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Innovative Approaches to Diversion Data

BY SEAN FLYNN
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Prosecutors across the country are collecting and using data to make decisions in their offices¹. At the same time, prosecutors are interested in developing and sustaining prosecutorial diversion approaches. Prosecutors can use data to assist in decision-making regarding diversion case processing choices as well as to make office policy and resource allocation decisions that, in turn, support expanded diversion programs. Data collection can help prosecutors decide if a prosecutorial diversion program will work for them, and if so, what characteristics it should have. Finally, data can help prosecutors see whether they are obtaining their intended outcomes. Prosecutors possess varying levels of data and resources for using data. Using a case study of how the Manhattan District Attorney's Office, a data-heavy prosecutor's office, has incorporated data into its diversion decision-making, this paper will discuss how data can be collected, analyzed, and shared in developing and overseeing a prosecutor-led diversion program to increase transparency, efficiency, effectiveness, and consistency.

Prosecutor-led diversion is a critical component of prosecutorial operations and success, and some data collection on this aspect

of prosecution is widespread. Prosecutors use diversion programs to identify sources of increased efficiency and conservation of resources, both in terms of time and human resources, for more severe cases as well as to reduce the number of convictions and the subsequent impact of convictions on people referred to prosecutors.² While diversion is not new, having been part of many prosecutor's offices in the 1970s, increased caseloads and unease over the impact of homelessness or unemployment as a result of a conviction have renewed interest in a prosecutor-led diversion³. In a 2018 national survey of prosecutors by the Urban Institute, 74 percent of responding offices reported having data on the number of cases disposed to diversion programs; just over half (56 percent) of offices reported having information on whether diversion (or problem-solving court or deferred option used) was successful.⁴ However, less than one third of respondents reported collecting information about compliance with office policies on which cases should be diverted, referred to as a problem-solving court, or deferred.⁵ Just under half of the large and medium offices collect that information in electronic case management files, with the majority using paper files.⁶ Thirty-seven percent of offices reported not collecting any data on compliance with office criteria, while an additional 19 percent reported not having criteria.⁷ While the Manhattan District Attorney's Office is an example of an office with significant data resources, other offices can use different models to incorporate data effectively. This includes hiring data analysts, training for senior attorneys or information technology staff, or working with

1 This article is part of a series on Prosecutor-Led Pretrial Diversion, prepared by the Institute for Innovation in Prosecution in partnership with, and with the generous support of, Arnold Ventures. The views expressed in this article are those of the authors and not necessarily the views of Arnold Ventures.

2 Michael Rempel et al., *NIJ's Multisite Evaluation of Prosecutor-Led Diversion Programs: Strategies, Impacts, and Cost-Effectiveness* iv (Center for Court Innovation, 2017).

3 *Id.* at 2.

4 Robin Olsen et al., *Collecting and Using Data for Prosecutorial Decisionmaking: Findings from 2018 National Survey of State Prosecutors' Offices* 8 (Urban Institute, 2018).

5 *Id.* at 12.

6 *Id.*

7 *Id.*



third-party researchers or universities.⁸

Operating diversion successfully and being able to communicate the intent and results of diversion is necessary to prosecutors. In fact, not collecting data on diversions can lead to inaccurate conclusions about an office and its performance. For example, state attorney for the Florida 8th Judicial Circuit William Cervone noted that collecting data on his diversion programs provides evidence of their success and justifies funding for their continued operation.⁹ Stephen Jones, the county attorney in Labette County, Kansas, reported that keeping a record of diversions that his office has implemented allows him to track his operations and examine what is working and what is not.¹⁰ He noted that if his office tracked more information about whether diversions have reduced recidivism, he could adopt strategies that might prevent some of these crimes from happening again.¹¹ In Travis, County, Texas, the district attorney's office examined case data and found that what were previously thought to be dismissals due to legally or factually insufficient cases were successful diversions prompting the office to allocate more resources to these diversion programs to expand their impact.¹²

This paper will describe the critical decisions that are part of prosecutor-led diversion and how data collection is critical to making those decisions successfully. It will provide examples from the Manhattan District Attorney's Office of how data collection, analysis, and data sharing are critical to the continued use and improvement of diversion programs. It will recommend approaches for offices to increase their use of data in prosecutor-led diversion decision-making and implementation, first through prioritizing the inventorying of data, identifying jurisdiction-specific decision points, and using data to generate key insights, and second through investing

in technology and improving data analysis capabilities.

I. Key Decisions About Prosecutor-Led Diversion and Role of Data Collection and Use

Three decisions that are critical to implementing prosecutor-led diversion are program choice, eligibility and screening, and success metrics. Program choice includes the decision of whether to have a diversion program and what program to offer. Importantly, this can include the decision about whether the diversion occurs pre-filing or post-filing, as well as what programming or treatment will be a part of the diversion.¹³ Programming can include education, community service, cognitive-behavioral therapy, or restorative justice.¹⁴ Prosecutors can also decide who will deliver the programming and how the contracts are structured.¹⁵ Eligibility and screening include the decision of what eligibility criteria an office will have, if any.¹⁶ Criteria can include restricting diversion opportunities to people referred for specific offenses or with particular criminal history scores.¹⁷ Screening can be evaluated either by legal criteria or by using a "Risk and Needs Assessment tool".¹⁸ Risk and Needs tools are based on the principles of risk, need, and responsiveness. These tools allow practitioners to match services to an individual's risk of reoffending, to assess and target criminogenic needs, and to tailor interventions to the way a person learns and their abilities.¹⁹ Criminal justice system practitioners use screenings to identify

8 *Id.* at 16.

9 *Id.* at 5.

10 *Id.* at 9.

11 *Id.*

12 *Id.* at 12.

13 Rempel at 1.

14 *Id.* at v.

15 Rempel at 61; Center for Health and Justice at TASC, A National Survey of Criminal Justice Diversion Programs and Initiatives, 16 (December 2013).

16 Rempel at iv, v, 15.

17 Rempel at 22, 23, 26; TASC at 18.

18 See Rempel et al., at 16.

19 See James Bonta & D.A. Andrews, *Risk-Need Model for Offender Assessment and Rehabilitation*, Public Safety Canada, at 1, 5, 17 (2007).



who is the right candidate for an approach and what services may be appropriate.²⁰ Success metrics include decisions about how an office defines and measures success. Offices can identify the purpose of the diversion and the problem that the approach aims to address. For example, some diversion programs are targeted towards people who otherwise might be sentenced to prison, and successfully completing diversion would reduce incarceration days used. Other programs are aimed at people whose screens indicated that particular services would be useful, such as behavioral health interventions. Accordingly, some programs measure total incarceration days averted, recidivism rates, employment rates, and estimated cost savings.²¹

The collection and use of data can help prosecutors' offices with diversion through four principles: transparency, efficiency, effectiveness, and consistency. Evidence from interviews with prosecutors, along with the following case study of the Manhattan District Attorney's Project Reset program, demonstrates the ways that data collection, data analysis, and data sharing can support these principles.²²

Information about key diversion decisions can allow prosecutors to release information more easily to stakeholders and the public, creating transparency, helping build support, or allowing for constructive feedback. About 25 percent of respondents to the Urban Institute's 2018 national survey of prosecutors' offices reported publicly publishing analyses based on data they collect, and half of the respondents reported encouraging and soliciting input and collaboration with residents and community groups.²³ Meanwhile, through the use of a public data dashboard, Philadelphia

District Attorney Larry Krasner's office has placed data and statistics, such as "incidents, arrests, charges, bail, case outcomes, case length, future years of incarceration, and future years of supervision" online for the public to view.²⁴ The stated goals of the dashboard are to better hold the criminal justice system, including the prosecutor's office, accountable for its policies and procedures.²⁵ In particular, the data dashboard page allows viewers to see the average number of diversions each month, by type of offense, and in comparison to other types of case outcomes.

Data also allows the office to identify bottlenecks in the diversion process, thus improving efficiency. For example, 72 percent of survey respondents reported using data to manage the allocation of time or resources.²⁶ In the Manhattan District Attorney's Office, Project Reset's data collection process (detailed below) allows the office to find delays in the diversion process that could prevent some individuals from being able to enroll.

Collecting and using data can improve the effectiveness of the diversion program by helping prosecutors understand which services are working and which are not. Twenty-three percent of respondents reported collecting data on recidivism results.²⁷ With Manhattan District Attorney Office's Project Reset, the data collection system allows staff to access information on program outcomes, enabling analysis of which programs are more successful with which participants.

Lastly, data collection and use by the prosecutor's offices allow for consistency of offers across the board given by ADAs, including those

²⁰ See Mellow, at (2013).

²¹ See Center for Health & Justice at TASC (TASC) *A National Survey of Criminal Diversion Programs and Initiatives*, at 13,16,19,20 (Dec. 2013).

²² Project Reset, Center for Court Innovation (2020), available at <https://www.courtinnovation.org/programs/project-reset/more-info>; see also Project Reset New York (2020), available at <https://www.projectreset.nyc/about>.

²³ See Olsen et al., at 9.

²⁴ Philadelphia District Attorney's Office Launches Public Data Tool, Medium (Oct. 3, 2019), available at <https://medium.com/philadelphia-justice/release-philadelphia-district-attorneys-office-launches-public-data-tool-9794c086b11c>.

²⁵ See *Public Data Dashboard: About Philadelphia's Criminal Justice System and the Public Data Dashboard*, Philadelphia District Attorney's Office (PDAO) (2020) <https://data.philadao.com/about.html>.

²⁶ See Olsen et al., at 11.

²⁷ *Id.* at 9.



involved in assessing eligibility. Forty-nine percent of respondents reported collecting data related to alternative case processing (like diversions) by the assigned prosecutor.²⁸ This allows for supervisors to track information across different decision-makers. In the case of the Manhattan District Attorney's Office, the data systems allow for quality control of aspects of Project Reset.

II. Tools for Using Data to Support these Conclusions

In this section, we look at tools for using data to support prosecutor decisions around diversion. We offer a case study from the Manhattan District Attorney's office in New York. The tools developed by this office as well as the principles and processes put in place for their use provide valuable lessons for all prosecutors trying to implement more data-driven diversion policies.

The diversion program offerings through the Manhattan DA's office impact cases at many stages of the case path, including both pre-arraignment diversion and post-arraignment diversion. This study will limit its scope to the impact of data on one pre-arraignment diversion program, Project Reset. First, we briefly discuss the program. Then, we discuss the Manhattan DA's strategy for using data to improve program execution. Their process can be categorized into Data Collection, Data Analysis, and Data Sharing. Each piece plays a vital role in their successful use of data to improve the diversion programs in Manhattan.

A. Project Reset

Through Project Reset, the Manhattan DA's office agrees not to prosecute individuals arrested for certain misdemeanor offenses in return for their participation in some type of

service intervention.²⁹ The timing of the program is important, because it enables the participant to avoid the collateral consequences of prosecution that would occur if their case followed the traditional case processing path.

Project Reset gets initiated at the police precinct. An individual is eligible for the program only if the arresting officer issues a desk appearance ticket (DAT) for their case. A DAT is a ticket that is issued at the time of arrest, which specifies a date for the individual to come back to court for arraignment, usually in about six to eight weeks.³⁰ DAT cases fit well with diversion opportunities, because the individual has time to complete a program, such as counseling, before they are scheduled to come back to court for arraignment. If the individual completes the required program steps, the Manhattan DA's office will decline to prosecute their case and no charges will be filed against them. The arrested person will not have to appear in court.

The goals of the program are to promote confidence in the criminal justice system, to help individuals avoid criminal records for low-level offenses, and to keep people out of the court system. The program is offered throughout the county boroughwide for individuals of all ages who are accused of low-level misdemeanors such as shoplifting, trespassing, and drug possession.³¹

After arrest, the intake process ensues. Police issue a DAT for the offense and alert the potential participant that they may be eligible for the Project Reset diversion program. The Manhattan DA's office manually reviews each case to determine eligibility and refers any

²⁸ *Id.* at 8 (noting "most offices having data on alternatives approaches to traditional prosecution").

²⁹ Project Reset, Center for Court Innovation (2020); *see also* Project Reset New York (2020).

³⁰ *See* N.Y. Crim. Pro. § 150.40(1)(McKinney 2020) (citing recent changes to the New York State criminal code that went into effect on January 1, 2020 require DATs to be arraigned within 21 days); *Project Reset*, Center for Court Innovation (2020); *see also* *Project Reset New York* (2020).

³¹ The program was first piloted in one police precinct in Upper Manhattan and focused solely on youth aged 16-17. The Raise the Age law now transfers all misdemeanor cases for young people 17 and younger to Family Court, and therefore they are no longer eligible for Project Reset.



eligible case to the assigned program provider. Assignment depends on the individual's age and the precinct in which they were arrested. The individual is offered the opportunity to discuss the diversion option with an attorney. If they choose to participate, program staff conducts an intake interview to assess the person's needs. They are matched with the service intervention that is best suited for them. Some types of interventions include group workshops, restorative circles, arts programming, naloxone training, and individual counseling.³²

In the next section, we begin to explain the tools that the Manhattan DA's office uses to make Project Reset more efficient and effective. We start with their efforts around data collection.

B. Data Collection

Data collection is a foundational piece of any strategy to use information for program improvement. Ensuring the right data is collected at the right time is vital for success. The Manhattan DA's office uses a few tools to help with this process.

General Case Management System

Through its case management system, the Manhattan DA's office captures a rich set of data on cases as they make their way through the court system. This information can be extremely helpful for understanding how initial decisions about the program play out on the ground, and how later changes in program operation can affect its efficacy. For example, an important first step in establishing a new program is the choice of program-eligible charges. Case management data can be used to determine the changes in case flow that would occur under different sets of program-

eligible charges. Prosecutors often have scarce resources with which to operate these programs. Running these program choice scenarios can help identify how resources can be best used to accomplish diversion goals. An effective case management system would facilitate this type of data collection and analysis.

Data collected by the Manhattan DA's office case management system has enabled it to explore new types of diversion, and to expand the age eligibility for existing programs. After the early success with young people in Project Reset, the Manhattan DA's office sought to expand the program to adults. The Office used case data to investigate the impact of such an expansion and assess the resources needed for implementation.³³ As an example, they recently expanded eligibility for Project Reset to include individuals with more serious criminal records.³⁴ Case management data made it possible for the Manhattan DA's office to assess the impact of expanding Project Reset to offer more people a second chance.

Additional Data Feeds

Incorporating data streams from other government agencies can add tremendous value to the internal data that a prosecutor's office collects. A linked feed with information on an individual's arrest record can make recidivism a trackable program metric. This additional metric can greatly enhance a program's evaluation capabilities.

Data streams from other agencies form an integral part of the Manhattan DA's office diversion process. The NYPD online booking system data feed provides a complete list of DATs issued by law enforcement. This DAT list forms the base set of cases that the Manhattan DA's office considers for diversion. Next, the Manhattan DA's office system filters this case list. Note that the minimum

³² Kimberly Dalve & Becca Cadoff, Center for Court Innovation, *Project Reset: An Evaluation of a Pre-Arrestment Diversion Program in New York City* at 8-9 (January 2019), available at https://www.courtinnovation.org/sites/default/files/media/document/2019/projectreset_eval_2019.pdf.

³³ *Id.* at 14

³⁴ The program has enhanced program requirements and is referred to Project Reset+.



eligibility requirements are different for different programs.³⁵ The Manhattan DA's office matches individuals in the NYPD online booking system with individuals in these additional feeds through their NYSID, a unique identifier assigned to an individual the first time they enter the criminal justice system. An individual who is arrested for a second time will be tied to their previous arrest through their NYSID.

The outcome of this process is a set of individuals who pass the minimum criteria and are potentially eligible for one or more diversion programs. Program administrators periodically receive an automated set of reports with the list of cases eligible for each program. The Manhattan DA's office uses SQL Server Reporting Services to generate these reports. Following this automated screening process, cases are assessed on an individual basis to determine if an individual should actually be invited to participate in a diversion program.

Of course, these integrations often are difficult to set up, not because of any specific technology barrier, but because they usually require many layers of bureaucratic approval. The Manhattan DA's office has been able to successfully navigate these bureaucratic hurdles both at the state and local levels. First, it had to convince New York State that its mission and reasons for wanting the data were vital for achieving its goals.³⁶ Then, it used executive relationships and data-use agreements with local agencies actually to add the new data streams.

Customer Relationship Management Platform

Collecting data on the diversion program itself is instrumental for understanding the program's impact and identifying steps for improvement. A jurisdiction can use program data to improve efficiency and increase transparency of program outcomes to criminal justice stakeholders

and the public. To acquire this data, an office needs to track participants through as many stages of the diversion process as possible. Using a program-specific tracking system is extremely important for pre-arraignment diversion cases, as their cases are not tracked by the general case management system. For post-arrest diversion, tracking systems can still add value by capturing detailed program information not contained in the general case management system.

The Manhattan DA's office and its partners developed a novel tracking tool built on top of a Customer Relationship Management (CRM) Platform to accomplish this task. Traditionally, CRMs are used by sales professionals in industry to track and manage relationships with current and potential customers and to improve relations over time. These platforms offer customizable reports for the Manhattan DA's office and its service providers to manage their caseloads and to track participants through their diversion programs. The tracking process can be summarized as follows.

After the automated screen process and individual case evaluation, the final list of eligible diversion program participants is identified. Next, the basic case/participant data is entered into the CRM platform. For some programs, an individual is allowed to participate more than once. If they have another case active at the same time, their information will already be in the system. Participant contact information is entered and can be acquired from a variety of sources, including additional data feeds if they have had previous encounters with the criminal justice system, or internal data from the prosecutor's office.

The office has three weeks to contact the individual and find out if they want to enroll in the diversion program. If they are unable to contact them during that time, the office determines they will be unable to help the individual and their case is closed in the CRM. Once the individual is contacted and agrees to participate,

³⁵ *Id.* at 27.

³⁶ *Id.* at 14.



they must complete the program requirements three weeks before arraignment. The three-week buffer is necessary to give the Early Case Assessment Bureau sufficient time to prepare for arraignment if it is required. However, the Diversion Coordinator can override the program deadline and give an extension to complete the program up until the arraignment date. For Project Reset, once a participant is enrolled, they are assigned to a program provider based on their offense and the area of Manhattan in which they were arrested. The participants are stratified based on location in Manhattan because the Manhattan DA's office wants to address the needs of each participant locally. The program tasks are recorded in the system, along with status reports about the participant's completion of conditions. Once the program is complete, the case outcome is captured. The CRM automatically generates a case outcome letter for the Manhattan DA's office to print, sign, and send by mail to the participant. If the participant fails to complete the program, the CRM ensures that the assigned ADA can seamlessly pick up the case if further prosecution is necessary. The CRM serves as a record of decision for these pre-arrest diversion programs.

The data collected by the Manhattan DA's office tracking system is used to improve program operation in several ways. First, the Manhattan DA's office can track metrics such as the race and age breakdown of participants in the diversion program. This information helps the Manhattan DA's office identify any inequities in participation that inadvertently result from the eligibility screening criteria. Second, the Manhattan DA's office can identify bottlenecks in the diversion process that may preclude certain types of individuals from participating in the program. For example, if a particular geographic area has a consistently high number of repeat offenders, then the Manhattan DA's program partners in that area might not be matching participants with the best treatment options. Finally, data on program outcomes helps the Manhattan DA's

office understand which program providers and interventions are more successful with certain clients. When combined with criminal history data from additional data streams, this information can be used to track traditional success metrics such as recidivism.

The CRM is also designed to improve communication across the stakeholders involved in an individual's case. Through a chat component, similar to Facebook Messenger, the Manhattan DA's office and program providers can trade information about a participant's progress in a secure, efficient way. The Manhattan DA's office can use this data along with more advanced analytic techniques, such as text mining, to further understand issues that arise during treatment. However, they have yet to take advantage of this in a structured way.

C. Data Analysis

With a thoughtful collection of data streams comes the opportunity to generate insights that can improve diversion decision-making within the prosecutor's office. This is the core component of a system that results in data-driven policies and decisions. A traditional business intelligence platform facilitates this type of data analysis. These platforms are designed to provide information on the business from historical, current, and predictive viewpoints. Through the platform, the team can build business intelligence applications that allow for users to analyze multidimensional data interactively and to generate insights. The result is a tool that the team can use to ask and answer questions to inform operations and strategy around the business.

The Manhattan DA's office uses a business intelligence platform to generate insights related to diversion and other prosecutorial functions. The Strategic Planning and Policy team has set up a data warehouse that houses the data on which the insights are based. The team has worked with executives to form standardized data definitions



that enable the correct questions to be answered. The team has built applications using Rshiny and PowerBI that a user can access to slice and dice the data and ask questions to improve the work of the Manhattan DA's office. These steps result in evidenced-based decisions that best support the function of the organization, including its role in the diversion process.

While the strategy team can run complicated customized analyses using R, the main focus of the Manhattan DA's office setup is to support self-driven exploratory data analysis by internal staff to generate the desired program improvements. It is not feasible for the system to collect enough data to automate changes based on feedback from data findings. The prosecutorial function is a complicated process, and its role in diversion oversight is no exception. Analyses must be driven by the individuals who understand the context and can use the data to draw the correct conclusions. If the unit chief for domestic violence offense has a hunch about the pattern of prosecution in certain cases, the office feels they should be able to test their hunch.

The data collected by the Manhattan DA's office makes possible the descriptive analysis of diversion programs across a number of dimensions. The Manhattan DA's office is interested in understanding the participant makeup of the diversion program itself. Data enables the office to answer questions such as:

- Which individuals are receiving what offers? Who are accepting their offers?
- What is the age range of program participants? What are other demographic characteristics of participants?
- For which offenses are individuals referred to the diversion program?
- Has there been an uptick in participation or a decline?
- What are the diversion program

outcomes for different segments of the program population?

- In the precincts where there is a high volume of arrests, is there a high volume of diversion participation?

Studying programmatic options and outcomes is also possible with the comprehensive data that DANY collects.

- Which providers are being utilized most?
- What needs are being addressed most frequently?
- What are the completion rates for each of the programmatic options?

The Manhattan DA's office can also run analyses that shed light on possible process improvements.

- Where do bottlenecks arise in the program?
- How long are individuals remaining in each part of the program?
- Which arresting officers are telling individuals about diversion? Which are not?
- What are the reasons for an individual's failure to comply with the program?

Manhattan DA's office executives and program administrators can use this descriptive information to better evaluate the program and prescribe improvements to program processes going forward. Key questions include:

- Given the descriptive information on race and age, is the program meeting its target population goals? Are groups being inadvertently excluded from the process?
- How can the program help participants better achieve diversion



- program success metrics?
- How can the program improve referrals from precincts that are not referring individuals to the pre-arrest diversion program?
- Are service providers adequately staffed to meet the needs of a growing reliance on a successful option?

Following a thorough evaluation of the diversion program through data, the Manhattan DA's office then can conduct counterfactual analyses of historical data to see what impact any proposed changes would have on the system. For example, the Office has analyzed the potential impact of an expansion of age eligibility for Project Reset. More generally, they use data to ask how they can expand the set of people served by the program. Any changes to program execution are driven by these types of data exercises, which leads to more informed policy decisions.

The Manhattan DA's office also uses data to ensure quality control. If a defense attorney asserts that his client was wrongfully denied acceptance into the diversion program, the Office can access program data to investigate and assess the veracity of the claim. If a certain policy change was not followed during the diversion process because it was not properly communicated to the ADA, supervisors could take proactive steps to intervene.

D. Data Sharing

Data sharing is another essential component of an organization's plan to achieve data-driven decisions. Actionable insights need to arrive in the hands of the ultimate decision-maker. Access to a competent data science team is not enough. If a silo develops around those conducting the data analyses, and the results are not communicated to the proper party, the data team's value will not be realized.

The Manhattan DA's office has developed

a few different methods for facilitating access to data and the insights that are generated by its intelligence platform. The first is DANYnet, an internal web portal. Most applications and reports produced by the Manhattan DA's office strategy team are available to any employee through DANYnet. Users can access interactive program reports, executive dashboards, and data visualizations to obtain a clearer picture of what is happening with diversion. The idea behind the near-universal access to the data is to empower employees to self-serve and find answers to their questions.

To ensure decisions are based on accurate information, all of the information is updated in real-time. If a manager needs to see some Key Performance Indicators (KPIs) for a diversion program before a meeting, they can access the latest information instead of some static report that is outdated the moment it is created. Efficiency increases because staffers can personally tailor the parameters and filters to answer the questions that are pertinent to their decision. The Manhattan DA's office can stay on top of newly updated information by setting up alerts to receive notifications when a new version of a report is available. These internal data-sharing efforts increase the transparency of the programs within the Manhattan DA's office. Involving more people in the data efforts helps to crowdsource the generation of insights and the identification of additional data needs.

The data and policy team generates a set of management reports each month for Manhattan DA's office executives. These reports track executive-level KPIs that help the executive team understand how the office and the diversion programs, in particular, are doing at a high level. Access to these management reports, as well as other documents with sensitive investigation information, is more restricted than regular reports. Email subscriptions ensure that they get to the correct audiences efficiently.

Through the CRM chat component, the



diversion team also can share information directly with the providers that offer the interventions to participants. With program-level data on participant placement, providers may be able to adjust their offerings to appeal to a broader range of clients and thereby improve the diversion program as a whole. Moreover, understanding completion rates and other success metrics across providers can offer valuable feedback to providers who want to remain competitive as an intervention option. The CRM chat also enables providers to give the Manhattan DA's office more detailed information about specific interventions, which can be mined to generate additional insights.

To make the data sharing process as effective as possible, the Strategic Planning and Policy unit conducts outreach to senior-level managers. Their seminars explain how to use the available applications and reports as well as the custom data science capabilities of the strategy team. To realize the goal of data-driven policies, senior managers and higher-level leadership need to be informed about the types of data available and what questions they can answer with the data. These are the individuals who will use the information when making day-to-day decisions within their units. Often, presenting simple facts to this group, such as the numbers of felonies, misdemeanors, and unindicted felonies within a given unit, is enough to pique their interest in accessing and using data more. Involving the individual unit decision-makers in this process also helps to improve the quality of the data available, as they can make suggestions about how to adjust data definitions and the presentation of results.

III. Roadmap for Your Jurisdiction

With the Manhattan DA's experience in mind, here is a list of first steps a prosecutor's office can take to make their diversion program more data driven.

A. First Steps

Step 1: Inventory Data

The first step is to take inventory of the data related to diversion currently available to the prosecutor's office. This set of data may include historical case information as well as more current data such as real-time data coming from the office's case management system. This information is useful for evaluating the case flow impact of a new or altered diversion program. If the program is already in place, then some level of outcome data might also be available. Ideally, other court data feeds or data from other government agencies could also be accessed as a part of the initial data inventory.

Step 2: Identify Key Decision Points

The next step is to identify the key decisions within the jurisdiction's diversion process workflow. Depending on the type of program the office runs or wants to launch, some decisions may include eligibility, offers/referrals, screening for risks and needs, programming choice, determination of program completion, outcomes, overall process efficiency, and cost. From this set, the prosecutor's office should choose two or three decisions that can be improved with better information.

Step 3: Use Existing Data to Generate Insights on 2 or 3 Key Decision Points

The primary determinant for which decision to choose is how well the data identified in Step 1 can inform that decision. Basic work with Excel and pivot tables can accomplish the task. As an example, we could use case data from the case management system to understand how our diversion program has impacted the flow of cases in the court system. How many cases have been



disposed of through the diversion program? Have certain types of cases been dealt with while others have not? These initial insights also can be used to demonstrate the value of collecting additional data to stakeholders. They can also help build the case for additional program investments to collect and use data for program improvements.

B. Next Steps

These additional steps are designed to give a prosecutor's office broader capabilities around establishing data-driven diversion policies.

Use Technology to Improve Data Collection and Quality

Once the use of existing data to improve key program decision points is exhausted, the prosecutor can mark additional parts of the diversion workflow for improvement. Since data is not available for these new parts of the workflow, some improvements in data collection need to be implemented. As identified in the Manhattan DA case study, technology can help here. Technology enhancements can augment the program's capacity to capture information on the selected parts of the diversion workflow. The key step here is to identify technological approaches that are easy to implement and will produce the desired actionable data. The choices are going to depend on needs, appetites, and abilities. With these additional data streams, the prosecutor's office can generate the necessary insights on the chosen diversion workflow components.

Adding new technology also will enable a jurisdiction to understand the drivers of program outcomes at an individual level instead of for the program as a whole. For example, an office may choose to understand new key decision points that include diversion plan creation and the participant's completion of program conditions. Adding technology can help capture an individual's assigned programs at

the time of diversion plan creation. It can also help track an individual's completion of program conditions over time. Prosecutors can gain a better understanding about which providers are used to address which needs. They can see how much time it takes for an individual to go from receiving their offer or referral to participating in a program. This information will shed light on whether the program is minimizing harm to the individual by dealing with their problems quickly. Intervention completion rates can give the prosecutor some information about which treatments are successful in addressing participant needs. If a specific intervention has a low completion rate, the diversion program can talk to the provider to address some of the deficiencies.

Given the nature of cloud computing options on the market, real-time or near real-time access to the data for the selected key decision points are possible with some technology investment. These capabilities are significant for tightening the data feedback loop for the program, and analyzing the additional data in real-time results in program improvement suggestions that are as current as possible.

Improve Data Analysis Capabilities

In addition to collecting more and better data, employing more advanced analytic techniques can help a prosecutor's office generate additional insights with the data they currently have. Moving beyond a purely descriptive use of data can help shed additional light on how the diversion program is operating. Advanced statistical analyses, including derived data elements, predictive modeling, and forecasting, can increase the value of the data collected.

Derived Data Elements

Derived data elements are created when an analyst combines one or more data elements into a single measure. Correlations are one



example; they can help the analyst understand the degree to which two factors are statistically associated with each other. For example, a jurisdiction can calculate correlations to check for racial discrimination in program entry. If an analyst finds a connection between race and the probability of program entry, then the jurisdiction might want to investigate why the identified correlation occurs. There may be some problem with the way offers are given, or there could be some other eligibility factor that is responsible for the identified correlation. Adjustments can be made to rectify the situation.

Another type of derived data element are relative scores. An 80 percent intervention completion rate may not mean much by itself. It is better to have an understanding of the intervention completion rate relative to other treatment options. Establishing relative scores such as deviations from the average completion rate can give the program administrator a more exceptional ability to discern successful treatment providers from unsuccessful ones.

Predictive Modeling

The idea behind machine learning is to automate the discovery and evaluation of patterns from large volumes of data. This information can be useful for prosecutors if it helps to answer questions that are important for a well-functioning diversion program. As an example, suppose the prosecutor's office wants to identify which potential participants have a high risk of not completing the diversion program requirements. This information may be necessary because it can help the office use its limited resources to track these individuals and intervene proactively before they fail out of the program.

As a part of this task, an analyst would want to know who these individuals are and how can they be characterized. One way to attack this problem would be to find common characteristics for this group of participants through a database

query. An analyst would gather information on the individuals who did not complete their diversion program, calculate summary statistics for group characteristics, and compare them to those who did complete their program.

A more in-depth analysis would involve determining which characteristics differentiate these participants from successful ones. This more advanced task would require the analyst to dive into the realm of predictive modeling. Given historical data on participant characteristics and whether they completed the program, an analyst could predict which participants are likely to complete the program. This modeling exercise would result in the identification of characteristics that are important for determining if a participant will be successful. The resulting model can then be used to predict whether a new program entrant is likely to complete the program requirements.

Of course, an analyst could go further. Another useful model would be to predict not only whether an individual will complete the program, but also the probability they will finish. This probability can then be used to assign individuals a risk score for failing to complete requirements. Participants can be ranked in terms of risk, which can help guide the prosecutor's decisions about where they should devote their limited tracking and assistance resources.

Predictive modeling can also help suggest treatment options for a new program participant. Given historical data on participant characteristics, treatment plans, and program success metrics, an analyst can develop a model that determines which interventions are most effective for individuals with certain characteristics to participate in the diversion program successfully. This model can be used as a recommendation engine for new participant treatment based on the known characteristics of the individual. Employing this type of advanced analytics should help to improve the success of the diversion program. These types of predictions can be done at a very granular level depending on the amount of data available.

*Forecasting*

Forecasting is another type of modeling that can be used to inform program operation. With forecasting, a data analyst uses historical data to make predictions about the future value of a variable or set of variables. One place this technique could be useful is understanding future intervention needs at the program level. Based on the previous year's participation, program administrators can predict what the likely level of participation in a given intervention will be the following year. This forecast can help the program line up the resources necessary to ensure a given intervention is available at the levels necessary to meet the predicted participant needs.

sharing can help a prosecutor's office scale up their diversion offerings past low-level misdemeanors and help achieve a vision of effective, efficient criminal justice.

IV. Conclusion

Prosecutors around the country, from the Manhattan District Attorney's Office to the Labette County Attorney in Kansas, are using data to make both operational and strategic decisions about diversion approaches. In particular, the prosecutor's offices are finding that transparency, efficiency, effectiveness, and consistency goals can be achieved through greater use of data collection and analysis. The example of the Manhattan District Attorney's use of data for Project Reset provides a roadmap for immediate next steps as well as longer-term actions. Project Reset shows that offices should inventory data, identify key decision points, and use existing data to generate insights on two to three key decision points. Additionally, advanced statistical analyses, including derived data elements, predictive modeling, and forecasting, can help offices do even more.

Prosecutor-led diversion offers an opportunity to build a criminal justice system that meets the complex needs of the community and moves beyond purely punitive measures. Increased data collection, data analyses, and data