Harnessing the Power of Data for Justice Reinvestment in Massachusetts

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Data are increasingly the lifeblood of an effective criminal justice system. Modern technology allows law enforcement, the courts, and corrections agencies to capture and exchange enormous amounts of actionable information. With data available across the system in real time, frontline workers can reach more informed decisions on a case-by-case basis. Technology also facilitates data aggregation, enabling managers and policymakers to better understand changing trends and outcomes associated with different interventions.

Massachusetts is working to harness the power of technology to better manage risk, reduce costs, and enhance public safety. Our leaders are active participants in the Annie E. Casey Foundation’s Juvenile Detention Alternatives Initiative. Through this coordinated effort, district attorneys, officials at the Department of Youth Services, and juvenile court judges built an impressive data dashboard to monitor the use of secure detention for adolescents awaiting trial. The Middlesex County Sheriff has also partnered with the National Institute of Corrections to dissect growth in the jail population—another notable effort to capture and analyze data at the managerial level. And, with support from the legislature and the Pew-MacArthur Results First Initiative, a multi-agency research team developed the first consistent set of recidivism figures for parole, probation, county correctional facilities, and state prisons. This is just a sampling. Throughout the Commonwealth’s criminal justice system, agencies are partnering with each other and with outside resources to capture and process high-quality data.

Yet, while this is a good start, there remains much to be done if Massachusetts is to make full use of available data and technology. Data limitations were particularly apparent when legislators considered the potential impact of Three Strikes legislation in 2012. Today, these limitations make it difficult to assess the impact of the new sentencing law. The difficulty of assembling data to inform a response to the opiate crisis is another prominent example of public safety information gaps hindering policymaking. In public comments, leaders affiliated with both the Special Commission to Study the Criminal Justice System and the Massachusetts Sentencing Commission have noted these hardships.

Inadequate information technology has been a
major barrier. In some cases, departments have found creative solutions to extract information from legacy systems that were not designed to generate data for research and evaluation. But this has often been a real drain on limited staff resources.

Soon, outdated information technology will be less of an obstacle. After a two-decade quest, Massachusetts is completing the build-out of IT infrastructure across the criminal justice system. From police cruisers to county courthouses and jails, connections and databases to securely exchange large volumes of data have been built. With MassCourts firmly in place, analysts now have electronic access to case information previously stored in paper files. County sheriffs are in the process of moving to a common data platform. Probation is getting a case management system, and the Massachusetts State Police are upgrading their database technology. For the first time, it may be possible to consistently collect basic information, such as how many inmates are in jails and houses of correction, the reasons for their confinement, the average length of their stay, and the services they receive while in custody.

The arrival of the Council of State Governments (CSG) Justice Reinvestment team is another promising development. CSG’s expert, analytical, and independent approach will undoubtedly point to critical information gaps. With this guidance, it will be possible to establish priorities and develop plans to address those costly information voids.

Policymakers looking to take advantage of these opportunities should take stock of what kind of criminal justice information system capacity is needed in broad terms. Toward that end, we offer a short primer on criminal justice information systems, the status of efforts to build this infrastructure in Massachusetts, and key steps the Commonwealth can take to wield data as a tool to enhance public safety.

Because the body of research on this topic is relatively thin, this paper draws more heavily on interviews with leaders in the field than is typical of MassINC reports. We have therefore labelled this more conceptual product a white paper. We are especially eager for feedback and plan to refine and update this work on our website over the coming months.

I. Building Integrated Criminal Justice Information Systems

To elevate data-driven decision-making, states need integrated criminal justice information systems that bring together information from various agencies, giving managers and policymakers a complete picture of performance. Many states have built advanced IT systems that provide agencies access to common data, but these platforms have generally been designed to meet only discrete needs, such as identity verification and the tracking of criminal histories across jurisdictions.

Building and operationalizing more robust criminal justice information systems will require attention to three components: administrative databases to capture critical information; centralized data platforms to integrate information from these databases; and capacity to maintain these systems and analyze the data they produce.

Administrative Databases

Each branch of the criminal justice system collects data in administrative databases. Agencies often maintain several databases to serve different functions. At a minimum, these administrative databases must be able to accurately capture three kinds of information: 1) basic data to track where and when an individual interacts with the system, the duration of this interaction, and the offense; 2) risk/need assessment data to view resource allocation and differentiate performance; and 3) program data to understand what kind of interventions (e.g., treatment, supervision level) an offender has received.

With frontline agency staff processing thousands of offenders, capturing information and keying it into databases can be time-consuming. The data-entry burden must be kept at a manageable level. Staff must also see data collection as valuable work, important to the functioning of their agencies. Careful attention must be given to these data collection issues when new systems are designed and implemented.

Centralized Data Platforms

A major challenge of integration involves coordinating the various entities of the justice system. This requires a lead agency to build the backbone infrastructure, balance competing interests, and develop and implement comprehensive plans. Many states have legislation or executive orders directing a criminal justice information systems board or commission to undertake this task. Often these boards are housed within criminal justice agencies; some are staffed by management and budget departments or offices of attorneys general.5
Integrating data from administrative databases hinges on accurately identifying individuals. Ideally, confirmation of identity occurs at point of arrest when a fingerprint or other reliable biometric data are collected. In a fully integrated system, birthdates and other personal information are then passed through the system. This reduces data-entry error and duplication of effort.

For decades, states have sought to develop this identity verification process with federal assistance. The primary focus was on sharing criminal history records, but states are now working to use their integrated record systems to extract meaningful information for policymakers. SEARCH, a national nonprofit focused on justice information-sharing technology, has been a leader in providing technical assistance to agencies. Through SEARCH, several states have joined a new initiative, known as the Open Justice Broker Consortium. Within this consortium, states are building low-cost, shareable technologies to address their information needs.

Information passed to a centralized platform is only valuable for analysis if the records have consistent meaning. Through national efforts, such as the Global Justice Information Sharing Initiative, agencies are standardizing protocols for safely and
securely exchanging data. With common protocols, inexpensive off-the-shelf business intelligence applications and statistical packages can be used to create standard reports and run more detailed queries upon request.

Analytical Capacity
In addition to the technology, states need centralized staff to maintain integrated systems and analyze the data they contain. Staff capacity is particularly critical for continually monitoring and troubleshooting data-quality issues. Typically, this capacity is found within a statistical analysis center (SAC). States receive modest federal support from the Bureau of Justice Statistics to undertake SAC-led data collection improvement projects. Federal funding has also been available through the Byrne Grant, which seeks to help law enforcement develop evidence-based approaches to reduce crime. Many states provide annual appropriations to their SACs to augment the federal government’s less-stable project-based assistance.

While most SACs are contained within public safety agencies, some are housed at universities. University SACs may have more capacity to produce technical reports and promote research partnerships. On the other hand, placing the SAC outside of the agency reporting structure can create further fragmentation and greater distance between data generators and end users.

II. Criminal Justice Data Infrastructure in Massachusetts
For more than two decades, Massachusetts has been slowly integrating criminal justice information systems (see text box on page 6). The technology has progressed to the point where agencies can now rapidly identify offenders and exchange criminal records. However, from the standpoint of justice reinvestment, there are still large holes in data availability. As detailed below, interviews with criminal justice leaders highlight limitations in the state’s administrative data systems, centralized data platforms, and analytical capacity.

A. Limitations in administrative data systems
Leaders we spoke to over the past several months repeatedly raised concerns about data gaps and quality issues at the agency level. While not an exhaustive inventory, the following ten data elements illustrate those concerns:

1. Response data. Police departments receive a high volume of calls. Dispatchers record the nature of reported incidents on the basis of information provided by the people requesting police response. Each department uses a different coding process and most do not have a procedure for validating the dispatcher’s categorization of incidents based on the often more accurate information officers collect at the scene. This makes it difficult to reliably draw conclusions about crime trends and pre-arrest diversion.

2. Offense data. Tracking offense data is challenging, as police departments must record charges according to Massachusetts laws, which often involve antiquated definitions. These categorizations then must be translated to the National Incident-Based Reporting System (NIBRS) standards for submission to the FBI. Agencies use different protocols for this process of translation. When charges are filed at the courthouse, offenses are often changed again to conform with charging practices unique to each court. Each of these steps can lead to geographic variation and other inconsistencies when comparing booking and charging patterns.

3. Diversion data. The databases maintained by district attorneys’ offices are not a component of the state’s integrated criminal justice information system. This leaves researchers and policymakers without information regarding the outcomes of incidents that end with pre-arraignment diversion. These data are critical for gauging the effectiveness of the behavioral health treatment system, as well as racial and ethnic disparities in case dispositions.

4. Risk/needs assessment data. Massachusetts has made considerable progress deploying validated risk/need assessment tools. The parole board adopted the Level of Service/Case Management Inventory (LS/CMI) after the 2012 Three Strikes legislation required the agency to adopt validated risk assessment. Probation has implemented the Ohio Risk Assessment System (ORAS). The Department of Correction uses COMPAS Re-Entry to determine risk to recidivate. All of these are recognized fourth-generation assessment tools that incorporate multiple risk factors and support agencies
The use of a risk-assessment tool that has not been properly validated can lead to erroneous results, misallocation of resources, and potential harm.
THE EVOLUTION OF INTEGRATED CRIMINAL JUSTICE INFORMATION SYSTEMS IN MASSACHUSETTS

Massachusetts has been working to build information systems to support data-driven decision-making for over two decades. In the early 1990s, the state convened a Criminal Justice Records Improvement Task Force, which produced a detailed analysis of the requirements to integrate state criminal justice data systems from point of arrest through the courts, corrections, and community supervision. In the decade that followed, significant progress was made. Massachusetts built a closed network that allows for the exchange of many types of information. The network supports more than 30,000 users across 700 agencies and integrates a wide range of databases, including vehicle registrations, firearms licensing, restraining orders, sex offender registries, and gang affiliations.

Governor Romney’s Commission on Criminal Justice Innovation included a subcommittee devoted to cross-agency information sharing. The subcommittee noted these advances but also suggested that additional effort was still required in several areas, including linking arrest data with records from the courts and corrections agencies and establishing common data collection standards across agencies. To address these concerns, the taskforce called for the establishment of a criminal justice information planning council, which Governor Romney created by executive order in 2005.

By 2006, this planning council had completed a strategic plan. The plan noted that data integration had been a patchwork effort, tying databases together on top of outdated computer and network technology. The state’s existing infrastructure lacked the bandwidth to transmit the large volumes of information now available. The plan called for first remediying these database and connectivity issues, and then building analytical platforms to take advantage of integrated information systems for operational and business intelligence.

Over the past decade, the state has made significant investments to modernize backbone infrastructure. Investments in the Springfield state data center have provided backup redundancy. With federal attention focused on terrorism in the years following 9/11, efforts to further the analysis of integrated data have largely centered around intelligence collection. Massachusetts built a statewide information sharing system and a fusion center to collect, share, and analyze incident report data.

In recent years, attention has begun to focus on improving capacity to analyze integrated data for criminal justice decision-making. In legislation creating the Special Commission to Study the Criminal Justice System in 2011, lawmakers directed the body to seek out technical assistance to reduce recidivism. This led to the partnership with the Pew-MacArthur Results First Initiative and data processes to produce accurate recidivism studies for cost-benefit modelling. The Massachusetts Statistical Analysis Center (SAC) has also been awarded a number of grants to work with partner criminal justice agencies to develop common definitions and standards to track key indicators: admissions, releases, and daily population counts.

More recently, EOPSS has been cataloging evidence-based programming in state and county correctional facilities. This inventory will provide an important baseline to assess the scope and availability of programs. The legislature has also made funds available to allow the Probation Service to pilot a pretrial risk assessment tool this year.

9. Criminal history data. When an offender is sentenced, the judge can ask Probation to check the defendant’s record in other states. This information may influence sentencing. However, in the state sentencing record, only the defendant’s criminal history in Massachusetts is recorded. This gives rise to concerns that offenders classified as having limited or no criminal history may actually have an extensive criminal history that is not properly reflected in the state data.

10. Race and ethnicity data. Race and ethnicity data are now consistently collected and reported by the courts, Parole, Probation, and the Department of Correction, using a unified set of definitions. However, police departments, district attorneys, and county sheriffs are not using these same definitions. This makes comparing race and ethnicity data across the system difficult.

B. Limitations in Centralized Data Platforms

Massachusetts has developed an integrated criminal justice information system (ICJIS). This system is maintained by the Department of Criminal Justice Information Services (DCJIS), within the Executive Office of Public Safety and Security. ICJIS includes connections to administrative data collected by the courts, DOC, DYS, Parole, Probation, and State Police. As the county sheriffs move to a common inmate management systems, ICJIS will also have direct access to these databases.

DCJIS has worked closely with agencies to standardize protocols to allow for the exchange of information, developing a data dictionary known as
C. Limitations in Analytical Capacity
The state’s criminal justice system clearly lacks system-wide analytical capacity. This is visible in difficulty responding to data requests from technical assistance providers, the long delay in fulfilling legislatively mandated reports, and the lack of even basic reporting from key components of the criminal justice system. While the Department of Correction and the Parole Board publish annual trend reports about six months after the calendar year ends, Probation does not publish any annual statistical summary, nor do most county sheriffs, the district attorneys, or the State Police. The Sentencing Commission prepares a detailed annual report, however these data are often provided only after a long lag time. With MassCourts allowing for more automation, this problem may be remedied soon.

III. A Tactical Plan to Harness the Power of Data in Massachusetts
Massachusetts leaders working to enhance the performance of the state’s criminal justice system must make improvements to data infrastructure and analytical capacity a top priority. Integrating information systems, standardizing data-collection protocols, and increasing analytical capacity will require a significant investment. However, with all of the progress that has been made and the growing focus on evidence-based corrections reform, Massachusetts is clearly in a breakout position. As presented below, a number of avenues exist to make the next leap and capture the full potential of integrated criminal justice information systems.

1. Form a data standards and integration taskforce. With MassCourts, the county inmate management systems, and new risk analysis data all beginning to flow into the Commonwealth’s ICJIS, it is an opportune time for an independent taskforce to revisit data and analytical gaps. In addition to examining gaps, a taskforce could review existing structures designed to sustain coordination among agencies and determine whether they meet current demands.

Massachusetts has a successful track record of assembling taskforces to develop and oversee the implementation of blueprints for ICJISs. The last iteration was convened by Governor Romney through an executive order. With the ICJIS located within EOPSS, executive action is a logical approach to forming this body.

An act of the legislature is another avenue for creating a taskforce. Legislation would underscore Beacon Hill’s interest in this work and encourage all branches of government to come together to find creative strategies to cost-effectively address gaps in data availability and analytical capacity. Along these lines, creating a taskforce to oversee the implementation of efforts to address data limitations exposed by the CSG process may make sense as a component of the comprehensive justice reinvestment legislation anticipated in 2017.

Regardless of the authorizing approach, data limitations revealed by the CSG process will likely provide valuable direction and momentum for a newly appointed taskforce.

2. Build an integrated public-use dataset. From education to transportation and public safety, public-use datasets are increasingly common in government. In the criminal justice system, public-use datasets could reduce the workload of agency staff who must respond to requests for custom data tabulations. Detailed public-use data would also better position researchers to evaluate the outcomes of varying interventions and alternative pathways for different subsets of offenders. This kind of longitudinal data has been critical to advances in criminology. While no state currently produces case-level public-use criminal justice data, today’s technologies make it much more practical to sensitively share large de-identified files. A public-use dataset would eliminate a major barrier to engaging the large community of talented researchers in Massachusetts, who are eager to apply their analytical skills to criminal justice problems.

Criminal justice leaders could partner with the Massachusetts Technology Collaborative’s Big Data Initiative to produce such a dataset for Massachusetts. MTC has worked closely with the Department of Transportation to develop public-use datasets in the past. MTC has also sponsored hackathons to engage
technologists in the state’s big data industry to help find solutions to data challenges at public agencies. Another option might be a partnership with Code for America, a nonprofit that helps government agencies utilize emerging data technologies. Code for America has been involved in a number of recent efforts to make criminal justice data more accessible to the public.

3. Increasing analytical capacity. Success with justice reinvestment requires agency staff able to pull data and produce reports. While technical assistance providers can offer support, agencies must have internal capacity to carry out this analysis. Massachusetts does have a number of talented analysts scattered throughout corrections agencies, who gather regularly for meetings of the informal Massachusetts Criminal Justice Agency Research Group. In recent years, police departments have also added a number of crime analysts. They have formed the Massachusetts Association of Crime Analysts.

Improving coordination among these analysts and modestly increasing the size of agency staff could go a long way toward maximizing the value of Massachusetts’s large investment in IT infrastructure and the even larger contributions taxpayers make annually to fund criminal justice operations. One way to achieve this would be through formal university partnership. For example, the Collins Center for Public Management at UMass Boston currently employs a team of data analysts assigned to municipal governments across the state. This model has allowed them to transfer learning and technology from one community to another and make efficient use of specialists with subject-area expertise. Similarly, Collins Center staff could be dispatched to county sheriffs, courthouses, and district attorneys’ office across the Commonwealth. This kind of formal academic partnership could help the state achieve the benefits of a university-based SAC without relocating the SAC outside of government and introducing further fragmentation.

Other options include offering agencies incentives to expand the staffing of analysis units and making grants more readily available to help research groups pursue high-priority projects.

4. Producing standard analytical reports across the system. The state’s research community could be enlisted to develop new annual reporting templates. While the DOC, Sentencing Commission, and Parole produce regular reports, more information should be available and easily accessible. Researchers should be able to synch trends in arrests, arraignments, pretrial detention, and incarcerations. Annual reports should break down the populations served by risk/need assessments, as well as the outcomes for these offenders. With sufficient resources, these cross-agency analysts could develop reliable reports that tap into available information made through recent and pending advances in the state’s criminal justice data infrastructure.

5. Validating and norming risk/need assessments. The variety of risk/needs instruments utilized by criminal justice agencies creates a particular challenge for comparing information generated across the system. More research is required to validate and norm these instruments for the Massachusetts population. (To date, DOC is the only agency to complete this process. Probation is currently undertaking validation with support from the University of Cincinnati. Parole is preparing for a validation process.) Coordinating efforts to regularly validate and norm the risk assessment tools utilized by different agencies in the system can make the process more efficient. It may also provide opportunities to better understand how these tools vary and how to create greater alignment in the future.

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Endnotes

1 Benjamin Forman is research director at MassINC. Joe Farrell is a MassINC intern and an undergraduate student studying political science at Northwestern University.

2 For example, see “Massachusetts Juvenile Detention Alternatives Initiative Dashboard Statewide Overview: April–June 2015 Update.” (Boston, MA: Executive Office of Health and Human Services, 2015.)


4 “Massachusetts’ Evidence-Based Approach to Reducing Recidivism” (Washington, DC: Pew Charitable Trust, 2014.)

5 For example, the courts are working with experts at UMass Medical in the area of substance abuse, Pepperdine University to evaluate Project HOPE, the Arnold Foundation to analyze the pretrial system, the University of Delaware to assess domestic violence cases, and the Brennan Center to research fee collection.


7 For example, see Rita Folan “Status of Offender Based Transaction Statistics (OBTS) System Development in the States.” (Washington, DC: National Institute of Justice, 1981.)


11 For example, see Don Andrews and others. “The Recent Past and Near Future of Risk and/or Need Assessment.” Crime and delinquency 52.1 (2006).

12 See Benjamin Forman and Alexander Jones. “Exploring the Potential for Pretrial Innovation in Massachusetts.” (Boston, MA: MassINC, 2015.)


Notes
ABOUT MASSINC
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ABOUT THE MASSACHUSETTS CRIMINAL JUSTICE REFORM COALITION
Established in 2013, the Massachusetts Criminal Justice Reform Coalition is a diverse group of prosecutors and corrections practitioners, defense lawyers, community organizers, and businessmen and women who find common ground in the need for corrections reform in Massachusetts. The coalition sponsors research, convenes civic leaders, and promotes public dialogue to move the Commonwealth toward data-driven criminal justice policymaking and practice.

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This white paper is a companion to a series of policy briefs examining Justice Reinvestment in Massachusetts. Each brief explores critical issues in our criminal justice system and opportunities to improve public safety through evidence-based change in policy and practice.

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