



TANF DATA  
COLLABORATIVE

JULY 2022  
OPRE REPORT  
2022-124

Melissa Wavelet  
Stephanie Rubino  
Caroline Morris  
Maryah Garner

# Increasing Data Analytics Capacity in State TANF Agencies

## The TANF Data Collaborative Approach

**G**overnment agencies at all levels collect administrative data in the course of their day-to-day operations. While such information has been used to determine effectiveness through program evaluations for many years, program administrators view it increasingly as a valuable resource that can also be used to improve program performance. For example, administrative data from employment and public benefits programs such as Temporary Assistance for Needy Families (TANF) can offer insights into families' unmet needs and ways to improve services.<sup>1</sup>

Administrative data are underused for program and research purposes, however, for a variety of reasons. There may be legal concerns about maintaining client confidentiality, for example. And pressures to meet day-to-day program needs may make it difficult for staff members to build the technical capacity needed to collect and analyze new data. Similar challenges make data projects difficult to execute in any industry.<sup>2</sup> Despite such barriers, government organizations recognize the benefits of using administrative data for program improvement. For example, integrating administrative data systems across programs and agencies can help state officials get a fuller picture of their programs' performance.<sup>3</sup> In addition to administrative data, agencies also use survey data to improve program performance. However, one shortcoming of survey data is that bias can be introduced when survey participants do not respond to a question (or questions) or do not remember particular details. Meanwhile, administrative data are usually available for larger samples and for longer periods of time and are relatively easy and less costly to process.<sup>4</sup>

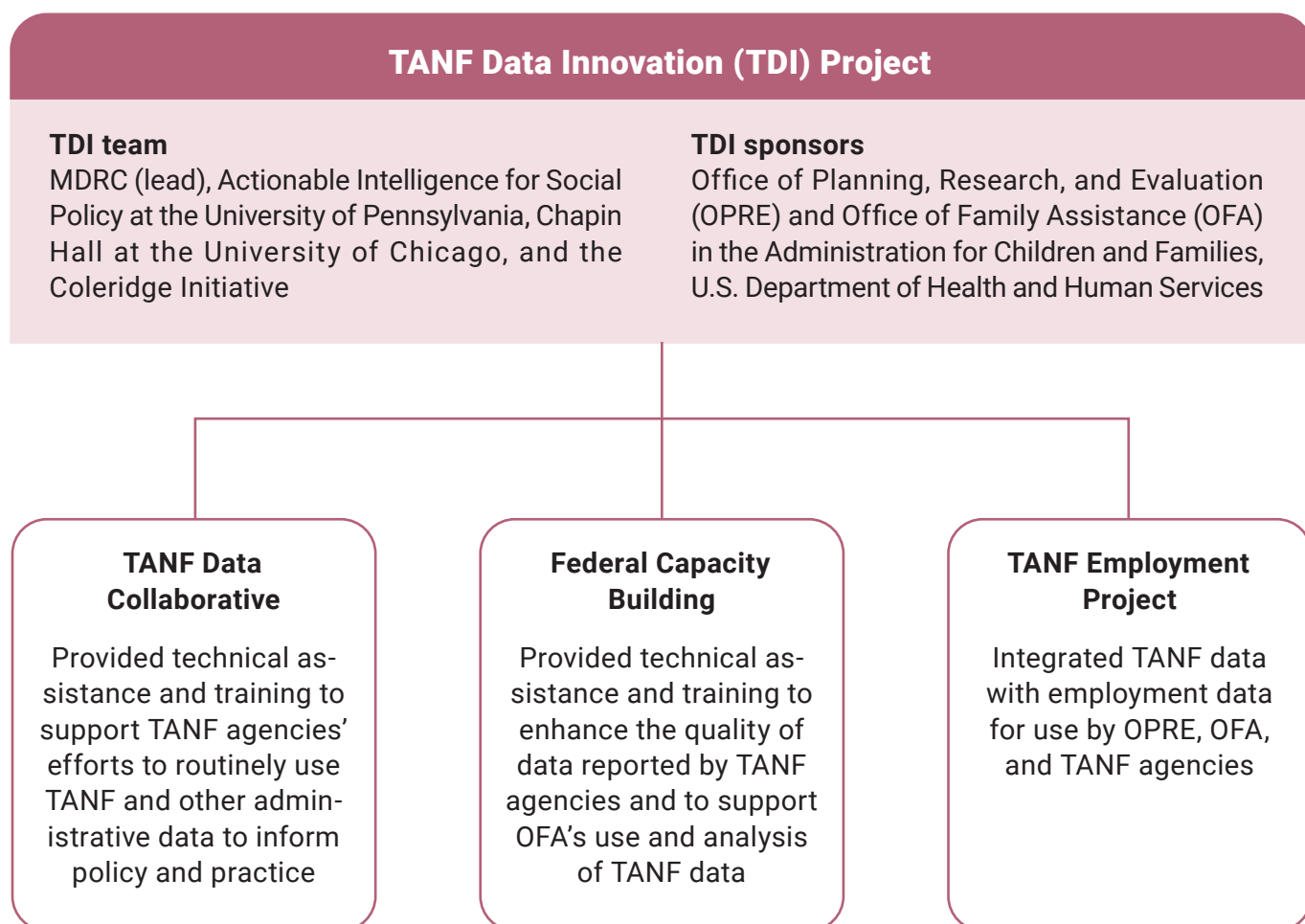
Recognizing the value of expanding the use of administrative data, Congress created the U.S. Commission on Evidence-Based Policymaking in 2016.<sup>5</sup> The commission imagined a future in which government operations would routinely generate rigorous evidence that informs effective public policy and improves how programs operate. Since then, federal agencies have been prioritizing investment in staff capacity and data infrastructure to support a culture of continuous learning and improvement.

The following year, the Administration for Children and Families, within the U.S. Department of Health and Human Services, launched the TANF Data Innovation (TDI) project. Sponsored by the Office of Family Assistance (OFA) and the Office of Planning, Research, and Evaluation, the project was a well-timed, unique opportunity to substantially expand the routine use, integration, and analysis of TANF and employment data by agency staff to improve program services and outcomes for families with low incomes. MDRC collaborated with the project sponsors, who provided ongoing guidance and support for the design and delivery of training and technical assistance activities throughout a 30-month pilot (described below). They also promoted TANF agencies' best practices across the field by shaping the dissemination and publication of project lessons. As illustrated in Figure 1, MDRC led the TDI team in partnership with three other organizations — Actionable Intelligence for Social Policy (AISP), Chapin Hall at the University of Chicago, and the Coleridge Initiative. The project was designed to build TANF agency staff capacity at the state and federal levels of government through a multidimensional approach that included training, technical assistance, a pilot, coaching, and data infrastructure upgrades. The project consisted of three components:

- 1** The **TANF Data Collaborative (TDC)** supported the efforts of teams of staff at TANF agencies to routinely use TANF and other administrative data (such as earnings data) to inform policy and practice through targeted training and technical assistance. This component included the TANF Data Collaborative Pilot Initiative — an intensive training and technical assistance program for staff at eight state TANF agencies.
- 2** The component to **increase federal staff capacity** addressed the quality, use, and analysis of data within OFA's TANF Data Division.
- 3** The **TANF Employment Project** focused on improving the TANF data infrastructure. This project, which is continuing in 2022, integrated federally reported TANF data with employment data from the National Directory of New Hires, allowing for deeper analysis of employment and benefits trajectories.

This brief is part of a series of publications on the TDI project. It describes training and technical assistance activities for all TANF agencies and for the eight TANF agencies participating in the TDC Pilot Initiative. The [first brief](#) summarizes results from a 2019 needs assessment of the capacity of TANF programs to analyze data for program improvement, monitoring, and evidence building.<sup>6</sup>

**Figure 1. Structure of the TANF Data Innovation Project**



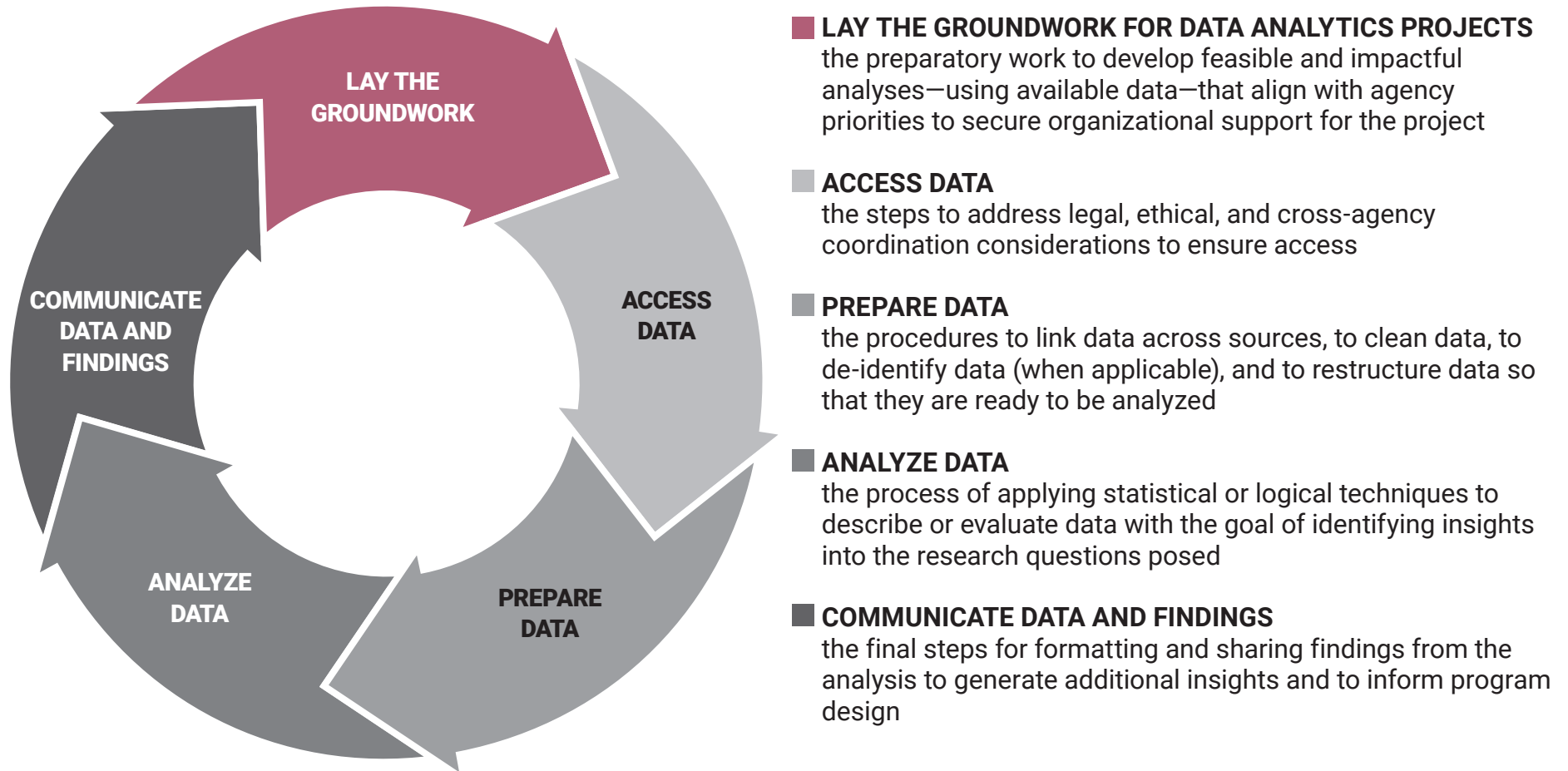
## The TANF Data Collaborative

The work of the TANF Data Collaborative began with a comprehensive needs assessment, led by Chapin Hall, to solicit TANF agency input to develop a foundation for technical assistance and continued improvement for TANF agency staff. The needs assessment used a combination of methods, including in-depth interviews with researchers and federal and local TANF leaders and staff, an online survey of TANF program leaders and staff in 54 U.S. states and territories about data infrastructure and data practices (48 agencies responded), and a review of publicly available reports and analyses that used TANF data.<sup>7</sup>

TANF agency responses provided insights into the baseline level of state capacity to access and use data sources for program improvement analytics. They also identified priority areas for training and technical assistance that could strengthen the capacity of state and territory TANF programs. The TDI team (MDRC, AISP, Chapin Hall, and the Coleridge Initiative) designed training and technical assistance to address these gaps, and content was organized according to the framework that the TANF Data Collaborative developed. The TDC framework mirrors five key phases of data analytics (shown in Figure 2) and identi-

**Figure 2. TANF Data Collaborative Framework**

The five key phases of data analytics projects described below informed the TANF Data Collaborative’s framework for training and technical assistance.



fies relevant support needed at each stage of that process. The phases include laying the groundwork for data analytics projects, accessing data, preparing data, analyzing data, and communicating data and findings. In practice, these phases are iterative and overlap, so the framework highlights questions and issues to address and revisit throughout the process.

The TDC offered a range of training and technical assistance products, services, and learning experiences targeting two audiences: (1) all TANF agencies or entities that serve families receiving TANF or who may become TANF-eligible, and (2) a select group of state TANF agencies that were chosen to participate in the TDC Pilot Initiative.

### **TANF Data Collaborative Resources Available to All TANF Agencies**

To advance all TANF agencies' use of their administrative data, the TANF Data Collaborative provided support through the following resources:

- **The TDC “Applied Data Analytics” course**, led by the Coleridge Initiative, focused on TANF and employment data and trained professionals at TANF and related human services agencies to develop key data science skills. The course was adapted from the [Applied Data Analytics curriculum](#) and, notably, provided access to linked, individual-level administrative data from both TANF and workforce agencies.<sup>8</sup> The course had three objectives: to train TANF agency staff in the use of modern decision-making tools and rigorous methods for computational data analysis; to establish professional networks and encourage cross-state collaboration; and to demonstrate how to create new approaches to storing, linking, and documenting data. The curriculum drew on best practices from both industry and government, including adherence to strict federal requirements for security and confidentiality.
- **Training and technical assistance on preparing federally reported TANF data** clarified federal reporting requirements and provided resources and individualized support to state and local TANF agencies to enhance the quality of the reported data. The TDI team also collaborated with the Office of Family Assistance on specialized analyses to help agencies gain further insights from the data.
- **Active dissemination** of TDC findings and initial lessons were shared at conferences hosted by federal agencies and national organizations with TANF agency administrators and staff across the field in attendance. Dissemination activities generated exchanges between TANF agencies and other social service agencies that informed TDC project planning.
- **The TANF Data Collaborative website** ([tanfdata.org](http://tanfdata.org)) offered a range of resources laid out in the TDC framework to provide on-demand support across the data analytics project continuum. Examples include a tool to assist in assessing data readiness, blog posts with quick tips on common data quality challenges, and interactive caseload dynamics figures to explore how different variables could affect TANF caseloads over time.

- **A toolkit for linking TANF and employment data for analysis**, under development in 2022, will help state and local TANF agencies access, link to, and analyze employment data from state unemployment insurance systems. The toolkit will address a variety of common challenges that agencies face, such as overcoming real or perceived legal barriers to data access, establishing a governance structure, selecting a data linkage method, and analyzing the linked data to gain actionable insights. The TDI team expects that the guidance will also be useful for a range of other state human services agencies, such as the Supplemental Nutrition Assistance Program, Child Care Assistance, and Child Support, as well as state departments of labor. In addition, legislators, advocates, service providers, and other organizations interested in supporting improved outcomes for the workforce could benefit from the information shared in this toolkit.

## The TANF Data Collaborative Pilot Initiative

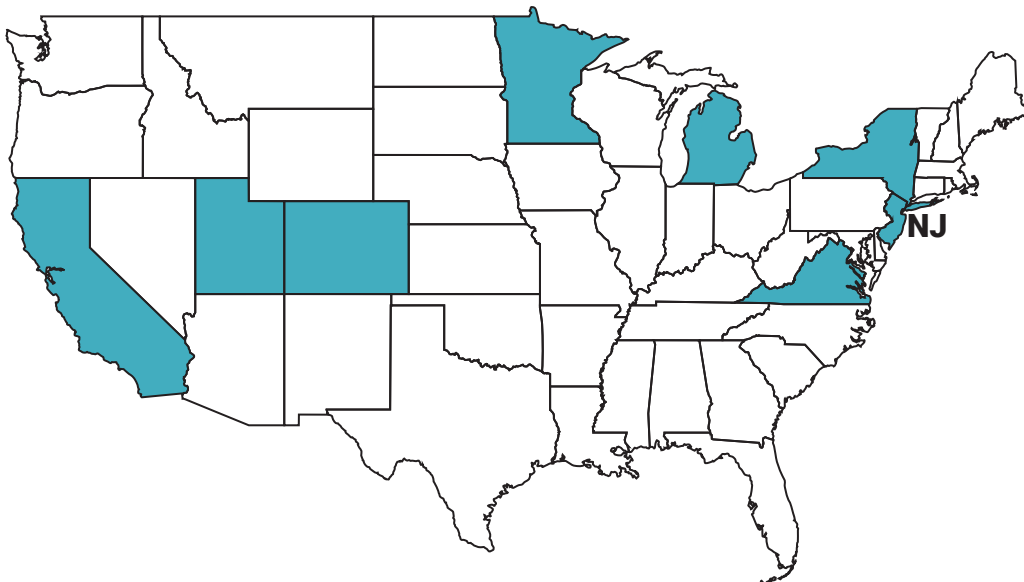
The TDC Pilot Initiative was an innovative approach to advancing state TANF agency efforts to improve program performance through applied data analytics. It provided intensive training and technical assistance for eight competitively selected TANF agencies. Pilot states received funding to plan and implement a multiyear project that leveraged TANF and other administrative data to inform program improvement over a 30-month pilot period through July 2022. It was unique in that it provided training in the use of both TANF and employment data. Throughout the pilot period, agency staff participated in hands-on data analytics training, engaged in one-on-one coaching sessions, attended regular technical assistance events, and made regular presentations on their progress and findings. This investment and concentration of activities reflected the high level of skill, knowledge, and organizational practices needed to support ongoing data analytics capacity for program improvement and was intended to develop TDC pilot agencies to serve as beacons of excellent data analytics practice.

### TDC Pilot Agencies

The selection process for the TDC Pilot Initiative was rigorous, with 22 self-nominations submitted. Agencies were asked to describe a well-defined data analytics project and their current access to TANF and wage data for analytic purposes. Additionally, each agency had to demonstrate the interest and commitment of its staff and leadership, which was necessary for learning. The selection process aimed to identify agencies with baseline access to employment data, with data analytics experience beyond reporting or compliance, and with proposed projects and goals that seemed most able to benefit from the TDC Pilot Initiative. The eight selected agencies (depicted by location in Figure 3) reflect a range of project types, data analytics capacities, and geographic diversity. Each agency engaged in a comprehensive suite of activities as it executed its data project over the 30-month pilot period.

Staff from MDRC and Chapin Hall were designated as pilot coaches, providing one-on-one support and on-demand access to a “technical bench” of data experts. The technical bench consisted of Chapin Hall and MDRC staff who have programming, statistical, and analytic

**Figure 3. TANF Data Collaborative Pilot Agencies**



- CA** California Work Opportunity and Responsibility to Kids (CalWORKs) and Family Resilience Branch
- CO** Colorado Department of Human Services, Division of Employment and Benefits
- MI** Michigan Department of Health and Human Services
- MN** Minnesota Department of Human Services, Economic Assistance and Employment Supports Division with Dakota and Olmsted Counties
- NJ** New Jersey Department of Human Services, Division of Family Development
- NY** New York State Office of Temporary and Disability Assistance
- UT** Utah Department of Workforce Services
- VA** Virginia Department of Social Services

expertise. They were available on an as-needed basis to join the coaches for instruction, advice, and discussion on topics such as how to create a longitudinal file, how to define a cohort, identifying which methods were most appropriate for answering proposed research questions, and how to conduct a linear regression and interpret results. Coaches and the data experts collaborated with pilot agency staff to leverage each agency's strengths, address any barriers that emerged, and help pilot agency teams maintain momentum to complete their pilot projects. The Coleridge Initiative led the Applied Data Analytics training for two cohorts of TANF agencies, including one cohort limited to the eight TDC pilot agencies, and all TDI partners contributed to the series of monthly technical assistance events and other activities.

## TANF Data Collaborative Principles Employed in the Pilot

The TDC Pilot Initiative was designed so the TDI team and each of the eight pilot agency teams could jointly develop their data analytics capacity, fostering short- and long-term learning. In the short term, each pilot agency team deepened its understanding of how to establish practices and routines associated with successfully completing a data analytics project (for example, defining a cohort, quality checking and cleaning the data, and so forth). It is hoped that the pilot agency teams will be able to use their enhanced data skills in the future – along with the practices, routines, programming code, and documentation developed and strengthened via their pilot projects.

The TDI team also learned from the pilot agency teams – for instance, from the variety and ambition of their research questions, which were grounded in program operations and place. Their insights on the challenges to using data to inform program improvement has deepened the TDI team’s understanding of the day-to-day realities in a TANF program. This understanding shaped the TDI team’s approach to technical assistance and training, aiming to make them more engaging and responsive. The pilot agency teams also reminded the TDI team of the commitment, passion, and expertise government professionals bring to their daily tasks in the face of competing and urgent work demands and the challenges created by the COVID-19 public health crisis.

To support sustained learning, the approach of the TDC Pilot Initiative and its training and technical assistance activities were informed by a set of principles based on theories about adult learning and change management.<sup>9</sup> Application of these principles supported each pilot agency team’s learning process in the short term (during the 30-month pilot period) and was expected to continue to do so in the long term (after the pilot period ended). These principles include:

- **Valuing and leveraging the expertise of TANF agency staff.** The TDC Pilot Initiative was centered on the skills, interests, and organizational priorities of the participating agencies. Pilot agency teams conceived of, conducted, and presented their data analyses. They refined their research questions, drafted analysis plans, cleaned the data, built data files, or conducted analyses, and when needed, received targeted support from pilot coaches and the technical bench. Pilot agency teams also led technical assistance events to serve as experts for each other. For example, representatives from three pilot agencies facilitated a session to explore different approaches to measuring TANF recipient employment stability and advancement and measuring employer outcomes.
- **Supporting grounded data analysis by establishing cross-disciplinary pilot agency teams.** The TDI team promoted the formation of cross-functional or cross-disciplinary pilot agency teams from the beginning of the pilot to ensure that data analyses would be relevant and policy recommendations would be applicable. Each pilot agency team consisted of staff from different units in the state’s TANF program, such as program, policy, data analysis, and reporting, and across the organizational hierarchy, such as administrators, mid-level managers, and analysts. The intentional mixing of technical staff (that



is, data staff) with nontechnical staff (for example, program staff) yielded an exchange of keen insights that could contribute to more accurate data analyses and interpretation of results. For example, program staff offered important contextual details to help data staff better understand the TANF customer caseload, program policies, or operational practices. Likewise, when program staff understood the basic mechanics of data analysis, they gained helpful and necessary contextual information to better inform the creation of relevant research questions and were better positioned to help interpret the results and put them into action. The TDI team customized the content of pilot activities with the various staff roles in mind to maximize their engagement and benefit.

- **Promoting the application of a “racial equity lens” in each pilot project.** Longstanding economic and racial disparities laid bare by the COVID-19 pandemic made equity considerations more important than ever for the TANF program. In the later phases of the pilot period, pilot agency teams considered what equity means in their local context and how their research questions, data, and analyses might contribute to reducing inequities. The TDI team assisted pilot agencies as they incorporated a racial and ethnic equity perspective throughout the phases of their Pilot Initiative projects. For example, the September 2021 monthly event, titled, “Centering Racial Equity Throughout the Data Life Cycle,” showcased AISP’s [Toolkit for Centering Racial Equity](#) through lectures and small-group discussions and activities. Pilot participants learned about positive and problematic practices for using administrative data. The goal was to develop actionable strategies to consider racial equity in their day-to-day work and TDC Pilot Initiative projects.
- **Creating contextualized training content that is responsive to TANF agencies’ environments and operations.** Training incorporated TANF and employment data rather than generic data, and pilot agency teams shaped training and technical assistance via ongoing feedback solicited by the TDI team. Based on pilot agency team input, training and technical assistance events were modified to enable participants to opt into different learning tracks depending on their background or interests.
- **Building sustainable processes and tools to accelerate data innovations and support transparent and reproducible research.** The TDI team created detailed instructional code notebooks for key data-processing steps, which can serve as an on-demand resource later. These notebooks also demonstrated documentation best practices that pilot agency teams could incorporate into their projects. During technical assistance events and coaching, the TDI team promoted strategies related to data documentation, staff training, and communication and dissemination to help pilot agency teams retain what they had learned and sustain its application.

## TDC Pilot Initiative Components

Informed by the principles described above and by the reported barriers to data use for TANF agencies — shortage of staff time, outdated or insufficient technology and data tools, and variable staff skills and experience in data analytics<sup>10</sup> — the TDI team designed the training and technical assistance activities in the TDC Pilot Initiative to address the gaps

identified by agencies in the earlier data use needs assessment. As such, the pilot comprises an interdependent set of five components. These components supported TANF pilot agencies in their efforts to create and execute data analytics projects that addressed a performance or improvement question of their own choosing. While each component could independently contribute to enhancing pilot agency teams' data analytics capacity, the intentional integration of pilot technical assistance and peer-focused events was designed to support sustained learning.

**COMPONENT 1: DIRECT FUNDING.** The Administration for Children and Families allocated resources to provide the eight pilot agencies with funding (up to \$175,000 per pilot agency) to support staff time to plan and implement a data analytics project and to participate in TDC Pilot Initiative activities. For example, some pilot agencies used these funds to hire data analysts to perform required activities, such as reporting, so that more experienced analysts could focus their time and attention on building capacity to conduct more advanced analytics. This funding directly addressed two of the barriers noted above related to staff skills and availability (shortage of staff time) cited in the needs assessment.

**COMPONENT 2: BUILDING FOUNDATIONAL SKILLS THROUGH THE TDC PILOT INITIATIVE APPLIED DATA ANALYTICS COURSE.** The pilot agency teams' completion of the tailored Applied Analytics training laid the foundation for successfully designing and conducting their own data analytics projects. The training provided an opportunity for hands-on, real-world practice with TANF and employment data. Specifically, teams used Indiana Family and Social Services Administration Agency data available through a secure Cloud-based computing platform (the Administrative Data Research Facility) as the basis for exercises. In addition to covering statistical and data-handling skills, the course design centered on collaboration, privacy, confidentiality, and data security. This foundational material was reinforced and built upon in monthly pilot events and teams' work with their coaches throughout the pilot period.

Similar to the regular Applied Data Analytics course, the content of the adapted course was designed to equip a wide range of agency staff (including those in leadership) with the skills needed to be part of fully integrated data science teams within agencies. It was also developed to be both accessible and challenging to all staff members, from data novices to computer experts. For example, subject matter experts with little experience in programming learned content to effectively communicate with team members who are more experienced in data analysis, and data experts learned which measures are most useful and why from a program perspective.

During the course, each pilot team also completed a project that involved working with TANF recipient data and wage records. This activity fostered a deeper understanding of the relationship between labor market conditions and TANF recipients and their outcomes, including employment, earnings, and wage growth. The pilot agency teams also practiced developing research questions while considering the characteristics of TANF program recipients that are associated with higher earnings or those who leave the program and do

not return within certain timeframes. This applied experience enhanced teams' knowledge base, which they could then draw on for their own projects.

The breadth of the course content, hands-on learning methods, and assignments outside the course sessions made up an intensive learning experience while pilot participants continued to do their jobs during the COVID-19 pandemic. The course consisted of three modules. The first module was a self-paced introduction to two programming languages – R and SQL. The second and third modules covered database management, data visualization, record linkage, machine learning, inference, privacy, confidentiality, and ethics. A particularly important set of skills was learning how to develop a project scope within the constraints of available data and how to restructure the data into cohorts of TANF program recipients as they enter and exit the program.

Within each module, the participants first viewed short videos covering introductions and theory, followed by an interactive Zoom lecture that reinforced important takeaways and addressed questions. Then, teams broke into small groups to work on the Applied Data Analytics course project, which involved applying the concepts covered by the modules. Participants were given access to code notebooks made available on GitHub (a software development platform) as an ongoing, on-demand resource.<sup>11</sup>

Participants answered questions that appeared in the short videos to ensure that they understood the content; they also provided feedback about the lecture, including what they would have done differently. This interactive process drove the successful delivery of the course content and allowed the instructors to customize the material every day of the course to support participants' progress and make sure they were able to keep up. It also ensured that course products were relevant and central to each pilot agency team's objective, and it enabled teams to demonstrate the value of using administrative data to solve real problems.

**COMPONENT 3: ACCESS TO A DEDICATED TDC COACH AND TO A TECHNICAL BENCH OF DATA EXPERTS.** Each pilot team had a dedicated TDC coach and on-demand access to data experts to address needs and challenges raised by their specific projects. The coaches brought considerable experience and expertise in managing and conducting data analytics projects and using the results to inform decision-making.

Regular coaching meetings included the designated TDC coach and all pilot agency team members, and the calls provided a space for teams to ask questions about technical assistance topics, project work, and deliverable deadlines. The coaches worked with their teams to brainstorm ideas for research questions, solve problems, and weigh choices. Coaches engaged on strategic issues, including examining and breaking down research questions that were too broad or that the data could not elucidate. Coaches also worked with their teams on mechanical issues such as troubleshooting software problems.

The coaching level of effort was intended to support pilot agency teams to refine the design of their projects and to solidify early learning from the Applied Data Analytics

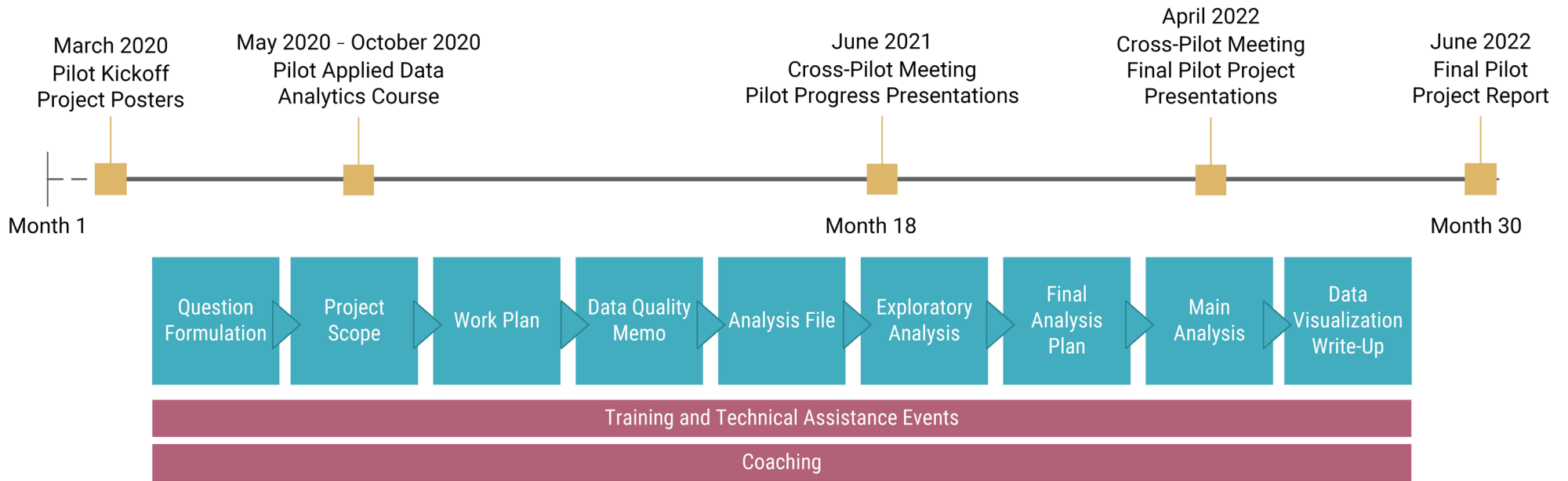
course and regular training and technical assistance events. Additionally, coaches were forming constructive relationships that allowed for further individualized support as they made progress toward each pilot milestone, described below. As discussed earlier, the coaches provided navigation and support while putting pilot agency teams in charge of completing the work. The change in intensity was intended to allow teams to become more self-sufficient over time.

**COMPONENT 4: STRATEGICALLY PHASED MILESTONES AND DELIVERABLES WITH CORRESPONDING TRAINING AND TECHNICAL ASSISTANCE.** By design, each of the eight pilot agencies started with similar levels of data access, availability of technology and tools, and staff time, among other elements. Yet, pilot agency teams varied in their size, skill sets, experience working with data, and organizational structure within their TANF agencies. Additionally, each team had different research questions unique to the needs of its particular TANF recipient caseloads and its interests. Regardless of where they started, the pilot agency teams demonstrated learning by reaching common project milestones and completing project deliverables throughout the 30-month pilot period. (See Figure 4.) The pilot milestones and deliverables included goals and expectations for the pilot agency teams and were designed to break the data analytics process into smaller and more accessible steps to promote early wins. Each milestone generated momentum as pilot agency teams strove to meet deadlines. Completion of deliverables also served as key moments for pilot agency teams to present and share their progress with their peers. Finally, milestones and deliverables marked progress across the five phases of the TDC framework and toward completion of the data analytics projects.

For example, once selected, all pilot agency teams attended a project kickoff in March 2020. The primary objectives of the three-day meeting were to (1) review the pilot expectations and learning opportunities; (2) introduce key concepts related to building data analytics capacity at the project level as well as at the organizational level (including technical assistance on how to pose research questions and how to develop a feasible project scope); and (3) build relationships as cross-functional pilot agency teams of data and policy staff got to know each other better while meeting other pilot agency teams. Each pilot agency team created a project poster depicting its initial research question, data, and methods, and participated in a “gallery walk” where kickoff participants walked to each poster and each team conducted brief presentations on its project. The walk enabled pilot agency teams to discover how their peers were approaching similar issues (for example, the intersection of TANF and transportation, child care, or child support, among others) and immediately anchor the TDC Pilot Initiative on the pilot agency teams’ priorities and goals. Teams were able to ask questions and offer feedback, which helped establish the foundation for a “learning community” across the teams (described below). The teams also spent dedicated time with their coaches to discuss the proposed projects, roles, and expectations.

Deliverables, such as an interim summary report and a midpoint conference presentation in June 2021, gave each pilot team an opportunity to pause, take stock, and reflect on what they had done and to document their work so it could be presented to peers and to the TDI team, who then provided feedback. By the end of the TDC Pilot Initiative, pilot agency

**Figure 4. TANF Data Collaborative Pilot Initiative Timeline and Milestones**



teams had deepened their analyses, documented their work, and examined how they had answered their research questions. The final milestone and deliverables offered pilot agency teams a reason to translate what they had learned and why it would matter to a variety of audiences. Each deliverable was customized for a different audience and included an overall summary report with an executive summary and a presentation of the pilot agencies' results at an April 2022 conference.

Ongoing training and technical assistance events were synchronized with milestones and the completion of deliverables to help expand pilot agency teams' capacity in a particular project phase, as reflected in the TDC framework. Training and technical assistance events prepared pilot agency teams for a range of data analytics activities such as how to effectively collect, prepare, organize, ensure quality of, analyze, and report data. See Box 1 for an example of an event.

**COMPONENT 5: TDC PILOT INITIATIVE LEARNING COMMUNITY.** The TDC Pilot Initiative learning community provided informal and formal opportunities for pilot agency teams to engage in peer-to-peer learning. The TDI team facilitated a variety of activities at the 2020 project kickoff that encouraged the formation of the learning community as pilot agency teams met and connected with each other and began exchanging their experiences with data analytics. Relationship-building continued during the Applied Data Analytics course, which encouraged collaboration across pilot agencies. These two events were followed by regular monthly events during which pilot team members interacted and strengthened connections in small-group breakout discussions. Occasionally, events showcased pilot work by offering a stage to share each other's expertise. Another cross-pilot agency learning opportunity emerged when two pilot agency teams requested additional support as they built their knowledge and use of R. In response, the coaches and the technical bench hosted R office hours for pilot agency team members to help them increase their understanding, practice coding, and be introduced to a wide variety of free, online resources. During office hours, pilot agency team members shared their screens and collectively walked through a set of coding exercises so that all could learn what worked, what didn't, and why. In between planned office hours, pilot agency team members completed assignments to further practice what they had learned.

Informal opportunities included "pilot hangouts," which reserved a time and space for pilot agency teams to break into small groups and get to know each other, have a little fun, and discuss whatever questions or topics mattered to them in that moment. For example, two pilot hangouts were dedicated to giving pilot agency team members a chance to connect to professionals in similar roles in other states and to build new relationships in the absence of the annual in-person conferences, which were canceled because of the pandemic. In addition to hosting events, the TDI team provided access to a messaging application for pilot agency team members to share ideas with each other, ask each other questions, and learn from each other through online conversations, but it was not used heavily and the TDI team did not pursue its use.

### **Box 1. Example of a Training and Technical Assistance Event in the TANF Data Collaborative Pilot Initiative**

MDRC hosted a two-part Data Quality Control series of training and assistance events as part of the TANF Data Collaborative Pilot Initiative to support pilot agency teams in completing a data quality memo milestone. A data quality memo, which reflects a critical step in the data analytics process, documents issues found in the data and the steps that are taken to address them. In Part One of the series, participants learned to identify common data quality errors and to explain the effects of data quality issues on analysis and policy implications. During Part Two, participants explored and applied strategies to mitigate common data quality issues that are documented in a data quality memo.

The series was designed so that participants could “choose their own adventure” by opting into one of three groups based on their roles related to data quality control efforts. The first group was for staff familiar with TANF program operations but who didn’t work with data regularly. This group reviewed and discussed an example of a data quality memo and identified high-level concepts to be captured in the memo – for example, typical elements like file location, data source, and how duplicates or missing values (“missingness”) are handled. They also explored how their TANF program knowledge could inform the way in which data quality issues are addressed – for example, to provide input on the level of missingness that would be a concern. The second and third groups were geared toward staff who worked with data regularly, and they reviewed and discussed use of an “R Markdown” file within the R programming language. The R Markdown file can be used to embed text within programming code to document decisions directly in the data file. This approach replaces the use of a standalone data quality memo and standardizes and consolidates documentation in one location in an easy-to-read format that can also be used to generate reports and presentations. One group reviewed the fundamentals of R Markdown files, while the participants in the other group, who were more familiar with R, covered more technical questions.

All participants received a data quality memo template for use in future projects to document which data quality strategies were used as well as a TANF Data Collaborative Data Quality Control Guide – a checklist of actions to take and questions to review as a tool to ensure high data quality.

## **Summary**

The TANF Data Innovation project was designed to bring together state, federal, and non-profit and university-based researchers to accelerate the use of administrative data in the management of the TANF program. TDI’s TANF Data Collaborative built on the strengths and specialized experience of each TDI team collaborating partner, while addressing issues that are common to data analytics projects in the public sector.

The TDC Pilot Initiative offered a multipronged model of training, technical assistance, and a peer learning community, with the goal of producing sustained organizational change in TANF agencies. It was infused with a posture of “learning by doing,” which meant that the TDI team, coaches, or technical bench were advising and supporting pilot agency teams in their efforts to complete the project work themselves in order to maximize their learning. As they successfully completed pilot project milestones, pilot agency teams demonstrated they were advancing their knowledge and skills and using new tools.

In deciding to focus most of its resources on eight pilot agency teams rather than offering widespread technical assistance, the TDI team and its federal partners gained a more nuanced understanding of the data analytics issues facing state agencies. This model also allowed the TDI team to adjust to both general and specific needs that arose throughout the pilot period. The achievements of the pilot agencies suggests that the TDC Pilot Initiative model is a promising approach to building organizational data analytics capacity, especially given the considerable disruption to personal and professional lives caused by the pandemic.

Administrative data collected by state human services agencies has the potential to be an important component of evidence-building efforts. As is often the case, state human services agencies have access to a fuller range of TANF data elements than is available at the federal level. For those federal agencies and programs interested in increasing the capacity of their state partners to use their administrative data for learning and improvement efforts, the TDI project provides a useful example. It demonstrates how to design and implement a strategy to enhance data infrastructure and support state staff as they conduct their own policy-relevant data projects.



## Notes and References

- 1 Scott W. Allard, Emily R. Wiegand, Colleen Schlecht, A. Rupa Datta, Robert M. Goerge, and Elizabeth Weigensberg, “State Agencies’ Use of Administrative Data for Improved Practice: Needs, Challenges, and Opportunities,” *Public Administration Review* 78, 2 (2018): 240–250.
- 2 Jared Council, “Data Challenges Are Halting AI Projects, IBM Executive Says,” *Wall Street Journal* (May 28, 2019).
- 3 Dennis P. Culhane, John Fantuzzo, Heather L. Rouse, Vicky Tam, and Jonathan Lukens, “Connecting the Dots: The Promise of Integrated Data Systems for Policy Analysis and Systems Reform” (Philadelphia: Intelligence for Social Policy, University of Pennsylvania, 2010).
- 4 Edith Yang and Richard Hendra, “The Importance of Using Multiple Data Sources in Policy Assessments: Lessons from Two Conditional Cash Transfer Programs in New York City,” *Evaluation Review* 42, 5–6 (2018): 550–574.
- 5 Commission on Evidence-Based Policy Making, *The Promise of Evidence-Based Policymaking: Report of the Commission on Evidence-Based Policymaking* (September 2017). Website: <https://www.acf.hhs.gov/opre/project/commission-evidence-based-policymaking-cep>.
- 6 Robert M. Goerge, Emily Wiegand, and Leah Gjertson, “Unpacking Data Use in State TANF Agencies: Insights from the TANF Data Innovation Needs Assessment” (New York: MDRC, 2021).
- 7 Goerge, Wiegand, and Gjertson (2021).
- 8 Frauke Kreuter, Rayid Ghani, and Julia Lane, “Change Through Data: A Data Analytics Training Program for Government Employees,” *Harvard Data Science Review* 1, 2 (2019): 1–26.
- 9 For adult learning, see Sharan B. Merriam and Laura L. Bierema, *Adult Learning: Linking Theory and Practice* (San Francisco: Jossey Bass, 2013). For change management, see Abdelouahab Errida and Bouchra Lotfi, “The Determinants of Organizational Change Management Success: Literature Review and Case Study,” *International Journal of Engineering Business Management* 13 (2021): 1–15.
- 10 Goerge, Wiegand, and Gjertson (2021).
- 11 Coleridge Initiative, “TDC’s 2020 Applied Data Analytics Training Program” (2020). Website: <https://github.com/Coleridge-Initiative/ada-tdc-2020>.

## Acknowledgments

We would like to express our sincerest appreciation to the agencies who participated in the TANF Data Collaborative Pilot Initiative. They include California Work Opportunity and Responsibility to Kids (CalWORKs) & Family Resilience Branch, Colorado Department of Human Services, Division of Employment and Benefits, Michigan Department of Health and Human Services and the University of Chicago Harris School of Public Policy, Minnesota Department of Human Services, Economic Assistance and Employment Supports Division with Dakota and Olmsted Counties, New Jersey Department of Human Services, Division of Family Development and Rutgers University, Division of Family Development, New York State Office of Temporary and Disability Assistance, Utah Department of Workforce Services, and Virginia Department of Social Services. The Pilot Initiative would not have been possible without the dedication of the individual staff from these TANF agencies who formed the pilot agency teams. We would also like to thank our partners, Actionable Intelligence for Social Policy, Chapin Hall, and the Coleridge Initiative, who together with MDRC formed the TANF Data Innovation team, and Public Strategies for their design and development of the [tanfdata.org](http://tanfdata.org) website. The full TANF Data Innovation team informed and supported the development of this brief. Particular thanks are due to Richard Hendra, Barbara Goldman, Erika Lundquist, and Johanna Walter of MDRC, and Nicole Deterding, Girley Wright, Bethanne Barnes, and Lauren Frohlich of the Administration for Children and Families in the U.S. Department of Health and Human Services for reviewing and supporting the production of this brief. Thanks also go to Jill Kirschenbaum and Alice Tufel for editing the brief and to Carolyn Thomas and Ann Kottner for preparing the brief for publication.

**OPRE REPORT 2022-124**

**JULY 2022**

**AUTHORS:** Melissa Wavelet, Stephanie Rubino, Caroline Morris, and Maryah Garner

**SUBMITTED TO:** Nicole Deterding and Girley Wright, Project Officers, Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services

**CONTRACT NUMBER:** HHSP233201500059I

This report is in the public domain. Permission to reproduce is not necessary.

**SUGGESTED CITATION:** Wavelet, Melissa, Stephanie Rubino, Caroline Morris, and Maryah Garner. 2022. "Increasing Data Analytics Capacity in State TANF Agencies: The TANF Data Collaborative Approach." OPRE Report 2022-124. Washington, DC: Office of Planning, Research, and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

**DISCLAIMER:** The views expressed in this publication do not necessarily reflect the views or policies of the Office of Planning, Research, and Evaluation, the Administration for Children and Families, or the U.S. Department of Health and Human Services. This report and other reports sponsored by the Office of Planning, Research, and Evaluation are available at [www.acf.hhs.gov/opre](http://www.acf.hhs.gov/opre).

**Connect with OPRE**



The TANF Data Innovation project is funded by the Office of Family Assistance and the Office of Planning, Research, and Evaluation within the Administration for Children and Families. MDRC and subcontractors Actionable Insights for Social Policy at the University of Pennsylvania, Chapin Hall at the University of Chicago, and Coleridge Initiative are conducting the Promoting and Supporting Innovation in TANF Data project for the Department of Health and Human Services (HHS) under a contract with the Administration for Children and Families, funded by HHS under a competitive award, Contract No. HHSP233201500059I. The project officers are Nicole Deterding and Girley Wright.

Dissemination of MDRC publications is supported by the following organizations and individuals that help finance MDRC's public policy outreach and expanding efforts to communicate the results and implications of our work to policymakers, practitioners, and others: The Annie E. Casey Foundation, Arnold Ventures, Charles and Lynn Schusterman Family Foundation, The Edna McConnell Clark Foundation, Ford Foundation, The George Gund Foundation, Daniel and Corinne Goldman, The Harry and Jeanette Weinberg Foundation, Inc., The JPB Foundation, The Joyce Foundation, The Kresge Foundation, and Sandler Foundation.

In addition, earnings from the MDRC Endowment help sustain our dissemination efforts. Contributors to the MDRC Endowment include Alcoa Foundation, The Ambrose Monell Foundation, Anheuser-Busch Foundation, Bristol-Myers Squibb Foundation, Charles Stewart Mott Foundation, Ford Foundation, The George Gund Foundation, The Grable Foundation, The Elizabeth and Frank Newman Charitable Foundation, The New York Times Company Foundation, Jan Nicholson, Paul H. O'Neill Charitable Foundation, John S. Reed, Sandler Foundation, and The Stupski Family Fund, as well as other individual contributors.

The findings and conclusions in this report do not necessarily represent the official positions or policies of the funders.

For information about MDRC and copies of our publications, see our website: [www.mdrc.org](http://www.mdrc.org).

**NEW YORK**

200 Vesey Street  
23rd Flr.  
New York, NY 10281  
Tel: 212 532 3200

**OAKLAND**

475 14th Street  
Suite 750  
Oakland, CA 94612  
Tel: 510 663 6372

**WASHINGTON, DC**

750 17th Street, NW  
Suite 501  
Washington, DC 20006

**LOS ANGELES**

11965 Venice Boulevard, Suite  
402  
Los Angeles, CA 90066

