Final Report to NIJ: American Society of Crime Laboratory Directors (ASCLD) Data Collection on Forensic Service Providers

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Contents

Executive Summary 1
1. Introduction 1
2. Summary of the Project 2
3. Methods 2
   3.1 Data Collection Instrument 2
   3.2 Content 3
   3.3 Respondent Identification and Recruitment 4
   3.4 Mode 4
   3.5 Data Collection Summary 5
4. Results 7
5. Conclusions 9
   5.1 Summary of findings 9
   5.2 Implications for policy and practice 9
   5.3 Limitations of study 9
6. Recommendations 10

List of Exhibits

1. Data collection summary table 6
2. Summary of State Forensic Providers* 8

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The information shared in this report represents the opinions of the individual practitioners and researchers who participated in this data collection effort, and not the opinions of their agencies, the FTCoE, or the NIJ. For more information or questions about this report, visit www.forensiccoe.org, email jerimiller@rti.org or call 919-485-5685.

EXECUTIVE SUMMARY

In 2010, The American Society of Crime Laboratory Directors (ASCLD) began the Data Collection on Forensic Service Providers project to determine the full scope of forensic science services provided in the United States beyond those offered in publicly funded, accredited crime laboratories. This data collection effort was motivated in part by the 2009 legislation from the Senate Judiciary Committee aimed at improving the overall delivery of forensic science services in the United States. In 2012, RTI International's Forensic Technology Center of Excellence (FTCOE)[1] provided technical assistance to ASCLD during data collection and analysis phases of the project. Beyond determining the actual number of forensic service providers in the United States, ASCLD sought to determine how many of these providers were accredited and how many were examining and/or testing crime scene evidence using criminalistics methods. The purpose of collecting these data was to 1) provide stakeholders, policy makers, and practitioners with a more accurate landscape of who is providing forensic science services in the United States; and 2)to facilitate accountability and professionalism across a broader spectrum of forensic service providers across the justice system.

1. INTRODUCTION

The American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB), an independent accrediting body of the ASCLD, oversees a voluntary accreditation program for forensic science laboratories that examine and test crime scene evidence. This accreditation program is based on quality assurance (QA) management and accountability within crime laboratories.

The accreditation of crime laboratories is transitioning to the International Standard ISO/IEC 17025[2] General Requirements for the Competence of Testing and Calibration Laboratories. In 2003, the ASCLD/LAB's accreditation program voluntarily adopted the ISO/IEC 17025 requirements, which resulted in a more comprehensive accreditation for crime laboratories that included additional layers of transparency and oversight. Yet despite these advances, the field of forensic science still lacks knowledge as to whether forensic accreditation should be limited to crime laboratories. Such knowledge is needed because other forensic science providers, beyond crime laboratories, process crime scene evidence.

In 2009, the Chair of the Senate Committee on the Judiciary, Senator Patrick Leahy (Vermont), crafted legislation aimed at improving the overall delivery of forensic science services in the United States. Among the priorities under consideration was the accreditation of forensic science service providers that are not considered "laboratories" (henceforth referred to as additional forensic science service providers), such as police processing units that develop fingerprints, swab bloodstains, or collect trace evidence (e.g., hairs, fibers) prior to submission of the evidence to a crime laboratory. More specifically, the legislation outlined the need of stakeholders and policy makers to know how many additional forensic science service providers are accredited and how many are not. With the exception of a few states that have made accreditation mandatory for certain providers, forensic science accreditation remains voluntary in the United States.

[1] The Forensic Technology Center of Excellence (FTCoE) is an NIJ funded (Award Number 2011-DN-BX-K564) collaborative partnership led by RTI International. The FTCoE provides testing, evaluation, technology transition assistance, and other services for use by crime laboratories, forensic service providers, law enforcement, and other criminal justice agencies whose mission is to combat crime.

[2] International Electrotechnical Commission (IEC)

2. SUMMARY OF THE PROJECT

Recognizing the potential importance of this information, ASCLD initiated a project to determine the number forensic science service providers meeting specific criteria that are actively examining and testing crime scene evidence in the United States. A particular goal of the project was determining how many of these providers were unaccredited and, to some extent, were examining and/or testing crime scene evidence using the same criminalistics methods used in accredited crime laboratories.

Data collection for the project focused on gathering information on the following criminalistics disciplines:

- crime scene processing
- firearms examination
- digital evidence
- controlled substances
- trace evidence
- latent print development and comparison
- impression evidence (e.g., toolmark, footwear)
- biological evidence (e.g., serology, DNA)
- toxicology (e.g., blood alcohol, drug-facilitated crimes)
- questioned documents.

This information would allow policy makers to know with greater accuracy how much crime scene evidence is being examined and/or tested at unaccredited facilities. The ASCLD's concern is that the processing of evidence at unaccredited facilities creates QA risks that require some degree of mitigation.

In early 2010, ASCLD completed its design of a data collection instrument that would be used to collect information from agencies identified as providing forensic science services, including forensic testing laboratories, crime scene and digital evidence units, and other types of evidence processing facilities. A network of volunteer ASCLD members and other colleagues was assembled to identify the agencies in each state that were providing forensic services and, therefore, needed to be queried. Because ASCLD members represent the managers and administrators of forensic science laboratories to which the providers submit evidence, this network was well positioned to determine which agencies provided forensic science services.

In 2012, RTI International, as part of the Forensic Technology Center of Excellence (FTCOE; NIJ Award 2011-DN-BX-K564), was tasked with providing technical assistance to ASCLD to facilitate data collection and analysis. This report details the results of the ASCLD data collection effort and the FTCOE's conclusions concerning the data collected from this initiative.

3. METHODS

3.1 Data Collection Instrument

The data collection instrument was designed to be brief and to capture agency point-of-contact information and personnel staffing estimates for as many self-identified forensic service providers as possible, by state. The purpose of the instrument was two-fold: 1) to document whether a provider offered services in criminalistics disciplines eligible for forensic accreditation, and 2) to determine if the provider was accredited by a recognized forensic accrediting body, such as ASCLD/LAB.

In order to complete the questions in the instrument, a representative from each forensic service provider was identified who had sufficient operational knowledge to self-identify his/her agency as a provider of the criminalistics disciplines of interest. The project defined a forensic service provider as an operation or entity having at least one individual dedicated to perform work in a specified criminalistics discipline for more than 50% of his/her time. This figure was thought to be a reasonable

approximation for full-time staff to have a sufficient amount of criminalistics workload to maintain technical proficiency in a service area.

3.2 Content

The data collection instrument contained a total of 10 items collecting information on various topics, including agency contact information, agency accreditation status, the number of staff dedicated to perform criminalistics services, the types of services offered, and if the services included court testimony duties. Agency contact information was collected in order to provide future information on education, networking, and outreach opportunities to agencies that desire to improve their quality system and forensic management practices. Although not provided in this final report, these data are maintained by ASCLD.

The data collection instrument addressed the following content areas:

- **Forensic functions performed** – Data were collected if an agency possessed expertise in at least one of the following criminalistics disciplines: crime scene processing, latent print development and comparison, firearms examination/comparison, toolmark comparison, other comparisons (footwear), digital evidence, serology, DNA, controlled substances, blood alcohol, other toxicology testing, trace evidence, and questioned documents. These disciplines were selected because they are practiced within accredited forensic science laboratories and fall under the scope of forensic accreditation.
- **Staff testimony as expert witnesses** – Providers were asked if the duties of dedicated staff working in one of the target disciplines included providing expert witness testimony. This question sought to determine if the forensic service provider is eligible to be accredited under existing accreditation programs, or if the agency is offering a limited and "non-technical" level of support.
- **Use of sworn officers for performing forensic functions** – Historically, some law enforcement agencies have offered criminalistics services performed by law enforcement officers rather than accredited forensic analysts. To determine if this is still a common practice, providers were asked if the staff working in a discipline were sworn law enforcement officers.
- **Accreditation Status and Forensic Accrediting Body** – Each forensic service provider was asked their accreditation status and accrediting body of choice. When the data collection effort began in 2010, two primary forensic accreditation providers in the United States could accredit crime laboratories offering multiple criminalistics disciplines: ASCLD/LAB and FQS-i. The data collection instrument was designed with an assumption that accredited crime laboratories had received accreditation from one of these accrediting bodies. Initially, if an agency reported receiving accreditation from another accreditation body, such as the National Association of Medical Examiners (NAME), the Commission on Accreditation for Law Enforcement Agencies (CALEA), or the American Board of Forensic Toxicology (ABFT), the agency was not documented as being accredited because the scope of the accreditation programs under these organizations did not cover multiple criminalistics disciplines. In 2011, ABFT was added as an acceptable forensic accreditation selection because some toxicology laboratories in the United States were appropriately seeking only ABFT accreditation for their operations.

3.3 Respondent Identification and Recruitment

The most efficient process to collect data (either online or via paper format) was to recruit a single volunteer for each state to serve as the State Coordinator. The role of the State Coordinator was to make contact with prospective forensic service providers, collect the data, and to the best of his/her knowledge, verify the accuracy of the data. When possible, a second Coordinator from the same state was called upon to perform an additional review of all final data submitted.

The typical State Coordinator was an ASCLD member working at, or retired from, a laboratory manager or director position, or a staff member working in a crime laboratory setting and familiar with the criminal justice system and accredited crime laboratory operations. The State Coordinator was required to possess knowledge of the forensic providers in a particular state, have sufficient time to dedicate himself/herself to the collection process, have good communication skills and the ability to make phone calls and build rapport with agencies, and have knowledge of the data collection project and the ability to answer questions of agency representatives completing the collection instrument. In states with an active ASCLD membership, it was fairly easy to recruit volunteers at the start of the project because ASCLD members were willing to respond to requests for assistance. In other states, identifying a State Coordinator was not possible due to the time commitments necessary to accomplish the tasks required of the position.

The most complete collections of data were obtained by State Coordinators who worked for an established crime laboratory within a state. This may be because these representatives were easily recognized by the agency being queried and their credibility and rapport with agency representatives provided an advantage to obtaining information with greater ease than that of an unfamiliar Coordinator calling to request data.

Some State Coordinators were asked to provide an estimate of the number of law enforcement agencies that were forensic service providers in a state. Compiling these estimates required that the Coordinator have access to crime laboratory contributor information or other sources, such as a network of criminal justice professionals in a state. In most cases, the Coordinators working in state government labs were able to use their laboratory information management system (LIMS) to provide lists of law enforcement agencies or other crime scene evidence contributors. ASCLD used the LIMS lists to compile lists of potential forensic service providers for each state. Some ASCLD volunteers working on the data collection primarily relied upon their own networks of contacts and would subsequently discover the existence of anther provider while they had conversations with one provider.

3.4 Mode

In 2010, the ASCLD commissioned an initial online data collection instrument using Questionpro software. The instrument was released nationwide by the ASCLD Advocacy Points of Contact. Each volunteer was given access to an online data collection tool, into which they entered data provided by a subject-agency during a phone call. These data were periodically exported into a spreadsheet and archived for later analysis. A preliminary evaluation of the first data submission indicated that data collection needed to be re-released with more oversight from a State Coordinator knowledgeable of providers in that jurisdiction.

An updated data collection instrument, which included some revisions, was released in mid-2011 via an online data collection tool. Still, some State Coordinators found it more convenient to use the 2010 data collection tool as a starting point and elected to manually enter data and submit it via a customized spreadsheet in paper form. In some cases, Coordinators estimated parts of the data

collection based on a "best guess" for entities for which data was incomplete. This practice limited the overall value of the data set.

Once the data collection for a state was considered complete, a summary spreadsheet of all the data submitted from forensic service providers contacted was provided to the State Coordinator for confirmation of completeness. Upon this confirmation, the collection effort for that state was considered finalized.

3.5 Data Collection Summary

The data collection effort began in May 2010 and concluded in December 2013. When the data collection was reopened in 2011, some Coordinators bypassed the web-based link and used the data collection spreadsheet (from the 2010 effort) directly to collect information, which resulted in some non-standardized entries. **Exhibit 1** indicates a summary of all collection activities, including the start and end dates of data collection for participating states. In the exhibit, the Data Collector Type column indicates whether a standard data collection instrument link, spreadsheet, or an executive summary was provided. The ASCLD requested executive summaries from states where limited data was collected. In these states, Coordinators were asked to provide their best estimate based on their knowledge and other factors including—number of law enforcement agencies in the state and population served. Whenever possible, the ASCLD asked for a review of that estimate from a separate, knowledgeable stakeholder.

Exhibit 1. Data collection summary table

State	Data Collection Started	Data Collection Completed	Data Collector Type	Comments
Alabama	June 2011	March 2014	Executive Summary	Executive Summary
Alaska	June 2011	January 2013	Data collection tool	Confirmed with coordinator; Spreadsheet
Arizona	June 2011	October 2013	Data collection tool	Confirmed with coordinator; Spreadsheet
Arkansas	June 2011	August 2011	Data collection tool	Confirmed with coordinator; Spreadsheet
California	June 2011	February 2014	Data collection tool	Confirmed with coordinator; Spreadsheet
Colorado	June 2011	March 2014	Executive Summary	Executive Summary
Connecticut	June 2011	N/A	Incomplete	
Delaware	June 2011	N/A	Data collection tool	
Florida	June 2011	March 2014	Data collection tool	Confirmed with coordinator; Spreadsheet
Georgia	June 2011	August 2011	Data collection tool	Confirmed with coordinator; Spreadsheet
Hawaii	June 2011	October 2013	Incomplete	
Idaho	June 2011	November 2012	Data collection tool	Confirmed with coordinator; Spreadsheet
Illinois	June 2011	March 2014	Data collection tool	Confirmed with coordinator; Spreadsheet
Indiana	June 2011	August 2011	Data collection tool	Confirmed with coordinator; Spreadsheet
Indiana	June 2011	May 2013	Data collection tool	Spreadsheet
Iowa	June 2011	January 2014	Data collection tool	Confirmed with coordinator; Spreadsheet
Kansas	June 2011	November 2013	Data collection tool	Confirmed with coordinator; Spreadsheet
Kentucky	June 2011	August 2012	Data collection tool	Confirmed with coordinator; Spreadsheet
Louisiana	June 2011	October 2013	Data collection tool	Confirmed with coordinator; Spreadsheet
Maine	June 2011	March 2014	Executive Summary	Spreadsheet
Maryland	June 2011	March 2014	Executive Summary + Data collection tool	Confirmed with coordinator
Massachusetts	June 2011	N/A	Incomplete	
Michigan	June 2011	September 2011	Data collection tool	Confirmed with coordinator; Spreadsheet
Minnesota	June 2011	November 2013	Data collection tool	Confirmed with coordinator; Spreadsheet
Mississippi	June 2011	August 2011	Data collection tool	Confirmed with coordinator; Spreadsheet
Missouri	June 2011	December 2013	Data collection tool	Confirmed with coordinator; Spreadsheet
Montana	June 2011	August 2012	Data collection tool	Confirmed with coordinator; Spreadsheet
Nebraska	June 2011	August 2012	Data collection tool	Confirmed with coordinator; Spreadsheet
Nevada	June 2011	August 2011	Data collection tool	Confirmed with coordinator; Spreadsheet

(continued)

Exhibit 1. Data collection summary table (continued)

State	Data Collection Started	Data Collection Completed	Data Collector Type	Comments
New Hampshire	June 2011	August 2012	Data collection tool	Confirmed with coordinator; Spreadsheet
New Jersey	June 2011	March 2014	Incomplete	Confirmed with coordinator; Spreadsheet
New Mexico	June 2011	January 2013	Incomplete	
New York	June 2011	January 2013	Executive Summary	Executive Summary
North Carolina	June 2011	N/A	Incomplete	
Ohio	June 2011	August 2011	Data collection tool	Confirmed with coordinator
Oklahoma	June 2011	August 2012	Data collection tool	Confirmed with coordinator; Spreadsheet
Oregon	June 2011	September 2011	Data collection tool	Confirmed with coordinator; Spreadsheet
Pennsylvania	June 2011	February 2014	Data collection tool	Confirmed with coordinator; Spreadsheet
Rhode Island	June 2011	March 2014	Executive Summary + Data collection tool	Confirmed with coordinator; Spreadsheet
South Carolina	June 2011	August 2011	Data collection tool	Confirmed with coordinator; Spreadsheet
South Dakota	June 2011	January 2013	Executive Summary + Data collection tool	
Tennessee	June 2011	March 2014	Executive Summary + Data collection tool	Estimate by volunteer
Texas	June 2011	N/A	Incomplete	
Utah	June 2011	July 2011	Data collection tool	Confirmed with coordinator; Spreadsheet
Vermont	June 2011	March 2014	Executive Summary + Data collection tool	Confirmed with coordinator; Spreadsheet
Virginia	June 2011	October 2013	Data collection tool	Confirmed with coordinator; Spreadsheet
Washington	June 2011	August 2012	Data collection tool	Confirmed with coordinator; Spreadsheet
West Virginia	June 2011	August 2012	Data collection tool	Confirmed with coordinator; Spreadsheet
Wisconsin	June 2011	March 2014	Executive Summary	Confirmed with coordinator; Executive Summary
Wyoming	June 2011	January 2013	Data collection tool	Confirmed with coordinator; Spreadsheet
Washington DC	June 2011	October 2013	Data collection tool	Confirmed with coordinator

4. RESULTS

As shown in **Exhibit 2**, data were collected from a total of 1,033 forensic providers in the states that participated in the data collection effort. The number of providers varied widely across states, with as many as 159 providers participating in Florida and as few as 2 providers participating in Alaska and New Hampshire. On average, each state had 22 forensic providers that participated in the data collection effort. The states of Connecticut, Massachusetts, North Carolina, and Tennessee did not participate in the data collection effort because ASCLD was unable to identify a volunteer to serve as State Coordinator who was either knowledgeable of the subject matter or had sufficient time to devote

to the project. Partial data were collected from some states, typically by the state crime laboratory and other larger forensic service providers in that state. However, if a more thorough exploration of providers in a state could not be accomplished, data for these states were considered incomplete.

In addition to the number of providers within a state, information on accreditation status was collected. As shown in the exhibit, approximately 70% of the providers that participated in the data collection effort were not accredited by a forensic accrediting body.

Exhibit 2. Summary of State Forensic Providers*

State	Accredited Providers	Unaccredited Providers	Total number of Public Service Forensic Providers
Alabama**	6	2	8
Alaska	1	1	2
Arkansas	1	7	8
Arizona	11	6	17
California	29	58	87
Colorado	7	20	27
Connecticut	N/A	N/A	N/A
Delaware**	1	1	2
Florida	32	127	159
Georgia	12	38	50
Hawaii**	1	2	3
Idaho	4	14	18
Illinois	13	29	42
Indiana	2	46	48
Iowa	2	7	9
Kansas	5	5	10
Kentucky	4	5	9
Louisiana	10	31	41
Maine**	2	0	2
Maryland	8	9	17
Massachusetts	N/A	N/A	N/A
Michigan	8	23	31
Minnesota	6	7	13
Mississippi	1	5	6
Missouri	13	3	16
Montana	2	2	4
Nebraska	2	5	7
Nevada	2	4	6
New Hampshire	2	0	2
New Jersey**	3	0	3
New Mexico	6	8	14
New York**	22	104	126
North Carolina	N/A	N/A	N/A
North Dakota	1	1	2
Ohio	14	24	38
Oklahoma	9	3	12
Oregon	7	8	15
Pennsylvania	5	30	35
Rhode Island	3	12	15

(continued)

Exhibit 2. Summary of State Forensic Providers* (continued)

State	Accredited Providers	Unaccredited Providers	Total number of Public Service Forensic Providers
South Carolina	4	10	14
South Dakota	1	3	4
Tennessee	5	2	7
Texas	N/A	N/A	N/A
Utah	5	14	19
Vermont	1	1	2
Virginia	11	32	43
Washington	11	5	16
West Virginia	3	5	8
Wisconsin**	5	6	11
Wyoming	1	2	3
Washington DC	2	0	2
TOTAL	**306 (29.7%)**	**727 (70.3%)**	**1,033**

*Forensic service providers were defined as an operation or entity having at least one individual dedicated to perform work in a specified criminalistics discipline for more than 50% of their time.

**Total based on Executive Summary

5. CONCLUSIONS

5.1 Summary of findings

The results of the ACSLD data collection effort indicate that the total number of forensic service providers in the United States may be less than original estimates. Estimating the number of providers is a dynamic process. This is especially true when dealing with smaller agencies, where if a trained individual leaves a department, it may be difficult to replace them. In such instances, some agencies are forced to discontinue a service. On the other hand, agencies may feel the need to provide more comprehensive services to their community, including the area of forensic services.

5.2 Implications for policy and practice

The definition of a forensic services provider for this data collection effort was limited to organizations that have at least one staff member who spends at least 50% of his/her time on forensic services. Assuming the policymakers accept the 50% definition, these data may assist with estimating the cost of providing funding for accreditation. This study may also improve the understanding of the scope of forensic science practice in the United States; however, further study should be conducted, perhaps using a professional agency with experience in survey design coupled with trained data collectors and supervised by a knowledgeable forensic practitioner. Significant work is required to determine the optimum method to reliably collect data of this type from the nation's diverse forensic community.

5.3 Limitations of study

It is important to note that it is extremely difficult to conduct data collection of this magnitude because of the lack of a sampling frame to identify all forensic service providers. Although a best effort was made via volunteers to contact all known providers, the study results should be interpreted with caution in light of a few limitations. First, data were collected over a 3-year period and are not a

snapshot of a particular day. As such, data collected from states that responded early may not be accurate to date given the dynamic nature of the field (i.e., crime laboratories open and close on an ongoing basis). However, the data may be used to help inform public policy and provide better estimates. Additionally, it should be noted that there are more forensic providers in the United States than were included in this collection.

Regarding the data collection procedures, the survey mode was changed during the project, which resulted in the inconsistent coding of some items. For example, on the paper survey, it was unclear whether a forensic unit was seeking accreditation or was already accredited; however, this was specifically addressed on the web survey. Further, for the number of staff performing forensic functions, it is unclear whether one staff member is performing all functions, or if each function is performed by a separate staff member. In addition, while identifying and documenting traditional criminalistics providers was a fairly straightforward process, the digital evidence and toxicology providers were somewhat ambiguous to locate and to determine whether they met the criteria to be a forensic service provider. The difficulty in identifying digital evidence service providers is likely due to law enforcement adopting this discipline outside of the scope of a traditional crime laboratory and/or crime scene collection unit role. In regards to toxicology, this testing can reside with law enforcement (breathalyzers), public health laboratories, and/or medical examiner offices.

As described earlier, data were collected by various stakeholders and volunteers, some of whom may have been more effective at soliciting information from providers. Some states submitted data at the provider level, whereas others submitted an executive summary of the state's forensic providers. Volunteer recruitment and attrition were also a challenge. Aside from the challenge of identifying a point person, time and motivation to fully participate in the data collection were an issue. As the timeline for this project expanded past 1 year, it became difficult to retain and identify suitable volunteers to oversee data collection efforts. For example, the most motivated ASCLD volunteers were often busy managing their laboratories and competing priorities. When administrative staff in crime laboratories were requested to assist, these staff were not familiar enough with the differences in the criminalistics disciplines of interest to confidently talk with providers about the level of services being provided. Also, some providers were hesitant to disclose their information to individuals who they did not know personally, especially with respect to accreditation status. Furthermore, due to the size and complexity of some states (e.g., Texas), it was challenging to identify a single State Coordinator with a sufficient working knowledge of all providers in the state. As a result, stakeholders and policymakers should acknowledge that the estimates obtained from State Coordinators do not reflect a representative sample of forensic service providers.

Finally, data were not collected in four states (Connecticut, Massachusetts, North Carolina, and Tennessee). Incomplete or no participation from a state can be attributed to ASCLD's inability to identify or maintain a State Coordinator to drive the data collection effort in that state.

6. RECOMMENDATIONS

Although this data collection effort provides some insight into the number and accreditation status of forensic providers in the United States, additional research is needed to overcome the limitations described above. Due to the size of this data collection effort, the study would benefit greatly from a more rigorous methodology. Currently, because data are incomplete and the collection effort was not in-line with what ASCLD hoped to accomplish, it is difficult to determine which data are problematic and which can be confirmed. Beyond state and local crime laboratories, the field of forensic science still lacks a clear understanding of what tasks are involved in being a forensic service provider. To capture an accurate and current estimate of forensic service providers and accreditation status

within state and local law enforcement agencies, future research may consider surveying a random sample of the universe of all state and local law enforcement agencies rather than attempting a full census of these agencies.

Because a sampling frame for this effort does not exist, such as survey would first require developing a list of all agencies and organizations that may provide forensic services. This could be accomplished by looking for existing data on law enforcement agencies and crime laboratories. For example, every 4 years, the Bureau of Justice Statistics conducts the Census of Publicly Funded Forensic Crime Laboratories, covering about 400 laboratories across the country, and the Census of State and Local Law Enforcement Agencies, covering about 18,000 agencies and across the country. These sampling frames could be used to select a random sample of agencies and laboratories to survey. Since there are relatively few laboratories, the survey could include all 400 laboratories, or a sample thereof. Because a large number of law enforcement agencies have the potential to provide forensic services, a sample should be drawn. Given the variation in law enforcement agency size and its relationship to the likelihood that forensic services are provided (i.e., larger agencies are more likely to conduct their own forensic research), the sample of agencies should be stratified such that larger agencies are more likely to be included in the sample than smaller agencies. Taking a sample of agencies, rather than recruiting all, will make the data collection effort time and cost effective.

Another possibility for gathering data on forensic service providers and accreditation status could involve partnering with the Bureau of Justice Statistics to add questions that address this subject matter to the Census of State and Local Law Enforcement Agencies. From there, data related to accreditation status and the types of forensic services being provided could be extrapolated for further data analysis. This also provides an opportunity to use an already established sampling frame and standardized data collection method.

Given the difficulty of this work and the technical expertise needed in sampling and survey methods, this data collection project requires the recruitment of a dedicated staff of trained experts using a rigorous collection and analytical methodology to produce reliable results. Moreover, to achieve reasonable response rates, the research organization performing the work should consider partnering with police and crime laboratory organizations (e.g., International Association of Chiefs of Police and ASCLD), and state liaisons that can help encourage response among their membership. The results from this data collection could be extrapolated, based on the sampling design, to provide estimates of the number of forensic providers and proportion that are likely to be accredited. Levaraging the resources and expertise of an experienced data collection and survey methodology team will result in a higher response rate and better data quality.