Roundtable on Improving Criminal Justice Data
Arnold Ventures

Recommendations considered by expert panelists at virtual roundtable discussions held in November and December 2020

In late 2020, Arnold Ventures convened over two dozen criminal justice experts from a variety of disciplines to explore ideas to improve the quality and availability of criminal justice data for research and evidence-based policy making. The goal was to address the challenge that too often, criminal justice data is incomplete, inaccurate, out of date, or inaccessible to researchers and policy makers.

As part of the project, the Institute for Excellence in Government interviewed over 50 experts, including criminologists, civic technologists and criminal justice practitioners. The interviews generated over 140 ideas, which were distilled into the 34 recommendations shared in this document. The interviews with criminal justice experts and two facilitated roundtable discussions culminated in a report with recommendations on modernizing the nation's criminal justice data infrastructure. The report, "Campaign for Criminal Justice Modernization: Because the Road to Reform is Paved by Data" reflects the input of the experts who were interviewed and who participated in the expert roundtable discussions.

The experts participating in the roundtable discussed the recommendations on the pages that follow. The first session, held on November 19, 2020 addressed recommendations to improve federal data collection. The second session, held on December 10, 2020 addressed recommendations focused on data collected and used primarily at the state and local level.

Roundtable on Improving Criminal Justice Data
Arnold Ventures
Combined and curated recommendations for federal action
Session One: November 19, 2020 (via zoom)

Recommendation 1: DOJ should create a 21st century federal data infrastructure with timely accurate collection, validation, curation and dissemination of crime and victimization data along with data on the operations of the criminal justice system in a way that balances security with ease of access to researchers, policymakers and the public.

Specific questions to address and actions to take include:
- A: Strategic and inter-governmental actions (5)
- B: Federal crime data collection and management actions (4)
- C: Accessibility and use of federal data actions (4)
- D: State and local, collaboration and innovation actions (5)

Key question	Problem/issue	Recommended action
A: Strategic and inter-governmental actions (group 1)		
1: What is the current state of the criminal justice system in the United States? What do we know, and what gaps in knowledge must be addressed? *Priority #1 for breakout group discussion*	Not since 1984 has a national snapshot been published describing, with the authority of the federal government, both the state of knowledge about the operations of the criminal justice system, the gaps in knowledge, and what must be done to close those gaps. A summary of current status can create a shared set of facts, and can help galvanize support for closing gaps in the availability, accuracy, completeness, and timeliness of data about criminal justice system operations and the impact on Americans.	Action 1: Congress and the White House should ask that BJS publish an update of the 1984 *Report to the Nation on Crime and Justice.* This could take the form of a series of "*State of…*" reports that describe the current state of the courts, the state of prisons, state of law enforcement, etc. Asking: • What's the demand for services? • Who sets this demand and how is it measured? Is this measurement accurate and appropriate? • What's the supply of services? • What do the individuals in this field actually do? • Are they fully resourced to do the job? • How is productivity measured, if at all? • What outcomes are achieved, and are they clear? Are those the right outcomes to strive for? • Is the public satisfied with the outcomes? Each report should include an assessment of strengths and weaknesses of current data collection and a roadmap for improvements (e.g. improving prosecution and court data), along with a suggested timeline for closing the data collection gaps. Outside experts should be

Key question	Problem/issue	Recommended action
		consulted during the development of such reports, perhaps including pro bono assistance from private sector experts. Data collection gaps should be tied to important questions that can be answered. For example, while it is often assumed that higher levels of education will improve the quality of law enforcement interactions with the public, this question is not easily answered because the periodic survey of law enforcement administrative data (LEMAS) does not allow for analysis of citizen complaints by characteristics of the officer, such as education level, years of experience of officers, etc.
2: How can the data generating agencies of OJP meet or exceed 21st century standards of data quality, availability, usability, timeliness and transparency called for in the Evidence Act? *Priority #2 for breakout group discussion*	The primary data generating agencies of OJP (BJS and NIJ) have not recently been called upon to report publicly on both what they have accomplished and where they are headed in the future. Creating a long-term strategy can help achieve more on an annual basis if each year incrementally builds toward a larger goal. The Evidence Act requires assessment of whether data exists to answer key questions, mandates data governance planning, requires assessment of data infrastructure maturity, asks agencies to assess staff data skill, and requires open data plans and publication of data inventories. While the act applies to DOJ and does not mandate such activities at each agency, compliance with the spirit of the law,	Action 2: Congress and the White House should require NIJ and BJS to create strategic plans with bold ideas for addressing the nation's crime research and data needs into the future. This should include a long-term strategy for not only addressing the goals of the Evidence Act, but exceeding those requirements for data availability and usability by researchers and the public, solid data governance, increased data literacy for staff and for stakeholders, and maximum transparency with machine-readable open data. Strategic plans should not be limited to today's problems, but should anticipate future data needs and find ways to instill continuous innovation so that the agencies can stay current. In developing its strategy, BJS should examine international best practice, for example from the UK and Australia, and should reach out to experts from across the appropriate disciplines, including in data science and related academic fields. The plans should address innovative methods to share results, since policy-makers and community members do not read academic journals. On a practical level, the plans should address issues such as the coding of gender in the future as the historical binary options in most current database structures become dated. As part of this effort, an assessment should be made as to whether it is appropriate for NIJ and BJS to be subject to single year

Key question	Problem/issue	Recommended action
	and completion of selected Evidence Act activities would be in keeping with modern data best practice.	appropriations when embarking on multi-year programs. At the conclusion of the strategic planning process, to assure sufficient resources to carry out the duties described, the White House should direct the Chief Statistician of the US to use the Principles and Practices of the Federal Statistical agencies to determine the appropriate level of funding for BJS to carry out its duties.
3: What is the scope and scale of racial equity gaps across sectors of the justice system and what are the missing data needed to fully capture the current environment?	Racial and ethnic data is not captured in a standard way across agencies and across regions, making it difficult to get an accurate national picture of racial disparity. Further, many policies that may have a disparate impact on communities of color or low income individuals (fees, fines, voter disenfranchisement) are not well documented.	Action 3: DOJ should commission a study of what is known about racial disparity in the criminal justice system and where there are gaps in data collection, accuracy, or completeness that must be closed in order to describe this challenge. (e.g. lack of race data in court records) The study should include recommendations and a timeline for implementation, and should specify what can be done via federal statute and what must be achieved via incentives rather than mandate.
4: How can OJP data and research efforts solve complex multi-system problems, reaching beyond criminal justice sources to other disciplines?	The most vexing public problems require person-centric, multi-sector solutions, yet most of government today functions according to its habitual "silo." For example, addressing criminal behavior of an individual experiencing homelessness can't be solved without integrating data about an individual's situation and needs across employment and education, health and mental health or substance use sectors. Breaking the status quo thinking and creating inter-governmental solutions will require connecting data, and thinking across entities	Action 4: The White House should create an interagency working group of statistical experts to act as a think tank and idea generator to develop new approaches to combining data for insight with the goal of preventing crime, reducing criminal activity, and mitigating the impact on communities of criminal activity. Drawing from other disciplines can surface lessons learned and identify new data sources that could be mined for insight - for example Commerce Dept economic data or credit card data, school data from Dept of Education, OSHA for workplace safety issues/workplace shootings, etc. The interagency working group should not only create ways to connect data across silos, but should also document and share the tools and methods to advance the state of knowledge generally, far beyond the working group. This can be done via publications, toolkits, open source code and the like.

Key question	Problem/issue	Recommended action
	and across levels of government.	This interagency working group could also advise BJS and the FBI on best practices for making data more timely and more widely accessible to researchers (see action 11 below).
5: How can OJP leverage the best scientific advice for evidence-based decision-making for grants, and for wise stewardship of statistical and research endeavors?	OJP research and statistical personnel are few in number by comparison to the broad scope of their responsibilities. Further, attrition over the years means that those who remain are stretched thin, and have little time to continuously stay current on best practices in their respective fields. External academics and practitioners can provide expertise on an as-needed basis with objectivity and field knowledge that would be impractical for OJP to gather on its own.	Action 5: The White House should require that the OJP Science Advisory Board be immediately reinstated. Congress should provide the resources so that it can be permanently staffed adequately to carry out its duties. NIJ and BJS should make use of advisory boards, short term fellowships and inter-agency personnel agreements to bring in the perspective of researchers, data users, and policy experts, including academics in the relevant disciplines, those with methodological expertise, and data scientists, so that statistical and research products are continually improved and made more user-friendly and relevant.

B: Federal crime data collection and reporting actions[1] (group 2)

Key question	Problem/issue	Recommended action
6: What crimes should be counted but are not currently? *Priority #1 for breakout group discussion*	The Uniform Crime Reporting (UCR) program began in 1929, and the National Incident-Based Reporting System (NIBRS) was created in 1988. Many crimes of modern daily life (cyber crimes, fraud, identity theft, environmental crime) were not included in the original or updated data collection designs but have a significant and unmeasured impact on modern life.	Action 6: Congress should direct OMB to investigate which crimes should be included in crime and victimization counts, drawing on existing recommendation of the NAS panel that recommended adding fraud, cyber, ID theft, etc. to get a full picture of crime, not just street crime. This should be a federal cross agency effort that goes beyond DOJ to include EPA, USPS, FTC, etc. As part of this effort, an assessment of the feasibility of collecting and reporting accurate and consistent state and local misdemeanor crime data should be completed. Expanding the scope of crimes state and local government must collect and report is complex and should be undertaken with planning for effective implementation. For example, hate

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[1] Assumes that by the time of publication of the recommendations of the Roundtable on Improving Criminal Justice Data that the UCR sunset and NIBRS transition will have been addressed satisfactorily such that no loss of local crime data reporting results.

Key question	Problem/issue	Recommended action
		crimes must now be reported, but this crime is thought to be under-reported.
7: What doesn't get counted about the conditions or impact of crime but should? *Priority #2 for breakout group discussion*	The opportunity cost of funding spent on crime control and not on other activities (prevention, etc.) has not been fully studied, nor has the return on investment for crime control activities. Data on mental health and substance use and their connection to incidents of crime is not well documented but could provide great insight. Further, little is known about the impact on the public's perception of the legitimacy of the system based on levels of enforcement, or about how law enforcement officer wellbeing impacts their work or ability to connect with and gain the trust of their community. Finally, the societal impacts of crime on communities and families (stigma, removal from families of those who are incarcerated, etc.) are not well documented.	Action 7: BJS should examine the factors related to causes or consequences of crime that are not currently measured but could or should be measured, and assess the value of collecting and sharing such data. A panel of experts should address the question, "What should the next generation of crime data look like?" This panel should draw on the current body of work produced by the National Academy of Sciences as well as input from researchers, practitioners, and policymakers. Results should address the full scope of data collection by the FBI and BJS including UCR/NIBRS, NCVS, etc.
8: How can federal crime data releases be made more timely?	Release of annual crime data by DOJ historically has taken up to ten months. The preliminary data for the first half of 2020 was released more quickly, just two and a half months after the close of the collection period. However, this increased speed of release still lags the release of other data collected by the federal	Action 8: DOJ should examine and streamline the crime reporting process for more frequent and timely reporting of crime data, report out crime data quarterly at a minimum, and report preliminary data if necessary to achieve this turnaround. DOJ should consider new methods for sharing machine-readable crime data in a format that enables linkage across federal data sources, as well as linkage to relevant state and local data sources as well.

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	government from across the nation, such as unemployment claims, new housing starts and the like. Current technology, social media, and open data portals have all enabled local police departments to release crime data on a weekly, monthly or near real time basis. The lag time from collection of data to federal reporting makes the data far less useful or research insights or for policy-making.	DOJ should examine best practices from other federal agencies, and should leverage the Federal Interagency Council on Statistical Policy for this purpose.
9: What reporting relationship between the federal collectors of crime data and the state and local recorders/reporters of crime data produces the most complete and accurate count?	Currently states collect local crime data and report it to the FBI for the UCR and NIBRS programs. This statistical function is placed in a law enforcement agency rather than the statistical agency of DOJ, the BJS.	Action 9: DOJ should ask OMB to direct its Chief Statistician of the United States to study the benefits and limitations of moving the crime reporting statistical function from the FBI to BJS. Moving this function from a law enforcement to a statistical agency has benefits and challenges and is worthy of careful consideration, particularly in light of the migration from UCR to NIBRS and the advance of technology. A goal of this examination should be to assess how to improve completeness and accuracy of data that is collected. An examination of best practices across the federal government should be part of this assessment.
C: Accessibility and use of federal data (group 3)		
10: How can the federal government make it easier for researchers to link data across federal sources? *Priority #1 for breakout group discussion*	Linking data across federal sources is time-consuming for researchers and nearly impossible for policy-makers and the public. For example, the police-community survey is collected at the county level but UCR and LEMAS data is collected and reported at the city level, and LEMAS is not even collected for every city.	Action 10: DOJ should create a secure, cloud-based national data sharing platform like FedRAMP that would enable researchers and policymakers to access federal criminal justice data sources with role-based authorization, in line with the vision of a National Secure Data Service described in the final report of the Commission on Evidence Based Policymaking. This would enable linking various federal data sources, for example police-community survey, UCR/NIBRS, LEMAS, NCRP, NCVS, and data collection series related to courts, probation, parole, jail, expenditures, etc.

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	NCVS not available at the local level. For one researcher, linking these data sets required 5,000 lines of code just to have the data ready to analyze.	The platform should be developed with the input of the user community so that it maximizes ease of use, and promotes active use of data sources collected by BJS. Promotion of use of this platform should include incentives to connect to other federal, state and local data as well as private sector data. Work on this effort should leverage insights of the federal interagency working group on data sharing referenced previously. In addition to making the platform accessible to researchers, DOJ should identify practitioners and policymakers and data journalists interested in accessing the data and invite them to participate in the design of the platform.
11: How can data collected via surveys and administrative systems be linked to better describe victimization and other phenomena? *Priority #2 for breakout group discussion*	Survey data is becoming increasingly expensive to collect as fewer people have landline phones and as fewer people choose to answer telephone surveys. Using administrative data can fill in gaps in what can be learned via surveys. Examination of hybrid data sets, that merge survey and administrative data enables different insight than either type of data alone. This is an emerging area with potential for deep insight using new analytic tools, and the federal government has a role to play in advancing the field for the benefit of the wider stakeholder community.	Action 11: BJS should use technology to blend survey and administrative data. For example, BJS could build the infrastructure to connect NCVS and NIBRS data into a platform researchers could use. Such a hybrid data platform would be expensive to set up, but once established could be scalable and locally-relevant, a federal investment with benefit at state and local levels. As part of this effort, BJS should examine the obstacles and successes of using administrative data sets (Homeless Management Info System, Indian Health Service, Heat Start) to fill in missing data on the Census count and what the implications are and lessons for both NCVS and other DOJ surveys.
12: How can victimization data be made more accessible for use by	The National Crime Victimization Survey (NCVS) is a gold-standard national data series, collected by the Census	Action 12: BJS should improve the self-service tool for NVCS so that it can be accessed more easily by researchers and policy makers, perhaps by leveraging the US Digital Service or

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researchers and policymakers?	Bureau on behalf of BJS. Yet only a handful of researchers are able to access geo-coded data, and only several dozen use this rich data resource regularly because it is complex to access. This rich store of valuable data is underutilized due to the lack of a user-friendly interface for accessing it and tight restrictions on using geo-coded data.	other resources for creating user-centric design and improving access and ease of use. Access to dashboards with drill-down capability to download data in machine-readable format, and the opportunity to explore multiple related variables simultaneously is not currently available for NCVS, yet it is the standard for open data platforms across government, even in small jurisdictions. Open data tools such as hackathons and competitions could be used to widen awareness of an improved self-service tool for this data. In addition to making the NCVS data platform accessible to researchers, DOJ should identify practitioners and policymakers and data journalists interested in accessing the data and invite them to participate in the design of the platform.
13: Can statistical series and reports be released in a more predictable schedule, and in a more user-friendly fashion?	Several BJS statistical series are no longer publishing on their prior schedule, and some publications have been delayed, with inconsistent lag times between the time of the data collection and the publication date. Regular schedules of release of statistical series and more consistent adherence to planned schedules would improve scholars' ability to plan long-term studies using BJS data series.	Action 13: BJS should release all statistical series within six months of collection of data and should publish a schedule of releases in advance preferably a multi-year calendar. BJS should engage end-users in a refresh of its web site, adding direct access to data with real-time dashboards, maps, and data visualization tools that serve both researchers and policy-makers. This effort could be informed both by experts from open data enthusiasts, data journalists, big data experts and community advocates seeking crime and victimization data.
D: State and local, collaboration and innovation actions (group 4)		
14: Can DOJ use grant funding incentives and public-private partnerships to advance	State and local justice agency IT systems are often outdated, and typically do not employ common data schemas or have standard	Action 14: DOJ should commission a task force of technologists, practitioners, researchers and data experts to develop a strategy for engaging the IT and data vendor community to make reporting, transparency and data

Key question	Problem/issue	Recommended action
interoperability across administrative data systems of the major technology platforms used by criminal justice agencies? *Priority #2 for breakout group discussion*	APIs that allow comparisons of individual-level data across departments, agencies or jurisdictions. Vendors have no incentive to make their software interoperable with other vendors' products, which leaves state and local justice agencies unable to compare data from one system to another, often even within the same unit of a department, much less across departments in a jurisdiction.	interoperability easier and more consistent across jurisdictions. This could be by providing incentives for the tech vendor community to build in data quality standards to products to help nudge the field along. The task force should address systems design that is user-centric, so that data is captured at the front end of the process with as much accuracy as possible. Finally, the task force should review the various efforts under way to create criminal justice data standards and determine if any subset of those standards should be recommended to the vendor community for adoption. In taking this action, DOJ should strive to reduce disparity between large urban and small rural jurisdictions in their access to modern technology.
15: How to bring new and diverse ideas/perspectives to criminal justice policy, research and data collection?	Deservedly, much attention has been paid in recent years to racial gaps in contact with the justice system and how individuals experience bias. Not yet sufficiently studied is the racial and gender demographics of the actors in the system (the cop, prosecutor, judge, corrections officer, etc.) and how those differ from the population at large, and the population in the system. Further, little has been documented about the demographics of scholars in the field.	Action 15: DOJ should commission a national study of the demographics of criminal justice practitioners and researchers and should document racial disparities and develop strategies to close those gaps. This assessment should examine the role of HBCUs, PBIs and MSIs in training a diverse workforce, as well as best practices in diversity and inclusion from the private, non-profit and academic sectors. The voices of those in the system should be included in this assessment as the perspective of customers may provide insight on the strengths and weaknesses of organizational culture in the criminal justice system.
16: How can federal collection and publication of state and local law enforcement data reduce unnecessary police use of force?	Data about use of force by the police on members of the public is inconsistent and not required to be reported publicly, with agencies representing [41%](#) of total sworn officers participating in the	Action 16: DOJ should collect and publish a standard set of data about the use of force by police on members of the public as well as use of force against officers, along with related organizational data for context. Data collected should include shootings by officers, complaints against officers and other

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	voluntary data collection as of 2019. Interactions police have with individuals experiencing mental illness are not well understood, resulting in fatal encounters that could have been prevented with greater insight and training.	key misconduct indicators, police force demographics, stop and frisk data, and traffic stop data. Collection should provide sufficient detail to understand both officer and citizen injuries, and the race and gender of both the citizen and the officer. DOJ should require that state and local law enforcement gather and report a standard set of data on the mental health needs of people who come into contact with police.
17: How can DOJ advance law enforcement accountability with data transparency at the state and local level? *Priority #1 for breakout group discussion*	Public trust in law enforcement is the lowest it has been in nearly three decades of measurement, with less than half of Americans trusting the police. Accountability and transparency can significantly advance public confidence.	Action 17: DOJ should assess and score all police departments based on the amount of data they make public, and if possible also on the quality and timeliness of the data. This summary data should be made available to the public on an open data dashboard along with tools that allow users to make comparisons across departments. DOJ and the White House should use this ranking data to create a campaign aimed at increasing trust and accountability for law enforcement. The ethos should be reward for meeting standards, and should include levels of success, for example bronze, silver and gold. The White House should use its ceremonial convening power to recognize excellence as departments come to the White House to claim their badges. For agencies struggling to meet minimum standards for quality and availability of data, DOJ should provide resources to help improve data quality. Ideally, the effort would be to build local capacity and to build trust, along with improving data quality and transparency, rather than as an effort to simply point out failure.
18: How can DOJ lead by example in data transparency?	The federal criminal justice system is small by comparison to the state and local systems across every jurisdiction in the country.	Action 18: Federal criminal justice agencies could lead in data transparency by setting an example for state and local government and by providing a template for replication. Across law enforcement, courts, corrections and prosecution, federal agencies could adopt current best practices and develop new

Key question	Problem/issue	Recommended action
	The uniqueness of the unified federal system and the deeper resources and access to technical expertise enjoyed by federal criminal justice agencies position them to be leaders and to establish models that can be replicated at the state and local level. Successful federal criminal justice system data platforms, methods and tools can be replicated to the state and local level via published toolkits and policy guidance, as well as training and technical assistance.	approaches to inter-governmental data sharing, accountability, and transparency about outcomes. This transparency effort could begin with federal prosecutors in the 94 US Attorney offices across the US who could publish quarterly data on key metrics (cased declined, cases processed, time to trial, results, etc.) using selected locally-relevant indicators from among the 55 indicators developed and now in use by 6 local prosecutors. Alternatively, or in addition, DOJ could work with the Bureau of Prisons to set a model standard for transparency of data corrections agencies report about their operations. A transformational corrections metrics system could include not only typical operational measures, but also data for measuring the wellbeing of those working in correctional facilities as well as those in custody. Data on the services provided to incarcerated individuals, including mental health, or addiction services they are receiving as well as education or job training and their preparedness for reentry could be reported as well, on an aggregated and deidentified basis. These standards should be defined with an array of stakeholders, including the incarcerated and the families.

Roundtable on Improving Criminal Justice Data
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Combined recommendations to support state and local agencies
Session Two: December 10, 2020 (via zoom)

Recommendation 2: DOJ should assist state and local law enforcement and criminal justice agencies in collecting high quality data, including both crime data and the operational and administrative data used internally, and in making the data more available for (a) sharing across agencies within a jurisdiction to aid in data-informed decision-making, and (b) analysis by researchers and policymakers for insight. More and better data will mean more state and local ability to manage with data, and greater access for researchers and policy makers to gain insight and to advance the state of knowledge and evidence in the criminal justice system.

Specific questions to address and actions to take include:
- Improving data quality and researcher access (4)
- Linking justice data for greater insight (5)
- Building capacity (3)
- Technology and policy (4)

Problem/issue	Recommended action
Improving data quality and researcher access (group 1)	
1: Criminal history records, used both for public safety and for employment screening purposes, and composed of local data stored in state repositories are inconsistent in their accuracy and completeness. The most recent biennial survey of state criminal history records found only 68% of records included disposition data, with some states having as few as 10% of their records including disposition. Most states don't audit the records, but when one state did, they found statewide 18% of records were misclassified, and that some agencies had misclassified up to 30% of records. CH records are an underutilized resource for research due to the challenge of gaining access to each individual state repository, and the underlying data quality issues.	Action 1: **DOJ should create a national, secure, easily searchable repository of criminal history (CH) data**. This platform should integrate data across states and enable state and local level law enforcement inquiry of individual level data that crosses state lines. Researchers should be granted access, with appropriate controls, to deidentified data that is linked at the person level. With this resource, researchers could do everything from program evaluation to desistence research, and gain a better understanding of patterns of offending across the life course and across state lines. To improve the quality of the data in this repository, Congress should provide incentives to states to conduct audits of their criminal history records and to cure inaccurate or missing data. State audits should include data quality improvement plans that include actions toward the goal of more machine-readable data and less free text. In some cases the State Statistical Analysis Center would be the appropriate body to conduct this audit, but they could

Problem/issue	Recommended action
Some states have the ability to query nearby states for individual criminal history records, but not all do. Federal leadership on creating a common shared cross-state resource would improve accuracy and availability.	also assign this responsibility to another entity as appropriate. Better CH data would benefit criminal justice agencies, policy-makers, researchers, and would also provide more accurate information for employment and firearm purchase screening.
2: Data captured by local criminal justice agencies in the process of their operations (police departments, courts, jails, prosecutors, etc.) is typically collected for operational not research purposes and may be full of abbreviations, free text, and inconsistent or incomplete fields. The quality and completeness of data may improve in accuracy once used by researchers, with feedback to data collectors. Seeing the results of analysis of the data often provides incentive to improve quality so that the insights are more complete.	Action 2: **OJP should fund researcher-practitioner partnerships to improve data quality, availability and transparency, and as source for moving toward evidence-based practice.** Such partnerships can be both a source of research insight for the local jurisdictions and also for building staff data analytics capacity in CJ organizations. Such partnerships can take the form of external academic, think tank, or analytics experts teaming with a jurisdiction, or of the external organizations entering into memoranda of understanding to embed their experts within the justice agencies. Such partnerships should create locally relevant insight and value, along with products that help the field generally, such as standard documents for data sharing agreements, and open source tools for analyzing common data sets. In creating a competitive grant program, OJP should seek a diverse range of solutions that cover a variety of justice system components and address both urban and rural areas. OJP should fund a sufficient number of these partnerships that different approaches can be explored and that lessons across sites can help advance the field. OJP should convene the recipients of these grants so that they can learn from each other, and so that common insights can be documented and shared. OJP should require in making the grants that each site publish both locally relevant findings and generalizable insights.

Problem/issue	Recommended action
3: Across the 18,000 state and local law enforcement agencies, 50 state corrections departments, and the jails, courts and prosecutors in the over 3,000 counties data entry clerks and professional staff are recording data and agencies are creating systems to track data, without standard ways of recording similar information. The use of standards provides the possibility of far greater ability to share data within a jurisdiction across agencies, and for the comparison of outcomes across jurisdictions. A variety of standards efforts are under way that will establish conventions that may be adopted by criminal justice IT system decision-makers in designing the systems of record. The adoption of shared standards is an ambitious and long-term approach as it relies on major investments in technology system upgrades, which are not only expensive, but require procurement processes that may take months or years.	Action 3: **OJP should provide guidance to state and local government in moving toward standards-based data systems.** OJP should commission a study that examines the costs and benefits of adopting data standards and recommend priorities, and should identify whether there is benefit in partial adoption of standards for agencies unable to fully adopt them. Further, the study should address the tradeoffs between full adoption of standards and the use of data science tools such as probabilistic matching to link data without the use of standard terms. The study should provide guidance on how state and local jurisdictions can create long-term plans that aim toward greater adoption of the standards that will provide greatest value. OJP should fund pilot projects that use standards for cross-jurisdictional data sharing and analysis, as a proof of concept that may accelerate the adoption of standards by other jurisdictions. (See also recommendation to create a task force to advance the role of the vendor community in advancing data standards.)
4: The criminal justice system is not really a system but a set of separate silos. No single entity has responsibility for data quality across the system. Data omissions and errors in one part of the system create problems for accurately linking individual level data across departments or agencies. Improving quality in one agency can help not only that agency, but the system as a whole as data is linked. Simply assigning responsibility for data accuracy to an entity could be a powerful force for both understanding the scope of the problem and defining a path to improvement.	Action 4: **OJP should fund state criminal justice data quality and transparency advisory boards.** The advisory boards would exist for the purpose of creating an assessment of data quality and transparency in the criminal justice system in that state, and then providing recommendations to improve that data and for annually reporting on progress toward achieving stated data quality and transparency goals. OJP should create model legislation that sets forth the authorities of such agencies so that as states create these entities they have the appropriate authority. Such boards would build on the work of State Statistical Analysis Centers in the conduct of audits of the completeness and accuracy of the state's criminal history records. (see related recommended action) If not all states chose to create a data quality and transparency advisory board, it would in effect be a natural

Problem/issue	Recommended action
	experiment allowing comparison of progress among those states with and without a board.

Linking justice data for greater insight (group 2)

Problem/issue	Recommended action
5: Every justice agency has its own data, in its own format in its own systems, and sometimes linking person-level data within an agency is difficult, much less linking the person-level data across the system to track the individual's progress. Simple questions like, "did the person spend the night in jail?" or " how long did they wait before trial?" are hard to discern. Harder still are questions that require linking more than one individual record, such as "how many inmates in the adult prison were at one time in the juvenile system?"

Connecting all parts of the criminal justice system in a jurisdiction from the point of first encounter, through case processing and adjudication, supervision, and reentry for an individual is possible and increasingly is showing promise with innovative approaches. Yet the ability to link individual-level data throughout the case life cycle is limited to a handful of jurisdictions with grant-funded outside expertise.

The interest, commitment, and energy of policy leaders to make such matches must be coupled with the determination, skill and resources of researchers or data scientists. Many challenges stand in the way. Current data availability, quality and transparency is uneven across the justice system, with court and prosecutor data the lease consistent.

In addition, researchers need to cultivate relationships to get access to data, and then are reluctant to publish findings that are negative lest they lose access to the agency and their data. When a change of administration occurs, the researcher has to start over in gaining trust to get access to data. | Action 5: **OJP should fund state and local integrated data hubs that connect person-level data across all case processing agencies in the CJS.** Data should be maintained with security and privacy protocols that allow person-level data to be linked with access provided only to those with authority, and with aggregate deidentified data available more widely.

The pilot sites should be given two to three years to show results and a sufficient number should be funded such that if one or more stalls in implementation or fails, there will still be some that succeed. The pilot sites should be considered learning labs of experimentation. Funding for project management offices is essential as these will be complex projects with many stakeholders and project governance will be important to success. Pilot sites could both connect the various criminal justice data sources and do analytics on the combined data. Insights should be made public and shared widely.

A competitive grant with sufficient funding could create state or local level public use data sets available to all criminologists and policy makers, through controlled secure access. A key component should be to advance data capacity throughout the jurisdiction, not just by providing the analytics as a service but also by building tools (dashboards, visualizations and the like) and developing training for analysts and managers. Training should be made available widely.

OJP should document both successes and failures and then create tools to replicate success. Where possible, capacity building for this effort should draw on local providers who can create long-term relationships.

Recognizing the power of statute to compel data sharing and the importance of executive leadership, OJP should prioritize selection of sites where statutory requirements are in place or are planned, and where strong executive support is present in multiple sectors of the criminal justice system.

OJP funding should be viewed as seed funding and sites should be able to be self-supporting over time. Local |

Problem/issue	Recommended action
	priorities in the selected sites should drive the research and analytics agenda of the data hubs. The pilot sites should provide feedback on the top priority data standards that would make a difference in their work (see recommendation related to data standards).
6: Linking data outside of the criminal justice area has potential to deepen insight on crime patterns, yet most state and local governments lack the ability to connect such data across public health, substance use treatment, homelessness, public safety, education, workforce and the like. State or local-level linked data sets that span disciplines would be valuable to researchers, policy-makers and to criminal justice system leaders and managers.	Action 6: **OJP should fund state and local projects that link CJS data to related systems, such as education, workforce, and public health**, perhaps building on integrated data hubs described previously. This effort could span public and private sector data and draw on state, local and federal government data for greater insight. The goal of linking additional data sets is to gain deeper insight than in justice data alone. Local policy priorities should drive the choice of research topic and data sources. For example, local data such as 311 calls, code enforcement, property tax assessment and the like may be of interest in solving local problems. From the pilot projects, OJP should share lessons learned and develop models for success that can be replicated. Publications from this effort should include both what works and what doesn't so that others can avoid likely problems.
7: Despite the value of linking data to gain insight, most state and local jurisdictions will not have the resources to create their own integrated data hubs. Or they may have the need for such insight only on an intermittent basis. For these jurisdictions, an on-demand resource would be more appropriate giving them access to expertise and resources of a large university or think tank, without having to make the full investment themselves, and instead sharing the cost across all participating entities and paying for just what they need. The creation of such a national resource would benefit both the jurisdictions that participate as well as the researchers authorized by the jurisdictions to gain access to the data.	Action 7: **OJP should create a national secure, cloud-based data sharing platform to provide analytics as a service to state and local jurisdictions lacking local data capacity.** This platform, hosted by a university or think tank would allow state and local jurisdictions to submit their data and to receive back locally-relevant policy insight from a national resource. This could be similar to the current FedRAMP platform in that it that would enable researchers and policymakers to access data sources from across multiple sources with role-based authorization. This could build on the existing success of the current CJARS platform, which connects individual-level state level justice data and social, economic, and demographic data collected by the Census Bureau. CJARS has been successful to date in connecting data for several states, but has not yet established itself as a nationwide resource. CJARS has been primarily fueled by philanthropic funding, but with OJP funds and state or local match, could approach national scale. The greater the number of jurisdictions that participate the larger the data set and the more valuable the insights. Recognizing this network effect of participation, OJP should

Problem/issue	Recommended action
	consider providing incentives to encourage greater state participation.
	This effort should produce locally-relevant insights drawing from data sources both in the justice system and beyond. The effort should produce user-friendly dashboards and data visualizations so that the insights are easily understood and communicated. Open source methods should be the preference for ease of sharing and replication.
8: Many state and local governments do not understand privacy protocols (HIPPA, etc.) and shy away from data sharing rather than dealing with the issues. This impedes state and local data sharing and stops important data and analytics insight before it can begin. Simply knowing it has been done in another jurisdiction may lower barriers to data sharing, and a federal roadmap and toolkit will provide additional support for both jurisdictions and their IT or data vendors as well as researchers.	Action 8: **OJP should publish guidance on how to share data while adhering to privacy laws.** This should provide examples of success and a roadmap for replication. A federal toolkit, and even a resource hub for TA or expertise would do a lot to advance data-sharing. If federal data sharing standards are clearly established, then responsibility can be placed on the vendor to follow the privacy protections, taking the burden off state and local government. This should also include an examination of why state and local law enforcement agencies are reluctant to share data with researchers, with other government agencies and the public, and what can be done to improve that.
9: Fusion centers, funded for over a decade by the Department of Homeland Security, and often located in law enforcement agencies, typically have access to sophisticated technologies for linking complex data sets for investigative purposes. The talent and skill in advanced data analytics contained in fusion centers typically exceeds that of local justice agencies. These centers of excellence remain an untapped source of value to state and local criminal justice agencies working with the same source data and trying to solve similar problems.	Action 9: **OJP should examine data sharing and analysis best practices at homeland security fusion centers.** OJP should commission a study of best practices at fusion centers and publish the results in a user-friendly format. This study should examine how the joining of data sets for intelligence purposes could improve the collection, use and quality of data at the federal, state and local level, and to extrapolate from investigatory findings of fusion centers that may be applied to crime prevention. This assessment should include recommendations on how to build local analytics capacity by leveraging the talent at fusion centers via training and educational or mentoring opportunities, staff exchanges and the like, as well as ways that the fusion centers can produce replicable methodologies or toolkits, provide technical assistance to state and local justice agencies, or create open source tools.
Capacity building (group 3)
10: Data and technology capacity at the state and local level is inconsistent, ranging from high levels of sophistication to paper-based data storage to mainframe systems built over 40 years ago.	Action 10: **OJP should commission a nationwide assessment of the technology and data maturity of state and local CJ agencies.** This study should describe a minimally acceptable level of data and technology capability and then estimate

Problem/issue	Recommended action
Despite the many frustrations at lack of data, lack of modern systems, no national estimate is available of what % of records are not available in electronic format, much less in standard formats that can be extracted for analytics or research.	the % of state and local agencies unable to meet that threshold.

The study should provide recommendations for assisting those jurisdictions and agencies unable to meet the minimum standard to achieve it, along with an estimate of the resources needed to close the gap.

The study should also describe the best practice examples including how they are able to achieve a culture that uses data to inform action. |
| 11: Some leading justice agencies have begun to embed researchers, including social scientists, or data scientists into their organizations. Others have close partnerships with research advisors. For example, in Washington DC the police department has an embedded social scientist and in Philadelphia the DA has several graduate students embedded as staff providing data analytics insight.

Yet this is the exception not the rule. Most state and local criminal justice agencies lack the resources, or have not yet seen the value of investing in research, data and analytics.

Federal leadership could help spread this model to other jurisdictions, and provide a new standard pathway for graduate students and recent graduates of social science disciplines, and develop new openness to data among criminal justice agencies. | Action 11: **OJP should fund state and local data and analytics capacity.** This could be accomplished via a variety of models. One model is to embed social scientists or data scientists into criminal justice agencies, either as full time employees, or as part time graduate research fellows.

An alternative model is a regional collaborative for a handful of agencies, working with a local university to provide support. Regional hubs should take on both agency-specific analytics to optimize operations, as well as project that link individual-level data across the CJS in a particular jurisdiction.

Another model would be to create a central, federal corps of specialist who can both provide analytics as a service, and also train clients when deployed, similar to how USDS has worked in federal government, or create several regional hubs of analytics and training/capacity building support.

Work produced by regional or federal hubs should benefit both the agencies they serve directly, and should advance the field by creating open source tools, and by sharing code and documentation publicly, such as via GitHub.

Data literacy should be a part of this effort so that the data talent of the experts is shared with the organization.

In selecting sites for grant, OJP should recognize the importance of local buy-in and executive leadership support. |
| 12: Most state and local jurisdictions do not have staff dedicated to data management and analysis, and many staff remain "data phobic" – in one example a 140-person organization does not have a single data analyst. | Action 12: **OJP should create scalable, low cost data literacy and skills training.** The goals should be to teach (1) very basic data literacy skills to executives, managers, and leaders, (2) skills development and enhancement training for analysts, and (3) training for data entry staff that teaches the value of accurate data entry for later use of the data. |

Problem/issue	Recommended action
Further, most staff responsible for data entry whether they be professionals or data entry clerks, typically do not understand the link between the quality and completeness of their work and the power of accurate data to provide insight. Most agencies lack access to professional development to increase data analysis skills of existing staff. As a result, the ability to use the data that already exists is low. While crime analysts in law enforcement have a national association for peer learning, data analysis in justice agencies is not similarly recognized as a profession with a national organization or peer network, limiting the ability to learn from others and replicate successful approaches.	A national resource of online learning could be supplemented with regionalized in persona and virtual support through academic and nonprofit organizations. Trainings should cover both how to interpret and use data, as well as how to translate data insights into public messaging. Publications should be created for a wide audience (data entry clerks, managers, decision makers, the media, etc.) that describe how to be a data skeptic in reviewing data reports. Basic understanding of data ethics should be addressed. OJP should sponsor ongoing professional development and skill growth opportunities via conferences and other learning experiences to continuously upgrade data management and analysis skills in the field. Such convenings would provide valuable peer exchange and networking opportunities for data analysts from across criminal justice organizations. OJP should consider sponsoring a formal network of criminal justice data practitioners for the purpose of peer exchange and mutual support and learning. In this effort, OJP should consider the diversity of current maturity levels for data and technology, and should strive to provide appropriate supports for each level of maturity, recognizing that attention is sometimes focused on the same progressive organizations, while others may be overlooked.
Technology and policy (group 4)	
13: Criminal justice agencies spend significant sums on their internal recordkeeping systems, most of which cannot share data from one system to the next. Vendors create proprietary data schemas and once an agency purchases a product the barriers to switching systems or trying to integrate across systems are high. Linking data is complex and in some cases too difficult to even attempt. Making data easier to access could facilitate greater data sharing.	Action 13: **OJP should mandate that any software or system created with federal grant dollars be able to export machine-readable data and have a standard open API for sharing data across systems**. OJP should prioritize funding of open source rather than proprietary systems. OJP should reach out to other federal agencies to advocate for this requirement in all federal grant funding to state and local governments, with priority on Department of Homeland Security, Department of Transportation and Department of Education whose grant funds are often administered by the same or similar state agencies and whose funds flow to related agencies.
14: Tech innovators in the criminal justice field are producing useful advances in technology, yet there are far more challenges than technology solutions to address them.	Action 14: **OJP should fund capacity building grants for growing tech talent in CJ field.** This could take the form of funding data science competitions, funding research fellowships, or engaging innovators via challenge.gov. OJP

Problem/issue	Recommended action
Federal investment could move the field forward.	could begin this effort by forming an advisory group to provide input and develop a strategic plan.
15: The requirement that states adopt the NIBRS platform is viewed by some as an unfunded mandate because funding for migrating to new NIBRS-compliant software was not provided by DOJ to state and local jurisdictions. Not all jurisdictions are now able to support NIBRS reporting of crime.	Action 15: **DOJ should create a cloud based NIBRS compliant recordkeeping system for police departments that could be accessed on a no cost or low cost basis in order to increase uptake of NIBRS reporting by departments.** An added value of this approach is that if at any time the NIBRS format is amended, this one platform could reach many departments with the changes.
16: Even in states with laws mandating standardized criminal justice data collection and transparent publication of that data, the ambitions of the law have not been achieved. Implementation of Florida's landmark legislation has lagged, and Massachusetts has fallen far short of achieving the data sharing goals of its justice reform law. As other states (CO, CT, AZ) implement laws to improve quality and availability of data, and as additional states take up legislation to address justice data and transparency, they may achieve more if they can learn from the successes and challenges of other states.	Action 16: **OJP should study the success and implementation challenges of the state level criminal justice data transparency laws, such as in FL, CA, and MA, and then create model legislation along with an implementation roadmap** for other states that is realistic about what data can be collected at the local level and shared to the state, and at what cost and over what timeframe. Model legislation should balance incentives with sanctions, should provide annual public reporting of progress and results, and should provide resources for data collection. In this examination, OJP should review the Massachusetts law that mandated data sharing, for a specific period of time, across 20+ agencies to answer 7 specific questions about opioids. Person-level data was shared in a secure environment that exceeded all privacy requirements. The key insights, model legislation, and recommended playbook for implementation should be provided in multiple formats, including video, digital and print to assure wide dissemination of key messages. OJP should work with the National Conference of State Legislatures on this effort, along with consultation with those already working in multiple jurisdictions such as Measures for Justice.