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HOURS OF OPPORTUNITY

VOLUME 2

The Power of Data to Improve After-School Programs Citywide

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Summary

All cities strive to ensure that children and youth develop into healthy, productive members of society. Out-of-school-time (OST) programs, which for our purposes include after-school and summer learning programs, have been increasingly seen as helping cities and states meet this goal. Research has shown that high-quality OST programs are associated with improvements in children's attendance, homework completion, grades, school behavior, and socioemotional outcomes (Lauer et al., 2006). In addition, OST programs may reduce crime and teen pregnancy rates by engaging youth after school hours, prime time for teens, in particular, to engage in problem behaviors (Fight Crime: Invest in Kids, 2000; U.S. Department of Education and U.S. Department of Justice, 2000).

Within cities, OST programming can be fragmented and uncoordinated. OST providers rely on an unsteady and often insufficient patchwork of city, state, federal, and private funding and user fees. Further, in many cities that provide financial support for OST, funding is funneled through a variety of youth-serving agencies that lack basic information about the programs they fund, such as the number of students served and program attendance. The result can be sub-optimal provision: Those most in need of these services often have limited access to programs, and available programming is often not of the highest quality. Increasingly, researchers and supporters of these programs have advocated for more systemic efforts around OST provision as a method to improve quality and access (Halpern, 2006). One function of an OST "system" can be to create mechanisms that enable

the flow of information among key stakeholders to improve decision-making. Management information (MI) systems are one such mechanism, enabling the collecting and sharing of data.

The MI systems described in this monograph are web-based and used, at a minimum, to collect and organize data on OST program activities, participant demographics, and participant enrollment and attendance. Providers enter data on an ongoing basis, and the systems typically include a series of built-in reports, allowing city-level funders (often city youth-serving agencies or intermediaries) and providers to track program performance throughout a program session and at the end of a session. These systems may or may not be linked to other data systems, such as a school district data system.

In the absence of these web-based MI systems, providers either record enrollment, attendance, and program data on paper or use a static computing system that can be operated from only one computer at the provider site. Under these conditions, city managers often do not receive data from providers until after a session has ended.

Data from MI systems can lead to improved access and services, which could, in turn, lead to better participant outcomes in two ways. At the city level, current information on enrollment and participation gives city managers rough indicators of both a program's interest to students (enrollment) and its quality (participation). City managers can use this information to identify potentially struggling programs and intercede with support, determine which programs or types of programs to fund based on historical enrollment figures, and place programs in specific areas of the city with higher demand. Second, providers can use their own data to modify programs midcourse, follow up with students to encourage participation, and plan future programs more effectively.

Purpose of This Study

In an effort to spur the creation of citywide systems of high-quality OST programs, The Wallace Foundation established an out-of-school learning initiative to fund OST system-building efforts in five major

U.S. cities—Boston, Chicago, New York City, Providence, and Washington, D.C. A requirement of this effort was that the cities adopt MI systems to support OST programs and system building. The Foundation asked the RAND Corporation to study the cities' progress toward their goals and to provide an assessment of the use of MI systems in these and other cities.

This monograph addresses the second part of the RAND study and examines the use of MI systems by OST providers and city-level policymakers in eight case-study cities. Five of the cities were Wallace initiative sites; the three others were Denver, Louisville, and San Francisco. Findings from the first part of the study are reported in *Hours of Opportunity, Volume 1: Lessons from Five Cities on Building Systems to Improve After-School, Summer School, and Other Out-of-School-Time Programs* (Bodilly et al., 2010), which examines the system-building efforts in the Wallace initiative sites. A third RAND publication, *Hours of Opportunity, Volume 3: Profiles of Five Cities Improving After-School Programs Through a Systems Approach* (McCombs et al., 2010), presents case studies of the Wallace-funded cities' efforts under the grant, including the development and implementation of MI systems.

This monograph presents insights from eight cities and is structured around three overarching research questions:

1. Why and how were MI systems for OST adopted in citywide efforts?
2. How are cities' MI systems currently used and implemented by various OST stakeholders?
 - What is the current status of implementation in these cities?
 - What do cities do to ensure data quality?
 - How and to what extent do city-level officials and providers use data from MI systems?
3. What factors have enabled or hindered implementation?

Data and Methods

We use descriptive case analyses of eight major U.S. cities to investigate issues surrounding MI system adoption and use by city agencies, intermediaries, and OST providers. Because this monograph was produced as part of a larger study investigating system-building efforts in cities funded through The Wallace Foundation initiative, it includes the five Wallace-funded cities. However, The Foundation was interested in how other cities had adopted MI systems independent of the initiative. These cities were not selected to serve as contrasts or comparisons for the Wallace-funded cities, nor did we ensure that the sample was representative of all cities that have adopted MI systems to track OST programs. We identified potential additional cities through a literature review and interviews with officials from the National League of Cities and major vendors of MI systems used in OST programs. We also conducted a brief interview with a leader in each of the eight cities to determine the scale, scope, and use of each MI system and the leader's willingness to participate in the study. In consultation with Wallace Foundation staff, we selected the additional cities based on a number of factors, including where the city was geographically located and how it used its MI system. In addition, we attempted to avoid cities that were already participating in another Wallace-funded study regarding the participation of middle school youth in OST programs. Collectively, the eight cities provide illustrative examples of the development and implementation of MI systems to improve OST provision.

For each of the case studies, we interviewed a range of city leaders, including representatives from city agencies that funded OST programs, the mayor's office, the school district central office, and intermediary organizations, as well as OST providers, after-school coordinators, and principals. Across the eight sites, we conducted 168 interviews. In addition, we administered a survey to providers in each city except Boston, where the survey was not applicable because the MI system was still in development. We analyzed interview data around themes derived from prior literature and conducted descriptive statistical analyses of the survey data.

Findings

The OST field is relatively new to developing MI systems and using the data to inform decisionmaking. At the time of our last round of data collection, in spring 2009, the case-study cities did not consider their work in this area to be complete, but all had made substantial progress. We found that city officials and OST providers shared a vision of how MI systems could gather information to support system improvement. The specific findings are summarized here.

City context drove development decisions. Each city had a unique context and goals that shaped some overarching development decisions. Cities' initial goals (e.g., to improve contract management, to coordinate in-school and after-school program data) led varying proportions of OST providers to use the MI system and to the presence or absence of data linkages with other information systems in the city. Varying desire for control over the data led to differing decisions regarding whether to develop the MI system in-house or to contract with an external vendor.

MI systems evolved over time. Many of the cities made modifications to enhance their MI systems over time. Cities developed new types of capabilities in their systems, such as the ability to process requests for proposals; changed the type of data gathered; and worked to make the system more user-friendly. Changes in context in two cities (Boston and Washington, D.C.) led to the adoption of new MI systems to meet new or growing needs.

MI systems gave cities much-needed data about OST programming and participation, which they used to improve programs. All the cities used data from their MI systems to better understand OST programming and participation (e.g., enrollment, attendance, demographics). The importance of this use should not be underestimated. Prior to MI system adoption, the cities could say little about the programs they funded or the youth being served. As one interviewee noted,

The biggest benefit is knowing what we are buying with these programs because, for so many years, we worked off our projections and aggregate numbers provided by CBOs. When we went to real data, our numbers dropped to like 40,000 kids. The ben-

efit has been that now we know who we are reaching, how often, and how much money we are spending.

City officials put this information to work to improve participation and programming. For instance, funding partners in Denver used MI system data to identify population groups prone to dropping out of OST programs and found that middle school students were particularly likely to drop out of programming. Subsequently, the partners worked with OST site coordinators to design programs that would better engage this age group.

MI system data improved OST contract management and shifted its nature to focus on the quality of programming. Agency and intermediary leaders in Chicago, New York City, San Francisco, and Washington, D.C., all reported using MI system data to improve contract management. For instance, the funding agency in San Francisco (Department of Children, Youth, and Their Families) used MI system data to manage contracts with grant recipients and to remit payments through a monthly invoicing feature.

In New York City and Chicago, we were told that the collection and use of data had shifted the nature of contract management. According to interviewees, prior to implementing their MI systems, the cities' management of OST providers was strictly contractual and focused on "paper" rather than programs. With MI system data, they were able to focus on program quality as well. For instance, city managers used average daily attendance reports to identify potential quality problems. If attendance rates dropped below certain levels, managers followed up with providers to determine whether there were problems that needed to be addressed.

Cities used MI system data to make funding decisions and to lobby for additional funding. Two cities used MI system data to inform how they funded providers. In Providence, intermediary leaders used past enrollment reports as one source of information during funding review meetings. New York City formally used its MI system as a basis for provider compensation and reduced funding to providers that did not meet attendance targets.

Agencies and intermediaries also reported using MI system data to justify their petitions for continued or additional funding. In Providence, the intermediary presented MI system reports to its board of directors, the city council, and funders, and it also used the reports to raise support for city OST efforts. In Denver, the public schools and other funding partners used results from the annual evaluations conducted by an independent evaluator, which showed a positive relationship between OST participation and school outcomes, to highlight the importance of increasing investment in the city's youth services. In New York City, the main funding agency reported using MI system information on programming and students served to help generate increased funding from the city. In fact, the agency's OST budget grew from \$46.6 million in fiscal year (FY) 2006 to \$118.2 million in FY 2009. As one respondent noted,

Our agency competes for dollars against other social service agencies. Because our agency has data that demonstrate the programs that are funded and the students that are served, our agency holds a competitive advantage above others.

Sharing data from the MI systems led to greater coordination among stakeholders. We found a wide range of OST data-sharing agreements across the study sites. Some cities shared MI system reports with other city agencies but did not link the MI system to other data systems. For instance, in New York City, the main funding agency shared OST participation information with another agency serving younger children (birth to school age). This data sharing allowed the two agencies to track and understand the continuation of services for eligible children from early childhood through their school years. Data were also shared with the city's department of education.

Other cities established agreements to link the MI system data to school outcomes to enable studies of the relationship between OST participation and children and youth outcomes. Providence, Louisville, and Denver each linked MI system data to school district data and studied the links between OST participation and school outcomes. Similarly, several agencies in Washington, D.C., including the interme-

diary, agreed to participate in data sharing through the city's Office of the Chief Technology Officer to link school district, OST participation, and health and human services data.

Mayoral demand for data appeared to be a key enabler of the cities' use of data. Resources, particularly time, were limited for city officials. Without a demand for data at the highest levels, some found it difficult to prioritize analyzing data even when they desired to do so. However, mayoral demand for data required city officials to set aside time and prioritize activities and resources in order to analyze, report, and use the MI system data. For instance, in New York City, agencies ensured that data were entered into the MI system and developed the capacity to analyze those data to provide regular progress reports to the mayor's office.

All cities invested in efforts to improve data quality. Data quality is important if an MI system is to be an effective tool to improve OST programming. Cities took a variety of approaches to ensuring the quality of entered data. Two cities uploaded participant data from district databases to ensure the accuracy of student records. Some city officials touted having participants scan their own identification cards as a highly reliable method of collecting attendance data. With these systems, attendance data were automatically entered into the MI system, preventing many data-entry errors. However, we found the scan technology to be underused by providers in the cities that supported it.

All cities invested in training users, including OST providers and city staff, on how to use the MI system. New York City and San Francisco also created intermediate and advanced training sessions for OST executive directors and program managers (individuals in charge of a program or group of programs) that covered data analysis, interpretation, and the creation of summary reports. Providers reported substantial demand for MI system training and were particularly interested in more advanced training in how to analyze, interpret, and share information.

Many providers reported using data from MI systems; however, they also reported constraints that limited their use of the data. The majority of providers agreed that their city's MI system provided valuable information about OST programs and reported a number of uses

for the data, including program management, program improvement, providing information to funders, and lobbying for additional funding. As one San Francisco provider explained,

Although data entry can put a strain on the agency due to time restrictions (not enough time for staff to enter data), the programs greatly benefit from the information derived from the [MI system]. The information helps in many ways, such as program management, program evaluation, program planning and fund development, and quality assurance.

However, even when there was support for the MI system, a few providers described capacity constraints that limited their use of data. According to one provider,

In my opinion, the whole concept of management information systems is fundamentally sound and will eventually become extremely useful. However, for small organizations like ours, unless funding and personnel problems are solved, it will be challenging to get the most out of the system. For now, it is a tool we see as being very useful up the road. We see potential and hope to be able to take advantage of it in the near future.

Providers who did not feel that the city MI system was useful tended to perceive it as oriented toward contract management and compliance. One provider expressed this sentiment plainly: “This system was not designed to help me. It is used by someone else to monitor me. Therefore, its usefulness to me is lost.”

Some providers reported having to use one or more additional MI systems for other funders or to support their own organization’s improvement needs, which was negatively related to providers’ views of the city MI system. Survey respondents explained the difficulties and frustration of using multiple MI systems. As one provider explained,

We all understand the need for management information systems. However, when an organization is funded by federal, state, and city contracts and each . . . requires a management information system, our staff have to enter the same client information

. . . into five different databases. Government agencies need to collaborate better and have a coordinated management information effort. It is a waste of staff time to enter the same information into so many databases—and this is an activity that no government grant is willing to pay for.

Finally, providers who had been using the city MI system longer were more likely to view it positively. This suggests that there is a learning curve associated with a new MI system and that perceptions of usefulness improve after the first year.

Lessons for an Emerging Field

While each of the sites experienced the development and implementation of MI systems in different ways, many of the factors that constrained or enabled the systems' use were shared. These experiences point to the following lessons for other cities interested in improving OST provision through the use of data:

- *MI systems are capable of supporting OST system improvement but will not do so without careful planning.* Cities in the study faced a number of decisions during the development phase that affected the ways in which the MI systems could be used. The lesson is that a clear understanding of the goals for the data, including how those goals support larger OST system-building goals, is a prerequisite for an effective MI system. In addition, it might be necessary to modify the MI system based on experience to enhance its utility. Likewise, cities had to adopt methods of breaking down barriers to the systems' use, such as training, dedication of staff time for data analysis, or the hiring of external evaluators.
- *Using data to showcase OST efforts can lead to additional funding and support.* City leaders and providers reported that the ability to show their funders enrollment, participation, and outcome data led to increases in resources and provided them with a competitive advantage over others seeking funding.

- *Customization of web-based systems encouraged MI system use.* MI system users typically thought the systems were easy to use and said that the web-based interface, implemented in all the cities we examined, encouraged timely data entry because the system could be accessed from multiple locations. Moreover, customization of the MI systems to meet the specific needs of city agencies and providers led to greater use of the systems and their data.
- *Investing in high-quality training reaps benefits.* Providers who reported receiving high-quality training were more likely than others to believe that the city MI system was useful. All cities offered training to providers and to city-level program officers to familiarize them with the MI system. Providers' demand for training was high, and they particularly wanted more advanced training in data analysis and the use of data.
- *Mechanisms to eliminate redundancies in data entry and reporting requirements would help providers.* One of the most significant constraints to providers' use of MI system data was the burden of entering the same data into multiple MI systems, which could include the city's MI system, another city's MI system, their organization's MI system, and a private funder's MI system. One solution would be for cities to engage in better coordination across major city organizations and to implement a common MI system. Another option would be to configure the city's MI system to allow providers to enter additional data required by other funders or their own organizations. A third option is to allow providers to easily exchange data between the city's OST MI system and other MI systems that providers might use.