Forensic Technology Center of Excellence

Strengthening Forensic Science Services through National Institute of Justice Grant Programs - 2016 Crime Laboratory Director's Meeting

Final Report

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Information provided herein is intended to be objective and is based on data collected during primary and secondary research efforts available at the time this report was written. The information provided herein is intended to provide an overview and guide; it is not intended as an exhaustive summary.
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The Forensic Technology Center of Excellence (FTCoE)

The FTCoE is a collaboration of RTI International and the following academic institutions, which are accredited by the Forensic Science Education Programs Accreditation Commission (FEPAC): Duquesne University, Virginia Commonwealth University, and the University of North Texas Health Science Center. In addition to supporting NIJ's research and development (R&D) programs, the FTCoE provides testing, evaluation and technology assistance to forensic laboratories and practitioners in the criminal justice community. NIJ supports the FTCoE to transition forensic science and technology to practice (award number 2011-DN-BX-K564).

FTCoE is led by RTI, a global research institute dedicated to improving the human condition by turning knowledge into practice. With a staff of more than 4,700 providing research and technical services to governments and businesses in more than 58 countries, RTI brings a global perspective. FTCoE builds on RTI's expertise in forensic science, innovation, technology application, economics, data analytics, statistics, program evaluation, public health and information science.

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1. MEETING OBJECTIVES AND OVERVIEW

On August 29–30, 2016, the National Institute of Justice (NIJ) convened a meeting with forensic Laboratory Directors from various regions of the United States. The purpose of the meeting was to (1) gather information and feedback on NIJ programs that are specifically dedicated to forensic science laboratories and (2) to provide an opportunity for an open discussion about the needs and challenges in the forensic science practitioner community.

NIJ's Office of Investigative and Forensic Sciences (OIFS) is the federal government's lead agency for forensic science research and development, as well as for the administration of programs that provide technical assistance, technology transition, and promote efficiency in the nation's forensic laboratories. OIFS' mission is to improve the quality and practice of forensic science through innovative solutions that support research and development, testing and evaluation, technology, information exchange, and the development of resources for the criminal justice community. Therefore, several activities and initiatives OIFS manages are specifically dedicated to the forensic science community, including the nation's laboratories, and are discussed in this report.

In order to best represent the forensic practitioner community, NIJ, through its Forensic Technology Center of Excellence (FTCoE), and in collaboration with the American Society of Crime Laboratory Directors (ASCLD), selected a diverse group of laboratory directors to attend the 2016 meeting.[1] Twenty-seven laboratory directors representing 16 states, three counties, and eight cities were selected after considering factors such as laboratories receiving Coverdell and DNA CEBR funding, and geographic diversity.[2]

Prior to the meeting the attendees were provided a survey specific to NIJ programs. The responses to the survey questions were collated and presented to the attendees during the meeting. Responses to these survey questions are also included in the Discussion sections of this report, including graphical summaries. A list of the questions follow:

[1] ASCLD is a nonprofit professional association of ~ 600 crime laboratory directors and forensic science managers representing more than 170 international and local, state, federal and private crime laboratories in the U.S. It seeks to foster professional interests; assist the development of laboratory management principles and techniques; acquire, preserve and disseminate forensic-based information; maintain and improve communications among crime laboratory directors; and promote, encourage and maintain the highest standards of practice in the field. http://www.ascld.org/.

[2] The initial meeting selection criteria identified laboratories that received both DNA and Coverdell grants. Through the DNA program, NIJ funds approximately 130 accredited biology/DNA laboratories. A cross section of agencies and laboratories also receive Coverdell funding. From this latter group (i.e., laboratories that received funds from both the DNA and Coverdell programs), FTCoE selected representatives from approximately 20%. FTCoE also considered geographic diversity and whether the crime laboratory was part of a state, county, or municipal entity. It is important to note that different laboratories operate under their own jurisdictional requirements and may have varying policies and procedures relating to the administration of grant funds. Therefore, the challenges identified in this document may not represent the views of all participants or unrepresented laboratories.

- How will the Justice for All Act (JFAA)[3] impact your laboratory?
- How important is the DNA Capacity Enhancement and Backlog Reduction (DNA CEBR) program for your laboratory?
- How would renovations using DNA CEBR funding, impact your laboratory?
- How would increasing the training cap from 5% to 8% impact your laboratory?
- How would purchase of IT equipment using DNA CEBR funding impact your laboratory?
- Did your laboratory apply for a competitive grant?
- How important is Coverdell program for your laboratory?
- What is the impact of increase in the funding for Coverdell grants?
- Should the Coverdell program change to 100% formula?
- Are you aware of the NIJ's solicitation - 'Research and Evaluation for Labs'?

2. MEETING TOPICS

NIJ's Strategic Approach to Address Forensic Science Community Needs

The meeting began with an overview of the forensic science initiatives and overall strategy employed by NIJ for addressing the needs of the nation's forensic science community, including backlogs of evidence in crime laboratories. The overview, led by OIFS Director Gerald LaPorte, also included a discussion of NIJ's annual appropriations for various DNA and other forensic science activities, including DNA analysis and laboratory capacity enhancement, research, development and evaluation. In fiscal year (FY) 2016, the DOJ Appropriations Act included $125 million allocated as follows: $117 million for DNA analysis and the capacity enhancement program and other local, state and federal forensic activities; $4 million for the Kirk Bloodsworth Postconviction DNA Testing Program; and $4 million for Sexual Assault Examination Program Grants. In FY 2016, Congress also appropriated $12.5 million for the Coverdell program. NIJ's strategic approach is also discussed in detail in the NIJ Report entitled *Fiscal Year 2015 Funding for DNA Analysis, Crime Laboratory Capacity Enhancement and Other Forensic Activities*.[4]

[3] The Justice for All Act (H.R. 5107, JFAA), is a law that has significant implications for both the expansion of forensic DNA data banks and exoneration through post-conviction DNA testing. It was first signed into law by President George W. Bush on October 30, 2004. The latest Justice for All Reauthorization Act of 2016 (H.R.4602) was introduced to Congress on February 24, 2016.

[4] LaPorte, G., Waltke, H. and Heurich, C, *Fiscal Year 2015 Funding for DNA Analysis, Capacity Enhancement and Other Forensic Activities*, Washington, D.C.: U.S. Department of Justice, National Institute of Justice, September 2016, NCJ 249905.

The DNA Capacity Enhancement and Backlog Reduction Program

Background

The DNA Capacity Enhancement and Backlog Reduction (DNA CEBR) program provides funds to state and local crime laboratories (1) to process, record, screen and analyze forensic DNA and/or DNA database samples; and (2) to increase the capacity of DNA laboratories (public forensic and database), thereby reducing the number of samples awaiting analysis and improving turnaround time.[5] Crime laboratories' capacities to process DNA evidence continue to grow because of increased automation, the hiring of additional personnel, the use of overtime and improved testing procedures and methods. However, the demand for DNA testing also continues to rise, resulting in persistent backlogs. Evidence of impact can be seen by a sustained increase in the number of DNA cases completed over time, an increase in DNA profile uploads and Combined DNA Index System (CODIS) hits, and ultimately, a decreased cost per case because of an increase in efficiency. Under this program, eligible applicants can determine the portion of anticipated funding to be used for capacity-building purposes as well as for DNA analysis.

Allowable costs under this program include salary and benefits associated with hiring additional laboratory personnel, overtime, training, limited travel, equipment, supplies, outsourcing, audits, Lean Six Sigma efficiency studies, process mapping, software, licenses and updates to **existing** Laboratory Information Management Systems (LIMS).

Unallowable costs include the procurement of new LIMS systems, construction and renovations, service and maintenance contracts for existing equipment, equipment or technologies not approved by National DNA Index System (NDIS), and excessive travel expenses. Rapid DNA Analysis instruments must follow the FBI's addendum to the QAS for Rapid DNA Analysis.[6]

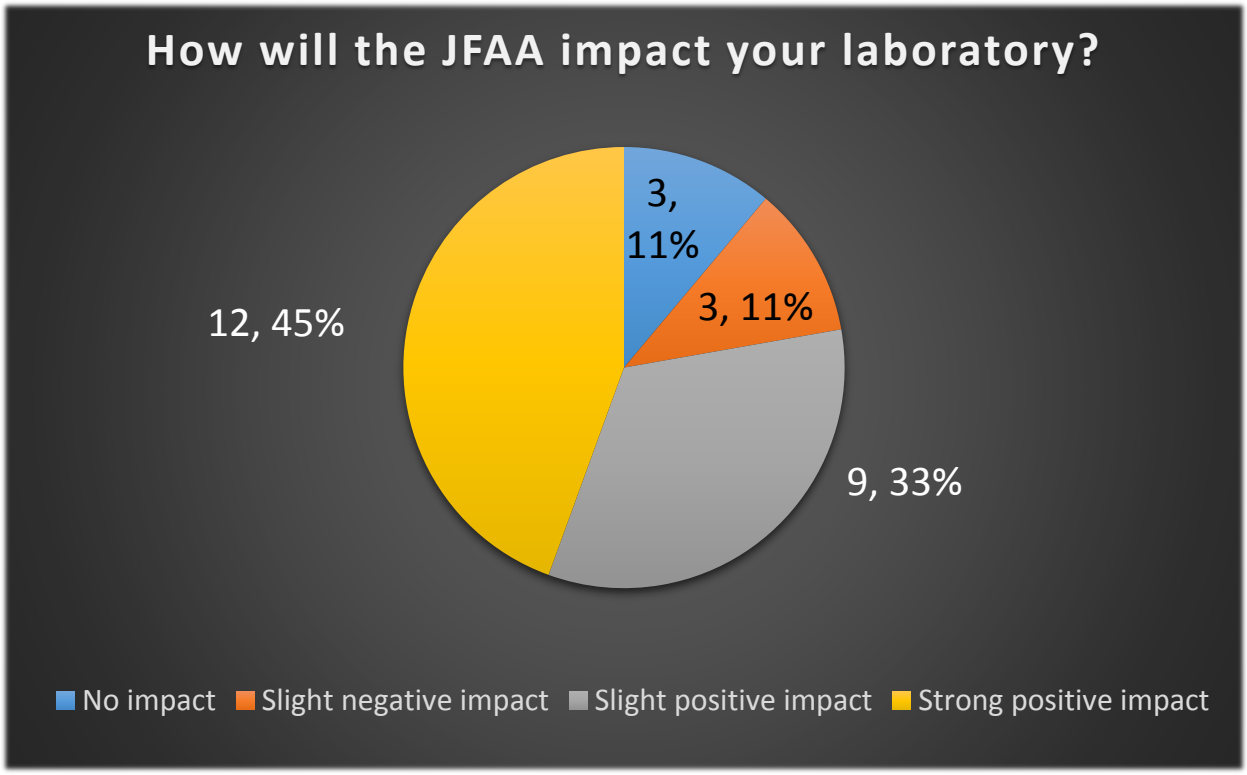
NIJ's CEBR program, has helped to increase laboratory capacity, decrease the price of testing and increase CODIS uploads. Since 2007, the DNA CEBR program has resulted in more than 253,000 CODIS uploads of forensic samples, generating more than 98,000 CODIS hits. The program has also led to more than 1.78 million CODIS uploads of convicted offender and arrestee profiles, and the cost for processing forensic cases has dropped from more than $1,200 per case in 2007 to less than $600 per case in 2015. NIJ recognizes that laboratories will continue to be challenged by the increasing demand for DNA analysis, and will continue to invest in new innovations that improve accuracy, reliability and efficiency.

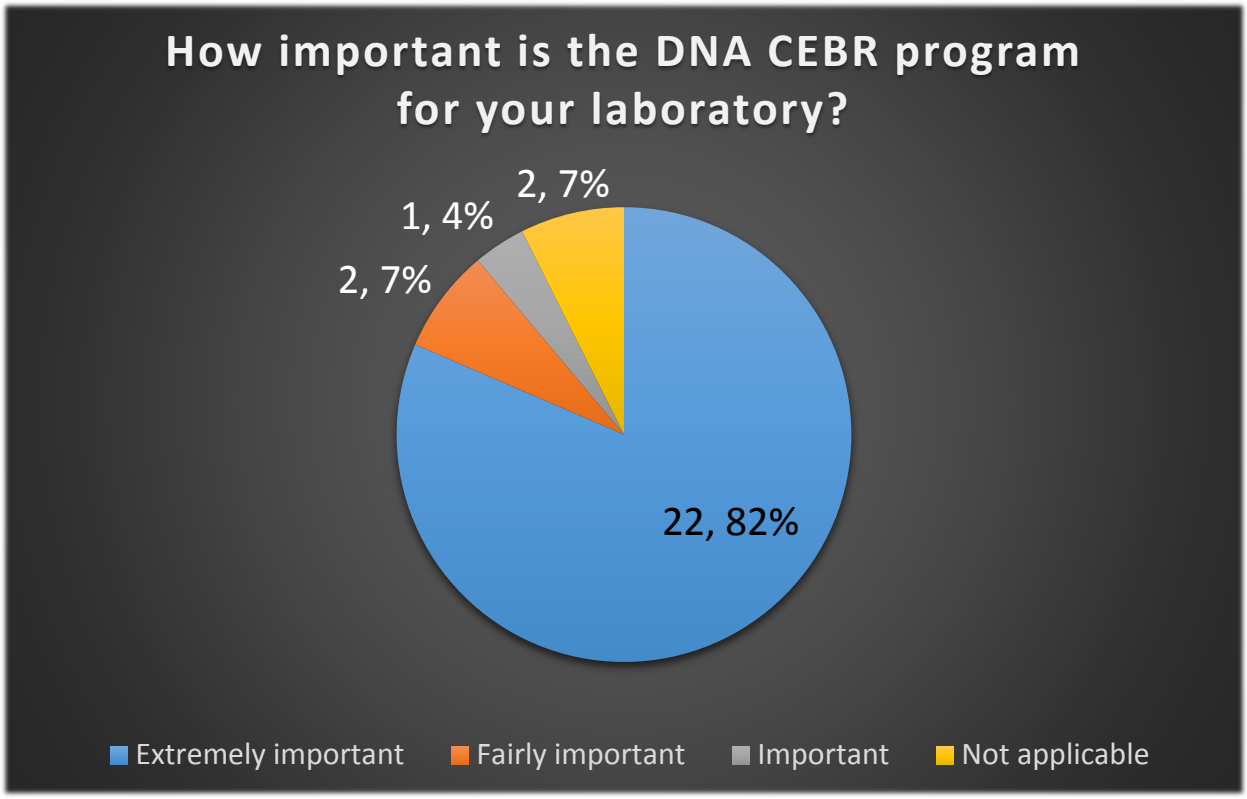
NIJ continually monitors the DNA CEBR program and how award recipients are expending funds, the unspent funds they have remaining as the fiscal year progresses, and the funds de-

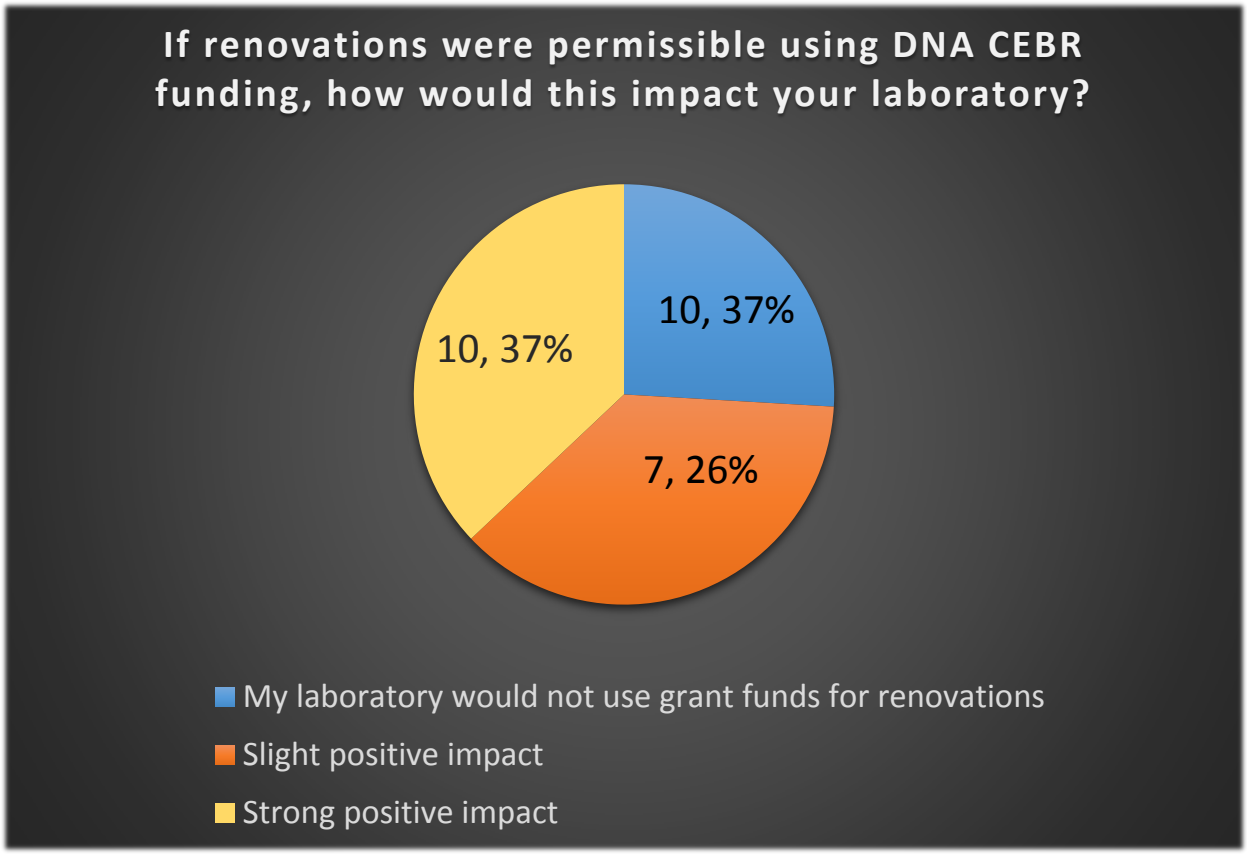
[5] For more regarding Backlogs of Forensic DNA Evidence, please visit: https://www.nij.gov/topics/forensics/lab-operations/evidence-backlogs/Pages/welcome.aspx.

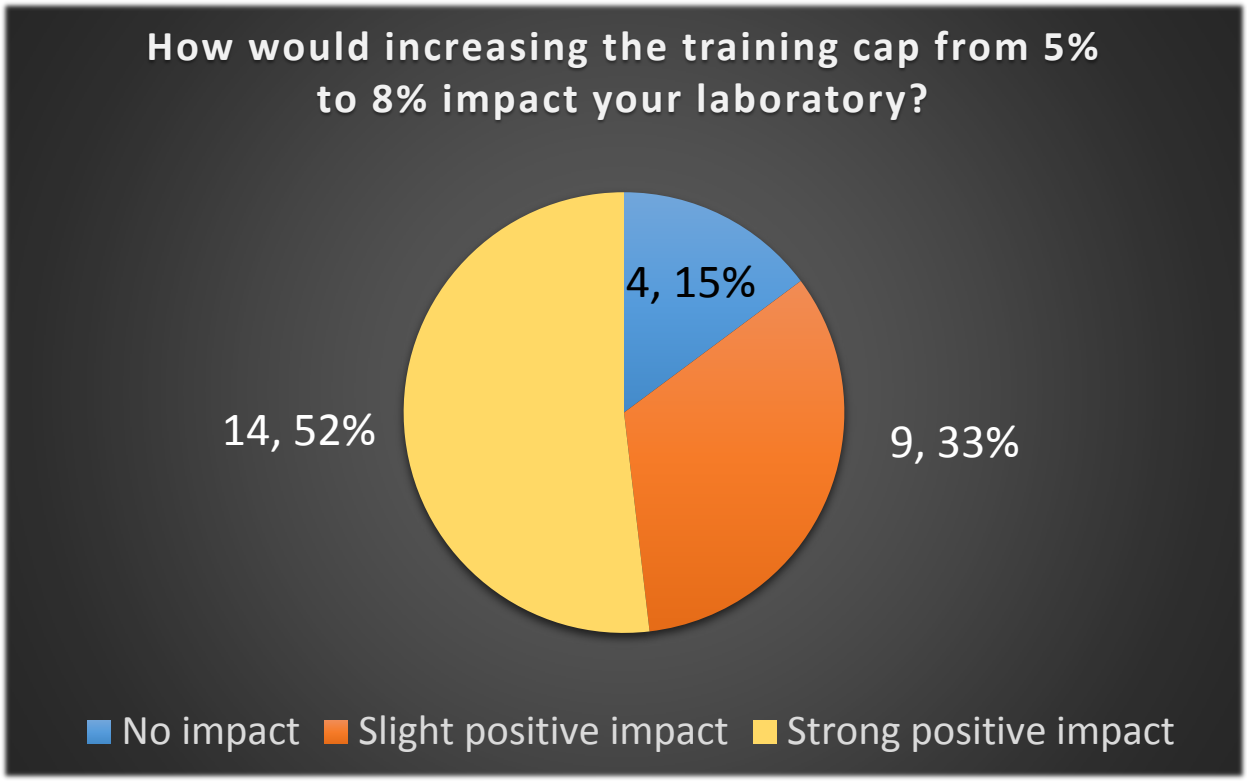
[6] For more information on "DNA Capacity Enhancement and Backlog Reduction (CEBR) Program", please visit: https://nij.gov/funding/Documents/solicitations/NIJ-2017-11582.pdf

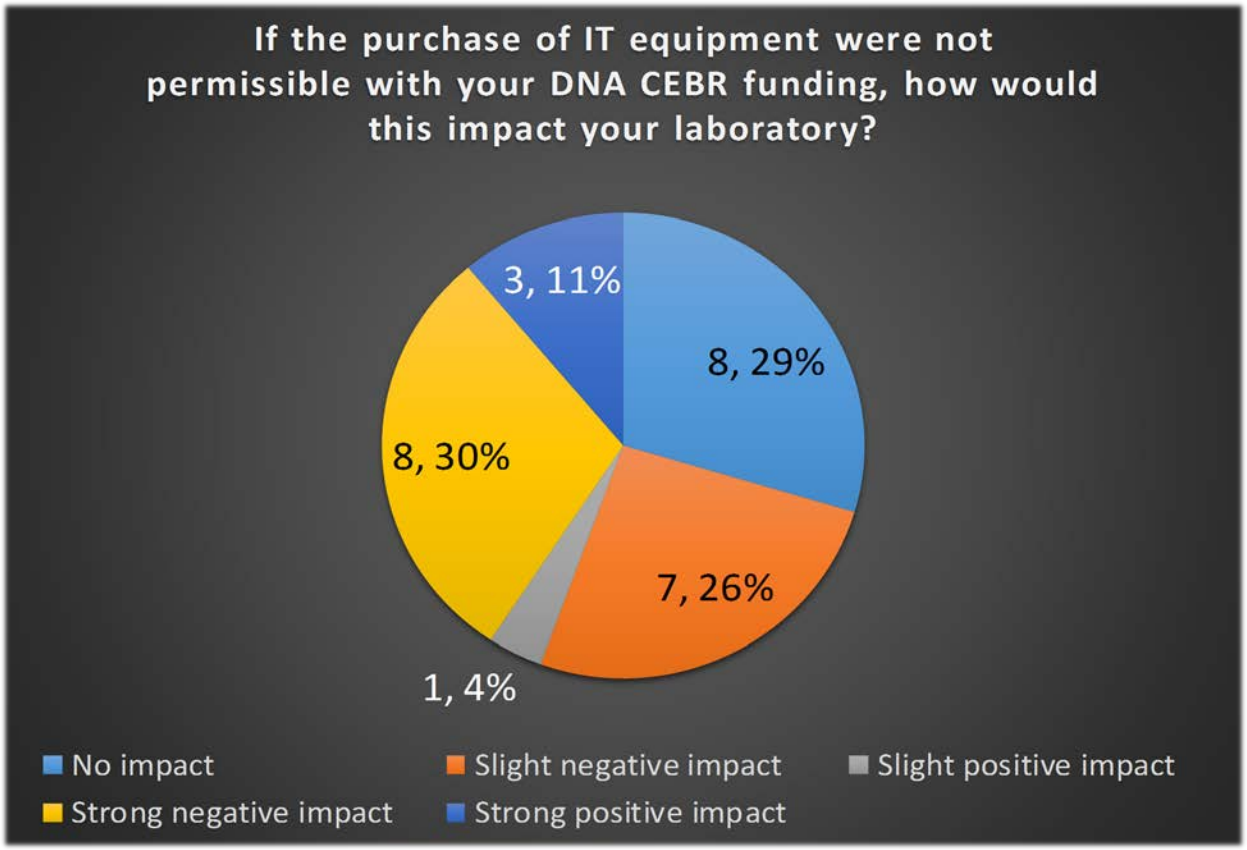
obligated by award recipients. Based on an analysis of data in past years, most laboratories receive sufficient funding for DNA analysis; however, there are some laboratories that will have greater needs and isolated challenges in different years. That is, the need for more resources, in addition to the annual DNA CEBR formula allocation, will vary from year to year and from laboratory to laboratory.

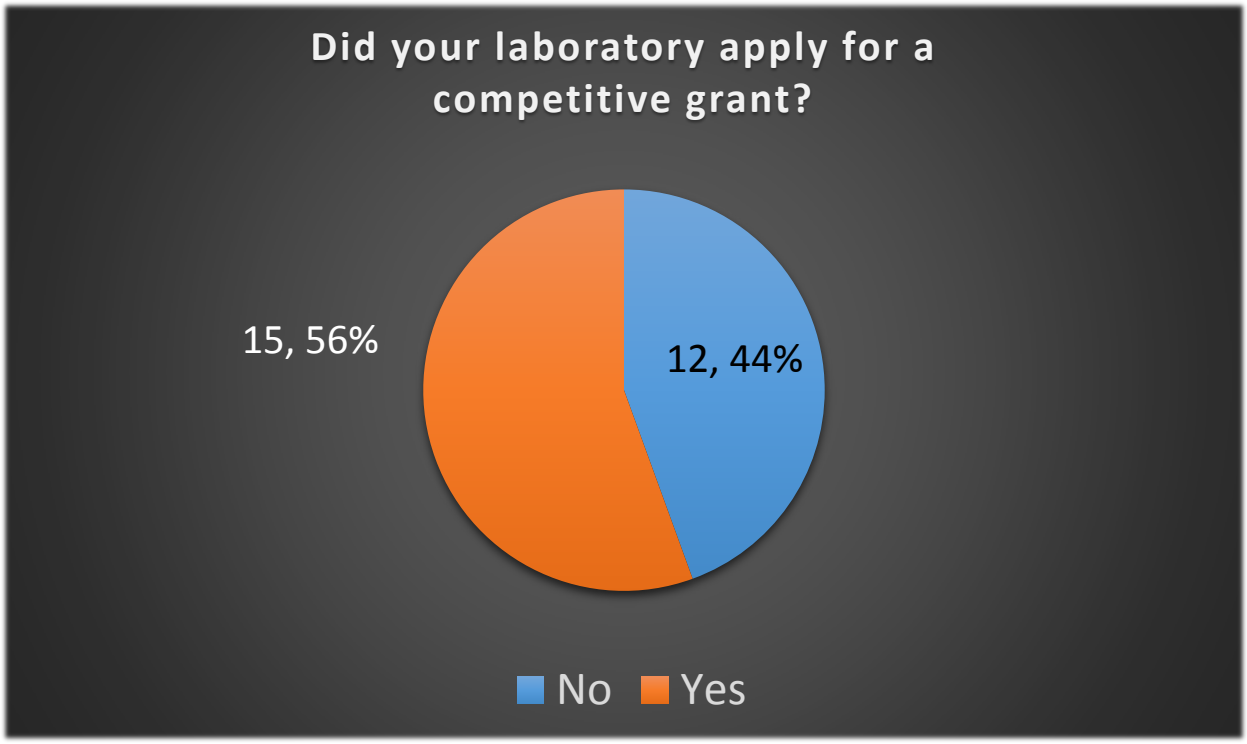



How important is the DNA CEBR program for your laboratory?
2, 7%
1, 4%
2, 7%
22, 82%
Extremely important
Fairly important
Important
Not applicable


If renovations were permissible using DNA CEBR funding, how would this impact your laboratory?
10, 37%
10, 37%
7, 26%
My laboratory would not use grant funds for renovations
Slight positive impact
Strong positive impact


How would increasing the training cap from 5% to 8% impact your laboratory?
4, 15%
9, 33%
14, 52%
No impact
Slight positive impact
Strong positive impact


If the purchase of IT equipment were not permissible with your DNA CEBR funding, how would this impact your laboratory?
3, 11%
8, 29%
8, 30%
7, 26%
1, 4%
No impact
Slight negative impact
Slight positive impact
Strong negative impact
Strong positive impact



Discussion

The Laboratory Directors expressed a need for funding sources such as the DNA CEBR program to conduct multidisciplinary forensic analysis and for projects that are not necessarily amenable to the current formula program that would enable long term solutions for more efficient processing, recording, screening, and analysis evidence. This could include purchases of large equipment, new or upgrades to existing LIMS, or physical renovation for lab improvements, all of which present challenges under the current funding structure due to time constraints, procurement, and other issues regarding implementation.

Generally, the Laboratory Directors expressed a concern about the creation of a competitive program to replace the current DNA CEBR formula distribution; however, the Laboratory Directors were amenable to a complementary program to the current DNA CEBR program.

Paul Coverdell Forensic Science Improvement Grant Program

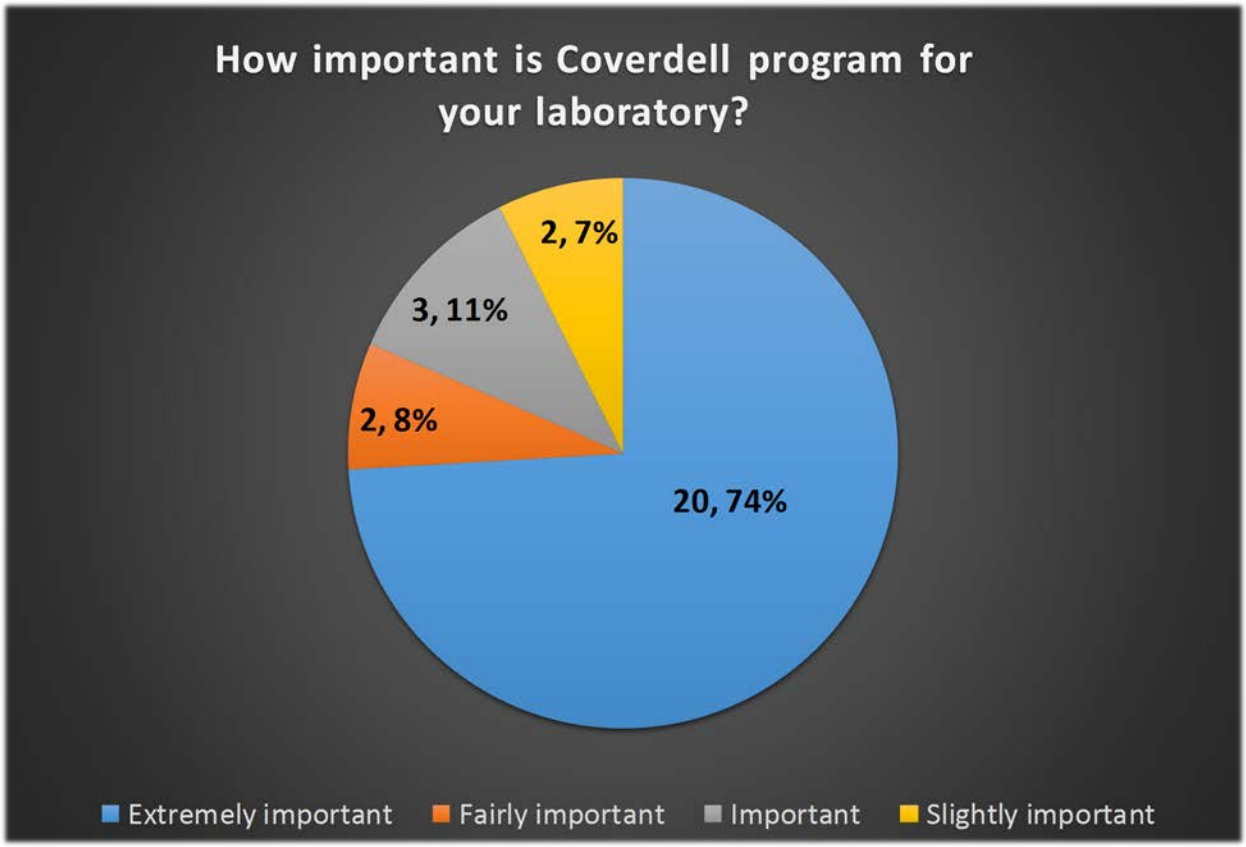
Background

NIJ provides funding to states and units of local government through the Paul Coverdell Forensic Science Improvement Grants (Coverdell) program to improve the quality and timeliness of forensic science and medical examiner/coroner's office services. In addition, the Coverdell program may be used to implement new technologies and to train, assist, and employ forensic scientists (as needed to eliminate backlogs in the analysis of forensic science evidence). Notably, the Coverdell program is not restricted to DNA and may be used for other forensic science disciplines, including firearms, latent prints, toxicology, controlled substances, forensic

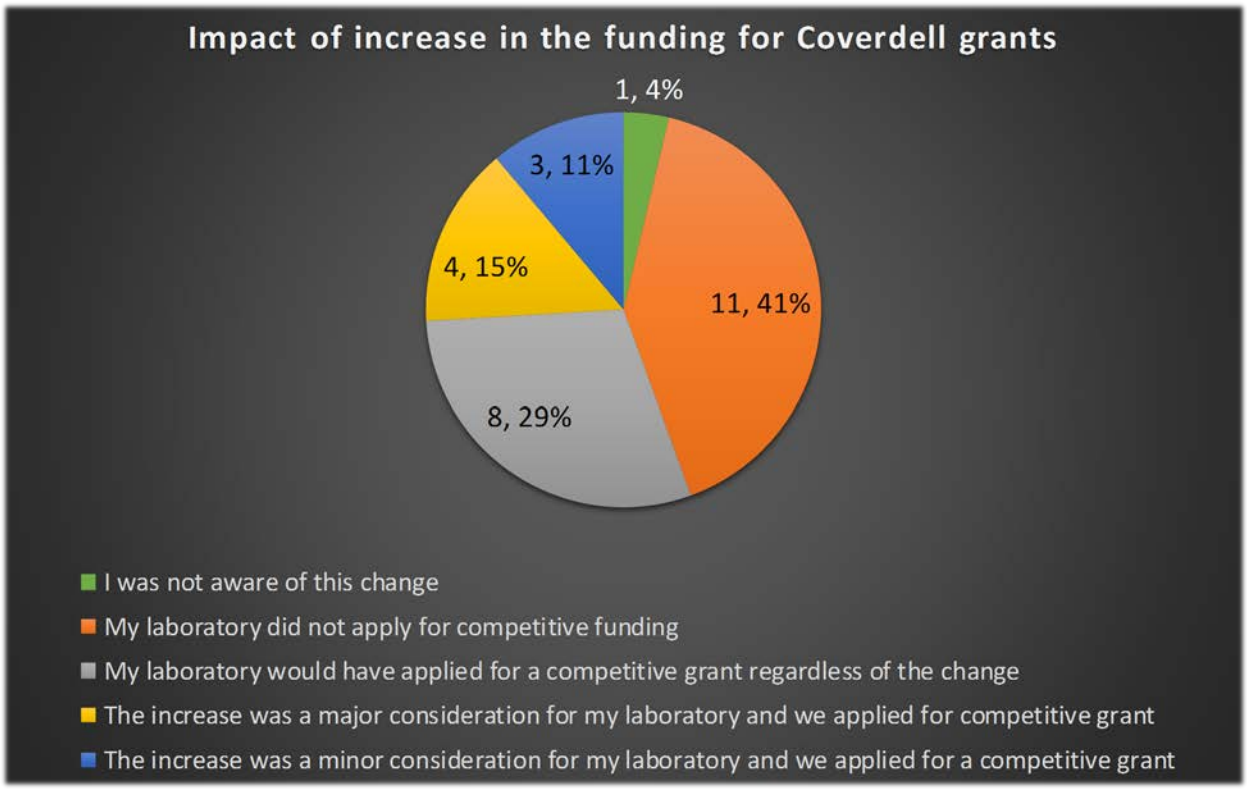
pathology, questioned documents, and trace evidence. The 2014 Census of Publicly Funded Forensic Crime Laboratories showed that the nation's 409 publicly-funded crime labs received an estimated 3.8 million forensic service requests in 2014 and completed 3.6 million requests that year, including those received prior to 2014. DNA database samples from convicted offenders and arrestees made up 39% of requests to federal labs, 36% of state labs, and less than 5% of requests to county and municipal labs.[7]

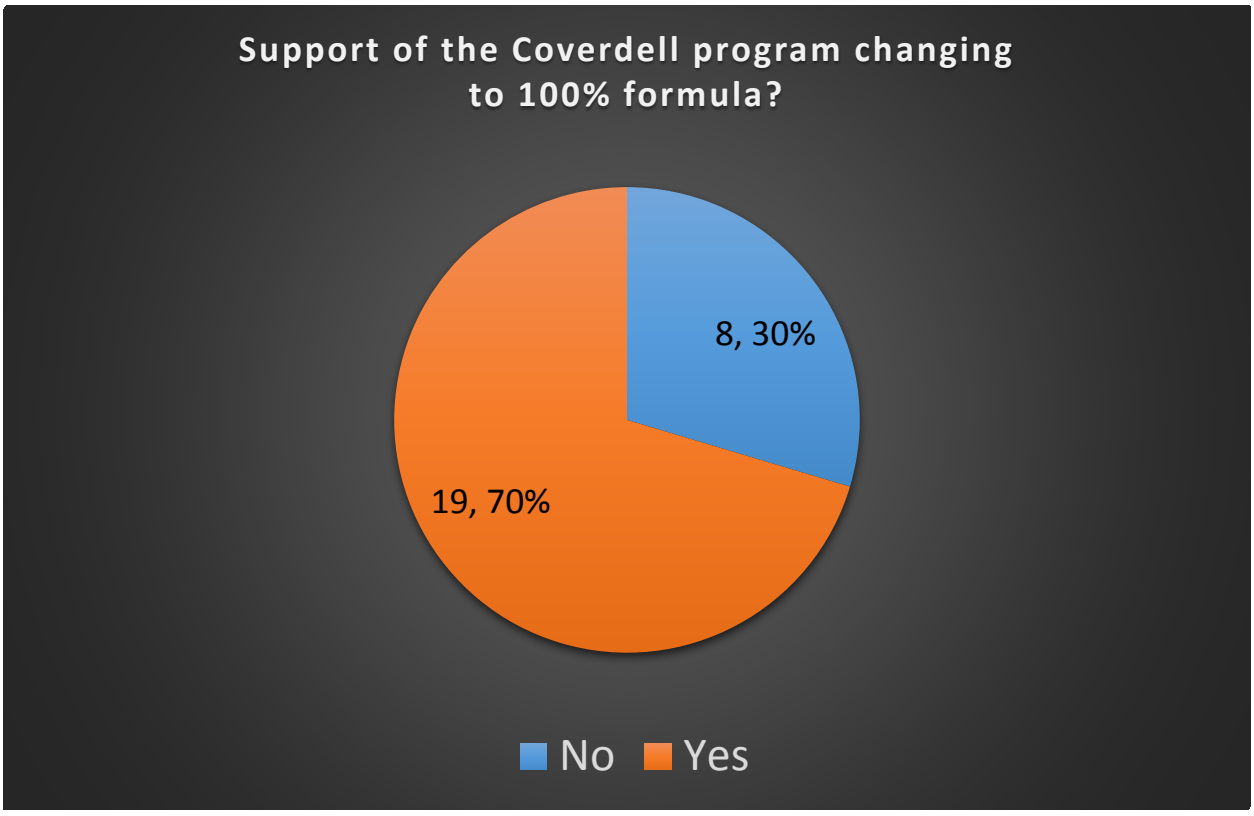
State administering agencies may apply for both "base" (formula) and competitive funds, where as local governments may only apply for competitive funds. Approximately 75% of Coverdell grants are allocated among eligible states and territories based on population. The remaining 25% is allocated to state and local governments through the competitive process.

In FY 2017, laboratory accreditation will become a new eligibility requirement. In addition, the minimum amount of support available to small states will increase from 0.6% to 1%. Competitive funds will decrease to 15%.



[7] http://www.bjs.gov/content/pub/pdf/pffclrs14.pdf


Impact of increase in the funding for Coverdell grants
1, 4%
3, 11%
4, 15%
11, 41%
8, 29%
I was not aware of this change
My laboratory did not apply for competitive funding
My laboratory would have applied for a competitive grant regardless of the change
The increase was a major consideration for my laboratory and we applied for competitive grant
The increase was a minor consideration for my laboratory and we applied for a competitive grant


Support of the Coverdell program changing to 100% formula?
8, 30%
19, 70%
No
Yes

Discussion

When polled, 78% of the crime laboratory directors felt that the recent changes in federal funding authorization would positively impact their laboratories. However, many laboratory directors were initially unaware that this decision could impact their formula allocation.

The Laboratory Directors overwhelmingly viewed the Coverdell and DNA CEBR programs as critical to their operations. However, forensic laboratories face extensive backlogs of non-DNA evidence, and the annual appropriations for Coverdell grants have not been sufficient to address these needs.

Despite the increase in Coverdell assistance, 41% of the Laboratory Directors indicated that their laboratories did not apply for the competitive portion of the grant, and 70% supported changing the Coverdell program to 100% formula.

Many Laboratory Directors reported that their staff were overwhelmed with the number of grant programs, and many laboratories lacked the resources needed to complete the application processes and manage multiple grant programs. Additionally, many Laboratory Directors expressed a desire for training and educational opportunities. Many commented that the 'grant summits' to train laboratory staff on proper grant management, as well as forensic science training events at national and regional professional meetings, would be beneficial to them and their staff.

Research and Evaluation for the Testing and Interpretation of Physical Evidence in Publicly Funded Forensic Laboratories

Background

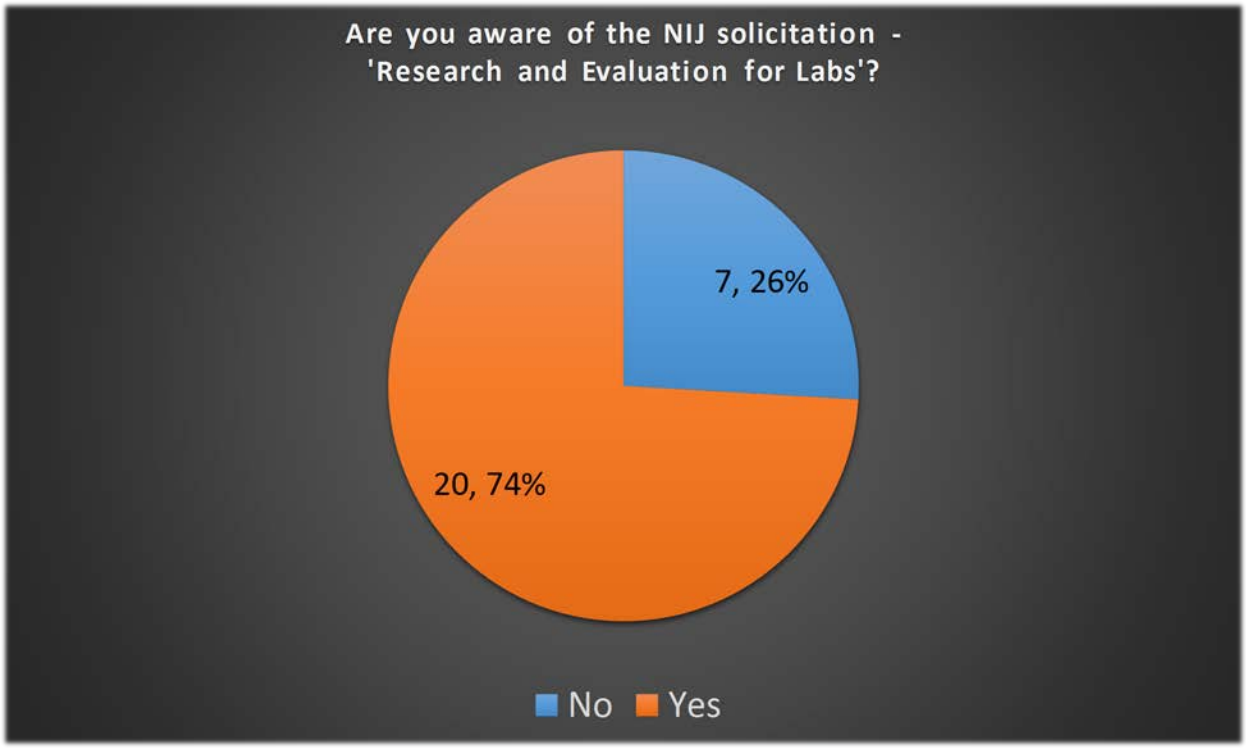
NIJ has sought proposals, through the Research and Evaluation for the Testing and Interpretation of Physical Evidence in Publicly Funded Forensic Laboratories program, from accredited state and local crime laboratories for research, evaluation and validation projects that would achieve the following: (1) inform the forensic community of best practices by evaluating existing laboratory protocols, (2) facilitate the production of a validated method(s) that may be replicated by other forensic laboratories, and (3) have a direct and immediate impact on laboratory efficiency and assist in making laboratory policy decisions.[8]

This program seeks to identify the most efficient, accurate, reliable and cost-effective methods for the identification, analysis and interpretation of physical evidence. By assessing existing laboratory protocols, NIJ seeks to understand their scientific rationale and underpinnings. NIJ also seeks to evaluate emerging laboratory processes. Thus, awardees are expected to publish technical research reports to inform the forensic community of best practices that have a direct and immediate impact on laboratory efficiency and that inform laboratory policy decisions.

[8] NIJ, *Research and Development for Publicly Funded Forensic Science Laboratories to Assess the Testing and Processing of Physical Evidence (CFDA No. 16.560)*, Washington, D.C.: U.S. Department of Justice, National Institute of Justice, 2014. Retrieved from https://www.ncjrs.gov/pdffiles1/nij/SL001113.pdf.

NIJ suggested the following as examples of topics that would further the purposes of this research program:

- citing work being performed at another laboratory and proposing to implement it;
- evaluating emerging methods and assessing the value of emerging laboratory processes;
- evaluating the impact of implementing a blind verification program for technical reviews;
- evaluating the effect and impact of discontinuing specific services;
- evaluating the minimum acceptance criteria for analytical data, such as mass spectra, generated in case samples;
- evaluating the accuracy gained from additional orthogonal testing of controlled substance samples;
- evaluating the implementation of software and statistical methods used to interpret for DNA mixtures;
- comparing newly developed broad-spectrum methods to existing multi-step methods; and
- comparing methodologies or instrumentation that is new to the laboratory or to the field itself with instrumentation that is already in use.



Discussion

The Laboratory Directors felt that there is still a challenge with transition of research into the crime laboratories. There is specifically a need to link crime laboratories with academics to ensure that the research is relevant to practitioners, statistically sound and that probability and statistics are applied in a way that is relevant to the discipline.

Resources for Sexual Assault Kit (SAK) testing

NIJ currently supports several initiatives to assist in the testing, tracking, reporting, and efficient processing of SAKs and sexual assault forensic evidence. These and other associated DOJ initiatives discussed at the meeting include the following:

NIJ–FBI Sexual Assault Kit Partnership

To address the need for more efficient SAK processing, NIJ and the FBI Laboratory in Quantico, VA formed a unique partnership, the NIJ-FBI Sexual Assault Kit Partnership, a unified collaborative team within the DOJ to extend federal support to state and local law enforcement agencies. Under the Partnership, the FBI serves as a centralized testing laboratory and will test a limited number of SAKs submitted by law enforcement agencies and forensic laboratories at no cost. The Partnership is currently yielding data from thousands of kits that is being used to not only solve more crimes, but add to the knowledge necessary to help alleviate the vast number of unsubmitted SAKs around the nation. As of Aug. 28, 2016, the FBI had received more than 160 inquiries from 25 states corresponding to 1,827 cases. Of these, 1,303 cases have been completed, resulting in 638 CODIS entries and 248 CODIS hits. For more information regarding the partnership, please visit http://www.nij.gov/topics/law-enforcement/investigations/sexual-assault/Pages/nij-fbi-sak-initiative.aspx

Bureau of Justice Assistance (BJA) Sexual Assault Kit Initiative (SAKI)

The SAKI program, administered by BJA, provides funding through a competitive grant program to support multidisciplinary community response teams engaged in the comprehensive reform of jurisdictions' approaches to sexual assault cases resulting from evidence found in previously unsubmitted SAKs. The types of agencies eligible for funding include state justice offices, municipalities, law enforcement, crime laboratories, legal offices and community service organizations. This comprehensive program, which takes a victim-centric approach, seeks to remediate unsubmitted evidence issues, create and report performance metrics, provide training and technical assistance (TTA), focus on improved responses to the complex issues associated with these cases, and support multidisciplinary policy development, implementation and coordination.

Through SAKI, BJA partnered with the Office of the District Attorney of New York (DANY), which also provides financial support nationwide to address untested SAKs and share mutual resources, including TTA. As of 2016, these two programs have provided more than $79 million to 43 jurisdictions in 27 states. This partnership projects that approximately 70,000 previously untested SAKs will be tested because of these assistance programs.

NIJ Sexual Assault Forensic Evidence–Inventory, Tracking and Reporting (SAFE-ITR) Program

It has been documented that in many instances the path of a SAK through the justice system from collection to disposition in court cannot always be well documented. While the exact number of unsubmitted/untested SAKs in the United States is unknown, many law enforcement agencies do not have electronic systems to track the processing of any evidence including SAKs. One of the underlying problems is that SAKs may be stored in several places including crime laboratories, police department evidence units, hospitals and/or clinics. Under the Sexual Assault Forensic Evidence Reporting (SAFER) Act of 2013, states and local governments audit sexual assault evidence samples awaiting testing. SAFE-ITR provides financial assistance to state and local law enforcement agencies to audit the amount and status of untested SAKs in their possession and create tracking and reporting systems providing the real-time locations of this evidence. The goal of the program is to establish and maintain accountability for participants in the criminal justice system as it relates to this type of evidence. SAFE-ITR represents an additional opportunity for those applicants who are not SAKI sites to apply for much needed critical communication and evidence tracking technology.

NIJ Sexual Assault Forensic Evidence Reporting (SAFER) Working Group

The SAFER Working Group has been tasked with developing nationwide best practices and recommendations on the collection and processing of DNA evidence, most specifically in sexual assault cases outlined in the Sexual Assault Forensic Evidence Reporting (SAFER) Act of 2013.

The SAFER working group involves multidisciplinary stakeholders representing sexual assault nurse examiners, medical examiners, forensic analysts, law enforcement, prosecutors, the judiciary, and victim advocates. These subject matter experts guide and inform 'best practice' recommendations designed to be accessible and achievable for national implementation by more than 18,000 law enforcement entities. These recommendations will be consistent with other national protocols and compliment and expand upon existing programs. It should be noted that these protocols are recommendations, not mandates.

Discussion

Comments were articulated indicating the crossover among DNA CEBR, SAKI, DANY and SAFE-ITR grant programs made it difficult to track and report information on numerous grant programs. Additionally, the directors expressed a concern that many of NIJ's programs focus on the processing of DNA evidence and not necessarily addressing other non-DNA evidence that could potentially help solve crimes. Thus, an inadvertent "downstream effect" has arisen, resulting in an -increasing number of untested cases that are not targeted by current program support.

The directors were concerned about the long-term costs of kit-tracking software. In many cases, large upfront costs are associated with the purchase and implementation of new software, followed by continuing maintenance fees to maintain that software. However, even if the laboratories receive grants to purchase the software, the on-going maintenance fees can be exorbitant. Furthermore, there is no interoperability of laboratory software.

The National Commission on Forensic Science (NCFS)

Background

NIJ provided the directors with an overview of the approved views and recommendations documents of the NCFS and a summary of the posted initial and final draft work products, the latter documents were introduced and voted for at the NCFS meeting in September 2016. Subsequently, the directors participated in a facilitated discussion about the potential impacts of these recommendations and views. All views and recommendations documents adopted by NCFS by vote can be found here: https://www.justice.gov/ncfs/work-products-adopted-commission. All initial and final draft documents developed by NCFS subcommittees can be found on the subcommittee webpages, located here: https://www.justice.gov/ncfs/subcommittees.

Discussion

Many directors expressed concern that the NCFS, which Commissioner membership includes only two non-federal crime Laboratory Directors, is not representative of the practitioner community and does not make decisions with the goal of improving forensic sciences. They also stated that the NCFS process lacks consistency across subcommittees. For example, some subcommittees address public comments and document the rationale for their adjudication of public comments, whereas other subcommittees ignore and do not adjudicate salient public comments.

Many of the directors indicated that they have implemented NCFS recommendations in their laboratories. However, in many cases, insufficient funding assistance is the most substantial implementation obstacle, especially regarding the NCFS recommendations on blind proficiency testing, procedures to eliminate cognitive bias and accreditation.

In addition, many directors stated that the NCFS recommendation for the accreditation of digital and multimedia forensic science service providers could significantly impact both that discipline and current digital evidence operations. In many jurisdictions, digital and multimedia forensic science operations are not handled by the forensic laboratory but are instead conducted by analysts commissioned as law enforcement personnel. Currently, there is no regulation regarding education and training, and few International Organization for Standardization (ISO) standards are specifically applicable to digital evidence processing. This issue is further complicated by the blurred distinction between the digital evidence necessary for an active criminal investigation and that to be used in court. This is especially evident in child pornography cases.

Similarly, the directors stated that the work products of the Organization of Scientific Area Committees (OSAC)[9] would have a valuable impact on their laboratories. Indeed, many of the laboratories represented have practitioners serving on OSAC committees and encourage their participation.

[9] The National Institute of Standards and Technology is working with the forensic science community to establish the new OSAC for Forensic Science to coordinate the development of standards and guidelines for the forensic science community and thereby improve the quality and consistency of work in this field.
See https://www.nist.gov/forensics/organization-scientific-area-committees-forensic-science.

3. CONCLUSION

This report summarizes the program overviews and the general comments and opinions from a diverse group of crime Laboratory Directors. It does not represent the views of all recipients of DNA CEBR and Coverdell grants.

Based on the discussion at the NIJ Crime Laboratory Directors Meeting, it was clear that both the DNA CEBR and Coverdell programs are critical resources that strengthen the quality of forensic science in the United States. However, laboratories continue to be challenged by the increasing demand for DNA and other forensic analyses, especially in sexual assault cases. Without these programs, these laboratories would not be able to increase their capacity and, thereby, reduce the number of samples awaiting forensic analysis.

NIJ's strategic response seeks to increase laboratory capacity and efficiency, decrease the price of testing, and increase CODIS uploads and, ultimately, CODIS hits. NIJ will continue to develop and evaluate programs focusing on the needs of the community and stakeholders, including addressing gaps and enhancing capacity, accuracy, reliability and efficiency. NIJ is thankful to the invited Laboratory Directors for providing information and feedback that can be used to develop strategies to strengthen the DNA and Coverdell programs and ensure that taxpayer funds are used effectively to strengthen forensic science services.