Because the
Road to Reform
is Paved by Data

CAMPAIGN FOR CRIMINAL JUSTICE DATA MODERNIZATION

RECOMMENDATIONS FROM AN EXPERT
ROUNDTABLE, HOSTED BY ARNOLD VENTURES

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Arnold
Ventures

EXECUTIVE SUMMARY

The Biden administration has shown a willingness to push for bold ideas, with early executive orders advancing racial equity, making greater use of facts and data in federal policymaking, and ending for-profit federal prisons. Comprehensive criminal justice reform should be an important next step on the Biden administration's agenda, to help fulfill the hopes of all the civil rights protests in the wake of George Floyd's tragic death. Implementation of hallmark justice reforms could have a significant impact for generations to come.

An ambitious criminal justice reform agenda will require a strong commitment to building a modern, nimble, comprehensive data infrastructure. Accomplishing this goal will serve multiple purposes. An effective data infrastructure will promote transparency and allow the public to hold its officials accountable. A modern data architecture will improve the effectiveness and efficiency of justice agencies. A strong data system will provide a baseline for measuring progress toward better outcomes, in particular progress toward racial equity.

Unfortunately, criminal justice reform is made more difficult by data that is incomplete and fraught with error. Indeed, due to the lack of reliable data, it is often difficult even to document systemic racism in the justice system (such as racial disparities in misdemeanor arrests), let alone to promote solutions to the fair and impartial administration of justice.

In this moment of heightened awareness of the fragile compact between the public and those whose job it is to make our communities safe, it is time to reimagine both the system and its underlying data infrastructure. Recommendations toward that end developed by a group of experts include:

- Recommendation #1: Establish an accurate baseline of facts about the criminal justice system, and envision a 21st century system

- Recommendation #2: Radically increase accountability of the justice system through data transparency

- Recommendation #3: Modernize the production and dissemination of criminal justice statistics

- Recommendation #4: Improve the integrity of data used for decision-making, research, and policy

- Recommendation #5: Make criminal justice data more actionable, by linking data for greater insight, and by building capacity to turn insight into action

- Recommendation #6: Harness modern technology to equip decision-makers with more timely and accurate information

This report describes each recommendation, along with implementation action steps.

INTRODUCTION

The so-called criminal justice system is not a single system at all. Instead, it is a menagerie of many thousands of municipal, county, state, and federal agencies, each with their own data systems. This extraordinary fragmentation makes it difficult to track what is going on. Reliable and systematic national data is lacking to describe the following key issues, and to disaggregate results by race and ethnicity, gender identity, or disability status, and other characteristics such as neighborhood, age, or income:

- Public trust in the fairness of the justice system

- The degree to which discretion is fair and impartial at each step of engagement – such as whether to stop, whether to detain or search, whether to arrest, whether to charge and with what severity, whether to offer a plea and at what level

- The extent of violence, injury, harassment, discrimination, or disrespect that occurs in interactions between members of the public, or those in custody with officers and other employees of justice agencies

- How individuals are treated during their custodial sentences and how well they are prepared for success upon release

- How individuals are supported during non-custodial sentences (e.g. probation and parole) and how well services are tailored to individual needs

- How victims of crime are treated and how that experience shapes their lives

It is time to reimagine the system. Reform is critically important, but a precondition of effective reform is the foundational data that can guide, fine tune, and measure the success of reforms. The data systems that support the operations of the nation's criminal justice agencies must be improved and the Bureau of Justice Statistics (BJS), the federal agency responsible for regular reporting of survey and administrative data, must be strengthened. Beyond administrative data, the federal government should invest in a regular series of community-level surveys that can measure victimization, fear of crime, and public trust in the operations of the justice system.

Unfortunately, BJS has been weakened, its budget reduced by 25% from 2010 to 2021 (37% accounting for inflation). Routine BJS reports have been curtailed and too often politicized, and the whole approach to the federal role in crime and justice data needs a complete re-examination. Now is the time to strengthen the data and statistical infrastructure – at the local, state and federal level – to support deep criminal justice reform, promote racial justice, and restore public trust.

This report provides recommendations to improve the quality and availability of data for criminal justice researchers, policymakers, and the public to inform and improve the fair administration of justice. The recommendations reflect input from over 50 criminologists, statisticians, technologists, and justice practitioners. Experts gave generously of their time in interviews and interactive deliberations. A total of 140 ideas were generated and 34 specific recommended actions were considered in a virtual roundtable discussion.

Each of the six key recommendations is described in the pages that follow, preceded by a statement of the challenge it addresses, and followed by concrete actions the Biden administration can take.

CHALLENGE #1:

The current state of data in the criminal justice system leaves us unable to accurately answer critical questions, in particular about racial justice.

Shared understanding of facts must be the basis of reform discussions in order to have common baseline for measuring the problem and establishing metrics for solutions. Unfortunately, at all levels the data infrastructure in the criminal justice system is unable to provide a "single source of truth" at every step of justice processing. The importance of common facts and data were noted long ago by Edwards Deming who said, "Without data, you are just another person with opinions."

Technology to capture and analyze data has advanced rapidly in the past decade. Yet, in the justice system, as one expert said, "How come our data analysis tools have exploded but the way we get the data is still the same – for 40 years." Investment in the basic data infrastructure of the justice system has failed to keep pace at all levels and as one expert said, noting the low priority given to foundational investments, "there's no ribbon cutting ceremony for a data warehouse." Without a vision for what is possible and a roadmap for how to get there, justice agencies will continue to underinvest in important data infrastructure and capability.

> "How come our data analysis tools have exploded but the way we get the data is still the same – for 40 years."

RECOMMENDATION #1: ESTABLISH AN ACCURATE BASELINE OF FACTS ABOUT THE CRIMINAL JUSTICE SYSTEM, AND ENVISION A 21ST CENTURY SYSTEM

Recommended actions include:

- **Action 1.1: The Biden administration should create a National Commission on Criminal Justice Data Modernization to envision 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.** The National Commission on Criminal Justice Data Modernization (Commission) should be immediately established, and charged to document gaps in data and knowledge that hinder policymaking and evidence-based practices, including those described in this report, and to develop recommendations to address those gaps. In 1965, President Johnson in his message to Congress announcing his Commission on Law Enforcement

and Administration of Justice, spelled out four priority policy areas and identified six specific questions for the Commission to answer. Similarly, the Biden administration should task its Commission with specific questions to answer, many of which care described in this report. The Commission should have respected leadership, and sufficient resources to carry out its mission. The Commission should be a top priority of the Biden administration's criminal justice reform agenda and its findings should inform policy, while maintaining independence appropriate for scientific rigor. The Commission should reach widely in seeking outside expertise, inviting input from practitioners and advocates, scholars in both criminology and statistics and adjacent fields such as data science and data ethics, as well as experts from behavioral economics, open data and civic tech, interested members of the public, the private sector, and philanthropy. The Commission should document current facts and set priorities for data collection and data quality improvements. In establishing the current fact base, the Commission should:

– **With the support of the Biden administration, ask BJS to publish a national snapshot of the current state of criminal justice data and operations.** Reform discussions should be grounded in a common set of facts, published with the authority of the federal government's justice statistics agency. The Commission needs, and BJS should provide documentation describing the current state of data and knowledge about criminal justice system operations, along with important gaps in knowledge. This could take the form of a series of "State of…" reports that describe the current state of the courts, the state of jails and prisons, the state of law enforcement, prosecution, etc. Each report should address key questions about the demand by the public for services and how services are delivered, how success is measured and how satisfied the public is with results. Each report should recommend how to improve both practice and the data available to researchers and policy makers to advance evidence-based practice. This national snapshot could take inspiration from the 1983 national report published by BJS that for the first time brought together facts across the justice system into a single narrative, using graphics and meant to be understood by a wide audience – a report that shared new insights gained from comparing data across the system.

– **Leverage existing efforts to document what is known about racial disparity in the criminal justice system, and use those findings to produce recommendations for closing gaps in data collection, accuracy, and completeness.** While the nation clamors for racial justice and greater equity, the nature and scope of the problem eludes precise description due to data inconsistencies, gaps, and time lags - at all levels of government. Many court records do not include any racial or ethnic data. In systems that do include this data, the field is often left empty or is completed inaccurately. For example, a Harvard Law School study of racial disparity in the Massachusetts criminal justice system found a great deal of inconsistent data and that much was simply missing – 24% of race data was missing along with 65% of ethnicity data. Further, many policies that may have a disparate impact on communities of color (fees, fines, traffic enforcement, driver's license suspension, voter disenfranchisement, etc.) are not well studied. A national assessment of racial disparity in the justice system is already under way led by the National Academy of Sciences Committee on Law and Justice. Findings from this work should be used by the Commission to develop recommendations to more accurately gather and analyze racial and ethnic data and to measure disparity, along with practical implementation advice for state and local agencies.

– **With the support of the Biden administration, direct the Office of Justice Programs (OJP) at the Department of Justice to conduct a nationwide assessment of technology and data maturity of state and local justice agencies**. Even the best experts are unable to establish a baseline assessment of national criminal justice data and technological maturity at the local level – so rather than facts, the field relies on anecdotes about lack of technology in small or rural jurisdictions which rely on paper-based systems and physical transport of files rather than secure electronic data sharing. One expert expressed concern that in jurisdictions with data collected on paper, issues of equity will be much harder to accurately document. While current data and technology capacity varies widely, there is no documentation of the magnitude of the problem. From case management systems to the storage and analysis of growing volumes of video data, the state of local technical capacity is varied and undocumented. A national snapshot of the current data and technology maturity could provide a baseline for measuring improvements over time, and could help create a long-term plan for needed technology and security upgrades to assure fair and equitable administration of justice and the protection of private information from intrusion by unauthorized users. This national snapshot could be conducted with self-assessment and reporting, or via sampling rather than an agency-by-agency study. The national snapshot should define minimally acceptable standards for records accuracy, completeness, accessibility and timeliness, and should highlight best practices across types and sizes of agencies.
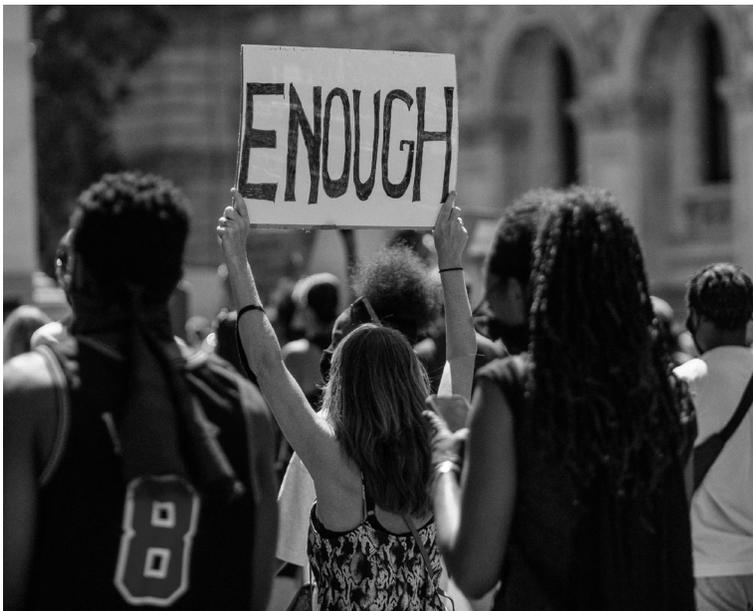
Without vision, the status quo will continue – a patchwork of local systems that produce data of varying quality and are not able to communicate across systems.

– **Develop consensus on an updated definition of crimes to record.** The Uniform Crime Reporting (UCR) program began in 1929, and the National Incident-Based Reporting System (NIBRS[1]) was created in 1988. Many crimes of modern life (cyber crimes, fraud, identity theft, environmental crime) are not included in these measures but have a significant impact on daily life. A panel of experts should address the question, "What should the next generation of crime data look like?" This panel should draw on prior work of the National Academy of Sciences as well as input from researchers, practitioners, and policymakers. Modernization discussions should address costs of crime to society and the opportunity cost of crime control spending versus prevention activities. This examination should include reassessment of the roles and responsibilities of the components that collect crime data and those that serve statistical functions. This effort should be conducted with an eye to maintaining statistical crime categories where possible to facilitate long term crime trend analysis.

– **After documenting current challenges, the Commission should describe a modern system, and create a roadmap for achieving it.** At the conclusion of its review, the Commission should produce a report that provides an ambitious roadmap for the future, similar to the [report](#) from the Johnson administration Commission that introduced significant modernization of police practices, and the [final report](#) of the Commission on Evidence Based Policy which provided a roadmap for advancing the use of data and evidence in government. The report should envision a system with timely accurate collection, validation, curation and dissemination of crime and victimization data along with high quality interoperable administrative data at all levels of the criminal justice system, in a way that balances security with ease of access to researchers, policymakers, and the public. Without vision, the status quo will continue – a patchwork of local systems that produce data of varying quality and are not able to communicate across systems. A future vision described by the Commission could provide focus for grant-making by OJP in service of that ideal state of data for criminal justice research and evidence-based policymaking.

- **Action 1.2: To continue the process of modernization, the Biden administration should revive and expand the OJP Science Advisory Board and should find new ways to tap external expertise.** Consistent with the new [mandate](#) that each federal agency have a science advisor, all OJP research and data activities would benefit from the best available scientific expertise. The Biden administration should restore and expand the OJP Science Advisory Board, and Congress should provide resources to institutionalize it. More broadly, OJP should make greater use of outside expertise, via advisory boards, short term fellowships and inter-agency personnel agreements. Ongoing exchange with outside experts will bring in valuable perspectives of researchers, data users, and policy experts, including academics in the relevant disciplines, those with methodological expertise, and data scientists. With such active idea exchange and open dialog with the field, OJP statistical and research products can be continually improved and made more user-friendly and relevant.

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[1] *The January 1, 2021 UCR sunset and NIBRS transition moves toward richer and incident-based crime statistics but does not address the issues raised here.*

CHALLENGE #2:

Public trust in law enforcement is the lowest it has been in nearly three decades, with less than half of Americans trusting the police, and with far lower levels of trust among certain groups.

Accountability and transparency could bolster public confidence, yet too much is opaque about the operations of the justice system. For example, reporting of use of force by the police on members of the public is not required to be shared publicly, nor is it standardized. As one expert noted about this data, "None of its available, or its not available in a way and in a timeframe that makes it terribly useful. For all the attention that has been paid, there is no ranking of quality and availability." A new initiative invites departments to voluntarily submit their data, but the data is not yet published by agency, and, as of early 2021, agencies representing less than half of total sworn officers were participating.

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RECOMMENDATION #2: RADICALLY INCREASE ACCOUNTABILITY OF THE JUSTICE SYSTEM THROUGH DATA TRANSPARENCY

Recommended actions include:

- **Action 2.1: The Biden administration should publish a dashboard with ratings of police departments based on the amount of data they make public, and on the quality and timeliness of that data, including data on use of force incidents.** The Biden administration should launch a campaign to increase trust in and accountability of law enforcement. The first step would be to define the minimum acceptable standard for transparency, with graduated levels leading to the highest rating for transparency. Data transparency standards should include key operational performance indicators, along with data about use of force by police on members of the public and the use of force against officers. Data on shootings by officers, complaints against officers and other evidence-based misconduct indicators, stop and frisk data, traffic stop data, behavioral crisis intervention data, and police force demographics should be included. Collection should provide sufficient detail to understand both officer and community member injuries, and the race and gender of both the community member and the officer. Agencies struggling to meet minimum standards should receive assistance, coaching, and support to meet basic thresholds of transparency and data quality. Funding could be used as an incentive to meet established thresholds. Over time, as compliance grows, withholding federal grant funds could be used as a penalty for noncompliance.

- **Action 2.2: BJS should create standard questions for measuring criminal justice system legitimacy for the National Crime Victimization Survey (NCVS), and then promote use of those questions by criminal justice researchers.** Legitimacy of the criminal justice system relies on the trust of the public as co-creators of community safety. Too little is known about how the public experiences the criminal justice system and what could be done to repair strains in the relationship. Too little is known about how calls for service compare to rates of victimization and what drives trust in the system and willingness to call for help. Understanding the "customer experience" is driving innovation in service delivery and efficiency across many sectors in government, but the criminal justice field has not yet embraced this approach. BJS should expand the NCVS to include questions that can better document how the public experiences the system. This would allow for research into how perceptions change over time and what factors drive trust or lack thereof. A standard set of survey questions used in the NCVS could then also be used by researchers and criminal justice agencies to survey perceptions of those with whom they have contact, providing a better understand of the causes and correlates of institutional legitimacy.

- **Action 2.3: Federal agencies should lead in data transparency, setting an example for state and local government.** Across law enforcement, courts, corrections and prosecution, federal agencies should adopt modern practices and develop new approaches to inter-governmental data sharing, transparency about outcomes, and the use of data for internal accountability purposes, while preserving individual data privacy protections. The unified nature of the federal system, and the comparatively greater level of resources for federal agencies enable them to lead and provide a data transparency roadmap for state and local justice agencies, publishing data that allows the taxpayer to see the value produced with their resources. For example, the 94 U. S. Attorneys could publish quarterly data on key metrics (cased declined, cases processed, time to

trial, results, etc.) using locally-relevant indicators from among the [55 indicators](#) now in use by a growing number of local prosecutors. The Bureau of Prisons could model transparency by publicly sharing key operational measures, along with data on the physical and mental health, education and employment services provided to those in custody, including follow up outcomes for their post-incarceration experience. Data on overall wellbeing of both those working in correctional facilities and those in custody could be included, along with data on employee discipline, training, safety and wellness.

- **Action 2.4: The Biden administration should create model state criminal justice data transparency laws and foster adoption among states.** The federal government can provide leadership on data and research infrastructure and can fund innovation and pilot projects, but the majority of criminal justice system operations are funded and managed locally. This makes state and local justice data transparency an important area for federal policy leadership. Even in states with laws mandating standardized criminal justice data collection and [transparent publication](#) of that data, the [ambitions have not been achieved](#). The Biden administration should develop model legislation for states that balances incentives with sanctions, and requires annual public reporting of progress and results. To assure success, OJP should provide technical assistance resources for adaptation and implementation of model statutes, and should consider providing incentive funding to accelerate initial data collection, analysis, and dissemination.

CHALLENGE #3:

Funding for BJS has declined 25% since 2010 (37% accounting for inflation), a rate of decrease that exceeds other federal statistical agencies; this decline from $60 million to $45 million weakens BJS's ability to keep current and innovate.

The $45 million annual appropriation for BJS ranks tenth out of the thirteen federal statistical agencies, just above the funding level for the statistical function of the Social Security Administration. Agricultural statistics are funded at six times the level of BJS, energy statistics three times, and education statistics funded at two and a half times the level of BJS. The National Academy of Sciences (NAS) panel in its 2008 review of BJS operations, noted that BJS "is one of the smallest of the U.S. principal statistical agencies but shoulders one of the most expansive and detailed legal mandates among those agencies."

The low funding level of BJS hampers its ability to keep current with rapidly advancing analytics methodologies and tools for linking data across sources to gain deeper insight, and hinders its modernization of data dissemination and access methods for researchers and the public – in short, BJS can barely keep up, much less plan strategically for the future. For a more detailed discussion of the funding challenges faced by BJS and the implications for data availability, see the related report, State of the Nation's Federal Justice Statistics.

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RECOMMENDATION #3: MODERNIZE THE PRODUCTION AND DISSEMINATION OF CRIMINAL JUSTICE STATISTICS

Recommended actions include:

- **Action 3.1: BJS should improve access to victimization survey data with a user-friendly platform.** The National Crime Victimization Survey (NCVS) is a gold-standard national data series but it is woefully underused. Only a handful of researchers currently access geo-coded data, and only several dozen use this rich resource regularly because it is so complex to access. Data tools have advanced significantly since the NCVS first published results in 1973, but ease of use of this source has not evolved. The standard for open data platforms across government, even in some small jurisdictions, includes interactive dashboards with drill-down capability to download data in machine-readable format, mapping tools, and the opportunity to explore multiple related

variables simultaneously. None of these modern capabilities is available for NCVS. To remedy this gap, BJS should create a self-service platform for researchers to access NCVS data, and extend the platform such that researchers can more easily blend such survey data with administrative records for deeper insight. User input will be key to an effective redesign, perhaps aided by resources such as the U. S. Digital Service.

- **Action 3.2: DOJ should publish crime data more frequently and in a more timely manner, and should release all publications on a predictable schedule**. Release of annual crime data by DOJ has historically taken ten months. [Preliminary data](#) for the first half of 2020 was released 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 government, such as unemployment claims, economic output, and new housing starts. Current technology and open data portals have enabled local police departments to release and provide access to crime data on a weekly, monthly or near real time basis. For some departments, social media channels allow them to reach wider audiences at increasing speed. The lag time in publishing national crime statistics makes the data far less useful for research or for policy-making. DOJ should create a more timely method for releasing crime data, should examine best practices from other federal agencies, and should leverage the Federal Interagency Council on Statistical Policy for this purpose. Additionally, several BJS statistical series are no longer publishing on their prior schedule, and [some publications have been delayed](#), with inconsistent lag times between data collection and publication. For example, the most recent justice expenditure data was three years old at the time of release, no corrections data have been published since 2016, the most recent police-public contact data are from 2015, and the probation and parole data published in the summer of 2020 was two years old by the time it was released. BJS should release all statistical series within six months of data collection, and should publish a regular schedule of releases.

- **Action 3.3: BJS should modernize its web site, adding direct access to data with real-time dashboards, maps, and data visualization tools for researchers, policymakers, and the public.** Best practice government data portals provide direct access to source data, while BJS typically provides summary data on its web site with selected source data available separately. This is cumbersome and unnecessary and does not reflect modern practice. The navigation, layout, and the look and feel of the BJS web site remains unchanged for at least a decade, as shown by archived [web pages](#) from 2011, as far back as recordkeeping goes. The BJS site has few self-service tools for data extraction, analysis, or visualization, and what tools do exist are difficult to find and far from comprehensive or intuitive. A number of justice policy and advocacy organizations have stepped into the void left by BJS in making data user-friendly data visualizations and issue briefs available to the public on topics such as [policing,](#) adult [criminal court case processing](#), and [incarceration](#). While excellent, these independent sources should not have to substitute for timely, accurate, well curated official government data. The effort by BJS to modernize its website should be informed by users of the data – such as researchers, open data enthusiasts, data journalists, big data experts, and community advocates seeking crime and victimization data.

CHALLENGE #4:

No single entity is responsible for data quality across the criminal justice system, resulting in wide variations in accuracy and completeness of records, and limited interoperability. Operational data captured by local agencies may be full of abbreviations, free text, and inconsistent or incomplete fields. As one expert said, "If it's not being collected accurately it doesn't matter what you do with it."

Accurate criminal history records are critical to job seekers, given that the majority of employers conduct background checks which may include a search of criminal histories. Researchers seeking to study criminal careers and policy makers seeking to identify trends also need accurate criminal histories. Yet, nearly one in three state-held criminal history records is missing the outcome, or disposition of the arrest.

Operational data sets are fraught with error too. One state has inaccurate data for one in five people held in its prisons. An audit showed that one in ten individuals were not in the jail or prison indicated by the system, and that a third of those whose whereabouts were inaccurate had been sentenced for violent offenses. Current efforts to support state justice statistics programs, improve state and local criminal justice records, and to develop better and more useful data standards are important but insufficient to meet the demand for more accurate data to inform research and practice.

One expert raised concern about a growing numbness to data quality caused by the sheer volume of data available on the Internet, "People use bad quality data all the time because they're so used to pulling things from the web without looking at source accuracy and completeness." Another expert noted that regardless of the many data quality issues researchers face, a barrier to improving quality is that, "You don't make any hay as an academic by challenging the quality of data."

RECOMMENDATION #4: IMPROVE THE INTEGRITY OF DATA USED FOR DECISION-MAKING, RESEARCH, AND POLICY

Recommended actions include:

- **Action 4.1: OJP should provide incentive funding to states that improve their criminal justice data quality via audits, technical assistance to local jurisdictions, advancing the use of standards, or the creation of data quality and transparency advisory boards.** Criminal history records, used both for public safety and employment screening purposes, and composed of local data and held in state repositories are inconsistent in their accuracy and completeness. These repositories have received federal support aimed at improving data quality and over the years progress has been made, but the underlying operating systems that generate

this data typically are not audited for accuracy and completeness. Researchers and practitioners alike bemoan the lack of resources to train those responsible for data entry in methods that could improve accuracy and completeness. To improve the quality of this data OJP could provide incentives to states to conduct audits of their criminal justice summary and source system data, and provide resources for training and other supports to cure inaccurate or missing data. State audits should include data quality improvement plans that advance the goal of more machine-readable data and less free text. 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. To achieve that end, state-level data quality improvement advisory boards could be created to assess data quality and transparency in the criminal justice system in that state. OJP could share best practices from state and local efforts to aid replication of effective measures.

- **Action 4.2: OJP should support scholarly work on key issues of data quality and availability.** Scholarly work could advance the field in important ways, establishing common nomenclature and standards regarding data quality, creating opportunity to advance methodological issues around accuracy and error standards, and the design decisions that can minimize error and algorithmic bias. Such activity should examine both criminology and data science methods and should address new media for research and analytics such as images, videos, web-scraping tools, etc. Areas where criminologists have yet to develop consensus on acceptable ways to minimize error should be addressed such as machine learning and probabilistic matching of data, anonymization of data and fuzzing of geolocation data. This effort could involve funding a single scholarly journal volume devoted to the topic, or a series of volumes, perhaps an ongoing effort between OJP and the National Academies.

- **Action 4.3: OJP should fund researcher-practitioner partnerships to improve data quality and advance the state of knowledge.** The quality and completeness of data typically improve once analyzed by researchers and presented back to data collectors. Seeing the results of analysis provides incentive to improve quality so that the insights are more accurate and impactful. Such partnerships can take the form of external academic, think tank, or analytics experts teaming with a jurisdiction, or embedding experts within justice agencies. Such partnerships can be a source of research insight for the local jurisdictions while building staff data analytics capacity in criminal justice organizations and advancing the state of knowledge. The important work of building local capacity may not align with incentives of academic institutions, a challenge that OJP could find creative ways to address.

CHALLENGE #5:

The most vexing public problems require person-centric, cross-agency solutions, yet most of government functions in "silos." For example, understanding criminal behavior of an individual experiencing homelessness requires data about the individual's employment and education, health and mental health or substance use needs. Yet the systems used by state and local agencies can seldom share this important and related information, even within the same jurisdiction or agency.

Linking data across sources is time consuming for researchers and so complex as to be functionally impossible for policymakers and the public. For one researcher, linking just two federal data sources (NCVS and Law Enforcement Management and Administrative Statistics (LEMAS)) required 5,000 lines of code to connect the sources, even before analyzing the data. Tracking a person through the justice system is complicated, and as one expert said, "The data are all very siloed and not integrated to tell a story about a person going through a system." Simple questions like, "Did the person spend the night in jail?" or "How long did they wait before trial?" are hard to answer. Harder still are questions like, "How many individuals held in the adult prison were at one time held in the juvenile system?"

Using current data modeling tools, connecting individual-level data from the point of first encounter through case processing and adjudication, supervision, and reentry is now technically feasible. Yet this capability is limited to a handful of jurisdictions with grant-funded outside expertise. Some justice agencies have begun to embed researchers, such as social scientists or data scientists, in their organizations; others have partnerships with research advisors. Yet this is the exception, not the rule. Most state and local criminal justice agencies lack the resources to invest in data capabilities, or have not yet seen the value of investing in research, data and analytics. Far too many criminal justice leaders and staff remain "data phobic."

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RECOMMENDATION #5: MAKE CRIMINAL JUSTICE DATA MORE ACTIONABLE, BY LINKING DATA FOR GREATER INSIGHT, AND BY BUILDING CAPACITY TO TURN INSIGHT INTO ACTION

Recommended actions include:

- **Action 5.1: DOJ should create a secure, cloud-based platform linking federal criminal justice data sources, with permission-based access for researchers and policymakers.** This national platform should link and allow analysis of various federal data sources, for example NCVS; crime data from the National Incident-Based Reporting System (NIBRS); justice expenditure data; police-community survey data; corrections reporting data; law enforcement administrative data; and data collection series related to courts, probation, parole, jail, etc. Development of the platform should leverage existing resources such as FedRAMP and the Federal Statistical Research Data Center network. Researcher data access should be granted 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. An interagency working group of statistical experts should be leveraged during design of the platform, to bring new approaches to combining data for insight, building on existing work of the Interagency Council on Statistical Policy (ICSP). Drawing from other disciplines can surface lessons and identify new data sources that could be mined for insight, for example federal economic data or private sector credit card data, school data, workplace safety data, etc.

- **Action 5.2: OJP should fund regional, state, and local integrated data hubs that connect person-level data for criminal justice insight.** OJP grant-funded data hubs at the state and local level could connect criminal justice data sources and analyze the combined data for insight not available from any single data source alone. Funding a limited number of sites could have national value if insights are shared via publications and if replicable open source tools are shared on sites like GitHub. Security and privacy protocols should allow person-level data to be linked and shared only with authorized users, with aggregate deidentified data available more widely. The goal would be to gain deeper insight by combining data sets, and protections should be put in place so individual-level data cannot be used for punitive purposes. A key goal for each grant should be to advance data capacity throughout the region, not just by providing analytics as a service but also by building tools (dashboards, maps, visualizations and the like) and developing training for analysts and managers that can be made available widely via online tools. As part of this effort, OJP should also fund state and local data hubs that link criminal justice data to other government data, such as education, workforce, and public health, and perhaps even academic and private sector data sources. Given the complexity of this type of data sharing, OJP could publish best practice case studies highlighting successes such as in Allegheny County. Local priorities should drive the research agenda and focus for each data hub - for example, local data such as 311 calls, code enforcement, property tax assessment and the like may be of interest in solving local problems. To inform this data integration work, OJP should glean data analysis best practices at homeland security fusion centers. Fusion centers, often located in law enforcement agencies, typically have access to sophisticated technologies for linking complex data sets for investigative purposes but are 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 5.3: OJP should fund data analytics centers of excellence that provide data services to state and local jurisdictions.** Most state and local jurisdictions do not have the resources to create their own justice data hubs, or may lack local universities or think tanks to partner with on such efforts. For these jurisdictions, an on-demand resource funded by OJP would give them access to as-needed expertise and resources of a large university or think tank. This could build on the growing success of the [Criminal Justice Administrative Records System](#) (CJARS) platform, which connects individual-level state level justice data and social, economic, and demographic data collected by the Census Bureau. The effort should produce user-friendly dashboards and data visualizations so that the insights are easily understood and communicated.

- **Action 5.4: OJP should fund state and local data and analytics capacity within criminal justice agencies and develop a model and toolkit for broad replication.** While a handful of local justice agencies have embedded social scientists or data scientists to advance the use of data to inform decision-making, this model is far from the norm. A series of grant-funded teams in justice agencies could serve as an experimental testbed, with lessons learned from a set of grant investments informing a playbook and toolkit for local agencies seeking to increase their ability to use data and research. This innovation is not yet widely known nor well documented. An alternative to embedded researchers is a regional collaborative for multiple jurisdictions or agencies, working with a local university to provide support. Another option would be to create a central, federal corps of specialists who can both provide analytics as a service, and also train agencies as short-term embedded employees. OJP should invest in multiple methods, study best practices across models, then create and share insights in tools of value to all agencies.

A federal toolkit could accelerate data sharing by empowering jurisdictions with a roadmap and the rules of the road, and would help replicate existing successes.

- **Action 5.5: OJP should develop and share data literacy resources for state and local criminal justice agency staff.** OJP can significantly advance data literacy and data skill among state and local justice agency staff by building free online tools that can be used across the nation. The goals should be to teach (1) basic data literacy and data-informed decision-making skills to executives, managers, and leaders, (2) skills development and enhancement training for analysts, and (3) training for data entry staff that improves the accuracy of data entry. A national resource of online learning could be supplemented with regionalized in person and virtual support through local academic and nonprofit organizations. Basic understanding of data ethics and privacy protections should be included.

- **Action 5.6: OJP should publish guidance on how to share data while adhering to privacy laws.** Given the complexity, many state and local governments justifiably do not understand the privacy protocols required to protect person-level information in a data exchange. Unfortunately, some avoid data sharing rather than dealing with the challenge. This impedes data sharing and the insight that can come from comparing data sources. In many instances, perceived statutory barriers are not actual prohibitions against data sharing, if it is done with appropriate protections in place. Documented case studies of success can help lower barriers to data sharing. A federal toolkit could accelerate data sharing by empowering jurisdictions with a roadmap and the rules of the road, and would help replicate existing successes. A federal toolkit, perhaps building on existing work to document state level data sharing laws, and a resource hub for technical assistance or expertise would do a lot to advance data-sharing and would support jurisdictions as they engage with researchers and with their IT vendors.

CHALLENGE #6:

Modern technology enables the capture of an increasing volume and variety of data (such as images, videos, web scraping, sensor data, etc.) yet the capacity of justice agencies to store and analyze these new types of data has not kept pace. Justice agencies are swimming in data but largely unable to turn it into insight.

Criminal justice agencies spend sizeable sums on their recordkeeping systems, most of which cannot share data, even within a single agency - as one expert pointed out, one of the most sophisticated police departments can't integrate data across its call dispatch, records management, and emergency response systems. Most vendors create proprietary data schemas and high barriers to switching systems or to integrating data across systems. This leaves agencies with expensive systems unable to export data to other systems in a way that it can be analyzed. And many agencies lack the resources to modernize their systems, with one researcher lamenting that a local agency was "using DOS-based late 80's systems."

RECOMMENDATION #6: IMPROVE THE USE OF TECHNOLOGY TO EQUIP CRIMINAL JUSTICE DECISION-MAKERS WITH TIMELY AND ACCURATE INFORMATION

Recommended actions include:

- **Action 6.1: The Biden administration should convene a task force of technologists, practitioners, researchers, and data experts to develop recommendations for improved data interoperability.** The post 9-11 push to make voice communications interoperable significantly advanced awareness of the need for interoperability, and made progress in the ability of local first responders to communicate across jurisdictional lines. A similar focus is now needed to allow data to be shared across silos in pursuit of better justice decision-making. A Criminal Justice Data Interoperability Task Force should seek incentives for greater data interoperability across systems. The Task Force should develop recommendations that ensure that criminal justice data systems can accurately record racial and ethnic data, and measure racial disparities, leveraging the work now under way to examine justice system disparity by the Committee on Law and Justice of the National Academy of Sciences. Further, the Task Force could advance data quality by recommending ways to advance user-centric systems design, so data are captured as accurately as possible. This could be achieved by providing incentives to build in data quality standards to products to help nudge the field along. The Task Force should also review the various efforts under way to create criminal justice data standards and determine if any subset of those standards should be advanced via federal funding incentives. Through its work, the Task Force should strive to reduce the disparity between large urban and small rural jurisdictions in their access to modern technology.

- **Action 6.2: DOJ should secure congressional appropriations to fund capacity building grants for growing tech talent in criminal justice field.** 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. Attracting leaders from other domains could bring additional talent, ideas and innovation to the field. Federal investment could move the field forward, in the form of data science competitions, research fellowships, or attracting innovators via challenge.gov and other civic tech venues.

- **Action 6.3: OJP should mandate that software or systems created with federal dollars be able to export machine-readable data and have a standard open API (application programming interface) for sharing data across systems.** State and local justice agency IT systems are often outdated, sometimes by decades. Most do not employ common data schemas or have standard APIs that allow export of data for comparison of individual-level data across departments, agencies or jurisdictions. Vendors have no incentive to make their software interoperable, so state and local agencies are unable to compare data from one system to another, often within the same unit of a department, much less across departments in a jurisdiction. OJP should require that all systems funded with federal grant dollars produce machine readable output with standard APIs. Further, OJP should prioritize funding of open source rather than proprietary systems.

CONCLUSION

The nation stands at a historic crossroads. A new administration has taken office that is committed to racial justice and has pledged fundamental criminal justice reform. Following the murders of George Floyd and Breonna Taylor and the sustained protests that ensued, the momentum for justice reform has never been stronger. Public officials are embracing ambitious criminal justice platforms unimaginable a decade ago. This confluence of events presents an unprecedented opportunity to leverage the power of data to build a justice system that is more transparent, more accountable to the public, more effective, and more consistent with the nation's commitment to racial justice.

To accomplish this goal, we need a national commitment to reimagining the underlying data infrastructure and implementing a plan to achieve that goal. The experts who provided input to these recommendations were uniformly excited about the potential for improvement in the quality and availability of data. They were also realistic that the challenge is great, and as one said, "We've been talking about data quality since the 1970s and yet we have not moved the needle." Calls for racial justice and the opportunity to advance the stagnant state of data and technology in the justice field makes this an excellent time to address longstanding problems that have contributed to the shortfall between today's realities and the nation's aspirations for justice.

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