Data Use to Improve Implementation

Best Practices and Tools to Use Data to Improve Implementation

Introduction

Implementation efforts rely on data to guide ongoing improvement. Data are used to understand current implementation opportunities and challenges and assess the impact of changes and improvements made during implementation. Implementation support practitioners can support teams to identify key questions and change ideas and then think creatively about different types of data – not limited to existing data or established performance measures – to answer those questions and test improvements.

How Can Data be Used to Improve Implementation?

With assistance from implementation support practitioners (ISP), implementation teams and implementing sites use data across the stages of implementation to drive ongoing improvement of implementation activities such as:

- team functioning;
- communication and feedback loops; and
- infrastructure to develop practitioner and staff competency, align policies and create supportive organizational cultures.

The work of implementation improvement typically begins in installation and continues through full implementation. Examples of how data can be used to improve implementation at each of these stages are described below.

Installation is a planning and preparatory period dedicated to developing infrastructure that will support the program or practice, including building practitioner and organizational capacity. Implementation teams can identify questions they would like to understand or answer regarding implementation and develop a plan to collect and track data related to the questions. For example, teams may be interested in understanding whether current infrastructure is sufficient and use data gathered through an infrastructure assessment to plan for improvements.

Initial implementation begins when staff initiate use of the program or practice; it is a time of learning, with attention to using both quantitative and qualitative data for implementation improvement. Using data is critical at this stage to identify implementation barriers, track progress of implementation improvement efforts and stabilize implementation infrastructure. During initial implementation, implementation support practitioners can guide teams to identity

the data they want to track during full implementation that will inform continuous quality improvement efforts.

Full implementation occurs when most practitioners can skillfully deliver the program or practice or all parts of an initiative, and the population you are focusing on experiences improved outcomes or results. Supporting teams to use data at this stage can help identify opportunities to continue improving implementation and to develop efficiencies in implementation efforts. At this stage, data can be used to link strategies to full implementation outcomes, including sustainability.

What Are Best Practices for Using Data to Improve Implementation?

The following two sections outline best practices for creating structures and processes that enable the use of data for implementation improvement. Implementation support practitioners can guide teams in applying these best practices. It is important to note that using data for implementation improvement requires carefully identifying and analyzing data. As relevant data are identified, implementation support practitioners can support teams to ensure a diverse set of data sources that go beyond administrative data. Data analysis should include disaggregation by race and other subpopulations relevant to the team's improvement efforts. Ensuring that those accountable for data analysis have the capacity to disaggregate data and are supported do so are important aspects to successful implementation improvement.

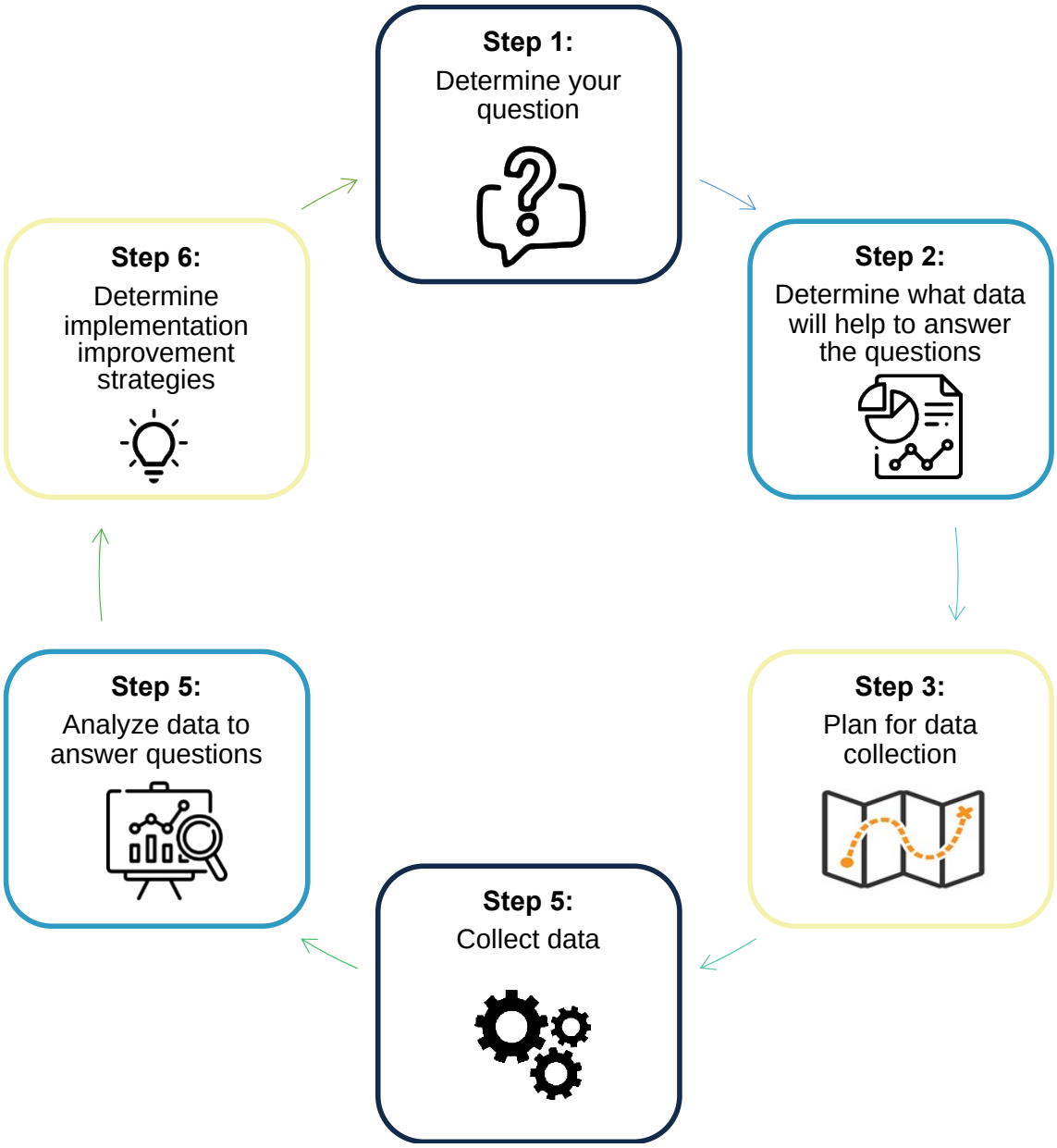
Creating Structures to Use Data for Implementation Improvement

- Clear accountability for using data. One of the core functions of an implementation team is the use of data to guide implementation improvement.[1] A plan for using data for implementation improvement should be developed by the team and then vetted and shared across the organization and with external partners. The plan should detail who is responsible for the process, as well as how data is gathered, used and shared within the organization and with partners. As with all team functions, quality data use is achieved through authentic participation from a diverse set of team members that represent varied perspectives in an organization or system, not just leaders or experts.[2] The process for using data should be proactive and transparent for all staff and families served by the organization.[3]
- Support those accountable for using data. Leadership support is an important factor in the extent to which implementation team members can successfully use data. For example, when leaders put into place certain resources or procedures (e.g., delegated authority to implementation team to collect and use data, development of policies around data use, etc.), teams are more likely to consistently use data for decision making and improvement. Additionally, organizations that embrace ongoing learning provide a more conducive environment for improvement efforts. It is also important to note that team members and community partners may need intentional capacity strengthening to participate in the data improvement process. Leaders and team members, in partnership with implementation support practitioners, can work together to understand assets and needs and form a plan to intentionally develop or refine the skills of everyone involved in the process.

- **Build data use for implementation improvement activities into routine practice.** For improvement efforts to be effective, they must be a routine part of an agency's practices and culture. Developing strategies focused on increasing staff engagement with and understanding of data use can help integrate ongoing improvement into day-to-day activities.[4] When accountability for improvement resides with an implementation team, improvement efforts should be part of the team's regular, ongoing activities. For example, during weekly meetings, the team should have a scheduled process for reviewing implementation improvement questions and related data and communicating information to staff within and across the service system to support ongoing efforts. Building data review into routine practices also ensures transparency, allowing the whole team to be able to review, analyze and make sense of the data. Routine practices for data use should be captured in written protocols, such as implementation team agreements, charters, communication protocols and organizational policies and procedures. This helps to ensure transparent and explicit expectations on data use and the inclusion of diverse perspectives.
- **Use data to drive decision making and improvement.** An effective implementation improvement process occurs when decisions are made based on data at every step.[5] It is critical that data are relevant and reliable for interpretation and improvement planning.[6] Multiple sources and types of data can be useful in addressing implementation questions.[7] These may include quantitative program data or qualitative feedback from staff or participants. Team members responsible for ongoing improvement should have regular communication with agency staff, supervisors, leadership and community partners to ensure that all stakeholders contribute to analyzing and interpreting data for implementation improvement. Including multiple perspectives enriches the interpretation process and creates an opportunity for shared decision making in the improvement process.[8]

Ensuring a Process for Using Data for Implementation Improvement

Implementation support practitioners can support teams to apply the following six-step process, which guides the use of data for improvement.



1. **Determine your question.** The first step in the implementation improvement process is identifying what questions you want to answer. It is important that improvement activities start with questions rather than available data so that team members are encouraged to consider all potential areas for improvement. Areas of inquiry can be guided by a theory of change or logic model that connects the question with possible factors that contribute to the challenge and desired improvements.[9] The team ensures that data sources are matched to the questions at hand,[10] and that diverse stakeholders — including members of the groups of people you seek to serve — are included in the formation of the questions and selection of data sources.
2. **Determine what data will help answer the question.** Once a question is formed and selected, the team can identify measures and relevant data sources that will assist in answering it. Frequently, programmatic and administrative data are used to guide the improvement process, but teams should also consider fidelity data and outcome data. Fidelity data measure the extent to which the program or practice has been implemented as intended. Outcome data measure the impact of the program or practice: changes in attitudes, behaviors and knowledge of the participants. In addition to considering various types of data to answer implementation questions, teams should also consider different sources of data — information gathered from staff, partners and the focus population can provide a rich perspective on a range of implementation questions. If the data needed to answer the question are not available, develop a data development agenda to determine ways to collect and analyze more pertinent data. However, don't avoid hard questions simply because these data are not yet available — use the best available data even while you are pursuing your data development agenda.
3. **Develop a plan for data collection.** For improvement efforts to be useful and sustainable, they need to be feasible. Understaffed organizations, often under a large amount of pressure, can experience challenges related to consistently using data to drive improvement.[11] Teams should first consider feasible measures to collect data from readily available sources. However, teams may need to collect additional data when existing data are not able to answer their questions. To avoid placing an undue burden on staff, teams should consider practical ways to collect new data and should also assess the time and effort that will be required by staff.
4. **Collect data.** Data collection methods also should be feasible, and the implementation team should clearly identify who is responsible for gathering, synthesizing and sharing data (and with whom data will be shared). To ensure regular access to programmatic and fidelity data for analysis and decision making, teams need to develop data-sharing protocols with program staff. Teams may also get consent to gather data directly from participants via feedback surveys, focus groups or key informant interviews.
5. **Analyze data to answer questions.** One of the essential aspects of analyzing data for implementation improvement is to look for trends and variations in the data, which can indicate areas to further explore or focus on as an improvement strategy. Once the team identifies variations or challenges, they can dig deeper using root cause analysis (RCA), a systematic process used to investigate and categorize the root cause of a problem or

challenge. The root cause is the factor that should be permanently eliminated to see improvement.[12] RCA gives teams the opportunity to look more deeply at identified challenges and investigate precursors that could be addressed to prevent these challenges from resurfacing.

6. Determine implementation improvement strategies. Often, implementation strategies do not match the implementation challenges or barriers they seek to address. Aligning strategies with implementation priorities is critical to the improvement process, as is monitoring of the strategies' success.

How to Use the Six Steps – Case Example

The following case example illustrates how an implementation support practitioner can guide a team to use this six-step process to inform data-driven improvements in implementation.

- Determining Your Question. An implementation support practitioner is partnering with a community-based youth leadership organization and has helped to form an implementation team with the goal of ensuring that youth who have experience with the juvenile justice or child welfare system have access to higher education and career development programs. The organization has developed and tested a program focused on higher education and career development access for youth and is currently implementing it in six local community centers. According to the theory of change, the program should be accessible in the community, and 70% of participants should represent young people involved with juvenile justice or child welfare.

  The ISP uses facilitation strategies[1] to foster curiosity among team members and build consensus around key questions to drive improvement. Through these exercises, the team notes that participation is growing across the centers and wants to ensure the program is reaching and relevant for the young people they are focusing on. The team identifies two implementation improvement questions: How do we know we are reaching youths who have experience with the juvenile justice or child welfare system? How relevant is this programming to young people?

- Determining What Data Will Help Answer the Question. Next, the ISP assists the team in considering what data, including program, fidelity and outcome data, could help answer their implementation questions. They determine that basic demographic data on participants involvement in these systems, referral source as well as participation data from career development sessions might help them understand whether they are reaching youth with juvenile justice or child welfare system experience. The team also determines that data on satisfaction with the programming would give them a deeper understanding of the relevance of the programming from the perspective of youth and staff.

- Develop a Plan for Data Collection. Using a data source selection matrix, the ISP helps the implementation team to consider how to collect the agreed-upon data. They know that

[1] Examples of facilitation strategies include Conversation Café, Shift and Share, and 1-2-4-All. Descriptions of these Liberating Structures facilitation techniques can be found at: https://www.liberatingstructures.com/.

program staff at the community centers complete an intake form for each participant as part of the welcoming process, which includes basic demographic information, as well as fidelity logs for career development sessions, which provide information on participation of young adults. Because participant and fidelity data are available for the implementation team whenever needed, the data are easy to gather. They decide a brief survey will allow them to gather data on satisfaction from program participants. The team reaches out to some program staff who indicate they are willing to administer satisfaction surveys to program participants and that a mobile survey option would be best for youth. The team also determines that interviews with career pathway facilitators would give the team additional insight into the relevance of the program for the young people participating. Therefore, two team members volunteer to lead discussions with the facilitators and summarize results.

- Collecting Data. The team conducts a staged data collection process to allow team members to gather data from multiple sources. First, they work with the data manager at each community center to gather data from intake forms and fidelity logs. The team also develops satisfaction surveys and administers these to program participants, using a survey that respondents can take on their phones. Then, a supervisor and a manager on the team schedule conversations with the career facilitators and gather their feedback.
- Analyzing Data. With assistance from the ISP, the team analyzes the collected data and develops summary reports highlighting key themes across the different data sources. The ISP facilitates an exercise to help team members reflect on the data summary and opportunities for improvement. The team observes that about a third of the youth participants have experience with the juvenile justice or child welfare system — much lower than their goal of 70%. The team also notices a decrease in the number of youths referred from the child welfare system in the previous two months, as well as inconsistent attendance from youths involved in juvenile justice. Satisfaction surveys reveal that youths find the programming very helpful but are having a difficult time arranging transportation to the community centers.

  After meeting with the facilitators, the implementation team learns that turnover at the local department of child welfare services has left a vacancy in the coordinator for youth services position. The team works with facilitators on a root cause analysis to determine why youths involved in the juvenile justice system are not attending regularly. Using the Five Whys, the team discovers that these young people are no longer able to get bus vouchers from their case workers.
- Determining Implementation Improvement Strategies. The implementation team develops a two-pronged strategy in response to their implementation question and data analysis. First, the team agrees that they need consistent outreach and a formal ongoing connection with the local department of child welfare services. The senior manager and intake coordinator agree to meet with the child welfare agency and schedule regular check-ins. The team also reaches out to the local transportation authority to secure bus vouchers and ensures the sessions are aligned with the bus route schedule so that young people can attend the weekly programming sessions. The team continues to monitor whether these improvements have their intended benefit.

What Principles and Competencies are Needed to Use Data for Implementation Improvement?

Implementation support practitioners often engage in activities to support reflection and ongoing improvement of implementation efforts. Using data for implementation improvement allows teams to reflect on opportunities and challenges, prioritize improvement strategies, and test their application. Specific principles and competencies[13] relevant to using data for implementation improvement are described below.

Principles

Principles guide and underpin implementation support practitioners' work.

- **Be curious:** Ask questions, tolerate uncertainty and ambiguity
- **Advance equity:** Integrate equity components in data use
- **Use critical thinking:** Explore the diverse elements of a situation, examine your own and others' assumptions, assess context and root causes or contributing factors, and make conscious choices that are informed by evidence and data

Competencies

Competencies are the necessary knowledge, resources and skills for the implementation support practitioners' work.

- **Build capacity:** Support stakeholders in using data to identify potential future external and internal challenges to implementation and to develop strategies for building sufficient capacity to meet these
- **Co-design:** Promote cyclical tests of tools, products, and processes among stakeholders to iteratively improve their prototypes based on data
- **Understand context**: Continuously use data and information to identify and respond to changes in the systems which affect implementation
- **Conduct improvement cycles:** Promote the collection and use of data suitable to understand the differential impact of programs and practices and their implementation on different focus populations and communities

What Tools or Resources Are Available to Use Data for Implementation Improvement?

Implementation Support Practitioners can use the following resource to support data use for ongoing implementation improvement.

1. Data Source Selection Matrix: This tool can help implementation teams determine data sources to address their implementation improvement questions.
2. Data Review Meeting Agenda Template: This structured agenda template provides a process for implementation teams to review their data, synthesize findings and discuss improvement opportunities. Using a structured agenda for each implementation team meeting helps teams to consistently use data and to effectively communicate within the team and with external stakeholders.
3. Root Cause Analysis Resources: These resources can guide teams through two possible root cause analyses: the Fishbone Diagram and the Five Whys. Root cause analysis is a process used to investigate and categorize the root cause of a problem, barrier or challenge.

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[10] Chapin Hall at the University of Chicago (2012). Framing analytic questions in the context of continuous quality improvement. Chicago: University of Chicago, Chapin Hall at the University of Chicago, Center for State Foster Care and Adoption Data.

[11] Carrilio, T. E., Packard, T., & Clapp, J. D. (2003). Nothing in-nothing out: Barriers to the use of performance data in social service programs. Administration in Social Work, 27(4), 61–75. https://doi.org/10.1300/J147v27n04_05

[12] It may be helpful to use the Systems Iceberg or other systems thinking tools to understand different perspectives and mental models. The Systems Iceberg and additional system-thinking resources can be found at https://waterscenterst.org/.

[13] Metz, A., Louison, L., Burke, K., Albers, B., & Ward, C. (2020). *Implementation support practitioner profile: Guiding principles and core competencies for implementation practice.* Chapel Hill, NC: National Implementation Research Network, University of North Carolina at Chapel Hill. https://nirn.fpg.unc.edu/resources/implementation-support-practitioner-profile