

Prosecutor Priorities, Challenges, and Solutions

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SUMMARY

State and local prosecutors face an ever-increasing array of challenges and responsibilities, including recruiting and retaining talented and diverse prosecutors and handling, storing, and using growing bodies of evidence generated through modern technology. Some of these issues have emerged recently, while others represent ongoing challenges to prosecutors that have been complicated by recent technology or emerging trends. Although crime levels are at their lowest in more than 25 years, prosecutors face significant challenges from, for example, persistent violent crime in urban areas, difficulties in obtaining the technical capabilities necessary to identify and prevent cybercrime, and the opioid epidemic that has devastated communities across the United States. Prosecutors are expected to deliver fair and legitimate justice in their decisionmaking while balancing aspects of budgets and resources, working with increasingly larger volumes of digital and electronic evidence that have developed from technological advancements (such as social media platforms), partnering with communities and other entities, and being held accountable for their actions and differing litigation strategies.

State and local prosecutors around the country continue to contend with very high caseloads and comparatively lower salaries than practicing attorneys in other settings. These realities can make both the retention and the ongoing professional development of prosecuting attorneys a challenge.

With the advent of such technology as social media and body-worn cameras, prosecutors must contend with large volumes of digital information and must determine the admissibility of evidence based on not just its probative value but also whether a proper chain of custody was established and followed. Similarly, although the rise of predictive analytics and other data science tools can provide new insights to increase fairness and promote justice, these kinds of risk assessment measures are not foolproof. Moreover, advances in forensic science have brought new capabilities that can be critical to a case, but the time required to properly conduct

Key Findings

The panelists

- recognized that research to better understand ways to improve staff recruitment, training, and retention would best support many of the challenges that prosecutors face.
- advised that prosecutors are challenged by the inadequate or inconsistent collection of data and other information that is shared among agencies, their partners, and the community, as well as by emerging digital and forensic technologies. Prosecutors need guidance on maximizing case investigation and trial resources.
- recommended identifying promising practices to prevent and respond to witness intimidation and tampering, which are pervasive in the criminal justice system and directly affect outcomes.
- recommended conducting research into the most-promising practices for collecting and disclosing officer misconduct and discipline issues, as well as reporting disclosure obligations related to the *Brady* and *Giglio* standards.
- recommended more research on engaging the community and determining whether different combinations of problem-solving and litigation strategies can reduce crime.

the testing may fall outside the statutory time frame by which a prosecutor must make charging decisions.

In addition to new technological advancements, the demands placed on a prosecutor have increased. Under the key Supreme Court cases outlining these standards, the scope of potentially exculpatory evidence that must be disclosed to the defense under the *Brady* and *Giglio* standards and the ethical guidelines that prosecutors must follow under the rules of professional conduct have both expanded over time (*Brady v. Maryland*, 1963; *Giglio v. United States*, 1972; Abel, 2015). Moreover, the increasing volume of potentially relevant digital information, video footage, and other information from technological devices and tools can significantly add to the amount of time needed to sufficiently examine and investigate the evidence in order to make decisions about whether to drop or pursue a case. This can be especially challenging because the staffing and other resources in prosecutors' offices have not necessarily kept pace with these increasing demands. In addition, because high-profile wrongful conviction cases have eroded trust in some communities, prosecutors sometimes operate under increased scrutiny. In combination, these circumstances can make the work of prosecutors more challenging in certain types of criminal cases in which witness cooperation and input from the community are essential to bringing a strong case.

These are just some of the challenges that prosecutors face in their work today. Although these challenges may be specific to a single entity within the criminal justice system, they can greatly affect the criminal justice system as a whole because prosecutors represent the key link between the police and correction systems. Addressing the needs of prosecutors could therefore contribute to improving the efficiency, legitimacy, and administration of justice within prosecutors' offices and the criminal justice system, as well as in the eyes of the victims and the community.

On behalf of the National Institute of Justice (NIJ), RTI International and the RAND Corporation convened a prosecutors' workshop in March 2018 as part of the Priority Criminal Justice Needs Initiative. Through the workshop and this accompanying report, we seek to complement and build on the important work of the National Law Enforcement and Corrections Technology Center, as well as previous NIJ-funded reports and research into the needs of prosecutors. The Priority Criminal Justice Needs Initiative regularly convenes workshops to bring together experts, practitioners, scientists, and key stakeholders to identify and candidly describe the most-

pressing challenges prosecutors and various actors within the criminal justice system face. These conversations are designed to help NIJ prioritize areas in which further research could directly affect the capacity and daily work of criminal justice practitioners and to promote a fairer, more efficient, and more just criminal justice system. A previous report supported under this grant succinctly summarizes the purpose of the

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prosecutor-focused workshop and resulting report: “The result of these efforts is a set of prioritized needs, providing a menu of innovation options for addressing key problems or capitalizing on emerging opportunities” specific to prosecutors (Jackson, Russo, et al., 2015, p. xv).

The purpose of this report is twofold: to identify the most pressing challenges that prosecutors face today and to prioritize future research needs that could help mitigate some of these challenges to enhance the capacity of state and local prosecutors in the United States. The intended audience includes NIJ staff, state and local prosecutors, criminal justice researchers, data scientists, and the general public.

The panel was designed to examine the challenges associated with prosecutorial work and identify the technology and other needs that, if met, can help prosecutors respond to those challenges. The 17 core participants in the workshop included six members from academic, training, or nonprofit institutes who focus on prosecutorial work; two city prosecutors; two county prosecutors; one state prosecutor; three county district attorneys; one supervisor of a county conviction integrity unit; and two agency data officers. Panel members presented their perspectives on the scope of a problem and proposed solutions and then engaged in a dialogue to identify promising practices to address the challenges of their work. The panel proceedings and recommendations are presented in this report.

INTRODUCTION

Prosecutors face a myriad of challenges that can influence their decisionmaking and performance. These challenges include persistent problems with inadequate resources, staff retention, and accountability, as well as contemporary issues related to changing technology and case law. In some cases, persistent issues intersect with new issues, such as the role of data in the form of digital and forensic evidence (Garrett, 2016; Giova, 2011; Jansen and Wolf, 2014; Martini and Choo, 2012; Murphy, 2017; Quick and Choo, 2014; Vance, 2015), predictive analytic tools (Butler, 2015; Casey et al., 2014; Center for Health and Justice at TASC, 2013; Ferguson, 2016; Kreag, 2017; Krent, 2017; Latessa, Lovins, and Lux, 2014; Laura and John Arnold Foundation, 2014; Picard-Fritsche et al., 2017), and case management (Baughman, 2017; Boehm, 2014; Brown, 2014; Browning, 2014; Chinsky, 2014; Cohen, 2015; Connelly, 2015; Fairfield and Luna, 2014; Fettig, 2014; Haugh, 2015; Hoffmeister, 2014; Johansen, 2015; Johnson, 2014; Johnston,

2014; Kroepsch, 2016; Leary, 2016; Monagas and Monagas, 2016; Oliver and Batra, 2015; Pruitt and Showman, 2014; Scheck, 2017; Taubman, 2015; Thompson, 2017; Trehan, 2014; Walsh, 2013; Wandler, 2016; Wright, 2012).

This report describes priority areas that a panel of prosecutorial experts recommended for new or continuing research. RTI International and the RAND Corporation convened the workshop panel in March 2018. The workshop discussion was purposely broad to cover many topics within a prosecutor’s functions and objectives. We examined academic and law review articles in emerging and evolving areas of law and fielded a short survey with participants ahead of the meeting to define the topic areas for the workshop. From this work, we identified a preliminary list of prosecutor-related needs and innovations, which anchored the discussion during the panel. We organized these into the following four categories:

- **Case screening and investigation.** Examples of needs and innovations in this category include evolving record-keeping systems, new decision tools to inform charging and noncriminal dispositions, and new technologies in data analytics for investigation.
- **Case prosecution.** Examples of needs and innovations in this category include high-tech courtrooms, new decision tools or technologies for jury selection, and technology to allow virtual testimony.
- **Evaluation of outcomes.** Examples of needs and innovations in this category include the identification of appropriate performance indicators, conviction integrity units, the establishment and maintenance of community trust, use of risk assessment tools, and overall crime reduction strategies.
- **Resource allocation.** Examples of needs and innovations in this category include training and staffing needs, case management systems, staff retention, specialized staff, and staff diversity.

The expert panel meeting lasted a day and a half. Although the discussions were segmented into the aforementioned four categories, conversations were open so that the participants could speak about topics that they found most relevant. Participants were asked to discuss their experiences, practices, and lessons learned in the field. Greater detail on the process of the workshop and the group’s identification of priorities is presented in the appendixes to this report. This report provides a review of the workshop’s discussions to identify priority needs for prosecutorial work. The identified topics covered a range of

issues, which we grouped into the following categories: staffing and resources, digital information, organizational data, litigation strategies, accountability, and partnerships and collaboration. In this report, we first present a qualitative review of the information discussed in the workshop and then provide the prioritized list of the panel-identified needs.

PROSECUTORS' CHALLENGES AND NEEDS

The prosecutor's expert panel discussed several challenges that have been persistent over time, such as witness intimidation, struggles to retain staff, and inadequate case-management systems. Many of these ongoing issues have evolved with or been exacerbated by emerging trends in technology and information. The panel also discussed more-contemporary issues related to the growing volume and diversity of the data used for prosecutorial functions, particularly digital information. In addition, panel participants discussed *needs* (which can also be thought of as research requirements, desired advancements, or solutions to current problems) that could help address the challenges identified.

Staffing and Resources

Hiring and retaining qualified staff can be incredibly challenging for a prosecutor's office, especially when there are not sufficient resources to support the office's work. Staff retention revolves around not only recruiting the right people and identifying their specialized skills or training to support their advancement but also creating incentives to reduce the likelihood of seasoned staff looking elsewhere for new opportunities. With competition from other agencies and the private sector, prosecutors must be creative in ways to compensate and recognize staff performance and to provide opportunities for professional development.

Adequate Staffing and Recruitment

Much of the panelists' conversation on staff recruitment involved providing better education about what prosecutors do to law students and new attorneys who are considering which career path to choose. As one participant stated, "Younger lawyers see 'prosecutor' as a dirty word" because of the perception that a prosecutor's sole purpose is to put offenders in prison for as long as possible. The participants advised that educating law students and new attorneys about the positive impact prosecu-

tors can and do make in communities may help boost recruitment efforts. Law students can be exposed to the broad scope of prosecutors' work and impact through clinics, courses, presentations, or externships. Many of these practices are already well established for the criminal defense field and can serve as a model for the prosecution field.

Recruiting attorneys from diverse backgrounds can also be a challenge. The panel participants acknowledged that the prosecutorial field is predominately male and white. Mentorship programs and tailored recruitment efforts are potential options to recruit talented attorneys with diverse backgrounds. Legal scholars have written about how some rural areas that have experienced a shortage of lawyers have addressed this problem through externship programs in law schools within the state, loan repayment assistance, continuing legal education credits in exchange for pro bono services, and other incentives and initiatives (Pruitt, McKinney, and Calhoun, 2015; Pruitt and Showman, 2014).

Specialized Staff

The participants of the workshop advocated for offices to have prosecutors with specialized knowledge or training in various substantive areas of law, such as domestic violence, gang-related crimes, and sexual assault offenses. Legal scholars have examined how specialized courts, such as drug courts and mental health courts, can address the needs of defendants who have specific mental health needs and may require medical treatment (Rempel et al., 2018; Fidler, 2015; Kugler, 2016). In addition, a prosecutor who is experienced with alternatives to incarceration may be better equipped to recommend certain types of offenders who are at a lower risk for recidivism and eligible for certain diversion programs. These types of diversion programs or problem-solving courts are designed to better meet the needs of offenders while also meeting such goals as increasing "administrative efficiency" and lowering instances of "collateral consequences" (Rempel, et al., 2018, p. vi). The participants discussed how a prosecutor with specialized knowledge can also support more-efficient case development and proceedings in complex cases. The workshop included a discussion about how an office can further benefit from having dedicated data analysts on staff who can collect and present qualitative and quantitative data to help inform prosecutors' decisions. Employing prosecutorial data analysts might make the most sense in larger offices, where the data can better support prosecutors with evidence-based information and increase the office's transparency and accountability with the public, among other goals.

Training

Properly training new prosecutors is essential, but it can be difficult for more-experienced prosecutors to make time for training on top of their regular workloads and other professional demands. The participants in the workshop advised that newer prosecutors should have a checklist with areas of training that could help ensure that they have the tools and skills needed throughout their careers.

For example, there is currently a lack of training on how to effectively use technology at trial. This issue is compounded by the costs associated with bringing in outside expertise to help prepare and present complex digital evidence. And some more-experienced prosecutors may be reluctant to adapt to new technologies. Furthermore, the promises of new technologies (e.g., using virtual tools to allow testimony from experts) are not always realized or possible, even with newer staff.

The participants also advised that prosecutors and others involved in the criminal justice system should be trained about the limitations of certain types of evidence. For example, the expectations around body-worn cameras might far exceed their probative value in providing clear and convincing evidence about an officer's or citizen's actions.

Retention

Even when an office is able to recruit the desired staff and train them appropriately, retaining good prosecutors can be a persistent challenge. Workshop participants advised that many factors, including high caseloads, limited resources, and higher salaries from private firms or larger agencies, lead to burnout and a high turnover rate. They advocated better salaries and working conditions, the creation of specialized roles or titles to create within-agency career paths, more mentorship and attorney support, and more training focused on retaining young prosecutors.

Locality

Prosecutors' offices that serve rural jurisdictions face challenges that offices operating in urban environments do not, often as a result of fewer resources and opportunities for career advancement. For example, some workshop participants discussed how the availability of court time can affect a prosecutor's decision about whether to push for a plea or take the case to trial. In some rural areas, a court may meet only once a week, and this lack of courtroom access can lead to higher plea rates. In one case, Tennessee has addressed its shortage of

“The time of the career prosecutor is almost over.”

– Workshop participant

lawyers in rural areas by creating the Access to Justice commission that focuses on providing information to the public and offering incentives for participating attorneys (Blaze and Morgan, 2015). Another primary issue facing rural offices that the workshop participants identified involved the need for more sustained and robust community outreach efforts that aim to establish trust with the community and to enlist community engagement in cases.

Digital Information

The evidentiary procedures for the authentication and admissibility of digital evidence, such as social media content and body-worn camera footage, are often very different from the evidentiary standards for physical evidence. In addition, there are practical challenges of storing and managing digital information, both during a case and after the case disposition.

Volume

The introduction of digital content and body-worn cameras has produced large amounts of potential evidence that prosecutors' offices have to obtain, manage, and store, often at great expense. It can be overwhelming and time-intensive for prosecutors to view many hours' worth of video footage. As body-worn cameras and other new technologies are implemented, prosecutors struggle to find personnel to review the recordings and funds to store the data. Legal scholars have examined how these concerns are only increasing as police departments deploy cameras among more officers (Hamann and Brown, 2018). Although the amount of digital information that prosecutors must sometimes sift through can be managed, in part, through innovative technological tools, such as data mining and data reduction solutions (Al Fahdi, Clarke, and Furnell, 2013; Quick and Choo, 2014), there are often steep learning curves or high costs that make it unrealistic for an office to implement these technologies.

“The volume of data is unbelievable; it’s almost gotten to a point now that to do our job perfectly is impossible.”

– Workshop participant

Redaction

For video and other evidence, prosecutors often must identify appropriate places to redact sensitive information, such as the identity of underage victims or victims of sexual assault. This process is often very time- and labor-intensive. To complicate matters, there are different levels of redaction based on how the information will be used. For example, redactions for the purposes of a Freedom of Information Act request may differ from redactions for the purposes of prosecution, which can be further separated into redactions for the discovery process and for video presented in court.

Storage

Although workshop participants noted that most prosecutors do not store evidence in their offices, participants did express concern about some prosecutors doing so. Storing evidence can be logistically challenging because it may require a great deal of physical space. And under some states’ laws, the original evidence must be stored, which could require the prosecutor’s office to store not only the original computer from which digital evidence was obtained but also copies that have been appropriately redacted and analyzed. Crucial to a prosecutor’s ability to try a case in court is that all evidence follows a strict chain of custody from crime scene to the court room. A strong chain of custody established by a lawyer contributes to the fairness, efficiency, and reliability of the process (Giova, 2011). Protecting privacy and properly maintaining evidence are important, particularly if evidence might be used in a future case.

However, the need to store large quantities of digital information can be expensive and logistically challenging. Compared with the chain of custody for physical evidence, that for

digital evidence is much more complex, volatile, and difficult to reliably maintain. Prosecutors must prove that only authorized persons had access to the evidence and guarantee that copies and analyses were made by authorized manipulations and using acceptable methods (Giova, 2011; Prayudi and SN, 2015). For example, the quality and authentication of audio or video recordings or other forms of digital evidence not only can be challenging to confirm but also must meet the evidentiary standards for the admissibility of evidence under the *Daubert* and *Frye* rulings (Morrison and Thompson, 2017).

Transcriptions

In recent years, there has been an explosion of surveillance video and body-worn camera footage produced, which has led to the need to transcribe this information. Transcriptions are a valuable tool to a prosecutor, particularly if the audio or video is lost, but they can also be time- and labor-intensive to produce and proofread. These pieces of evidence can contain inaccuracies (e.g., from errors in transcribing), particularly when capturing colloquial language (e.g., slang terms used by a gang), and therefore could be unreliable and dismissed in court. The costs associated with transcriptions can be burdensome for prosecutors’ offices. Participants in the workshop recommended that such costs, as well as those associated with redactions, should be shared across the criminal justice system instead of having the prosecutor’s office cover all of the expenses.

Organizational Data

Data have long been the primary tool for criminal justice decisionmaking. However, in contemporary times, agencies are not equipped to take advantage of all that data have to offer, even though the efficient use of data and data analyses is what creates successful organizations. Participants of the workshop recognized this issue.

Data Management

While more and more data covering a multitude of complex issues are stored in prosecutors’ offices, a well-organized data management system can provide an important tool to more comprehensively understand various aspects of cases, far beyond conviction rates and other raw data related to case dispositions. Intelligence-led prosecution that uses and incorporates predictive analytics and other forms of data analysis has the potential to lead to more-efficient, fairer, and

more-sensible criminal justice outcomes (Kreag, 2017). But the availability of large amounts of data through technological advances can raise challenging ethical concerns, as well as legal concerns over a defendant's or witness's right to privacy (Richards and King, 2014).

Workshop participants understood the importance of data management and analysis; however, they expressed concerns about the multiple and diverse existing data management systems through which to organize and store data across agencies within a jurisdiction. These competing systems can make the retrieval of data more difficult. The participants advised that integrating record systems would give prosecutors access to more-complete and timely information that would help inform their charging decisions. Ideally, record-keeping systems would evolve to ensure that all labs and law enforcement agencies can upload essential information into the prosecutor's portal.

The ability to provide accurate and complete data about case dispositions can have a financial impact on a prosecutor's office. Sometimes, the authorized budget is based, in part, on the number and types of case dispositions a prosecutor's office has handled. A good data management system will, for example, make it easy to provide information about case dispositions in a timely manner; however, this depends on how clearly the data were defined and organized and how accurately they were entered into the system. These systems would also serve as a valuable tool in the postconviction review process.

Data Ownership with Third-Party Vendors

A similar issue to data management involves how third-party vendors, which create the software applications to manage and produce data, work with prosecutors' offices. Workshop participants advised that some off-the-shelf data management software programs do not meet the needs of the prosecutor's office and that working with the software vendor to tailor the product can be extremely difficult. Ideally, the vendors would work with prosecutors during the software's development.

More concerning to workshop participants were the terms and conditions of vendor contracts; existing contractual language often provides data ownership to the vendor and not the customer. The participants advised that it is important to be able to take custody of all data collected through the vendor's software before the contract expires and to specify in a vendor contract that the prosecutor's office owns the data at the end of the contract term. This will ensure that the prosecutor's office is not at risk of losing the data.

Data Transparency and Quality

There is an essential need for data transparency and quality not just within and across criminal justice agencies but also for the general public. The quality of data also needs to be uniform, to the greatest extent possible. For example, a workshop participant advised that data quality was excellent when it pertained to his office's felony cases, but there was a huge decrease in quality and level of missingness for misdemeanor cases.

Litigation Strategies

Prosecutors have a great deal of authority in the criminal justice system. The workshop participants emphasized the value of working closely with community members, which can include educating the community on how the legal process works. The participants discussed how one of the most important decisions that a prosecutor makes occurs at the pre-trial stage, in deciding whether to pursue or drop a case. The participants gave numerous examples of how these pre-trial decisions can be further complicated by external factors. For example, some of the participants live or work in jurisdictions that statutorily require a prosecutor to determine whether to bring or drop charges within a few days' time. This can be challenging when this deadline occurs before the forensic evidence has been analyzed, relevant witness statements have been collected, or other evidence has been provided. In other jurisdictions that allow more time before a person must be formally charged or otherwise released, an individual may be held in pre-trial detention while the prosecutor waits for relevant evidence to be made available.

Witnesses and Community Engagement

The framework of community prosecution, in which prosecutors intentionally place prosecutors' offices in communities affected by certain crimes in order to facilitate stronger relationships with those communities, provides a model for how prosecutors can work in partnership with the community to promote better outcomes for individual defendants, victims, and the community at large (Wolf, 2006). Following this approach in engagement with witnesses may result in witnesses being more likely to come forward to provide evidence or valuable information about a defendant or more readily aiding prosecutors in understanding and predicting which people are most at risk of committing crimes or becoming victims.

Witnesses often play a key role in a case, through the possession of key evidence, critical knowledge about the

defendant, or information about the crime. Yet prosecutors must walk a fine line when working with a witness in order to clearly communicate the importance of the witness's knowledge or memories without crossing over into witness coaching or inadvertently encouraging speculation. In addition, it may be important for a prosecutor to protect a witness from intimidation or harm to secure his or her cooperation (AEquitas, 2014; Prosecutors' Center for Excellence, 2016).

The workshop participants discussed that, even though their offices might not always be able to offer witness relocation, they can proactively guard against witness intimidation. The participants agreed that witness intimidation, particularly when it occurs on social media, is one of the biggest challenges prosecutors must consider when working with witnesses (Browning, 2014). The participants described various ways to reduce or prevent witness intimidation, such as working with victim advocates, communicating with potential witnesses through non-face-to-face methods, and taking the opportunity to prosecute a high-profile witness intimidation case if it arises. Workshop participants agreed that keeping victims and witnesses safe can directly result in keeping the prosecution of a case safe. In some criminal cases, such as gang-related cases, it may be necessary to arrest a witness to secure his or her cooperation, or a grand jury can be used to compel the testimony of witnesses who do not wish to voluntarily cooperate.

Multimedia

Certain technological tools can enhance prosecutors' ability to provide legal representation to underserved areas. And using certain technology, such as Microsoft PowerPoint, at trial can enhance the presentation and explanation of evidence in the courtroom, but it is important to use such tools responsibly and ethically. In addition, some courtrooms may have more technological capabilities than others. A participant from one jurisdiction stated that his office no longer uses PowerPoint at trial because of the risk of presenting evidence in a prejudicial manner. Prosecutors must be careful to use technology in a manner that clarifies the evidence or a particular argument.

Plea Bargaining

A prosecutor's decision about how to proceed after charges are filed is one of the most important and consequential determinations that a prosecutor makes. Workshop participants stressed that the most important factor in deciding whether to offer a plea bargain is the strength of the case. This may be

based on things outside the prosecutor's control, such as the accuracy and comprehensiveness of the arresting police officer's report or the noncooperation of a key witness. Participants stated that it is important to reach an early resolution in cases that are not strong so that the prosecutor's office can dedicate resources to other cases.

Some jurisdictions, such as New York City, have developed a series of factors for certain "low-level, non-violent offenses below the misdemeanor level" that, if present, either aggravate or mitigate a case (Manhattan District Attorney's Office, 2018). This framework offers a guidepost to help inform the decisionmaking process of prosecutors in New York City. Another factor that may be considered in determining whether to offer a plea deal or go to trial is whether specialty courts exist in the jurisdiction. Involving the victim in the plea-bargaining process can provide a useful perspective in determining the most desirable case outcome.

Risk Assessments

Prosecutors are sometimes incentivized to bring the most-severe charges, which might not promote the fairest outcome. Predictive analytics and risk assessment tools, such as Ohio's Risk Assessment System Misdemeanor Assessment Tool, can help prosecutors better predict whether an individual would be an ideal candidate for pre-trial diversion (Jansen and Wolf, 2014). Risk assessment tools generally consider the defendant's risk of recidivism, needs in order to prevent the commission of future crimes, and receptivity to certain interventions.

Predictive analytics can also help identify areas of higher crime and discern which individuals are most likely to commit crimes. This can help prosecutors' offices focus their resources on cases that will have the greatest impact on reducing crime and improving public safety (Ferguson, 2016). There was an acknowledgment at the workshop that, although risk assessment tools can be a great aid, they should not replace the human knowledge, experience, and sound judgment of an experienced prosecutor. Moreover, even though they are designed to be objective in nature, risk assessment tools can nonetheless promote certain kinds of bias that might undercut the fairness they were originally designed to support.

Accountability

Prosecutors are held to certain ethical standards, in addition to legal and constitutional requirements, that advise or determine how prosecutors should approach and perform the various

aspects of their work. These standards not only protect prosecutors by supporting their actions but also hold them accountable when mistakes are made. Historically, prosecutorial accountability has been left to the district attorney to sanction misbehavior. The U.S. Supreme Court has stated that prosecutors' and district attorneys' offices are generally immune from civil liability (*Imbler v. Pachtman*, 1976). Although the court's decision may have impeded efforts to hold prosecutors accountable in the past, prosecutors' offices have implemented wrongful conviction units more recently. We discuss these accountability-related issues in this section.

Brady and Giglio Issues

The Supreme Court established a prosecutor's duty to turn over potentially exculpatory evidence that may be favorable to a defendant in a series of cases. This duty was first established in *Brady v. Maryland*, in which the Supreme Court held that prosecutors must turn over evidence that favors the accused, and their failure to do so violates the defendant's due process rights (*Brady v. Maryland*, 1963). In subsequent cases, the Supreme Court extended *Brady's* scope to include evidence about a witness's credibility (*Giglio v. United States*, 1972), potentially exculpatory evidence even when the defendant has not specifically requested it (*United States v. Bagley*, 1985), and the duty of prosecutors to learn more about potential exculpatory or favorable evidence (*Kyles v. Whitley*, 1995). Taken in total, these cases require prosecutors to consider the probative value of evidence not only when making prosecutorial decisions but also when determining whether the evidence might be favorable to the defense (District Attorneys Association of the State of New York, 2015).

Participants of the workshop advised that many prosecutors' offices around the country have developed a *Brady* list, which is a record of sources who may have provided biased information in the past. Because prosecutors often rely on police reports or testimony offered by police officers in making key decisions, it is important for prosecutors to be aware of prior instances of a police officer's dishonesty or bias (Ashton, 2017). Workshop participants mentioned that some jurisdictions have a process by which the division chiefs formally meet to decide which law enforcement officials are included in the *Brady* list, and some jurisdictions include crime labs on a watch list of sorts if there have been problems with reliability in the past. Using reliable sources is of utmost importance in a prosecutor's work; thus, workshop participants discussed the

challenges, ethics, and upkeep of their offices using these types of lists to hold their work and partnering agencies accountable.

Data Management

Participants of the workshop discussed that well-organized and functional data management systems not only improve an organization's operations but also make it easier to share information across agencies and hold staff accountable for their actions. Using vertical prosecution can also lead to better data management. That is, when one prosecutor leads a case from the indictment or arraignment pre-trial stage all the way through sentencing, it reduces the chances that relevant evidence or data will be lost or misplaced (Wolf, 2006). The process of reviewing a case by a conviction integrity unit or other means post-conviction is made much easier when the data corresponding to a case have been methodically organized and stored. On the other hand, if information about case dispositions and other key actions is not consistently entered, the resulting poor quality of data can lead to an incorrect understanding of prosecutorial actions.

Wrongful Conviction Units

Conviction integrity units can be instrumental in creating policies in a prosecutor's office to reduce the risk of wrongful convictions (Boehm, 2014; Levenson, 2015). These units have

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been able to pinpoint some of the more common reasons behind wrongful convictions, such as the subsequent discovery of mishandled evidence or exonerating DNA evidence (Gould and Leo, 2016). Workshop participants discussed both the challenges and importance of creating conviction review units within a prosecutor's office and acknowledged that these units can help ensure accountability and good data management practices.

Partnerships and Collaboration

Strong community partnerships and engagement strengthen a prosecutor's case by building the necessary trust that encourages candid and honest cooperation among victims, witnesses, and the community at large. (For more information about community engagement, see the earlier section on litigation strategies.)

Researchers and Academics

Workshop participants acknowledged that prosecutors and researchers can forge a mutually beneficial collaboration.

Researchers and other academics can perform complex data analyses to help prosecutors make sense of trends or patterns that emerge from criminal cases and provide feedback on how prosecutorial actions or practices affect specific outcomes.

The participants advised that relationships that bring together researchers and prosecutors tend to work best when they are initiated and led by the prosecutor, although many offices struggle to make these relations or proactively reach out to potential partners. The Lab in Washington, D.C.,¹ is one example of a fruitful partnership because several of the Lab's behavioral scientists are working directly with civil servants instead of outsourcing this work to another institution. Having the groups work so closely together in this way is changing the culture of the civil servants by enabling them to think through how to change practices that may not be effective.

Data Exchanges

Sharing information about criminal cases across agencies can be challenging. Workshop participants advised that the exchange of data with courts or other state, local, or tribal entities works best when the request is clearly made and when the practical constraints of data quality and data retrieval are acknowledged. Such initiatives as intelligence-driven prosecution can help prosecutors work more closely and effectively with law enforcement.

PRIORITIZING PROSECUTORIAL NEEDS

Workshop participants recognized the challenges and associated needs outlined in the previous section as the most pressing that prosecutors face today. From the discussions with the 17 participants, we identified 28 needs that, if addressed, could improve the capabilities of prosecutors in the criminal justice system. We prioritized these potential targets for effort and investment based on the participants' ranking of several factors, as described next.

We prioritized the needs using a variation of the Delphi method, a technique developed at RAND to elicit expert opinion about well-defined questions in a systematic and structured way. The Delphi process used for this workshop builds on previous RAND work examining criminal justice technology, police, and practice needs (see Hollywood, Boon, et al., 2015; Jackson, Russo, et al., 2015). For this workshop, the two numerical factors that each participant was asked to score during the rating process were as follows:

1. How important each of the needs was viewed as benefiting different—though admittedly complementary—objectives related to improving prosecutors' capabilities. Each participant rated each need on a scale of 1 to 9 for each category (where 1 corresponded to contributing nothing to the objective and 9 indicated that meeting the need could result in a 20 percent or greater improvement in performance).
2. The likelihood of success that the need would be met. In some cases, this might require only minor adaptation, and, in others, it might be very difficult. The participants rated each need's chance of success, combining *technical success* (whether it would be difficult to do) and *likelihood of adoption* (whether prosecutors' offices would use it if it were available) on a scale of 1 (a 10-percent chance of succeeding) to 9 (a 90-percent chance of succeeding).

These two scales sought to capture the key components that are needed to calculate the expected value of a given need—that is, how important it would be multiplied by the probability that it could be successfully produced and used. Rather than simply asking a group of experts to rank options and taking the average of many responses, we used the Delphi method, which helps identify and explore differences among experts' responses. As part of this method, participants provide ratings in multiple rounds, and there are discussions in between

focused on ratings for which there are substantial divergences among the group. For the prosecutorial-needs effort, we employed two rating rounds, with one intervening discussion.

The effectiveness of expert elicitation processes like the Delphi method relies on the knowledge and capabilities brought to the process by the participants. In identifying and selecting workshop participants, we sought to build a panel with a mix of perspectives and views, though within the context of an effort focused on the needs of prosecutorial organizations. All workshop attendees, except the project and NIJ staff, participated in the ranking process.

We took each of the scores assigned by each participant and calculated an expected value for each need by multiplying the importance scores for each need with the probabilities of its success. To rate each need, we took the median expected value that was assigned by the participants, which provides a reasonable estimate of the center of the data even if there were outliers in the rankings. We used these expected values to cluster the needs into three tiers. After clustering, the participants had the opportunity to review and provide one additional round of input, as described in Appendix A. There were eight needs

assigned to the top tier, ordered by expected value (see Table 1). For ease in relating the needs to the areas discussed in the previous section, we assigned each need to one of the following six categories:

1. staffing and resources
2. digital information
3. organizational data
4. litigation strategies
5. accountability
6. partnerships and collaboration.

However, in contrast to similar panels held on other criminal justice topics as part of the Priority Criminal Justice Needs Initiative, this panel assigned high scores for importance to the majority of the needs identified in the workshop; thus, the main factor differentiating needs that clustered at the top of the prioritization was the perceived ease of meeting them. In fact, a majority of the needs that fell in Tier 2 (Table 2) and even two needs that fell in Tier 3 (Table 3) were scored as either an 8 or 9 for importance, meaning that the group viewed them as comparably important to the top-tier needs but more difficult

Table 1. Top-Tier Prosecutorial Needs, by Expected Value

| Problem or Opportunity | Associated Need | Category |
|--|---|--------------------------------|
| The amount of data that prosecutors need to examine to do their job has been growing significantly over time, while the level of individual responsibility for missing potential evidence and important information is also growing. | <ul style="list-style-type: none"> • Develop a protocol for inexpensive and efficient prosecutor training. • Conduct research into the effects of inadequate staff on justice outcomes. • Conduct research into the factors that determine adequate staffing levels. | Staffing and resources |
| Prosecutor retention is a pervasive problem. | <ul style="list-style-type: none"> • Conduct research to better understand the factors that influence retention. | Staffing and resources |
| Data exchange among agencies, their partners, and the community is often inefficient, inadequate, or both. | <ul style="list-style-type: none"> • Conduct research to highlight existing promising strategies that have already been used to make small improvements in data exchange (i.e., identify the key elements for initial exchange). | Partnerships and collaboration |
| Witness intimidation and tampering is pervasive in the criminal justice system and directly affects outcomes. | <ul style="list-style-type: none"> • Conduct research into the most-promising practices for responding to witness intimidation and tampering. | Litigation strategies |
| Agencies are having trouble recruiting new prosecutors with gender and ethnic diversity. | <ul style="list-style-type: none"> • Conduct research to identify the most-promising practices that improve interest in pursuing careers in prosecution from a broader population of candidates. | Staffing and resources |
| Agencies have different approaches to determining the most effective ratio of prosecutorial staff and support staff. | <ul style="list-style-type: none"> • Conduct research to identify the most-promising practices for determining the most effective ratio of prosecutorial staff and support staff. | Staffing and resources |

Table 2. Tier 2 Prosecutorial Needs, by Expected Value

| Problem or Opportunity | Associated Need | Need Received a High-Importance Score | Category |
|---|--|---------------------------------------|------------------------|
| There is considerable uncertainty in the most-desirable case resolution strategies and their effects on public safety. | <ul style="list-style-type: none"> Conduct a review of the effectiveness of the plea and diversion options currently in use (path analysis). | ◆ | Litigation strategies |
| It is difficult and time-consuming to identify, track, store, and disclose officer misconduct and discipline issues. | <ul style="list-style-type: none"> Conduct research into the most-promising practices for collecting and disclosing officer misconduct and discipline records. | ◆ | Accountability |
| It is difficult and time-consuming to collect and report disclosure obligations related to the <i>Brady</i> and <i>Giglio</i> standards. | <ul style="list-style-type: none"> Conduct research into the most-promising practices for collecting and reporting disclosure obligations related to the <i>Brady</i> and <i>Giglio</i> standards. | ◆ | Accountability |
| Storage of large quantities of digital evidence is causing a strain on resources. | <ul style="list-style-type: none"> Conduct research to identify the most-promising and cost-effective practices for long-term storage and retrieval of digital evidence. | ◆ | Digital information |
| The benefits of using a combination of problem-solving and litigation strategies are not well understood. | <ul style="list-style-type: none"> Conduct research about engagement in the community and whether it can reduce crime. | ◆ | Litigation strategies |
| Agencies are looking for guidance on how to build an effective review process for wrongful convictions. | <ul style="list-style-type: none"> Conduct research to determine the best strategies to minimize or eliminate wrongful convictions that result from the lack of conviction integrity or public integrity. | ◆ | Accountability |
| Jurisdictions have different rules for producing content for multimedia presentations. | <ul style="list-style-type: none"> Collect and promote the most-promising practices for training prosecutors to prepare and use litigation technology in the courtroom. | ◆ | Litigation strategies |
| Off-the-shelf case management solutions are often inadequate and not easily tailored to an agency's needs. | <ul style="list-style-type: none"> Conduct research to identify and publicize the most-promising practices for internally developed systems that would be broadly applicable across agencies of different sizes or administrative affiliations (e.g., court, county). | ◆ | Organizational data |
| Transcription of the huge volumes of audio and video evidence is costly and time-consuming for discovery, evidence presentation, and the historical record. | <ul style="list-style-type: none"> Conduct research to identify the most cost-effective technologies that can be used to produce automated or semi-automated transcripts. | ◆ | Digital information |
| It is difficult and time-consuming to identify, track, store, and disclose crime lab staff misconduct and discipline issues. | <ul style="list-style-type: none"> Conduct research into the most-promising practices for collecting and disclosing crime lab staff misconduct and discipline records. | ◆ | Accountability |
| There is a significant divide between the capabilities available to typical agencies in rural and urban areas. | <ul style="list-style-type: none"> Identify the most-promising practices to pool litigation technology and training resources across a state or region for mutual benefit. | ◆ | Staffing and resources |

Table 2—Continued

| Problem or Opportunity | Associated Need | Need Received a High-Importance Score | Category |
|---|--|---------------------------------------|--------------------------------|
| When academic researchers and prosecutorial agencies have a healthy ongoing partnership, there is a significant potential for useful innovations. | <ul style="list-style-type: none"> Conduct research to highlight the most-promising practices from academic-prosecutorial partnerships. | ◆ | Partnerships and collaboration |
| Data within many agencies are nonexistent or are of poor quality. | <ul style="list-style-type: none"> Conduct research on data transparency and the impact that it might have on improving data quality. | | Organizational data |

Table 3. Tier 3 Prosecutorial Needs, by Expected Value

| Problem or Opportunity | Associated Need | Need Received a High-Importance Score | Category |
|--|--|---------------------------------------|--------------------------------|
| Procedures for measuring cases are often not obvious or clear. As a result, aggregate statistics lack sufficient context. | <ul style="list-style-type: none"> Develop definitions for metrics that can be used to standardize software and procedures and provide appropriate context to avoid misleading the public, partner agencies, or other consumers of the information. | | Organizational data |
| Off-the-shelf case management solutions are often inadequate and not easily tailored to an agency's needs. | <ul style="list-style-type: none"> Conduct research to collect information on past procurement processes and identify the factors and practices that led to success (from the perspective of the agency). | | Organizational data |
| There is a significant potential for improving the efficiency, effectiveness, and fairness of agencies by embedding researchers and analysts. | <ul style="list-style-type: none"> Conduct research to identify the most-promising practices for embedding researchers and research analysts in agency offices. | | Partnerships and collaboration |
| The utility of risk assessment tools, particularly their impact on accuracy and fairness when augmenting prosecutor decisionmaking, is unknown. | <ul style="list-style-type: none"> Conduct research to identify and highlight the most-promising practices for integrating validated risk assessment tools into existing decisionmaking processes. | | Litigation strategies |
| When private companies are holding agency data, legitimate data exchange and access issues can arise (as a result of lack of payment or claims that the data are proprietary). | <ul style="list-style-type: none"> Develop model policies for applying existing standards to vendor products and contracts. | ◆ | Organizational data |
| The marketplace for video management, storage, transcription, and redaction software and services is not functioning well for agencies. | <ul style="list-style-type: none"> Conduct research to identify the most-promising practices that agencies may already be using to improve their leverage. | ◆ | Digital information |
| Storage of large quantities of physical evidence is causing a strain on resources. | <ul style="list-style-type: none"> Conduct research to identify the most-promising and cost-effective practices for long-term storage and retrieval of large quantities of physical evidence. | ◆ | Digital information |

Prosecutors today must contend with challenges associated with increasing volumes of data and evidence that have developed from technological advancements.

to achieve. These 14 needs are identified with a diamond in the third column of Tables 2 and 3. Because the breadth of perceived high-importance needs was much broader than the top needs reflected by expected value, these 14 needs represent a wider set of potential priority research areas that would benefit prosecutors in performing their role in the criminal justice system.

Key among the top-tier and other priority needs were identifying better ways to improve staff recruitment, training, and retention; improving data and other information exchange among agencies, their partners, and the community; identifying promising practices to prevent and respond to witness intimidation and tampering; conducting research into the most-promising practices for collecting and disclosing officer misconduct, discipline, and *Brady*- and *Giglio*-related issues; and conducting more research about engaging the community and whether different combinations of problem-solving and litigation strategies can have an impact on crime reduction.

CONCLUSIONS—FOSTERING INNOVATION IN PROSECUTION

State and local prosecutors' offices around the country face many challenges today. One ongoing challenge is identifying and retaining talented prosecutors from diverse backgrounds who are willing to serve long term in this public service role. Budgetary and other resource constraints can lead to a work environment that is increasingly demanding, particularly in rural or more-remote areas that may contend with the addi-

tional challenge of fewer courtrooms and other important judicial resources.

In addition to these ongoing challenges, prosecutors today must contend with challenges associated with increasing volumes of data and evidence that have developed from technological advancements in recent years. The advent of such technologies as body-worn cameras, predictive analytics, and digital evidence resulting from a party's or a witness's online activities presents state and local prosecutors with the promise and challenges of new types of potential evidence. For example, footage from body-worn cameras can strengthen a prosecutor's case but first requires many hours of staff time to determine whether any of the footage is relevant. Similarly, certain documents that have probative value but contain sensitive information may need to be redacted separately for the purposes of discovery and presentation at trial. This process may be time-consuming and burdensome for staff in the prosecutor's office.

Workshop participants spoke at length about the numerous challenges with handling and storing the large amounts of digital evidence and other types of data that are generated from current and closed cases. Third-party software programs currently on the market can help store and organize data; however, these programs often are not tailored to the specific needs of a prosecutor's office, and some offices have encountered problems with acquiring full ownership of the data after the contractual license with the third-party software vendor has expired. Sometimes, various agencies within a jurisdiction use different data management systems, which makes it more difficult for the agencies to easily and coherently share information.

Despite these potential difficulties, new technological and analytical capabilities can be useful and can inform key decisionmaking. One of the most important decisions a prosecutor makes is whether to drop or pursue a case. Predictive analytics and other risk assessment tools can help a prosecutor make this decision by assessing the defendant's likelihood of recidivism. If the chances of re-offending are low, then, instead of pursuing the case further through a plea bargain or taking the case to trial, a prosecutor may decide to offer the defendant the chance to participate in a pre-trial diversion program.

Workshop participants discussed various types of litigation strategies and accountability measures that are critical to bringing the strongest case that will lead to a fair and just outcome. For example, engaging with witnesses in a manner that both encourages them to be fully cooperative and does not put them at risk was identified as a top-tier concern. Participants described some of the intricacies involved with complying

with the *Brady* and *Giglio* requirements to turn over potentially exculpatory evidence. The creation and maintenance of *Brady* lists, which identify sources who have previously acted in a manner that calls their credibility and reliability into question, can help prosecutors discern how much weight to give the police reports or testimony from such individuals. Jurisdictions around the country handle *Brady* lists in different ways. In some cases, law enforcement and prosecutors' offices work together to identify individuals who should be placed on this list. In other jurisdictions, use of these lists is more adversarial and contentious.

In discussing accountability, workshop participants talked about the various forms of conviction integrity units and post-conviction review procedures that exist in various jurisdictions. Some prosecutors' offices have built additional protocols that examine and factor into their decisionmaking the strength of evidence, unreliable witnesses, and other factors that might lead to a wrongful conviction.

The workshop concluded with a conversation around the potential benefits of collaborations between prosecutors' offices and researchers. The development of data science and predictive

analytics has created the opportunity to predict and identify patterns of crime, which can help prosecutors make decisions about which types of cases to prioritize. These collaborations can also help others outside the legal world better understand and make sense of the judicial system, as well as better understand and appreciate the important work that prosecutors conduct every day.

The ever-evolving nature of the challenges described in this report will affect prosecutors' work in new ways; however, many of these issues and their effects on prosecutors' work are not yet well understood. Rigorous research that aims to better understand and identify appropriate responses can improve how prosecutors approach their daily work. Although these challenges may be specific to a single entity in the criminal justice system, they can greatly affect the system as a whole because prosecutors are often the intermediary between the police and correction systems. Addressing these challenges and the needs of prosecutors could greatly improve the efficiency, legitimacy, and administration of justice in prosecutors' offices and, by extension, the criminal justice system.

APPENDIX A. TECHNICAL METHODS

This appendix presents additional detail on the workshop agenda and the process for identifying and prioritizing technology and other needs specific to prosecutors' offices; through this process, we developed the research agenda that structured the topics presented in the main report. The descriptions here are drawn and adapted from previous publications of the Priority Criminal Justice Needs Initiative and reflect the adjustments to the needs identification and prioritization process implemented at the prosecutor-focused workshop.

Pre-Workshop Activities

We recruited panel members first by identifying knowledgeable individuals through existing professional and social networks (e.g., LinkedIn) and by reviewing literature published on the topic. We then extended an invitation to those individuals and provided a brief description of the workshop's focus areas.

In advance of the workshop, panelists were provided an opportunity to identify the issues and topics that they felt would be important to discuss during the workshop. Based on a comprehensive literature review and input from the workshop participants, the workshop agenda and discussion were structured as follows:

Day 1

- Welcome and introductions
- Initial discussion of prosecutorial functions and objectives
- Needs related to case screening and investigation
- Needs related to case prosecution
- Needs related to resource allocation

Day 2

- Summary of previous day
- Needs related to evaluating outcomes
- Final brainstorming session
- Panel review and final needs prioritization
- Next steps for reporting findings from the panel

Identification and Prioritization of Needs

During separate sessions of the workshop, we asked the panelists to discuss the challenges that they face during the pre-trial and trial phases of a case, which panelists had identified prior to the workshop. While conducting this review, participants suggested additional areas potentially worthy of research or investment.

Participants also considered whether there were areas that were not included in the existing list and suggested new ones.

To develop and prioritize a list of technology and policy issues that are likely to benefit from research and investment, we followed a process similar to one that has been used in previous Priority Criminal Justice Needs Initiative workshops (see, for example, Jackson, Russo, et al., 2015; Jackson, Banks, et al., 2016, and references therein). Participants discussed and refined problems related to each prosecutorial function and identified potential solutions (or *needs*) that could address each problem. In addition, needs could be framed in response to opportunities to improve performance by adopting or adapting a new approach or practice (e.g., applying a new technology or tool in the sector that had not been used before).

At the end of the discussion of each topic focusing on a single prosecutorial function (see the agenda), participants were given an opportunity to review and revise the list of problems and opportunities that they had previously identified. The panelists' combined lists for each topic were displayed one by one in the front of the room using Microsoft PowerPoint slides that were edited in real time to incorporate participant revisions and comments.

Once the panel agreed on the wording of each slide, we asked them to anonymously vote using a handheld device (specifically, the ResponseCard RF LCD from Turning Technologies). Each participant was asked to individually score each need and associated strategies to address those needs using a 1–9 scale for two dimensions: importance and probability of success.

For the *importance* dimension, participants were instructed that 1 was a low score and 9 was a high score. Participants were further told to score a need's importance with a 1 if it would have little or no impact on the problem and with a 9 if it would reduce the impact of the problem by 20 percent or more. Anchoring the scale with percentage improvements in the need's performance is intended to help make rating values more comparable from participant to participant.

For the *probability of success* dimension, participants were instructed to treat the 1–9 scale as a percentage chance that the need could be met and broadly implemented successfully. That is, they could assign the need's chance of success between 10 percent (rating of 1) up to 90 percent (rating of 9). This dimension was intended to include not just technical concerns (whether the need would be hard to meet) but also the effect of factors that might lead prosecutors' offices to not adopt the new technology, policy, or practice even if it was developed; such factors could include, for example, cost, staffing concerns, and societal concerns.

After the participants rated the needs displayed on a particular slide (i.e., for either importance or probability of success), we displayed a histogram-style summary of participant responses. If there was a significant disagreement among the panel (the degree of disagreement was determined by our visual inspection of the histogram), then the participants were asked to verbally discuss or explain their votes at one end of the spectrum or the other. If a second round of discussion occurred, participants were given an opportunity to adjust their rating on the same question. This second-round rating was optional, and any rating submitted by a participant would replace his or her rating provided during the first round. This process was repeated for each question and dimension at the end of each topic area. Figure A.1 shows an example of a slide on the importance dimension, with related problem, need, and histogram, and Figure A.2 shows a slide on the probability of success dimension.

Once the participants had completed this rating process for all topic areas, we put the needs into a single prioritized list. We ordered the list by calculating an expected value using the method outlined in Jackson, Banks, et al. (2016). For each need, we multiplied the final (second-round) ratings for importance and probability of success to produce an expected value. We then calculated the median of that product across all of the

respondents and used that as the group's collective expected value score for the need.

We then clustered the resulting expected value scores into three tiers using a hierarchical clustering algorithm. The algorithm we used was the “ward.D” spherical algorithm from the “stats” library in the R statistical package, version 3.4.1. We chose this algorithm to minimize within-cluster variance when determining the breaks between tiers. The choice of three tiers is arbitrary but was done, in part, to remain consistent across the set of technology workshops we have conducted for NIJ. Also, the choice of three tiers represents a manageable system for policymakers. Specifically, the top-tier needs are the priorities that should be the primary policymaking focus, the second-tier needs should be examined closely, and the third-tier needs are probably not worth much attention in the near term (unless, for example, they can be addressed with existing technology or approaches that can be readily and cheaply adapted to the identified need).

Because the participants initially rated the needs by one topic area at a time, we gave the participants an opportunity at the end of the workshop to review and weigh in on the entire tiered list of all identified needs. The intention of this step was to let the panel members see the needs in the context of the other tiered needs and allow participants to consider whether there were needs that appeared too high or low relative to the

Figure A.1. Example Slide for Rating the Importance of a Need

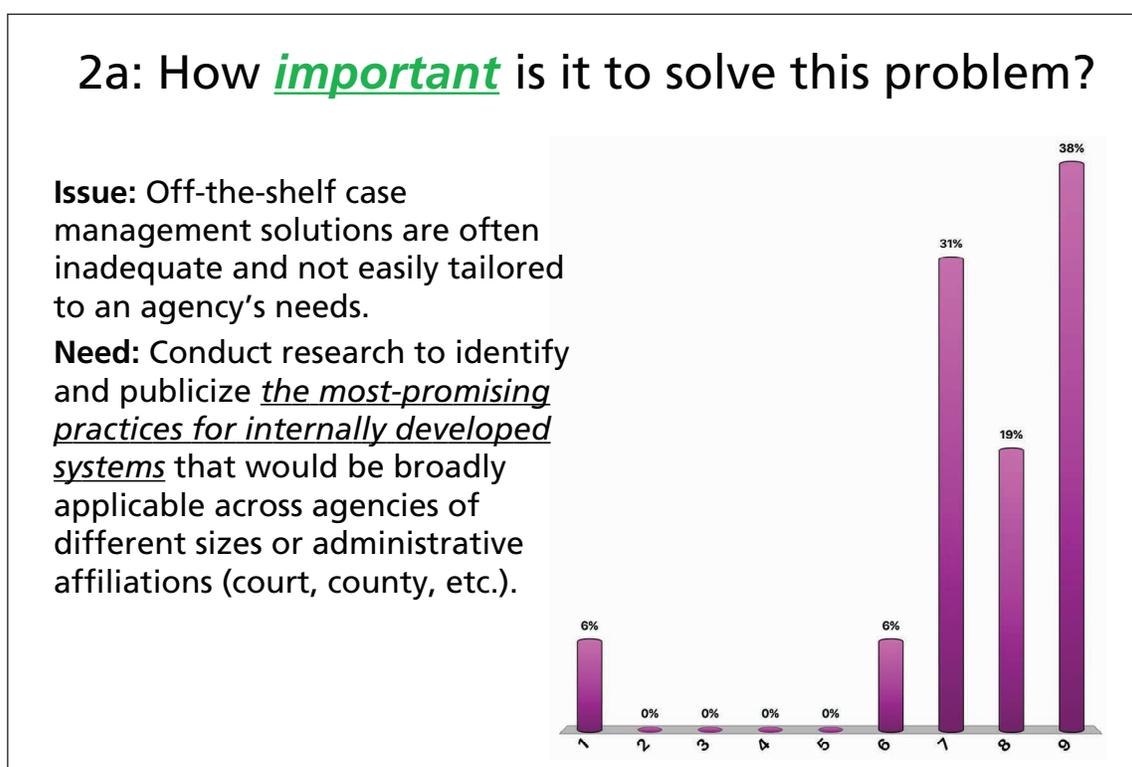
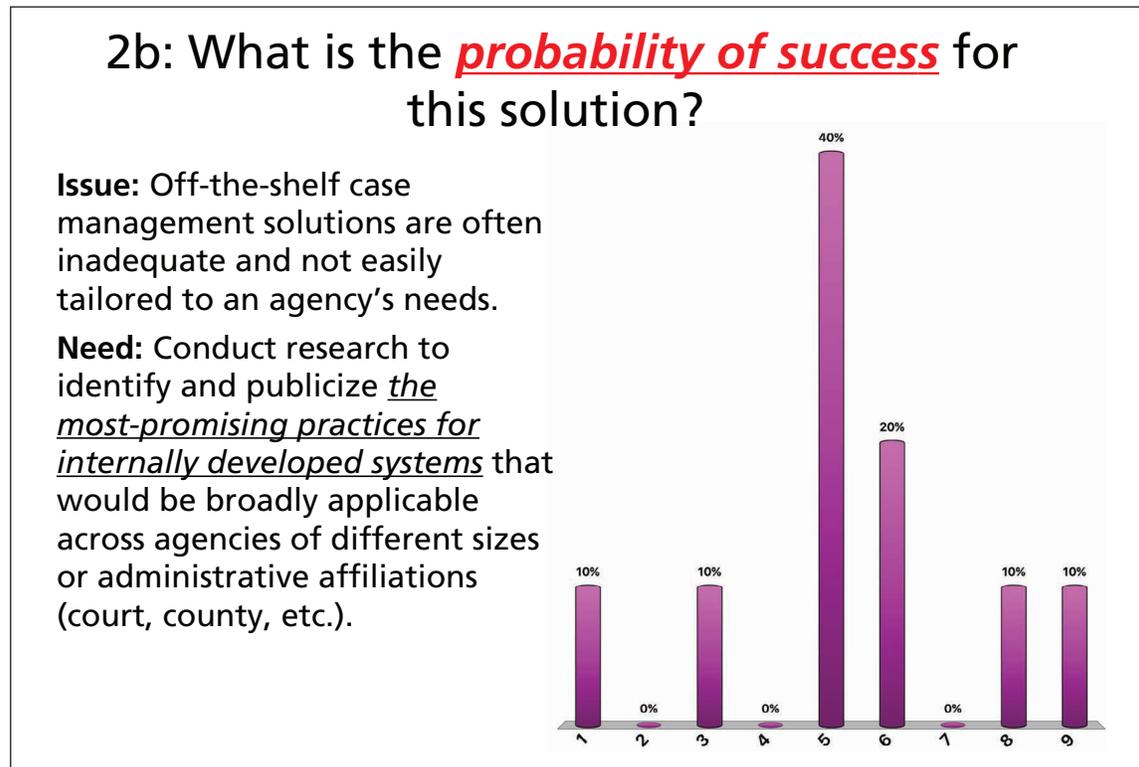


Figure A.2. Example Slide for Rating the Probability of Success of a Need



others. To collect these assessments, we printed the entire tiered list on a paper form and distributed it to the participants. This step allowed the participants to see all of the ranked needs across the different prosecutorial functions, providing a top-level view complementary to the rankings provided session by session. Participants were then asked to examine where each of the needs landed on the overall tiered list and whether this ordering was appropriate or needed fine-tuning. Participants had the option to indicate whether each problem and need pairing should be voted up or down on the list. A stylized mockup of this form is provided in Figure A.3.

We then tallied the participants’ third-round responses and applied those votes to produce a final list of prioritized, tiered needs. To adjust the expected values using the up and down votes from the third round of prioritization, we implemented a method equivalent to the one we used in previous work (Hollywood, Woods, et al., 2016). Specifically, if every panel member voted “up” for a need that was at the bottom of the list, then the collective effect of those votes should be to move the need to the top. (The opposite would happen if every panelist voted “down” for a need that was at the top of the list.) To determine the point value of a single vote, we divided the full range of expected values by the number of participants voting.

To prevent the (somewhat rare) situation in which small numbers of votes have an unintended outsized impact—for example, when some or all of the needs in one tier have the same or very similar expected values—we also set a threshold that at least 25 percent of the workshop participants must have voted on that need (and then rounding to the nearest full participant). For this workshop, there were 17 participants, so for any votes to have an effect, at least four participants would have had to have voted to move the need up or down.²

After applying the up and down vote points to the second-round expected values, we compared the modified scores with the boundary values for the tiers to see whether the change was enough to move any needs up or down in the prioritization. (Note that there were gaps between these boundaries, so some of the modified expected values could fall in between tiers. See Figure A.4.) As with prior work, we set a higher bar for a need to move up or down two tiers (from Tier 1 to Tier 3, or vice versa) than for a need to move to the tier immediately above or below. Specifically, a need could *increase by one tier* if its modified expected value was higher than the highest expected value score in its initial tier. And a need could *decrease by one tier* if its modified expected value was lower than the lowest expected value in its initial tier. However, *to increase or decrease by two*

Figure A.3. Mockup of the Delphi Third-Round Voting Form

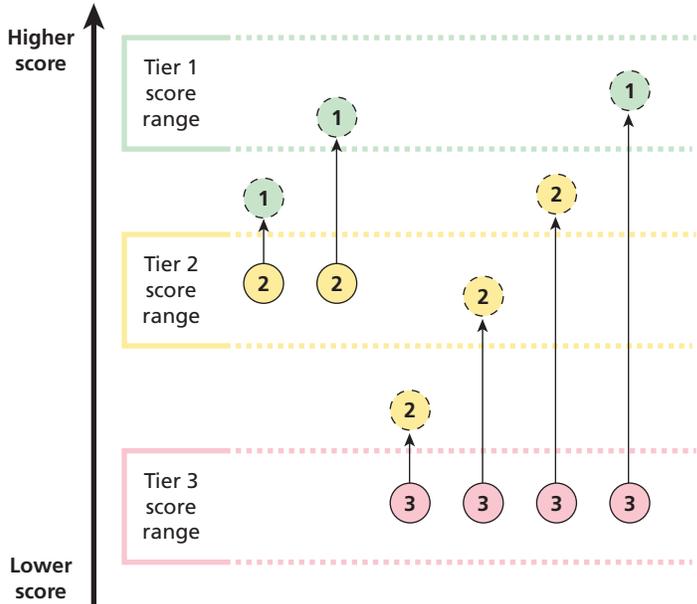
| Question | Tier | Vote Up | Vote Down |
|-----------------|------|---------|-----------|
| Tier 1 | | | |
| Issue: Need: | 1 | | |
| Issue: Need: | 1 | | |
| Tier 2 | | | |
| Issue: Need: | 2 | | |
| Issue: Need: | 2 | | |
| Tier 3 | | | |
| Issue: Need: | 3 | | |
| Issue: Need: | 3 | | |

tiers (possible only for needs that started in Tier 1 or Tier 3), the score had to increase or decrease by an amount that fully placed the need into the range two tiers away. For example, for a Tier 3 need to jump to Tier 1, its expected value score had to fall within the boundaries of Tier 1, not just within the gap between Tier 1 and Tier 2. See Figure A.4, which illustrates the greater score change required for a need to move two tiers (one need on the far right of the figure) compared with one tier (all other examples shown).

Applying these decision rules to integrate the participants' third-round inputs into the final tiering of needs resulted in numerical separations between tiers that were less clear than the separations that resulted when we used the clustering algorithm in the initial tiering. This can occur because, for example, when the final expected value score for a need that was originally in Tier 3 falls just below the boundary value for Tier 1, that need's final score could be higher than that of some other needs in the item's new tier (Tier 2). See Figure A.5, which shows the distribution of the needs by expected value score after the second-round rating process and then after the third-round voting process.

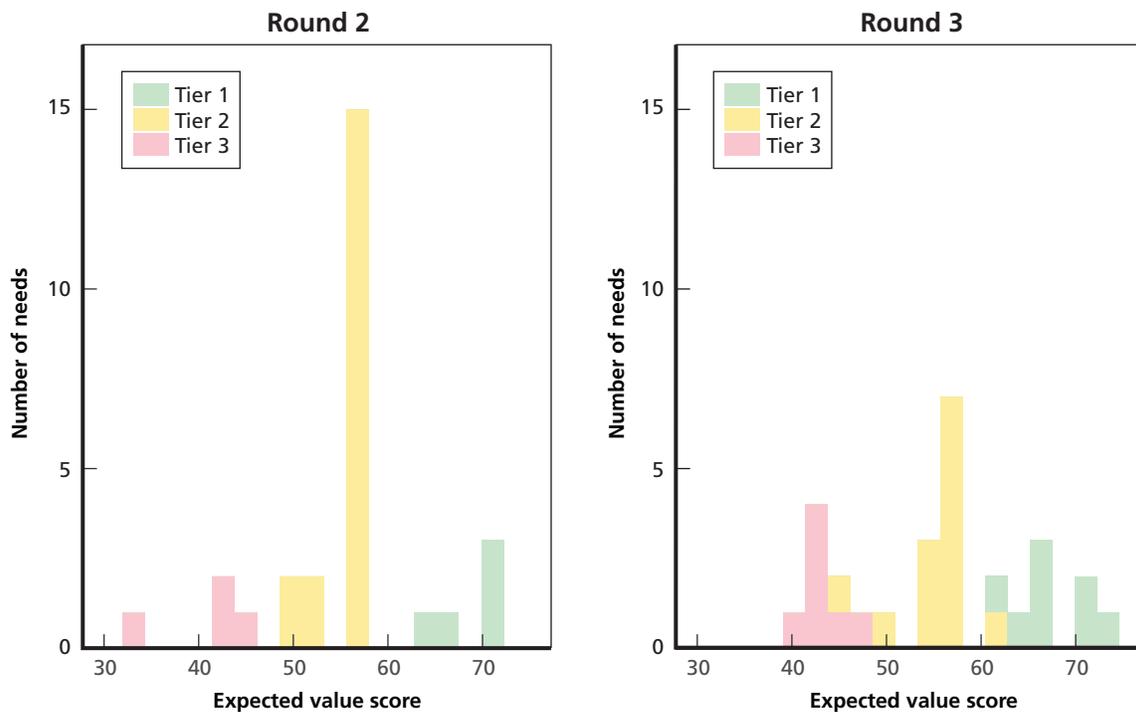
As a result of the third round of voting, 16 needs did not change their position, six needs fell one tier, and six needs rose one tier. No needs changed by two tiers. The output from this process became the final ranking of the panel's prioritized results.

Figure A.4. Illustration of How a Need's Increase in Expected Value Might Result in Its Movement Across Tier Boundaries



NOTE: Each example need's original tier is shown by a circle with a solid border (the two needs starting in Tier 2 and the four needs starting in Tier 3), and each need's new tier after the third-round score adjustment is shown by the connected circle with a dotted border.

Figure A.5. Distribution of the Tiered Needs Following Rounds 2 and 3



APPENDIX B. PRE-WORKSHOP SURVEY

In this appendix, we provide the pre-workshop materials sent to participants. Aside from minor editorial fixes (e.g., punctuation) and formatting, these materials are presented unchanged from their original content.

2018 Prosecutors Workshop

Pre-Meeting Questionnaire

Thank you for agreeing to participate in the 2018 Prosecutors Workshop, part of the National Institute of Justice's (NIJ) Priority Criminal Justice Needs Initiative. The workshop will bring together prosecuting attorneys, training coordinators from national and state prosecutor resource groups, and experts in innovative and emerging prosecution practices.

The Prosecutors Workshop is one in a series of expert panels convened by the Priority Criminal Justice Needs Initiative. The panel format is designed to result in recommendations for future court- and prosecution-related research and development at NIJ and may also inform developers of technologies, tools, and training that have the potential to address critical needs in prosecutor policy and practice.

Your responses to the questions below will provide us with initial input to frame the panel discussion. Your responses will remain strictly confidential. Your individual responses will not be released to anyone, and only summary information from all respondents will be used to better understand priority areas. You are free to skip any questions that you do not wish to answer, but we hope that input from the panel is as complete as possible to develop the discussion framework and maximize our time together during the 1.5-day panel meeting on March 21 and 22.

Prioritizing Prosecutor Objectives

First, we would like your input on the importance of several prosecution objectives. This will inform the panel discussion by allowing us to weight different chronic or emerging issues and potential innovations that might be useful in achieving different prosecution objectives.

Please assign levels of importance (1 to 100) for each prosecution objective. Your score should reflect the importance of each objective relative to the other objectives.

The objective that you believe is most important should be given a score of 100. Then assign scores to each other objective reflecting its importance relative to that most important

objective. For example, if another objective is equally important, it should be scored as 100 also. An objective that is half as important as the top goal would be scored as 50. An objective that you view as unimportant would get a score of 0.

Each objective can have any number. For example, if you think all these objectives are equally important, all would be scored as 100. If you think they are each of different levels of importance, each score would be different.

| Objective Name | Objective Definition | Score (0 to 100) |
|---|---|------------------|
| 1. Provide fair and impartial access to justice | Protect all persons, including the accused, victims, witnesses, and other litigants equally without bias, discrimination, or political influence. Decisions related to pre-trial detention, case investigation, whether and what charges to prosecute, plea negotiations, and sentencing recommendations must not depend on race, economic status, or other extra-legal factors. | |
| 2. Ensure due process | Protect the rights of the accused and of victims by ensuring due process and following uniform rules of practice and procedure. Elements of due process include notice, discovery, right to bail, counsel, lawful and regular process, confrontation, cross-examination, the right to call witnesses, the privilege against self-incrimination, and public and timely resolution, among others. Prosecution and the application of law to the facts in individual cases must be consistent and predictable. | |
| 3. Administer justice on a case-by-case basis | Resolve disputes and provide individualized justice to individual cases. Determine the facts of a case and administer appropriate punishment to the guilty in criminal cases or appropriate penalties to those responsible for civil harm. | |
| 4. Protect the public | Prosecute cases in a manner that seeks sentences or other case dispositions that separate dangerous criminals from the public, rehabilitate offenders, and/or deter future criminal behavior. | |

| Objective Name | Objective Definition | Score (0 to 100) |
|--|---|------------------|
| 5. Improve the public's trust of the judicial system | Provide protection against the arbitrary use of governmental power. Build and maintain public trust and confidence through transparency and accountability. | |
| 6. Ensure efficient and effective use of limited resources | Improve the efficiency of prosecution operations. Maintain due process and individualized justice while disposing of cases efficiently and fairly. | |
| 7. Improve prosecutor competencies | Improve the competencies of prosecution staff through training, education, and other resources. | |

Prosecution Technology Problems and Opportunities

To set up our discussion during the panel of ways that new innovations or technologies might help prosecutors, we are going to ask you two things:

First, what do you see as the primary challenges or issues facing prosecutors today where innovation could help prosecutors' offices better achieve their missions? Challenges may be chronic, where a technology or innovation may address long-standing issues in prosecution, or emerging, such as how the proliferation of technology in the public and other components of the criminal justice system presents new challenges to prosecutors.

Second, we are going to ask you about four prosecution policy and practice areas. For each area, we will ask the same two questions:

- Problems/shortfalls in the current prosecution tools and practices where improvements are possible, and
- Opportunities you see where significant changes in policy, technology, or practices could help prosecutors' offices perform better or more efficiently.

The areas we will ask about are as follows:

Case screening and investigation: Practices and tools to investigate cases referred for prosecution to determine whether and how to charge those cases. Needs and innovations here may relate to:

- Processes and records management systems designed to share information with law enforcement, forensic evidence labs, the defense bar, pre-trial detention and services agencies, the judiciary, and other parties to a case.

- Establishing or maintaining collaborative and proactive partnerships across the criminal justice system and the community.
- Implementing policies and practice to support relations with victims and prospective witnesses.
- Compiling and analyzing digital and forensic evidence to inform charging decisions; this could include gaining access to evidence from smart phones, social media sites, and security cameras operated by private entities.
- Adopting decision tools to inform charging and noncriminal dispositions.
- Maintaining discretion in charging decisions while providing the public with information and adhering to community expectations and norms for prosecution.

Case prosecution: Practices and tools to prosecute crimes, from the point of formal charging through case disposition, to ensure public safety and adherence to community norms. Needs and innovations may relate to:

- Presenting digital and forensic evidence.
- Using experts appropriately or in a compelling manner.
- Adopting decision tools or technologies for jury selection and case presentation.
- Using virtual interactions in the courtroom, where appropriate, to allow testimony from experts, reluctant witnesses, and others.
- Advocating for appropriate sentences.

Evaluating outcomes: Approaches to review systemic or case-specific policies and practices in order to seek to reform and improve the administration of criminal justice. Needs and innovations may relate to:

- Prompt disposition of criminal charges.
- Conviction integrity review.
- Use of risk assessment instruments or tools that inform decisionmaking.
- Ensuring access to justice.
- Promoting community safety.
- Establishing and evaluating performance metrics.
- Ensuring that extra-legal factors do not influence decisionmaking.
- Establishing and maintaining public trust and legitimacy.
- Processes to share information with the public.

Resource allocation: Promote availability of and efficient allocation of prosecution resources. Needs and innovations may relate to:

- Personnel resources, including access to special assistants, investigative resources, and experts.
- Use and availability of prosecution-led diversion programs.
- Prioritizing prosecution resources to focus on the most serious and violent offenses.
- Resources to prosecute specific types of cases, such as gun crimes, violence against women, financial crimes, and crimes involving the elderly.

1. Overall, what are the **top three challenges or issues** facing prosecutors today?

1. _____
2. _____
3. _____

2. What problems or shortfalls exist around **investigating cases referred for prosecution** that limit prosecutors’ offices’ ability to achieve their missions effectively and efficiently?

1. _____
2. _____
3. _____

What opportunities do you see—by applying new technologies, changing prosecution strategies or practices, or other innovation—in the area of **investigating cases referred for prosecution** that would improve prosecutors’ offices’ performance or efficiency? (List as many or as few as you would like.)

1. _____
2. _____
3. _____

3. What problems or shortfalls exist around **prosecuting cases** (from formal charging through disposition) that limit prosecutors’ offices’ ability to achieve their missions effectively and efficiently?

1. _____
2. _____
3. _____

What opportunities do you see—by applying new technologies, changing prosecution strategies or practices, or other innovation—in the area of **prosecuting cases** that would improve prosecutors' offices' performance or efficiency? (List as many or as few as you would like.)

1. _____
2. _____
3. _____

4. What problems or shortfalls exist around **evaluating outcomes** that limit prosecutors' offices' ability to achieve their missions effectively and efficiently?

1. _____
2. _____
3. _____

What opportunities do you see—by applying new technologies, changing prosecution strategies or practices, or other innovation—in the area of **evaluating outcomes** that would improve prosecutors' offices' performance or efficiency? (List as many or as few as you would like.)

1. _____
2. _____
3. _____

5. What problems or shortfalls exist around **resource allocation**, including management, personnel, development, and training, that limit prosecutors' offices' ability to achieve their missions effectively and efficiently?

1. _____
2. _____
3. _____

What opportunities do you see—by applying new technologies, changing prosecution strategies or practices, or other innovation—in the area of **resource allocation** that would improve prosecutors' offices' performance or efficiency? (List as many or as few as you would like.)

1. _____
2. _____
3. _____

6. Are there any issues, problems, or opportunities that you see that don't easily fit into any of the areas we defined on this questionnaire? Is there anything you think we have missed that is important to cover in the workshop?

1. _____
2. _____
3. _____

7. Are there specific topics, programs, or cases that you have handled and align with one of the above focus areas? Please list these areas (up to three) and provide a short sentence about your expertise. We will take this under consideration when finalizing the meeting agenda.

1. _____
2. _____
3. _____

Notes

¹The Lab’s website describes its objectives as follows:

The Lab @ DC collaborates with District agencies to:

- Design policy and program interventions that are tailored to the District, based on theory and evidence from academic and industrial research, as well as analyses of available administrative data.
- Conduct high-quality evaluations—including randomized evaluations and rapid, iterative experimentation—to learn how well things work and how to improve.
- Foster a scientific community of practice, engaging and collaborating with experts and stakeholders across agencies, universities, and community groups. . . .

We’re working on a variety of projects, from body cameras to improve policing, to flexible rent programs to address homelessness, to a Form-a-Palooza to systematically improve all government forms. To learn more about these and other projects, visit our project pages on the Open Science Framework. (The Lab @ DC, undated)

²For this workshop, 25 percent of 17 would be 4.25 participants, and we rounded down to four, meaning that our threshold was slightly below our target percentage.

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Justice Policy Program

RAND Social and Economic Well-Being is a division of the RAND Corporation that seeks to actively improve the health and social and economic well-being of populations and communities throughout the world. This research was conducted in the Justice Policy Program within RAND Social and Economic Well-Being. The program focuses on such topics as access to justice, policing, corrections, drug policy, and court system reform, as well as other policy concerns pertaining to public safety and criminal and civil justice. For more information, email justicepolicy@rand.org.

About This Report

On behalf of the U.S. Department of Justice, National Institute of Justice, the RAND Corporation, in partnership with the Police Executive Research Forum, RTI International, and the University of Denver, is carrying out a research effort to assess and prioritize technology and related needs across the criminal justice community. This initiative is a component of the National Law Enforcement and Corrections Technology Center System and is intended to support innovation within the criminal justice enterprise.

This report is one product of that effort. It summarizes an expert panel convened by the National Institute of Justice in March 2018 to identify high-priority needs for prosecutors in the U.S. court system. The workshop explored needs relating to staffing and resources, digital information, data, litigation strategies, accountability, and partnerships and collaboration. High-priority needs identified for action included developing better training resources and tools for the assessment of staffing needs, conducting research into promising practices for responding to instances of witness intimidation and tampering, and examining the effectiveness of plea and diversion options that are currently in use. Mentions of products or companies do not represent approval or endorsement by the National Institute of Justice or the RAND Corporation.



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