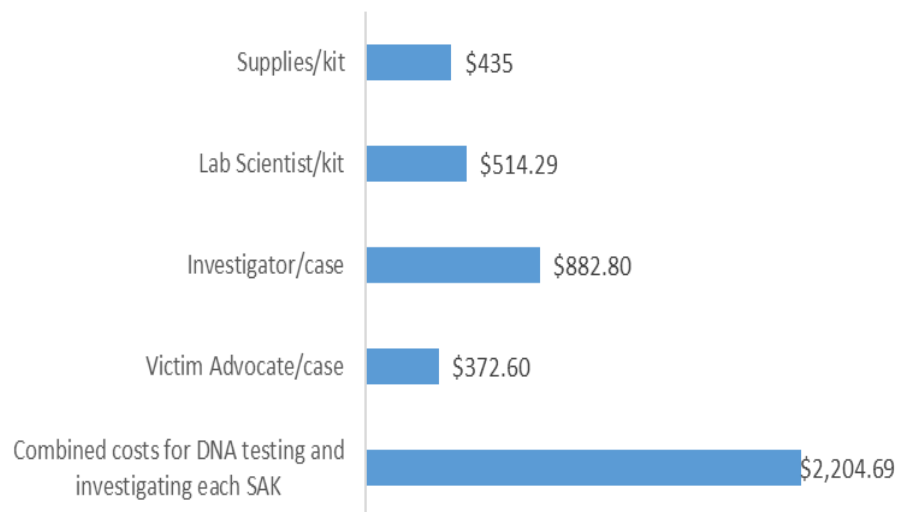
The Task Force investigates all reports from the BCI on the SAKs. All SAKs will have a DNA report from the BCI. According to the Task Force, the cost per investigation:

Cost of investigators:  $\$882.80$  per investigation (40 hours per investigation\*  $\$22.07$  per hour =  $\$882.80$ )

Cost of victim advocates:  $\$372.60$  per investigation (20 hours per investigation \*  $\$18.63$ /hour =  $\$372.60$ )

Total cost per investigation:  $\$1,255.40$  per investigation ( $\$882.80 + \$372.60 = \$1,255.40$ )

Figure 4. Cost of Testing and Investigating Sexual Assault per SAK



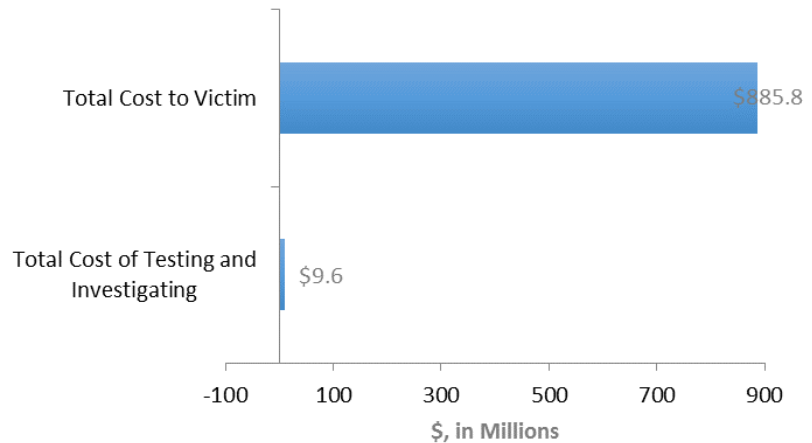


## Total Cost of Testing and Investigating the SAKs

Total cost for DNA testing and investigating: \$2,204.69  
( $\$949.29 + \$1,255.40 = \$2,204.69$ ).

Total cost for DNA testing and investigating all SAKs tested as of January 1, 2016: \$9,569,008  
( $\$2,204.69$  per SAK \* 4,347 SAKs = \$9,583,787.40).

Figure 5. Cost of Sexual Assault to the Victims



## Cost of Future Sexual Assaults Averted

While it is not possible to know exactly what percentage of sexual assaults are reported vs. not reported, preliminary analysis of the SAK Task Force data suggests that conservatively 25% of the offenders subsequently committed another reported sexual assault—crimes that could have possibly been prevented if the SAKs were tested at the time and led to conviction.

This estimate is based upon statistics collected by the Task Force on serial offenders, data collected as part of the Cuyahoga County Sexual Assault Kit Pilot Research Project (Lovell, Butcher, and Flannery 2016) and data collected as part of Detroit's unsubmitted SAKs (Campbell, Fehler-Cabral, Pierce, Sharma, Bybee, Shaw, Horsford, and Feeney 2015).

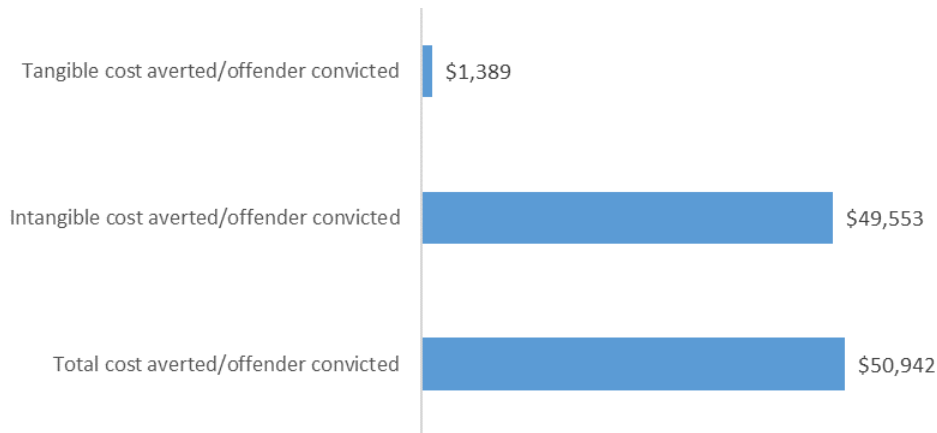
Thus, we conservatively estimate that 25% all sexual offenders will commit a subsequent sexual assault that is reported. The cost of future sexual assaults averted per offender convicted are calculated based upon the 25% reported reoffending and the cost to the victim.

Tangible cost averted per offender convicted:  
 $\$1,389$  ( $.25 * \$5,556 = \$1,389$ )

Intangible cost averted per offender convicted:  
\$49,553 ( $.25 * \$198,212 = \$49,553$ )

Total cost averted per offender convicted: \$50,942 ( $.25 * \$203,768 = \$50,942$ )

**Figure 6. Cost of Future Sexual Assaults Averted per Offender Convicted**



Using the above projection of 948 convictions from the 4,347 SAKs tested as of January 1, 2016:

Tangible cost of future sexual assaults averted due to SAK Task Force:  
\$1,316,772 ( $948 * \$1,389 = \$1,316,772$ )

Intangible cost of future sexual assaults averted due to SAK Task Force:  
\$46,976,244 ( $948 * \$49,553 = \$46,976,244$ )

Total cost of future sexual assaults averted due to SAK Task Force: \$48,293,016  
( $948 * \$50,942 = \$48,293,016$ )

## Cost-Effectiveness of the SAK Task Force

We present the cost-effectiveness of the SAK Task Force in terms of the cost per indictment and the cost per conviction. As stated previously:

Total cost of the SAK Task Force: \$9,569,008

Tangible cost of future sexual assaults averted due to SAK Task Force: \$1,316,772

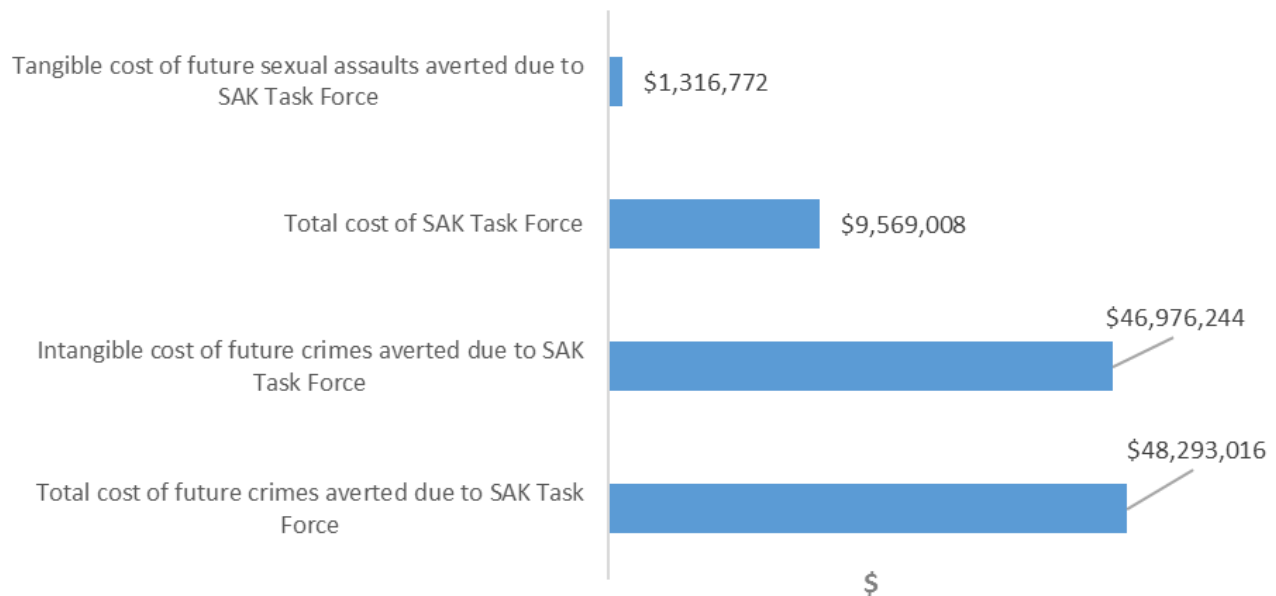
Intangible cost of future crimes averted due to SAK Task Force: \$46,976,244

Total cost of future crimes averted due to SAK Task Force: \$48,293,016

Projected number of indictments: 1,290

Projected number of convictions: 948

Figure 7. Cost of Future Sexual Assaults Averted



## Net Savings of the SAK Task Force

Tangible costs averted by convictions: \$8,252,236 ( $\$9,569,008 - \$1,316,772 = \$8,252,236$ )

Intangible costs averted by convictions:  
savings of \$37,407,236 ( $\$9,569,008 - \$46,976,244 = \text{savings of } \$37,407,236$ )

Total costs averted by convictions: savings of \$38,724,008 ( $\$9,569,008 - \$48,293,016 = \text{savings of } \$38,724,008$ )

### Cost per Indictment

Tangible costs averted per indictment: \$6,397 ( $\$8,252,236 \div 1,290 = \$6,397$ )

Intangible costs averted: savings of \$38,724,008 and 1,290 indictments

Total costs averted: savings of \$38,724,008 and 1,290 indictments

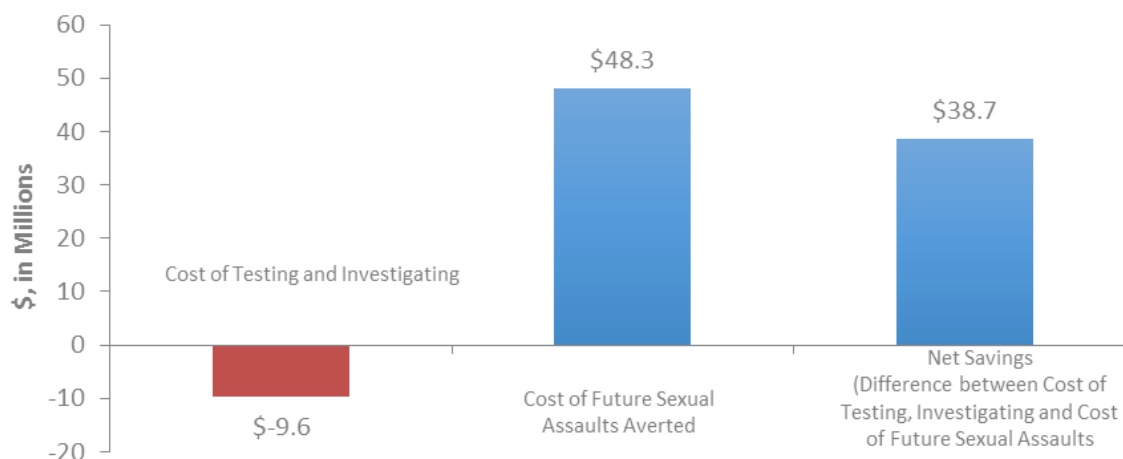
### Cost per Conviction

Tangible costs averted per conviction: \$8,705 ( $\$8,252,236 \div 948 = \$8,705$ )

Intangible costs averted: savings of \$38,724,008 and 948 convictions

Total costs averted: savings of \$38,724,008 and 948 convictions

Figure 8. Net Savings of the SAK Task Force



## Discussion

In sum, the cost to the 4,347 sexual assault victims is over \$885.7 million dollars; the total cost to test and investigate the SAKs is over \$9.5 million; the cost of future sexual assaults averted due to the SAK Task Force is over \$48.3 million, and the Task Force has brought a net savings to the community of over \$38.7 million dollars.

The findings presented in this report have several important implications. First, sexual assault is extremely financially costly to victims and to the community. In fact, sexual assault is the second most expensive violent crime after murder (McCollister, French, and Fang, 2010). In our analyses, the cost to the unsubmitted SAK victims in Cuyahoga County alone, conservatively, is over \$885.7 million, as this figure does not account for the long-term cost of such a traumatizing crime.

Second, the cost to test and investigate the SAKs is significantly smaller than all other associated costs presented in this report. In fact, the Task Force has actually produced a net \$38.7 million savings—accounting for the cost of testing and investigating the SAKs and the savings associated with cost of averting future sexual assaults.

Given the conservative estimate that 25% of offenders will commit a subsequent sexual assault that is reported and how costly sexual assaults are to victims and the community, these findings highlight just how important it is to test, investigate, and prosecute all SAKs.

Sexual assault is a crime that underreported (approximately 2/3 are not reported), under-investigated, under-prosecuted, and just generally under-prioritized. These findings provide further evidence of the cost the victims and the community have suffered because of the under-prioritization.

## References

Campbell, R., G. Fehler-Cabral, S. Pierce, D. Sharma, D. Bybee, J. Shaw, S. Hornsford, and H. Feeney. 2015. "The Detroit Sexual Assault Kit (SAK) action research project: final report." <https://www.ncjrs.gov/pdffiles1/nij/grants/248680.pdf>.

Lovell, R., F. Butcher, and D. Flannery. 2016 "Cuyahoga County Sexual Assault Kit (SAK) Pilot Project: Report on Serial and One-Time Serial Offenders." <http://begun.case.edu/begun-center-selected-assist-cuyahoga-county-sexual-assault-kits>.

McCollister, K., M. French, and H. Fang. 2010. The cost of crime to society: new crime-specific estimates for policy and program evaluation. *Drug Alcohol Dependence*. 108:98-109. doi:10.1016/j.drugalcdep.2009.12.002.