



Collecting and Analyzing Data for Learning and Program Improvement

Implementing Data-driven Programs in Refugee Resettlement

Data-informed decision making is a guiding principle for the Office of Refugee Resettlement (ORR) and the programs it supports. But what is involved in making data-informed decisions and implementing data-driven programs? How can data-driven programs help address the barriers that refugees, asylees and other vulnerable populations face when accessing services and becoming self-sufficient members of American society?

Data-driven programming

Data-driven programs are those where data is used to shape program design and inform decision making during the life of the program. Throughout implementation, data-driven programming involves collecting data needed for learning and program improvement and regularly analyzing and acting on that data.

Choosing what data to collect

Making data-driven decisions requires *high quality* data, or data that is complete, correct, consistent, and timely. It also requires *purposeful* data.



Switchboard defines **data-driven programs** as programs where data shapes program design and informs decision making during the life of the program.

“Because you have to” doesn’t motivate behavior change in children *or* adults. If you want to collect high quality data and establish a culture of using data for learning and program improvement, staff need to *value* the data. They need to understand why the data is important: how it can be used, how it will help them and how it will help the clients they serve. And they need the skills to engage in evaluative thinking and the mandate and support to make necessary adjustments.

To collect high quality, purposeful data, begin by setting a learning agenda.

Data is often collected for reporting and accountability. In data-driven programming, however, each data point should be collected not only for accountability, but also to help program staff, funders, or communities answer actionable questions about the service, program, policy, or clients served. Together, these questions make up a **learning agenda**, which should lay the foundation for data collection and analysis plans. These plans should then become components of a program’s monitoring and evaluation (M&E) strategy.

A program’s learning agenda may be determined by the funder or by program management staff, but is ideally developed through a collaborative discussion between members of a team and other relevant stakeholders. It might include questions related to results (impact or outcomes), or the project’s process/implementation (such as progress, service quality, and context).

The learning agenda for data-driven, ORR-funded programs should typically include questions that can be answered at the end of a quarter or funding cycle, such as:

- Did we see the **outputs** (products, goods, services and immediate results) that we expected during this time period? If not, why not?
- During this time period, did we achieve the **outcomes** we expected to see for clients? If not, why not?
- Were there any differences in outcomes for clients based on demographics (e.g., sex, age, nationality, or education), arrival date, project

site (or implementing organization), case worker, or services received? If so, why?

A learning agenda should also include questions that can be answered more frequently, such as process/implementation monitoring questions like:

- Is implementation of project activities on track? If not, why not?
- Is the project on track to meet output targets? If not, why not?
- What is the quality of the services being provided? Are they timely? Are they being provided in accordance with relevant requirements or guidelines? Are they accessible to intended clients, regardless of demographic characteristics (e.g., sex, age, nationality, or education), and location? If not, why not?
- How does data across project sites (or implementing organizations) compare? What accounts for any differences or trends we see?



The questions that make up a learning agenda and lay the foundation for data collection and analysis plans should provide **useful and actionable information**, and be **feasible** to answer given your resources and time constraints.

For each question you include in your learning agenda, consider why this question is important. When answered, what decisions will it enable you to make? How will it help you support your clients? Documenting the purpose of each question included in your learning agenda will help you communicate this information to staff, partners, or sub-grantees.

Also consider how frequently you need to answer your question in order to make decisions and whether the question is feasible to answer given available resources and time constraints. If you are interested in answering several different questions, consider prioritizing them to ensure feasibility.

Engaging staff and other stakeholders in setting the learning agenda can foster **shared understanding of why the data is being collected**: why it is important and meaningful and how it can be used. This can strengthen data quality, analysis and use.

Next, determine what data will enable you to answer the questions set out in your learning agenda.

To determine what data you need to collect, how, and when, it may be helpful to map this out in a table included in your M&E plan. For example:

Question (What we want to learn)	Data to answer this question	Data source	Frequency of data collection

Developing a learning agenda based on existing data collection and reporting requirements

While a learning agenda is ideally set before data collection and reporting requirements are determined, in many cases, the data that programs, organizations and states are required to collect has already been specified. In these cases, you can set a learning agenda by examining existing data and asking:

1. What stories does this data tell us about our programs? What questions does this data help us answer?
2. How and when could this data be used? What decisions could this data help us make related to program design, program implementation and service delivery, funding, or community outreach? When would it enable us to make these decisions?
3. What additional questions do we want to be able to answer about our program, if any? When would we need to be able to answer them in order to make program improvements?

To engage relevant staff, partners, or sub-grantees in the process, schedule a meeting to focus on setting the learning agenda. Print out a list of data points currently collected and reported. Have people work in pairs or small groups to explore the first two questions listed above. You may want to use a table:

Existing data point:	Question this data helps us answer:	How this data could be used:

Have groups present back and then discuss the third question above.

For tools to guide discussions with staff, partners, sub-grantees, or others about what data should be collected, how, and when, see Switchboard's [Data Analysis and Action Planning Templates](#).

You should also make sure that all necessary data to answer questions related to your outcomes and outputs is accounted for in your project's logical framework, or logframe. To learn more about this type of logic model, see the e-learning module [Developing Logical Frameworks](#).

Review data collection tools and reporting templates.

It is important that any data collection tools (such as forms, surveys, and assessments) and data entry fields you use clearly align with your learning agenda. Once you have determined what data you need to collect, carefully review your data collection tools, including existing reporting templates, and either refine them or modify your learning agenda as needed.

If data from different staff, project sites, partners, or sub-grantees will be aggregated, it is important that everyone collect the same data in the same way. Setting a shared learning agenda and data collection plan, with standardized data collection and reporting tools, may help improve consistency.

Now that we've discussed setting a learning agenda in order to collect high quality, purposeful data, let's consider how to analyze the data you collect.

Analyzing data for learning and program improvement

Data analysis is the process of transforming raw data into information that is usable and/or that advances knowledge or understanding, and interpreting this data.

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Data analysis is sometimes thought of as an activity that is done by a lone statistician or data manager at the end of a program for a report. While having some background in statistics is certainly useful, staff should see data analysis for learning and program improvement as a collaborative process. Program staff and other relevant stakeholders should be engaged in looking at the data together to answer the questions set out in the learning agenda.

Data analysis may also involve stakeholders outside your program or organization. For example, data analysis may be done by an implementing agency together with partners, by implementing agencies and relevant state Offices for Refugees, or by implementing agencies or state Offices for Refugees together with funders.

Note that throughout data analysis, it is important to adhere to data protection principles and policies, particularly those related to protection of personally identifiable information (PII).

Develop a data analysis plan

How will data be analyzed?

For each question in your learning agenda, determine how the data will be analyzed. The type of analysis you use will depend on the question you are answering. Typically, basic descriptive statistical analysis is sufficient to examine a project's progress against targets, outcomes, or changes over time, or at differences in results of different project sites or client populations.

Descriptive statistical analysis is a type of analysis that *describes* or *summarizes* data, without making any *inferences* or *predictions* based on that data. Descriptive statistics can be useful for examining results and identifying trends.

Commonly used descriptive statistics include **measures of central tendency**, or ways to describe the center of a data set. These include the **mean**, or average among values in a data set; the **median**, or middle value in a data set; and the **mode**, or most common value in a data set.

Common descriptive statistics also include **measures of spread**, or ways to describe how close together or far apart a data set's values are. Among others, these include the **range**, or difference between the highest value and the lowest value; and the **standard deviation**, a measure of

how spread out the data set's values are from the mean (a low standard deviation means that most values are close to the mean, while a high standard deviation means that the values are spread farther apart).

Inferential data analysis is a type of analysis that makes *inferences* or *predictions* based on a sample data set taken from a larger population. This can be useful if you are looking to learn whether there is a statistically significant difference between two or more groups. For instance, a **t-test** is a type of inferential hypothesis test used to determine if there is a significant difference between the means of two groups. An **analysis of variance (ANOVA)** is another type of inferential statistical technique that is used to determine if there is a significant difference between the means of more than two groups.

The capacity of staff to do inferential data analysis (including statistical background/experience and access to necessary software) should be considered when developing your learning agenda. If it is beyond your current capacity to tackle questions that can only be answered through inferential analysis, consider adjusting your questions so they may be answered through descriptive analysis.

When will data be analyzed and who will be involved?

When developing your data analysis plan, consider how frequently data analysis will be done and who should be involved. For data-driven programming, it is important that data analysis be embedded into routine practice, with data being analyzed periodically throughout the life of a project.

One suggestion is to plan to integrate data analysis into your existing, regularly scheduled meetings—whether these meetings are with staff, community stakeholders, partners, sub-grantees, or funders. Alternatively, you may plan to conduct separate, standalone data analysis and action planning meetings dedicated to examining data and reflecting on one or more questions outlined in your learning agenda.

What data will be analyzed?

Given time constraints, you should likely prioritize specific questions from your learning agenda to focus on during each meeting, rather than try to

cover the full agenda. This will determine what data you present for analysis and who will present it.

Structure data for analysis

To analyze data efficiently, it must be structured for analysis. This means arranging your data to answer the questions set out in your learning agenda and adhering to tidy data principles (see *Resources*, at end of this document, for more about tidy data). This can save significant time cleaning the data and preparing it for analysis. Some basic tips are to:

- Ensure that each unit/observation for which you are collecting data (such as each client, case, participant, project site, class session, etc.) has its own row.
- Ensure that each column heading contains a single variable or category name (where your rows refer to clients, these might include date of birth, immigration status, sex, date of arrival, date of enrollment, etc.).
- Ensure that only one type of variable is entered in each column; that is, don't mix numbers and text. Quantitative (numerical) values should be stored separately from qualitative (categorical) values.
- Ensure that in each column, the value options for categorical variables are consistent (such as married, single, divorced, or widowed). Standardized data collection tools that use pre-defined controlled list choices (drop-down menus) can help, as can staff training on using tools consistently.
- Use consistent spelling and formatting. Standardized data collection tools and appropriate training can help with this as well.

Summary tables and **data dashboards**, or groups of automatically updating charts, can help you view data quickly and efficiently, without having to generate new tables and charts every time you want to examine or present your program data. In developing data dashboards, consider who will be involved in analyzing the data and the best way to present the data to them so that they are able to easily interpret it. Put any tables and dashboards on separate spreadsheets from their raw source data.

See Switchboard's [Resource Library](#) for more guidance on effective data visualization, including data dashboards.

Engage in data analysis and action planning, in accordance with your data analysis plans

Whether you are integrating data analysis and action planning into existing, regularly scheduled meetings or holding dedicated meetings for this purpose, there are a few things you can do to make sure your meetings are effective:

1. Decide in advance what data will be discussed and why, and who will present it. Depending on who will be involved in the meeting (such as staff from one program, staff from multiple programs, or staff from different project sites or organizations), you may plan to rotate responsibility for presenting data—for example, focusing on one program, site, or organization each month.
2. Visualize the data. Project the visualized data (tables and charts) on screen or print handouts.
3. Prepare the questions for discussion in advance, drawing on your learning agenda. Be sure to focus discussion not only on what results or trends the data shows, but on the *reasons* for these results or trends.
4. Make sure the right people are in attendance. Include people who can help accurately interpret the data based on their knowledge of the program or clients, as well as decision makers. Encourage active participation from people at different levels in both presenting and interpreting data. Engaging direct service staff in this process can help staff understand the value of the data they collect and report, strengthen evaluative thinking, and shift from focusing only on compliance-driven services to focusing on data-driven services as well.
5. Don't forget to action plan. Discuss: What steps do the data suggest we take? Which steps are the highest priority for us? Who will be responsible for these steps and when?
6. Take notes. Document trends, learning, and action steps.

[Switchboard's Data Analysis and Action Planning Templates](#) may be helpful in conducting a data analysis and action planning meeting. The questions included should be adapted to your learning agenda and the data being analyzed in the specific meeting.

Acting on Data

Engaging in collaborative data analysis and action planning isn't enough. Your action plan needs to be implemented. One way to ensure that your action plan is implemented is to review action steps and their status at the next data analysis meeting.

Conclusion

Data-driven programming involves systematically collecting and analyzing data with a focus on learning and program improvement. It requires high quality, purposeful data and collaborative, ongoing processes that are integrated into day-to-day work. In some cases, it requires a cultural shift from a culture of data collection primarily for compliance and accountability, to a culture of data collection for service quality and positive outcomes for clients and communities. In all cases, it requires alignment of data collection with learning priorities.

Resources

[Data Analysis and Action Planning](#) (2018): This e-learning module was developed by the Monitoring and Evaluation Technical Assistance (META) Project.

[Switchboard's Data Analysis and Action Planning Templates](#) (2019): Use these templates when planning for data analysis, conducting a data analysis meeting, and following up on next steps.

[Switchboard's Introduction to Data Analysis for Learning and Program Improvement](#) (2019): This recorded webinar offers an introduction to data analysis.

[Team-Based Inquiry: A Practical Guide for Using Evaluation to Improve Informal Education Experiences](#) (2014): Developed by the Nanoscale Informal Science Education Network, this toolkit offers a range of data analysis resources for program teams, whether working in education or other areas.

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