Learner's Guide to Monitoring and Evaluation of Care Reform in Armenia

March 2020

USAID
FROM THE AMERICAN PEOPLE

MEASURE Evaluation

Learner's Guide to Monitoring and Evaluation of Care Reform in Armenia

Zulfiya Charyeva, PhD, **Hasmik Ghukasyan**, MA, **Camelia Gheorghe**, MSc

MEASURE Evaluation
University of North Carolina at Chapel Hill
123 West Franklin Street, Suite 300
Chapel Hill, North Carolina 27516
Phone: +1-919-445-9359 • measure@unc.edu
www.measureevaluation.org

This publication was produced with the support of the United States Agency for International Development (USAID) under the terms of MEASURE Evaluation cooperative agreement AID-OAA-L-14-00004. MEASURE Evaluation is implemented by the Carolina Population Center, University of North Carolina at Chapel Hill in partnership with ICF International; John Snow, Inc.; Management Sciences for Health; Palladium; and Tulane University. Views expressed are not necessarily those of USAID or the United States government. MS-20-185

USAID
FROM THE AMERICAN PEOPLE

MEASURE Evaluation

FOREWORD

The Ministry of Labor and Social Affairs welcomes cooperation with international organisations and recognizes the importance of a lasting partnerships for progress and development in the public sector.

This Learner's Guide to Monitoring and Evaluation of Care Reform in Armenia is an admirable outcome of successful cooperation between the Ministry of Labor and Social Affairs and the MEASURE Evaluation project. It will provide those working within and administrating the care system, and its stakeholders, with a better-quality roadmap for operation, grounded in evidence-based monitoring and evaluation.

Our ultimate goal is to protect the best interests of children, which is the principle that guides all of our actions, and this tool is crucial to achieving that goal.

X _____ia

ACKNOWLEDGMENTS

The Armenia team of MEASURE Evaluation (a project funded by the United States Agency for International Development [USAID]) would like to acknowledge USAID's Displaced Children and Orphans Fund for its financial support of this activity. We also thank Deborah Grieser, Director, USAID/Armenia; Lyla Bashan, Director, USAID/Armenia Sustainable Development Office; and Ani Manukyan, Project Management Specialist, USAID/Armenia Sustainable Development Office, for their continuous support of the MEASURE Evaluation activity in Armenia.

We express our gratitude to Zaruhi Batoyan, Minister of Labor and Social Affairs of Armenia, and Zhanna Andreasyan, Deputy Minister, for their support of this activity.

Last, we thank the knowledge management team, MEASURE Evaluation, University of North Carolina at Chapel Hill, for editorial, design, and production support.

Suggested citation

Charyeva, Z., Ghukasyan, H., & Gheorghe, C. (2020). Learner's Guide to Monitoring and Evaluation of Care Reform in Armenia. Chapel Hill, NC, USA: MEASURE Evaluation, University of North Carolina

CONTENTS

FIGURES

TABLES

ABBREVIATIONS

CSO	civil society organization
DCOF	Displaced Children and Orphans Fund
DDU	data demand and use
DQA	data quality audit
GOA	Government of Armenia
IE	impact evaluation
IRS	indicator reference sheet(s)
IT	information technology
LFA	logical framework approach
M&E	monitoring and evaluation
MOLSA	Ministry of Labor and Social Affairs
NGO	nongovernmental organization
PEPFAR	United States President's Emergency Plan for AIDS Relief
RBM	results-based management
RDQA	routine data quality assessment
SDG	Sustainable Development Goal
SMART	specific, measurable, appropriate, realistic, timely
TOC	theory of change
TOR	terms of reference
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development

CHAPTER 1. OVERVIEW

Background and Context

The United States Agency for International Development (USAID) Displaced Children and Orphans Fund (DCOF) works in countries around the world to improve the safety, well-being, and development of vulnerable children, with particular attention to preserving and facilitating their access to appropriate, protective, and permanent family care. The overall goal of the USAID/DCOF-funded activity in Armenia is to strengthen the country's leadership to advance the reform of national policies and systems for the care of children who lack adequate family care. Enhanced government capacity to assess, address, and monitor care reform is the long-term vision of USAID/DCOF, the USAID-funded MEASURE Evaluation project, and government partners in the country. To support this agenda, MEASURE Evaluation conducted a series of training sessions in monitoring and evaluation (M&E) during 2018 to 2019 for stakeholders in Armenia. The training included basic training in M&E, training on data use and demand, data quality, and data analysis.

Purpose of the Guide

This guide serves as a reference document for participants who attended the MEASURE Evaluation training sessions. It also serves as a self-learning guide for people who do M&E work but who were unable to attend the training. It is expected that the guide's users will apply key M&E concepts in their daily work. Because this is a self-learning material, there is no opportunity to discuss new concepts in a group setting or to ask questions. It is therefore suggested that users visit the MEASURE Evaluation website (https://www.measureevaluation.org/resources) for additional M&E materials.

Intended Users of the Guide

This guide is designed for government officials who work on the monitoring and evaluation of care reform at national and regional levels in Armenia, and for civil society representatives and service providers who serve children in adversity, reunified families, and vulnerable families at risk of separation. Service providers include community and regional social workers, and employees at day care centers, residential care institutions, and at other settings offering alternative care for children in adversity, such as small group homes, supervised independent living, and foster care.

Content of the Guide

Topics covered in the guide are an introduction to M&E, logic models, M&E plans, indicators, data collection, reporting and data quality, data analysis, data demand and use (DDU), evaluation, and report writing. For each topic, the theory is provided, followed by exercises and examples about monitoring of care reform to facilitate learning. Each chapter starts with a summary of the topics covered in the opening paragraph and ends with key messages. Answers to the exercises are provided at the end of each chapter. We provide a glossary of key M&E terms at the end of the guide.

CHAPTER 2. INTRODUCTION TO M&E

In this chapter, we introduce basic M&E concepts, discuss the utility of M&E, and the differences between M&E and an audit or inspection. We also present the role that M&E play in the policy and program cycle.

Definition of Basic M&E Concepts

The purpose of M&E is not just to produce information but to inform action. In Armenia, through M&E, the lead ministry for care reform and its stakeholders obtain data to learn about the implementation of state-funded programs, action plans, and strategies, and to report to the government on progress in the sector in response to the implementation of the Government Action Plan for 2020-2023 on Promoting the Right of a Child to Live and Develop in the Family or the Medium-Term Expenditure Framework.

Monitoring is an ongoing process by which stakeholders obtain regular feedback on progress being made in the achievement of goals and objectives of a specific project, program, strategy, or action plan, which is used to inform actions and decisions during implementation. Monitoring is an integral part of the implementation of a strategy/action plan/program, and should not be considered an addition to it. It should engage all parties, including the ministry, implementing agencies, local and international organizations, and program recipients so that they feel ownership of the results and are motivated to sustain them.

There are three domains of information required for monitoring systems:

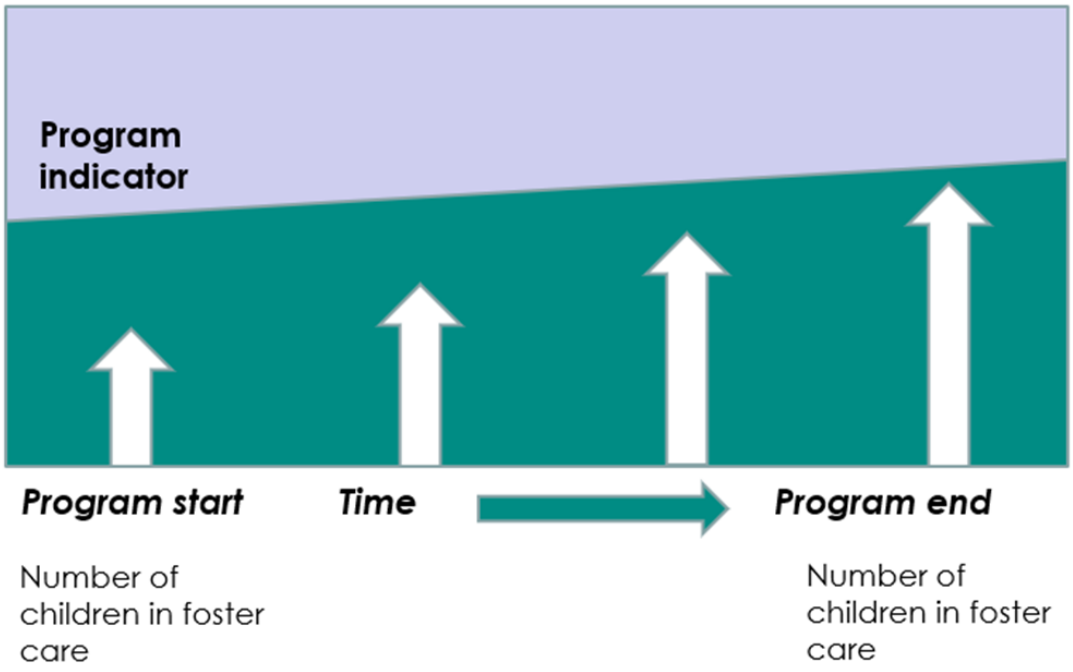
Inputs: The resources invested in a program

Processes: The set of activities undertaken by a program

Outputs: The immediate results obtained by a program

Figure 2.1 illustrates the monitoring of a program over time. As shown, data for the indicator— the number of children in foster care—are monitored throughout the duration of the program.

Figure 2.1. Program monitoring



Evaluation is the rigorous and independent assessment of either completed or ongoing projects, programs, action plans, or strategies to determine the extent to which they are achieving or have achieved their stated objectives and planned results. Evaluation is used to inform policymaking and planning for future interventions and funding, or to improve the implementation of ongoing projects, programs, action plans, or strategies.

Evaluation is more complex than monitoring because it requires more rigorous methodologies and tools. It is therefore often an expensive exercise. For this reason, evaluation is done only sporadically, usually at end line. Programs implemented over several years may also conduct a midterm evaluation. However, regardless of its duration, a program that decides to conduct an end line (and midterm) evaluation should first conduct a baseline evaluation to measure changes in the expected outcomes.

There are two domains of information used in evaluation:

Outcomes: Intermediate program results

Impact: Long-term program results

Figure 2.2 illustrates program evaluation. It shows that the increase in the number of children in foster care was larger in the scenario with the program compared with the scenario without the program.

Figure 2.2. Program evaluation

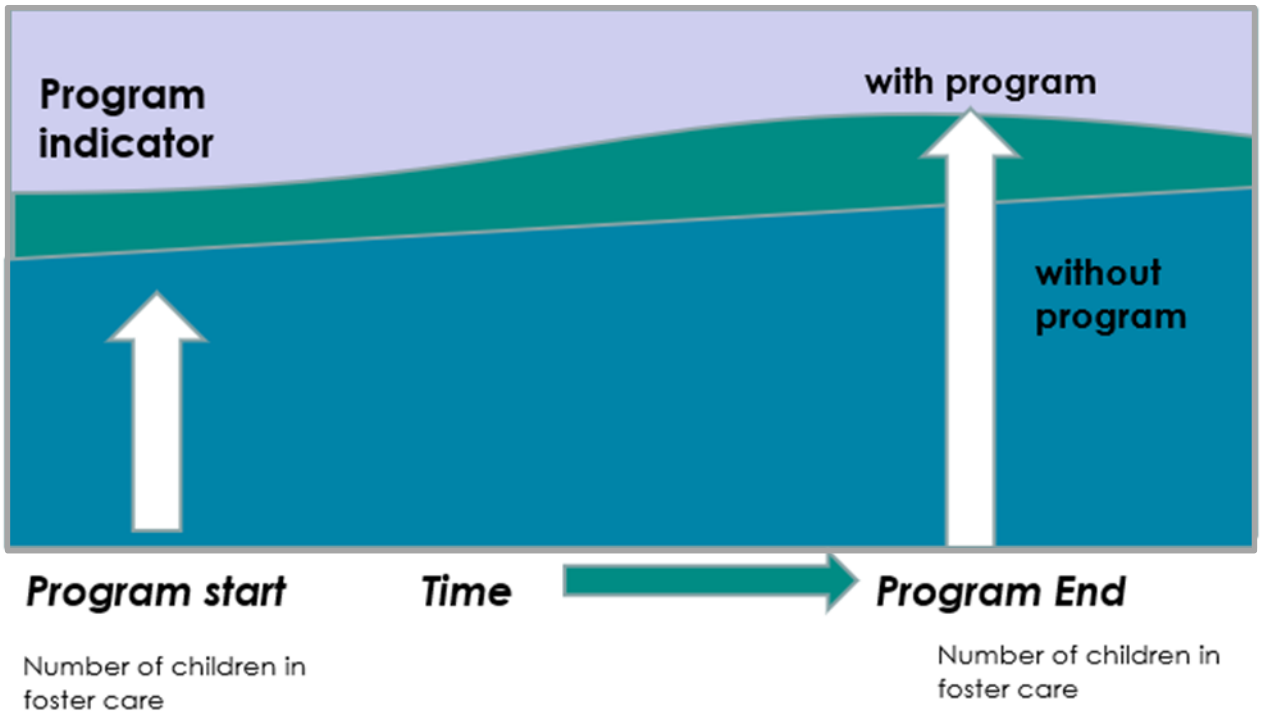


Table 2.1 provides a summary of the differences between monitoring and evaluation.

Table 2.1. Summary of the differences between monitoring and evaluation

	Monitoring	Evaluation
Questions	• To what extent are planned activities achieved? • Are we making progress toward achieving our objectives? • How many people are we reaching with our services or information? • How well are the services provided? • What is the cost per unit of service?	• Have we achieved the planned outcomes? • What contributed to or hindered the achievement of the outcomes? • What are our program's long-term effects?
Frequency	Routine	Sporadic: Baseline, midterm, end line
Components	Inputs, processes, and outputs	Outcomes and/or impact
Data source	Routine data from information management systems (service statistics, training records, project reports)	Mainly nonroutine data and rigorous scientific methods (surveys, special studies, surveillance)

M&E is a continuous process that occurs throughout the life of a program. To be most effective, M&E should be planned during the design stage of a program, and the required time, money, and personnel should be calculated and allocated in advance. Monitoring should be conducted during every stage of a program, with data collected, analyzed, and used on a continuous basis. Information from monitoring can be used as one of the sources of data for evaluation. Evaluation is usually conducted either during the implementation of a program (e.g., midterm evaluation) or after the implementation phase is completed. However, it should be planned at the start, and included in an M&E plan because it relies on data collected throughout a program, with baseline data being especially important. The M&E plan is discussed in Chapter 4.

Exercise 2.1. Use of monitoring and evaluation

Is monitoring or evaluation needed in the following cases?

1. The Child Protection Coordination Council would like to know whether the Action Plan implemented in the districts of the Central region has reduced unintended births among teenage girls.

2. UNICEF would like to know how many case managers were trained this year in the framework of the project implemented by the Ministry.

3. The Ministry conducted an inspection of care institutions to assess whether quality standards were observed.

Utility of M&E and the Differences Between M&E and an Audit or Inspection

Program or policy M&E allows program managers and decision makers to:

- Make informed decisions
- Better manage risks and opportunities
- Be accountable and responsible
- Take corrective actions for improvement
- Learn from experience

Remember that M&E information is useful only if it is used.

Evaluation is not the same as an inspection or audit. *Inspection* is a general examination of an organizational unit, issue, or practice. Inspection is conducted to:

- Determine the extent to which the organizational unit, issue, or practice adheres to normative standards, good practices, or other criteria.
- Make recommendations for improvement or corrective action.

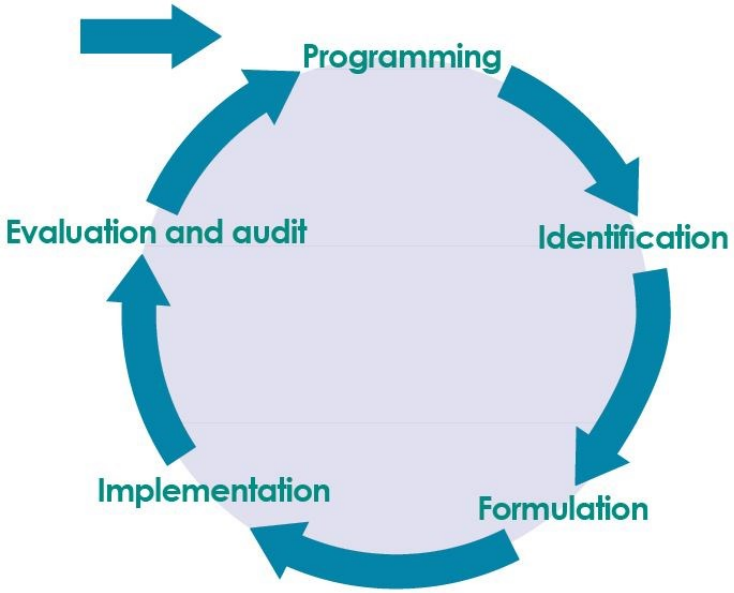
Audit is an assessment of the following areas:

- Compliance with regulations, rules, and established policies
- Reliability of financial and other information
- Adequacy of management controls to ensure the efficient use of resources
- Effectiveness of risk management
- Adequacy of organizational structures, systems, and processes

M&E in the Policy Cycle

A program is a detailed set of targets and arrangements to implement a policy (Shepherd, 2011). The policy cycle is a sequence of activities involving the identification, design, and implementation of policies, and feedback on the policies and their implementation. The policy cycle is shown in Figure 2.3. The model for the public policymaking process has four components: (1) agenda-setting: agencies and government officials meet to discuss the problem at hand (problem identification); (2) option formulation: alternative solutions are considered and final decisions are made about the best policy (policy formulation); (3) implementation: the selected/best policy option is implemented in the final stage (policy adoption: formal acceptance as law, regulation, or normative act); and (4) evaluation and audit. M&E are needed for the achievement of evidence-based policymaking, budget decisions, management, and accountability (Makay, 2007).

Figure 2.3. Policy cycle



Source: European Commission. (2004). Project Cycle Management guidelines, Volume 1, page 16. Retrieved from https://ec.europa.eu/europeaid/sites/devco/files/methodology-aid-delivery-methods-project-cycle-management-200403_en_2.pdf

National policy development in Armenia is similar to the cycle shown in Figure 2.3. In close consultation with key stakeholders, the line ministries identify issues that require regulation and the actions needed to address them. They formulate an action plan, then start implementation through the respective agencies or delegate implementation through social service contracting, and conduct regular inspections (and audits if needed) to monitor implementation. Evaluation of policy implementation is usually done by external donor organizations. The Ministry of Labor and Social Affairs (MOLSA) usually requests evaluations of its main programs (such as the State Employment Program or the Family Living Standards Enhancement Program) by the National Institute of Labor and Social Research. Monitoring of the implementation of action plans or programs is implemented through predefined indicators comparing planned and actual values at the end of a reporting period. Monitoring is done by program staff, MOLSA staff, or by implementers during the entire life of the care strategy, action plan, or program.

Key Messages

- ✓ The purpose of M&E is not just to produce information but to inform action.
- ✓ M&E is not an audit or inspection.
- ✓ Monitoring is an ongoing process by which a ministry and its stakeholders obtain regular feedback on progress being made toward the achievement of a program's goals and objectives.
- ✓ Evaluation is an assessment of either completed or ongoing projects, programs, action plans, or strategies to determine the extent to which they are achieving or have achieved their stated objectives and planned results.

Additional Resources

Please see the MOLSA M&E regulation and methodology approved in 2016 for more information on the sequence of activities needed for M&E implementation (http://www.mlsa.am/?page_id=2833). The activities include the following:

1. Identify programs to be monitored
2. Establish a working group of stakeholders
3. Select a coordinator of the working group
4. Define the program's aspects/domains
5. Develop and revise the program's historical overview
6. Develop and revise the program's M&E Passport
7. Develop and revise the M&E indicator framework in Microsoft Excel
8. Set goals and targets
9. Develop data collection strategies and cost estimates
10. Collect data through the information technology (IT) system, surveys, and focus group discussions
11. Enter the data in the indicator framework, with sources and other specifics
12. Analyze the data and develop reports
13. Present M&E results to the target audience(s)
14. Develop assignments for program improvement based on the conclusions
15. Use the results to create avenues for feedback (such as local authorities; nongovernmental organizations [NGOs])

Chapter 2. Answers to the Exercises

Exercise 2.1. Use of monitoring and evaluation

Is monitoring or evaluation needed in the following cases?

1. The Child Protection Coordination Council would like to know whether the Action Plan implemented in the districts of the Central region has reduced unintended births among teenage girls.

2. UNICEF would like to know how many case managers were trained this year in the framework of the project implemented by the Ministry.

3. The Ministry conducted an inspection of care institutions to assess whether quality standards were observed.

Answers:

1. Evaluation (it refers to the outcomes of the Action Plan)
2. Monitoring (counting the number of case managers trained in a year)
3. Monitoring (tracking whether quality standards were observed)

Chapter 2 References

Mackay, K. (2007). *How to build M&E systems to support better government*. Washington, DC, USA: The World Bank. Retrieved from http://siteresources.worldbank.org/EXTEVACAPDEV/Resources/4585672-1251737367684/How_to_build_ME_gov.pdf.

Shepherd, G. (2011, April*). Monitoring and evaluation in the public policy cycle: the Experience of OECD countries*. PowerPoint presentation at the Seminario: Monitoreo y evaluación de programas sociales: Experiencia internacional y desafíos para la implementación del Ministerio de Desarrollo Social, Centro de Políticas Públicas, Pontificia Universidad Católica de Chile. Retrieved from https://politicaspublicas.uc.cl/wp-content/uploads/2015/01/ppt-geoffrey-shepherd.pdf.

CHAPTER 3. STRATEGIC PLANNING AND LOGIC MODELS

In this chapter, we discuss the practical use of M&E by linking them to strategic planning. We also present logic models that help us understand the hierarchy of change, such as the logical framework of a strategy document or a program and the associated theory of change (TOC). We illustrate the program cycle, describe the steps and considerations for developing a TOC and a program's logical framework, and discuss the components of the results chain (inputs, activities, outputs, outcomes, and impact). Definitions of key terms help distinguish the concepts and their interconnections. Suggestions for how to clearly define program objectives and results are provided, which further help formulate indicators and measure progress in the implementation of the logical framework and the TOC.

Overview

Any strategic document developed by a ministry is designed to show the main changes in society or in the life of people, which the government wanted to see in a certain period of time, usually within a ten-, five-, or three-year period.[1] The strategic documents describe the country context and a specific issue or problem, and then define the goal and objectives the government or a ministry wants to achieve in solving or addressing the issue/problem and its ultimate impact. International best practice suggests presenting the desired change in an easy way, thereby allowing all key players and stakeholders to understand and accept the strategy or program in a similar way. Over the last few decades, there has been an ongoing debate in the international development community about the best way to describe how strategies/programs lead to results. One approach has been to use a logical framework (also called a logframe). Another increasingly popular approach is to create a TOC (tools4dev, n.d.).

Strategic documents are tools for strategic planning. The TOC is used to map the desired change described in the strategic document, whereas the logical framework is a logic model used to visualize the results chain. To avoid confusion with these terms, it is best to start with a discussion of strategic planning.

What Is Strategic Planning?

Strategic planning is a **systematic process** by which organizations, communities, or partnerships (in your context, the ministries) identify their priorities for development or action based on stakeholders' expectations, set goals or strategic objectives, and make fundamental decisions about mobilizing resources to achieve the goals in a continuously changing environment.

The strategic planning process results in **a policy document**, which can be a sector strategy, government program, Medium-Term Expenditure Framework, or a long-term development program.

For the policy document to be implemented, **operational planning** is needed, which is a process of action planning and resource allocation to achieve the goals or strategic objectives of the policy document. The operational or action plan includes the activities needed to be implemented to achieve the strategic goals, such as changing legislation, developing and delivering training sessions, establishing and providing services, etc. The action plan should be costed to assure that the activities will be implemented

[1] The Armenian development program is designed for 10 years, covering the period from 2014 to 2025; the Government Action Plan or sectoral strategy documents cover five-year periods, whereas the Medium-Term Expenditure Frameworks are designed for three years, supporting the government to plan its expenditures to meet its strategic goals.

and will lead to the achievement of the intermediate results or outcomes and the plan's ultimate goals or impact.

Box 3.1. Example of the implementation of the action plan for 2017–2021, Child Rights Protection Strategic Document in Armenia

The MOLSA's strategic documents usually have action plans. For example, the Child Rights Protection Strategic Document for 2017–2021[2] has a five-year action plan, which includes a list of activities linked to the following priority areas:

- Improvement of the child protection system.
- Ensuring equal access to inclusive and quality education, and assuring the comprehensive security of learners in educational institutions.
- Ensuring the rights of a child to health protection.
- Early detection of juvenile offenders, victims of abuse, and youth with antisocial behavior, and the prevention of violence.
- Assuring the participation of children in cultural life, development of cultural and creative capacities, promotion of participation in cultural heritage, and cultural education.
- Ensuring access to juvenile justice.

However, the action plan does not link its activities to expected results; it stops at the output level. Moreover, the outcomes are not clearly formulated and the activities are not costed.

This five-year action plan is then divided into annual action plans. MOLSA staff are implementing the activities in the annual plans but do not link the activities to the strategy. Although best practice suggests that the contextual issues that affect the strategy should be considered, the action plans do not address contextual changes.

A good practice is to have an action plan for the entire duration of the strategic document and to update it annually **based on contextual changes** and keeping in mind the outcomes and impact the strategy wants to achieve.

Strategic planning is a **highly participatory process** and should involve all key stakeholders, including those who implement and those who are effected by implementation, that is, the end beneficiaries. Figure 3.1 presents the phases of strategic planning. As you can see, participation of key stakeholders is in the middle of the cycle.

Strategies are effective if they:

- ✓ Address the identified strategic issues.
- ✓ Are technically workable and administratively feasible.
- ✓ Are flexible.
- ✓ Are results-oriented.
- ✓ Are ethical, moral, and legal.
- ✓ Create significant public value at reasonable cost.

Adapted from Bryson, 2018.

[2] Government of Armenia (GOA), Resolution N 30 of July 13, 2017.

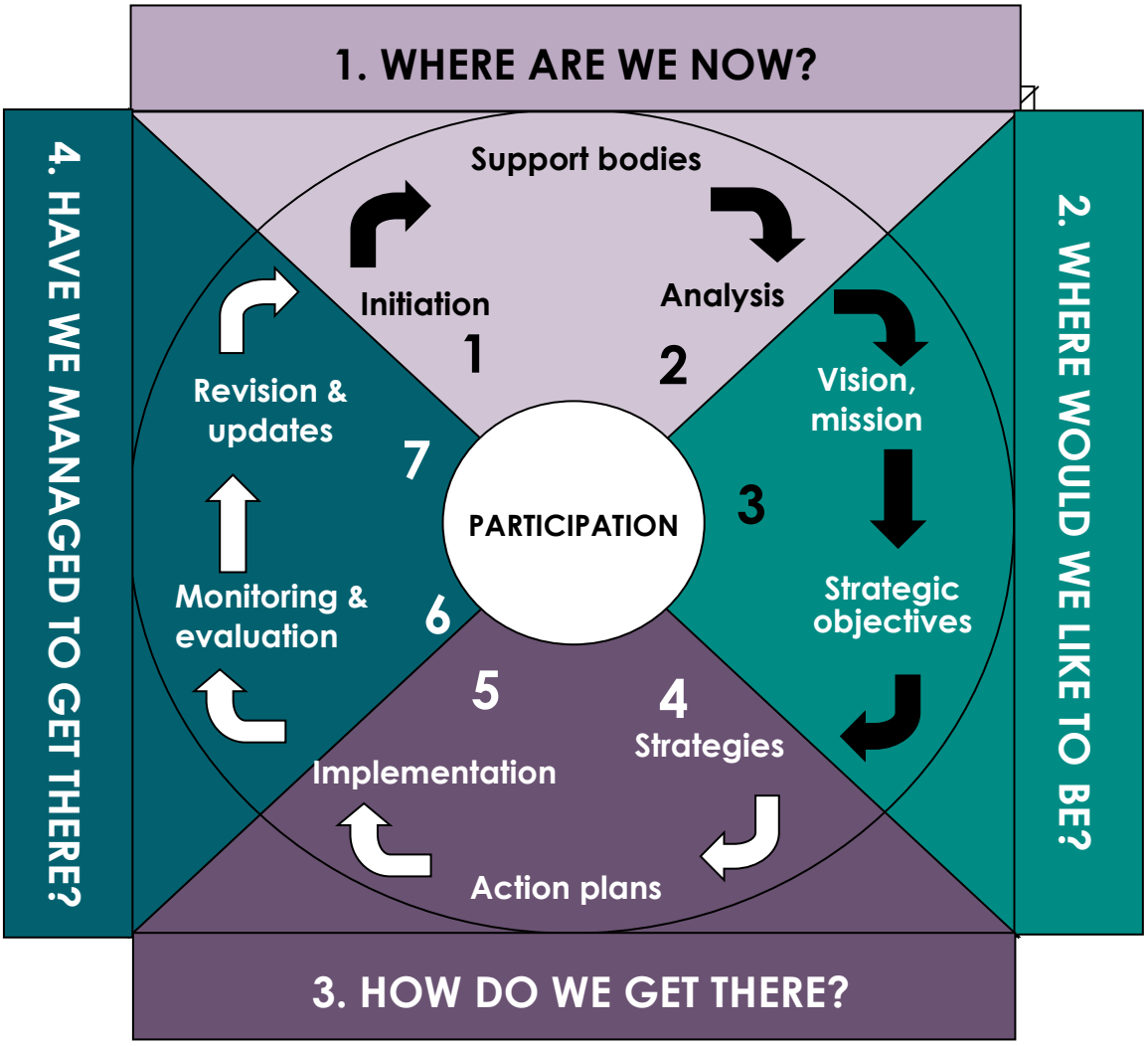
Phases of Strategic Planning

The strategic planning process has **four phases** that address four key questions in a fully participatory manner. The first question is **where we are now?** In this phase, the activities are situational analysis, research, using different sources of information to draw a clear picture of the current state, the identification of challenges, and the definition of the key issues that should be addressed. **Identifying key issues is at the heart of the strategic planning process.** Its purpose is to identify the fundamental policy questions—the strategic issues agenda—facing the country, community, or a group of people. The way these questions are framed can have a profound effect on the creation of ideas for strategic action and a winning coalition. Identifying strategic issues is typically one of the most important steps for participants in strategic planning. The main characteristics of a key issue are:

- It can be addressed (there are available resources, procedures, and a required institutional framework to support implementation).
- If not solved with priority, the country or community will be negatively influenced in its survival and development chances.
- Has a major impact on the country or community through its size and gravity.
- Persists for a long time, having the tendency to become chronic.

If the identified issues do not comply with these characteristics, then they are not the priority areas for strategic planning.

Figure 3.1 Phases of strategic planning



The second phase is envisioning **where we want to be in the future**. In this phase, the strategic goal is formulated and the key issues are transformed into actions.

The **strategic objective** is the "desired status" after addressing a key issue. It is a positive change in human development as measured by people's well-being (e.g., children). It is a substantial positive change in social, economic, and political conditions over a long-term period.

The strategy should be flexible enough to allow for adjustment and updating.

The strategy is a **living** document!

The third phase is the implementation stage. The key question is: **how do we get there?** For this purpose, the action plan is developed and costed, and resources are allocated. During this phase, the vision is transformed into a logical framework to help all stakeholders clearly see how the key issue(s) will be addressed and what results can be achieved.

The last phase is M&E. It helps to answer the fourth question: **did we manage to achieve what we planned to do?** During this phase, the action plan should be revised and updated to respond to any contextual changes.

Exercise 3.1. Key issues and their strategic objectives

Is the strategic objective correctly set to address the key issue identified?

1. Key issue: Each year, more than 1,000 children are deprived of parental care and are institutionalized.

Strategic objective: Development of family-type services in all districts of the country.

2. Key issue: Children with disabilities learn in segregated educational environments, have reduced physical access to schools, and their educational process is ill-suited to their needs.

Strategic objective: Development of inclusive education.

To support a better fit between the strategy or program and the context, the development of a TOC is becoming a more and more popular approach.

Theory of Change

In her report, *Review of the Use of "Theory of Change" in International Development,* Isabel Vogel concluded that the TOC is "a tool and methodology to map out the logical sequence of an initiative, from activities through to the changes it seeks to influence" and at the same time it is "a deeper reflective process: a mapping and a dialogue-based analysis of values, worldviews and philosophies of change that make more explicit the underlying assumptions of how and why change might happen as an outcome of the initiative." Documented TOCs and visual diagrams are acknowledged as subjective interpretations of the change process and are used as evolving "organizing frameworks" to guide implementation and evaluation; they are not rigid predictions or prescriptions for change (Vogel, 2012).

As stated above, strategic planning should be a participatory process. When stakeholders define the key issues and discuss the strategic goals, the TOC diagram is useful for visualizing all pathways that may lead to the desired change and the assumptions that may support or hinder implementation.

The TOC is from the family of **logic models**. Logic models are well-recognized approaches for graphically describing the logic of a program or strategy, showing how the activities lead to the expected results using available resources. There are many types of logic models, including but not limited to logical frameworks (logframes), results chains, results-based management (RBM), results frameworks, and local actor-oriented models. The most popular logic models are the logical framework approach (LFA) and RBM. These approaches are nearly the same; however, they use slightly different wording to describe the results chain components and are used by different donors. Table 3.1 provides more information. The GOA has adopted the RBM approach for its strategic documents (GOA, 2016).

A logic model is a graphic or visual depiction summarizing the key elements of a TOC. It is often used as a facilitation tool during the program design process. Both the logical framework and the RBM approaches help monitor the progress of implementation, linking the resources, activities, assumptions, and results in one logical chain.

Table 3.1. Comparison of terms used in LFA and RBM to describe the components of the results chain

Logical framework approach	Results-based management, theory of change
Overall objective	Impact
Purpose	Outcomes
Results	Outputs
Activities	Activities
Means and costs	Inputs

The Armenian language uses a mixture of these two wordings, sometimes leading to confusion in interpreting or describing the specific level of the results chain.

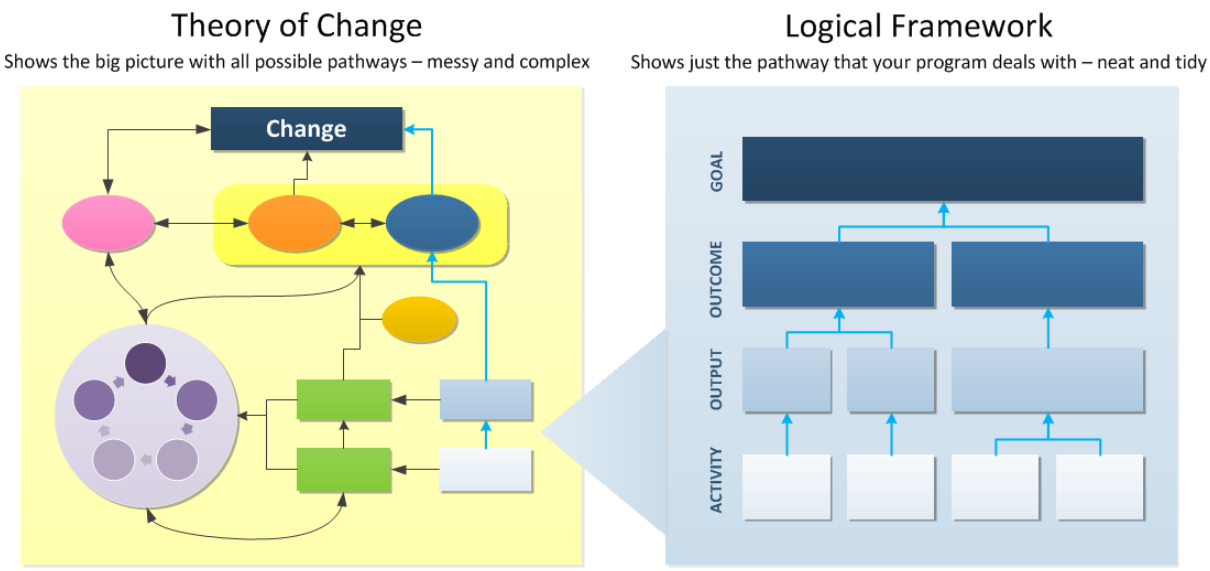
Differences between the TOC and the Logical Framework

TOC is not currently popular in Armenia. Yet, strategy development would benefit if TOC were discussed and developed first, followed by the preparation of the associated logic model. This is because the **TOC gives the "big real world picture" and summarizes work at the strategic level**, with all possible pathways leading to change, and the reasons why the pathways will lead to a change (is there evidence or is it an assumption?). **A logical framework illustrates a program (implementation)-level understanding of the change process**. In other words, the logical framework is like a microscopic lens that zooms in on a specific pathway in the TOC. This makes it easier to monitor program implementation (tools4dev, n.d.). The government and ministries use TOCs as a way to communicate their goals to the population and to promote internal learning about a program strategy.

TOC can be used as poorly or as well as any other approach. It is challenging to work with because it requires commitment to take a reflective, critical, and honest approach to answering difficult questions about how the efforts may influence change, given the political realities, uncertainties, and complexities surrounding all development initiatives. To be applied well, TOC requires an institutional willingness to be realistic and flexible in programming responses, both during the design stage and, more importantly, during implementation and performance management.

Figure 3.2 illustrates the TOC and LFA. Table 3.2. presents the differences between TOC and LFA in detail.

Figure 3.2 Theory of change versus the logical framework



Source: tools4dev, n.d.

Table 3.2. Differences between the TOC and the logical framework

Theory of change	Logical framework
• Gives the big picture, including issues about the environment or context that you cannot control. • Shows all the different pathways that may lead to change, even if those pathways are not related to your program. • Describes *how* and *why* you think change happens. • Could be used to complete the sentence: "if we do X then Y will change *because*…" • Is presented as a diagram with narrative text. • The diagram is flexible and does not have a specific format; it could include cyclical processes, feedback loops, one box could lead to multiple other boxes, different shapes could be used, etc. • Describes why you think one box will lead to another box (e.g., if you think increased knowledge will lead to behavior change, is that an assumption or do you have evidence to show that it is the case?). • Is mainly used as a tool for program design and evaluation.	• Gives a detailed description of the program, showing how program activities will lead to the immediate outputs, and how these will lead to the outcomes and goal (the terminology used varies by organization). • Could be used to complete the sentence: "we plan to do X, which will give Y result." • Is normally shown as a matrix, called a logframe. It can also be shown as a flow chart, which is sometimes called a logic model. • Is linear, which means that all activities lead to outputs, which lead to outcomes and the goal. There are no cyclical processes or feedback loops. • Includes space for risks and assumptions, although they are usually only basic. Does not include evidence for why you think one thing will lead to another. • Is mainly used as a tool for monitoring.

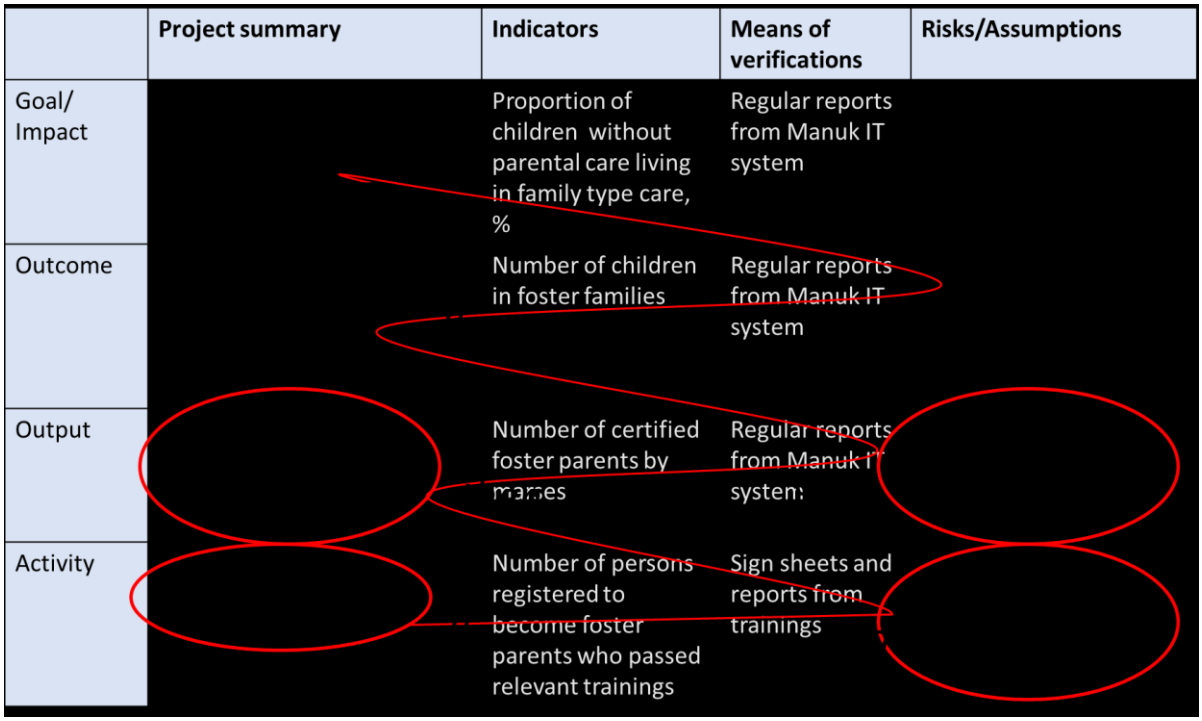
Source: tools4dev, n.d.

Logframe Matrix

Most logical frameworks use a **logframe matrix** similar to the template given in Figure 3.3. The logic of the program is shown both vertically and horizontally. The **activities** are the tasks (work program) that need to be carried out to achieve the planned results. O**utputs** are the goods and services that implementation of the strategy or program deliver. Outputs are largely under a management team's control. O**utcomes** are achieved at the end of strategy or program implementation period and are the specific, expected benefits for the target group. I**mpact** is the contribution of the program or project at a national or sectoral level.

When preparing a logframe, one of the most difficult columns to complete is risks and assumptions. An easy way to check whether the risks and assumptions make sense is to look at the activities row and follow this logic: IF these activities are undertaken AND the assumptions are true THEN these outputs will be produced. (Figure 3.3 provides an example.) Then do the same with the outputs: IF the outputs are created AND the assumptions are true THEN the outcome will be achieved. And then the same for the outcome: IF the outcome is achieved AND the assumptions are true THEN the goal will be achieved.

Figure 3.3. Example of a logframe matrix



	Project summary	Indicators	Means of verifications	Risks/Assumptions
Goal/ Impact		Proportion of children without parental care living in family type care, %	Regular reports from Manuk IT system	
Outcome		Number of children in foster families	Regular reports from Manuk IT system	
Output		Number of certified foster parents by names	Regular reports from Manuk IT system	
Activity		Number of persons registered to become foster parents who passed relevant trainings	Sign sheets and reports from trainings	

Exercise 3.2. Defining activities and results

Define each of the statements below as an activity or a type of result.

	Activity	Output	Outcome	Impact
Statement	**1**	**2**	**3**	**4**
Specific expertise in child protection is developed				
Increased incomes of poor families with children				
Train the specialists from the district departments in case management				
More secure livelihoods of families with many children in rural areas by 2022				
Healthcare services have the capacity for a rapid response to a measles epidemic in districts X and Y				
New jobs created in poor urban areas				
Local policies are responsive to gender issues				
Decreased HIV/AIDS adult prevalence rate by 2020				
Low-income families have the skills needed to manage small family businesses				
Improved policy framework for the social				

	Activity	Output	Outcome	Impact
Statement	**1**	**2**	**3**	**4**
inclusion of people with disabilities				
Strategy for poverty alleviation adopted by the government				

Results-Based Management

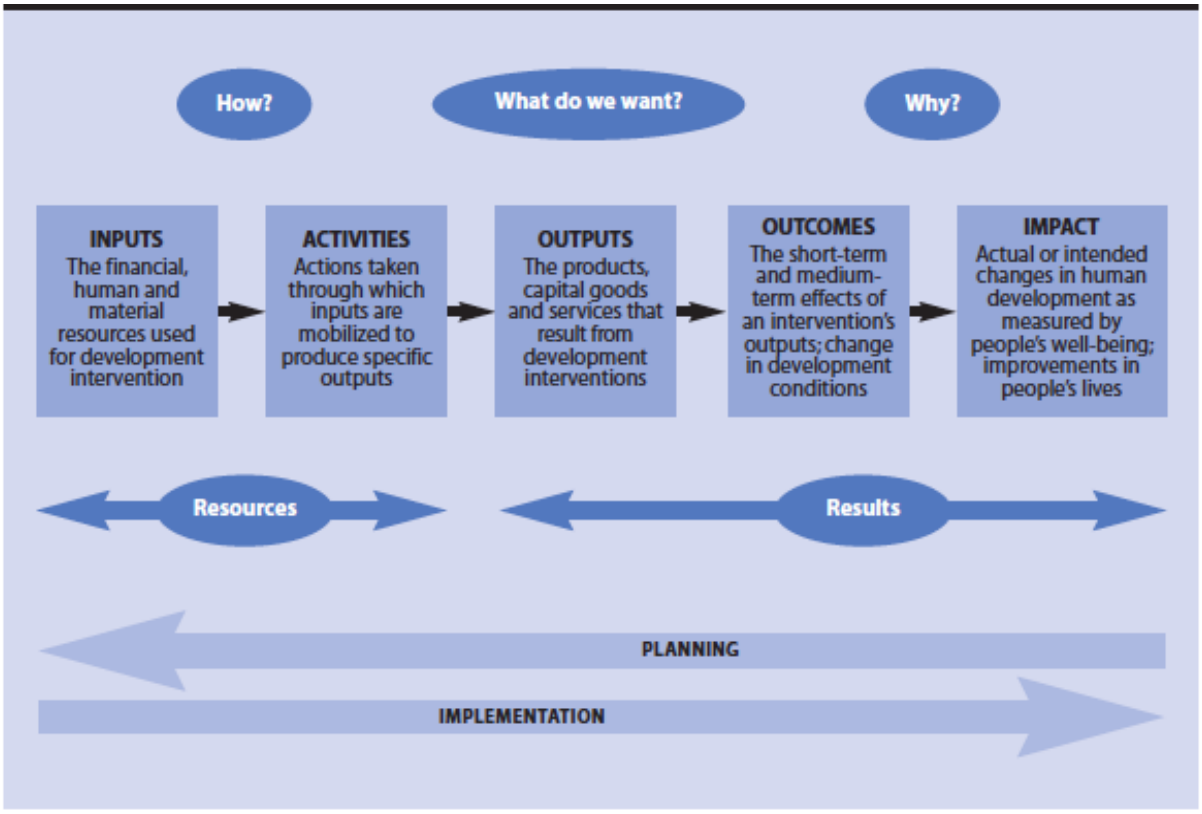
RBM is a management strategy by which organizations—in your context, the ministries and civil society organizations (CSOs)—ensure that their processes and resources contribute to the achievement of improved performance and results that can be demonstrated (outputs, outcomes, impact). RBM is defined as orienting all actions and the use of resources toward achieving clearly defined and demonstrable results. RBM increases transparency and accountability, allowing interventions to complement each other and avoid overlap and waste. Three interconnected processes—namely, good planning, monitoring, and evaluation—can greatly enhance the effectiveness of the strategy, action plan, or program. Good planning helps focus resource allocation and subsequent implementation on the results that matter. Effective M&E helps assess progress toward the achievement of results and to learn from the past, thereby ensuring that future initiatives better contribute to development impact.

There are two arrows in the RBM diagram, as illustrated in Figure 3.4. The first arrow shows the planning process, which starts from the end results, (i.e., the results that are expected to be achieved by the implementation of the strategy, action plan, or program). It is not appropriate to start the planning process based on the resources available, which is a very common practice in Armenia. Planning should always be based on the needs, not on the resources available. It should be based on the ultimate change that is in mind. The actions should be planned accordingly to achieve the expected results and then the needed resources should be estimated.

The second arrow shows the implementation process that should start from the resources. The resources are used to implement the activities and achieve the outputs, which are very tangible goods and services. The outputs are used to achieve the outcomes, which are the institutional and/or behavioral changes. The outcomes, if achieved, contribute to the expected impact, to the positive or negative change in human development, and in the society. They may include primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended.

The logic chain in RBM is used in developing the TOC.

Figure 3.4. Logic chain in RBM



Source: United Nations Development Programme. (2009). Handbook on Planning, Monitoring and Evaluating for Development Results, page 55. Retrieved from http://web.undp.org/evaluation/handbook/documents/english/pme-handbook.pdf.

The correct wording and formulation of the components of the RBM are important.

How to Formulate Impact

As stated above, impact is the substantial change that you aim to achieve. It is a change in human development measured by people's well-being and is usually called "strategic objectives" or "goals" in policy documents.

For the formulation of the impact statement in a strategic document, verbs expressed in the past tense are used (e.g., improved, strengthened, increased, reduced) and substantial changes in social, economic, and political conditions over the long-term are communicated.

Examples of impact are:

- Reduced infant mortality in region X
- Reduced poverty among families with many children in the country
- Increased life expectancy among the population
- Improved living conditions for persons with sensory disabilities
- Rights of children in contact with the justice system are protected according to European and international applicable standards
- Secured equal opportunities to decent jobs for single mothers
- Increased the quality of life among the rural population

The most frequent shortcomings in the formulation of impact statements are:

- ✓ Sometimes the impact statement is formulated like an activity or a measure (e.g., to develop solutions for the fulfillment of the educational needs of children in remote areas).
- ✓ Sometimes there is confusion between means and objectives (e.g., to improve the healthcare provided to single mothers).
- ✓ Sometimes there is confusion between impact and outcome (e.g., to improve existing institutional capacities).
- ✓ Sometimes the impact formulation states how to achieve the goal (e.g., to ensure the rights of children in adversity to live in a family through reunification of children living in residential care institutions with their biological families [deinstitutionalization] and prevention of their reinstitutionalization).

How to Formulate Outcomes

As stated above, the outcome is what you wish to achieve. It is the actual or intended changes in development conditions that an intervention (project, program, action plan, strategy) is seeking to support. The outcomes for a strategy or program are the medium-term development results created through the delivery of outputs and with the contributions of various partners. The outcomes show changes in institutional performance and behavior.

To formulate the outcomes correctly, a verb indicating a result should be used, such as **"reduced," "improved," or "strengthened**." Avoid intentions in the formulation of the outcomes, such as "to assist/support the government…" Avoid describing "the how" in the formulation, such as "improved through…" and "supported by means of …" The outcome should signal that **something important has changed** for the country, region, or community. The outcome should be specific and measurable, and should avoid multiple results.

A few examples of outcomes are:

- Increased access of poor families to social housing
- Fostered public awareness of issues faced by children with disabilities
- Increased access of rural youth to financial products and services
- Reduced risks of prevalent fatal diseases among the homeless population
- Reduced level of domestic violence against young women
- Increased access of children at risk to a child-friendly justice system
- Favorable attitudes and perceptions of society toward the rights of children in conflict with the law
- Improved employability of single mothers

Frequent shortcomings in the formulation of outcomes are:

- ✓ The language does not contain change; instead it shows intention and "the how" (e.g., to promote democratic governance in accordance with international norms by increasing the participation of persons with disabilities in decision making).
- ✓ Contains multiple results (e.g., improvement of the delivery of social services to children deprived of parental care and protection of their rights in compliance with international commitments).

- ✓ States how (e.g., needs assessment among child victims and child witnesses will be carried out, including mapping of services from the child protection perspective and the introduction and development of relevant actions and services).

How to Formulate Outputs

It has already been stated that outputs are products. They are what you produce or deliver, such as: the deliverables of the project or program or the operational changes that resulted from implementation; new skills or abilities of staff and/or beneficiaries; and the availability of new products and services in the community. Outputs are short-term results. They are achieved during the implementation period of a project/program/action plan/strategy.

If the result is mostly beyond the control or influence of the program or project, it cannot be an output.

The formulation of the output should include a noun that is qualified by a verb describing positive change: "The **assessment study** on the performance of the National Child Protection Committee **is completed, discussed, and results are used** to inform amendments to its organization and functioning regulation."

The output should be specific and measurable, within the direct control of the implementing agency, and contribute directly to a given outcome. Usually, more than one output is needed to achieve an outcome.

A few examples of outputs are:

- Police officers understand the impact of gender violence on poverty and the social exclusion of women.
- Youth from region X have improved their abilities to develop web pages.
- The National Social Work Agency has adequate personnel, equipment, and skills to implement continuous training programs for employees of the public social assistance system.
- Capacity of persons with disabilities to use micro-credits in social economy is increased.

Frequent shortcomings in the formulation of outputs are:

- ✓ Wordy, not specific enough
- ✓ Passive voice, wishy-washy wording
- ✓ Overambitious
- ✓ Repeating activities

For example, the output stated as "Strengthened the capacities of central public authorities to develop, implement, and monitor long-term and linked mid-term policies and programs for family reintegration of children from placement centers" can be better formulated as "Central public authorities are better able to design, implement, and monitor family reintegration of children from placement centers."

How to Formulate Activities

Activities are what you do to obtain the stated outputs. Coordination, technical assistance, preparation, and training tasks executed by the personnel of a certain initiative are examples of activities. Usually, more than one activity is needed to achieve an output.

For the formulation of an activity, it is important to start with a verb and describe the action.

Examples of activities are:

- Update the Adoptions Registry
- Finalize the informational system on social assistance
- Provide free legal aid to women who are victims of domestic violence
- Deliver training to community social workers
- Develop the organization and functioning regulation of the respite service
- Procure medical equipment for regional hospital XX

How to State Inputs

Inputs are the resources that you use to carry out the activities, such as funding, technical expertise, relationships, staff, information, equipment, and buildings. The inputs are needed to implement the activities required to obtain the stated outputs. For example, the inputs to conduct a training course may include trainers, training materials, supplies, venue, and funds.

Figure 3.5 provides an example of the RBM logic model.

Figure 3.5. Example of the RBM logic model

Box. 3.1. Funny examples of a logic model

Example 1: Chicken soup

- What do you need for the soup? (inputs): cookbook, chicken, vegetables, water, etc.
- What do you do to prepare the soup? (activities): wash vegetables, cut the meat and vegetables, boil, taste, etc.
- What do you achieve in tangible terms? (output): the soup
- How do you feel after eating the soup? (outcome): full, well fed
- What does that contribute to? (impact): happiness, health

Example 2: Cinderella at the ball

- Inputs: ball dress, tiara, diamond shoes, etc.
- Activities: dress, do the make-up and hair-styling, travel to the prince's palace, etc.
- Output: Cinderella participates at the ball
- Outcome: Prince falls in love with Cinderella, wedding
- Impact: happy marriage, lots of kids

Key Messages

- ✓ Strategic planning is a systematic process that identifies priorities for development or actions based on stakeholders' expectations, sets goals or strategic objectives, and makes fundamental decisions about mobilizing resources to achieve goals in a continuously changing environment.
- ✓ Strategic planning is a highly participatory process and should involve all key stakeholders, including those who implement and those who are affected by implementation (i.e., beneficiaries).
- ✓ The strategic planning process has four phases that answer four questions: where are you now?; where do you want to be in the future?; how do you could get there?; and did you manage to achieve what you planned to do?
- ✓ The TOC is used to map the desired change described in the strategic document, whereas the logical framework is a logic model used to visualize the results chain.
- ✓ RBM is a management strategy by which the implementers ensure that their processes and resources contribute to achieving improved performance and results that can be demonstrated (outputs, outcomes, impact).

Exercise 3.3. Formulation of the logic model components

1. **Are these outcomes correctly formulated?**

a. Systematic registration of prospective adoptive parents secured through the Adoptions Registry.
b. Deinstitutionalization of at least 30 percent of persons with disabilities placed in residential institutions.
c. Strengthening the capacity of civil servants to develop quality standards for child protection services.

2. **Are these outputs correctly formulated?**

a. Promotion of inclusive education and reduction of discrimination in kindergartens by establishing an efficient detection, monitoring, and prompt intervention system.
b. Provision of financial support for setting up small businesses aimed at boosting the employment of single mothers.

3. **Consider the following problem statement and draft one output and one outcome statement.**

In district X, the proportion of children who are placed in residential care institutions is significantly higher than the national average. This problem is associated with the high proportion of low-income families, high unemployment rates, and the lack of prevention of family separation services, especially in rural areas.

4. **Are these outputs adequately formulated?**

a. Market-based vocational training program developed for persons with disabilities.

b. Improved legislative framework in the area of national adoptions.

c. Mechanism for monitoring the quality of social services implemented.

d. Strengthened capacity of foster parents to ensure their ability to provide care to children with disabilities.

Chapter 3. Answers to the Exercises

Exercise 3.1. Key issues and their strategic objectives

Is the strategic objective correctly set to address the key issue identified?

1. Key issue: Each year, more than 1,000 children are deprived of parental care and are institutionalized.

   Strategic objective: Development of family-type services in all districts of the country.

2. Key issue: Children with disabilities learn in segregated educational environments, have reduced physical access to schools, and their educational process is ill-suited to their needs.

   Strategic objective: Development of inclusive education.

Answers:

1. No, the strategic objective is formulated like an activity, a measure to be taken, not as a desired status after addressing the key issue (parental care deprivation and annual institutionalization), indicating a long-term change in human development. It does not comply with the definition.

   A more appropriate formulation would be: Conditions for rearing and educating children in a family environment are ensured for all children living in all regions of the country.

2. No, the formulation of the strategic objective is not in accordance with the definition.

   A more appropriate formulation would be: The right to quality education is ensured for children with disability equally as for other children.

Exercise 3.2. Defining activities and results

Define each of the statements below as an activity or a type of result.

Suggested answers (note: depending on the results framework, the outputs for one project can serve as outcomes for another project and vice versa. Therefore, both output and outcome are marked for some of the statements)

	Activity	Output	Outcome	Impact
Statement	**1**	**2**	**3**	**4**
Specific expertise in child protection is developed		X	X	
Increased incomes of poor families with children			X	
Train the specialists from the district departments in case management	X			
More secure livelihoods of families with many children in rural areas by 2022			X	

	Activity	Output	Outcome	Impact
Healthcare services have the capacity for a rapid response to a measles epidemic in districts X and Y			X	
New jobs created in poor urban areas		X	X	
Local policies are responsive to gender issues		X	X	
Decreased infant mortality rate by 2022				X
Low-income families have the skills needed to manage small family businesses		X		
Strategy for poverty alleviation adopted by the government			X	

Exercise 3.3. Formulation of the logic model components

1. **Are these outcomes correctly formulated?**

a. Systematic registration of prospective adoptive parents secured through the Adoptions Registry.
Answer: No, it does not indicate a medium-term change in institutional performance and sounds more like an output.

b. Deinstitutionalization of at least 30 percent of persons with disabilities placed in residential institutions.
Answer: No, it is formulated like the indicator target.

c. Strengthening the capacity of civil servants to develop quality standards for child protection services.
Answer: No, it is formulated like a process. It should be restated as: Strengthened capacity of civil servants to develop quality standards for child protection services.

2. **Are these outputs correctly formulated?**

a. Promotion of inclusive education and reduction of discrimination in kindergartens by establishing an efficient detection, monitoring, and prompt intervention system.

Answer: No, this is stated like an objective or planned result at a higher result level (i.e., inclusive education). It can be restated as: Discrimination detection, monitoring, and prompt intervention system are introduced in kindergartens.

b. Provision of financial support for setting up small businesses aimed at boosting the employment of single mothers.

Answer: No, the first part is formulated like an activity, and the second part of the statement indicates an objective. The actual planned output is not about providing financial means, but rather about supporting local entrepreneurs to set up new businesses to employ single mothers. It can be restated as: Local entrepreneurs have the financial means needed to create jobs for single mothers.

3. **Consider the following problem statement and draft one output and one outcome statement.**

   In district X, the proportion of children who are placed in residential care institutions is significantly higher than the national average. This problem is associated with the high proportion of low-income families, high unemployment rates, and lack of prevention of family separation services, especially in rural areas.

   Answers:

   Example of an output statement: Increased access to prevention of family separation services in rural areas of district X.

   Example of an outcome statement: Decreased proportion of children who are placed in residential care institutions in district X.

4. **Are these outputs adequately formulated?**

   Suggested answers: Items (a) and (c) are correctly formulated.

   a. Market-based vocational training program developed for persons with disabilities.

   b. Improved legislative framework in the area of national adoptions.

   c. Mechanism for monitoring the quality of social services implemented.

   d. Strengthened capacity of foster parents to ensure their ability to provide care to children with disabilities.

Appendix 3.A. M&E Plan Template

<Logo>

<Organization Name>

<Project title>

Monitoring & Evaluation Plan

31 March 2020

www.tools4dev.org

INSTRUCTIONS: Instructions for this template are shown in red and yellow. Delete all instructions before submitting your proposal.

Items to be completed are highlighted in grey. Remove the grey highlighting before submitting your proposal.

Contents

INSTRUCTIONS: Update the Table of Contents as the final step before submitting your report.

Abbreviations

INSTRUCTIONS: Delete any abbreviations that you do not use in your report. Add any additional abbreviations that you use. Abbreviations should ONLY be used for things that appear more than 15 times in your plan. If something appears less than 15 times it should be written out in full every time. The first time you use an abbreviation, it should be written out in full with the abbreviation in parentheses afterwards.

AIDS	acquired immunodeficiency syndrome
HIV	human immunodeficiency virus
M&E	monitoring and evaluation
MOH	Ministry of Health
NGO	nongovernmental organization
TOT	training of trainers

1 INTRODUCTION

INSTRUCTIONS: Complete this section with background details.

1.1 Purpose of this plan

<Describe what the purpose of the monitoring and evaluation plan is, such as who prepared it, for which audience and why>

1.2 Project summary

<Provide basic information on the project that this monitoring and evaluation plan is for>

Title	<Insert>
Starting Date	<Insert>
Duration	<Insert>
Partners	<Insert>
Target Area	<Insert>
Beneficiaries	<Insert>
Cost	<Insert>
Funding Source	<Insert>
Goal	<Insert>

2 LOGICAL FRAMEWORK

INSTRUCTIONS: Complete the following logical framework table, describing the goal, outcome, outputs and activities of the project. See the Logical Framework (Logframe) Template on tools4dev for an example of how to complete this table.

	PROJECT SUMMARY	INDICATORS	MEANS OF VERIFICATION	RISKS / ASSUMPTIONS
Goal	<Insert>	<Insert>	<Insert>	<Insert>
Outcomes	<Insert>	<Insert>	<Insert>	<Insert>
Outputs	<Insert>	<Insert>	<Insert>	<Insert>
Activities	<Insert>	<Insert>	<Insert>	<Insert>

3 INDICATORS

INSTRUCTIONS: For each indicator listed in the previous logframe table describe precisely what the indicator is and how it will be measured. An example is shown below. Copy and paste the table as many times as required for completing all the indicators.

Indicator	Reading proficiency among children in Grade 6
Definition	Sum of all reading proficiency test scores for all students in Grade 6 divided by the total number of students in Grade 6.
Purpose	To assess whether reading proficiency at the schools participating in the program is improving over time. This would provide evidence on whether the reading component of the program is effective.
Baseline	Average score: 47
Target	Average score: 57
Data Collection	The class teacher will conduct a reading proficiency test for all students in the class. Each student will be assessed individually in a separate room. The teacher will ask them to read a list of words, sentences and paragraphs out loud and will mark each one that they have difficulty with. Any students not present on the day of the assessment will be excluded.
Tool	National Reading Proficiency Assessment questionnaire (See Annex A)
Frequency	Every 6 months
Responsible	Teachers
Reporting	The individual score for each student will be reported in the six monthly progress reports submitted by each teacher to the Program Manager. The Program Manager will then combine the data from each class to create full list of students and their scores. This will be used to calculate the average score for all students in Grade 6 using the definition above. The average score will be included in the report for the donor submitted every six months.
Quality Control	All teachers will attend a one day training course on how to complete the assessment. To verify the accuracy of the test scores submitted by the teachers the Program Manager will randomly select one class

	every six months to audit. This audit will involve re-testing all the students in the class and comparing the results to the results submitted by the teacher.

Indicator	<Insert>
Definition	<Insert>
Purpose	<Insert>
Baseline	<Insert>
Target	<Insert>
Data Collection	<Insert>
Tool	<Insert>
Frequency	<Insert>
Responsible	<Insert>
Reporting	<Insert>
Quality Control	<Insert>

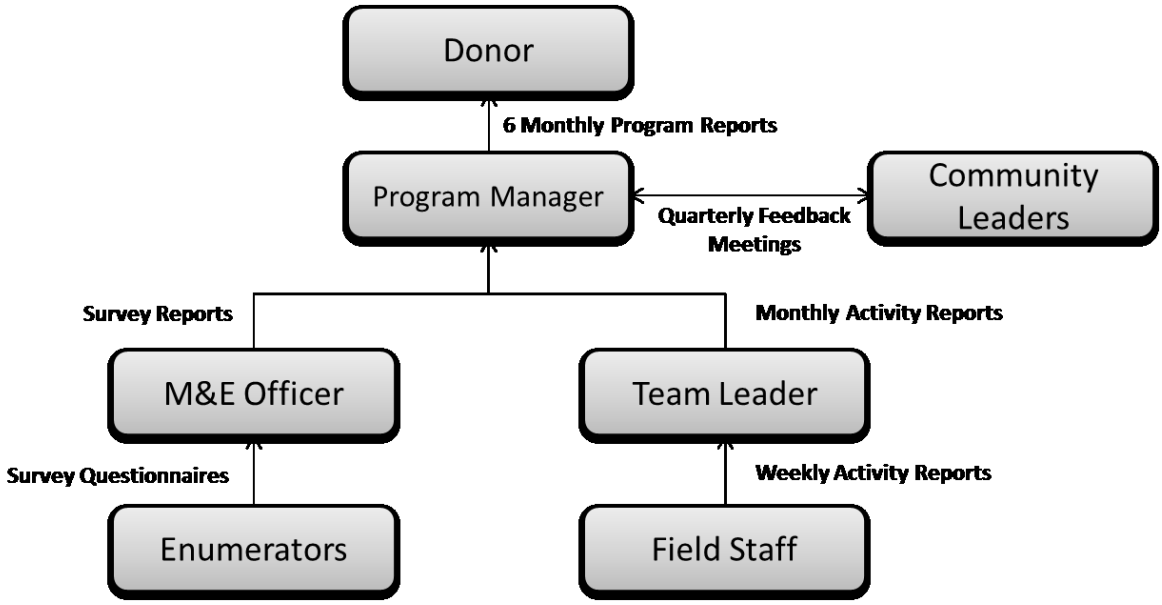
4 ROLES & RESPONSIBILITIES

INSTRUCTIONS: List each role in the organization and their specific responsibilities for monitoring and evaluation. This may include collecting data, checking data, conducting analysis, reviewing reports, making decisions based on the data, etc.

Role	Responsibilities
<Insert>	<Insert>
<Insert>	<Insert>
<Insert>	<Insert>
<Insert>	<Insert>
<Insert>	<Insert>
<Insert>	<Insert>
<Insert>	<Insert>
<Insert>	<Insert>

5 DATA FLOW

INSTRUCTIONS: Insert a flow chart and description showing how the monitoring data will flow from the place where it is collected up to the management team and then to other stakeholders, including the donor. An example is shown below.



<Insert description of the data flow process>

6 DATA MANAGEMENT

6.1 Storage

<Describe how the data collected will be stored. For example, will it be stored in a spreadsheet, database, hard copies, etc. How will it be backed up? How long will it be stored for? Data for different indicators may be stored in different ways>

6.2 Analysis

<Describe which software/tools will be used to analyze the data, such as SPSS, Stata, Excel, Tableau Public, etc.>

6.3 Privacy

<Discuss any privacy issues with the data and how they will be addressed. For example, if you are collecting personal medical records, how will they be kept confidential, who will have access to them, when will they be destroyed, etc.>

APPENDIXES

INSTRUCTIONS: Add any necessary appendixes. At a minimum, this should include the tools (questionnaires, interview guides, procedures, etc.) that will be used to measure each indicator.

<Tool Title>

<Insert tool>

<Tool Title>

<Insert tool>

<Tool Title>

<Insert tool>

Chapter 3 References

Bryson, J. (2018). Strategic Planning for Public and Nonprofit Organizations: A Guide to Strengthening and Sustaining Organizational Achievement, 4th Edition. Hoboken, NJ, USA: John Wiley & Sons, Inc.

Government of Armenia. (2018). Methodological Manual, for definition of programs and activities by program budgeting format for submitting budget applications to Ministry of Finance for development of 2019-2021 Medium Term Expenditure Framework, February 2018. Retrieved from http://scs.am/files/metodakan-cucumner-19-21.pdf.

Government of Armenia. (2016). Regulation of Results-Based Monitoring and Evaluation of Programs Implemented and Services Provided to the Population within the Social Protection Sector of Republic of Armenia, Appendix N1 to order N_70-A/1__ of «_28__» «___June__» of 2016 of the RA Minister of Labor and Social Affairs.

Tools4dev. (n.d.) Theory of change vs logical framework – what's the difference? Retrieved from http://www.tools4dev.org/resources/theory-of-change-vs-logical-framework-whats-the-difference-in-practice/.

Vogel, I. (2012). *Review of the use of 'theory of change' in international development: Review report*. London, UK: Department for International Development. Retrieved from http://www.theoryofchange.org/pdf/DFID_ToC_Review_VogelV7.pdf.

CHAPTER 4. M&E PLAN DEVELOPMENT

In this chapter, we discuss what an M&E plan is; the M&E plan development process, including the engagement of key stakeholders; and the components of the M&E plan, such as the M&E framework, indicator tracking table, risks monitoring plan, and evaluation plan. We review the structure of the M&E plan and key considerations needed to have a good M&E plan.

Every strategy/program should have an M&E plan. It is a fundamental document that details a program's objectives and the interventions developed to achieve the objectives, and describes the procedures that will be implemented to determine whether the objectives have been met. It shows how the expected results of a program relate to its goals and objectives, and describes the data needed, how these data will be collected and analyzed, how this information will be used, the resources that will be needed, and how the strategy/program will be accountable to stakeholders.

Purpose of the M&E Plan

The process of developing and implementing an M&E plan may actually need to begin with advocating the need for and the purpose of the M&E plan. This is especially true if M&E is not valued or practiced or there is no authority to do M&E. In this case, it is necessary to consistently promote the message that an **M&E plan is designed to demonstrate the extent to which a program is achieving its objectives and ultimately improve the program.**

Purpose of an M&E plan:

- State how a program will measure its achievements and therefore provide accountability.
- Document consensus and provide transparency.
- Guide the implementation of M&E activities in a standardized and coordinated way.
- Preserve institutional memory.

Regardless of whether the strategy/program is a comprehensive national child protection program or a subnational vertical care program, an M&E plan should abide by the following standards:

- It should be **useful** and serve the practical and strategic information needs of its intended users for decision-making purposes (from assessing program performance to allocating resources, etc.). Intended users may include a ministry's high-level officials making decisions about the national strategy/program and staff who are making decisions to improve programs at the district level.
- The M&E plan should be **realistic and practical**. To the extent possible, it should make the best use of existing data collection systems. If new data collections systems or studies are involved, resources (cost and technical capacity) should be carefully considered.
- Data collection and special studies included in the M&E plan **should abide by regulations and protocols** that consider the rights of those involved in and affected by the M&E activities.
- Last, the M&E plan should **provide technically accurate and useful information** for decision making and program improvement.

Participants in the M&E Plan Development Process

Having an M&E unit or team can greatly facilitate the development and implementation of an M&E plan. When there is no M&E unit or responsible staff, the coordination of M&E plan development should be handled by the program manager or the head of the division. All interested stakeholders should participate in the M&E plan development process, including high-level officials of the ministry, heads of departments and divisions, regional and municipality-level stakeholders, and program-level specialists. Their participation can be arranged through a workshop or by giving feedback, comments, and suggestions on draft versions of the M&E plan through email communication. It is important that such key stakeholders are consulted from the outset to ensure a clear understanding of the program's goals and objectives, to ensure that the indicators in the M&E plan reflect the actual data being collected, and whether that information is the most useful for them to make decisions for program improvement. They should participate in setting program targets and the regular review of M&E findings. This process will create a sense of ownership among partners and ensure that the information and results guided by the M&E plan are consistent with users' expectations. Taking extra measures to promote the participation of intended users or stakeholders involves building consensus and commitment among them.

Throughout the process of developing the M&E plan, **the end users should be kept in mind** and involved to ensure that the M&E plan is used. It is therefore vital to maintain effective relationships with the intended users.

Development of the M&E Plan

To develop the M&E plan, the following steps are taken:

1. Translate the problem statement, program goals, and objectives into the M&E framework
   - Establish the scope of the M&E plan
2. Develop the M&E framework
   - Determine the elements to be monitored and evaluated
3. Define indicators and identify data sources
   - Input indicators, process indicators, output indicators, outcome indicators, and impact indicators
4. Determine the methods for data collection
   - Develop the data collection plan
   - Determine M&E responsibilities
5. Set targets
6. Define the reporting system, and the use and dissemination of results
7. Plan for mid-course adjustments.

These steps should be written and clearly described in the final **M&E plan document**.

Typically, **the components of an M&E plan document** are:

1. The introduction to the M&E plan and program description
2. M&E framework
3. A detailed description of the indicators to be monitored
4. The data collection plan for monitoring the indicators
5. A plan for risk management
6. A plan for evaluation
7. A plan for the use of the information obtained
8. A mechanism for updating the plan

For someone who had never developed an M&E plan, this description of the process may give the impression that an M&E plan is a complicated document. It is, but only at the start. The value that the M&E plan brings to the program team and decision makers is vital. It provides all the information needed about the program in one well-structured document. An example of an M&E plan from the tools4dev website is presented in Appendix 3.A at the end of this guide. The M&E plan template can be accessed at http://www.tools4dev.org/resources/monitoring-evaluation-plan-template/

A description of each step of the M&E plan development process follows.

Establishing the Scope of the M&E Plan: Translating the Problem Statement, Program Goals, and Objectives into the M&E Framework

In this step, the following components of the M&E plan are developed: the introduction to the M&E plan and the program description.

As mentioned in the previous chapter, the strategic document (policy document or reform strategy document) should have a clearly defined program/strategy statement, goals, and objectives.

A problem statement includes the following:

- The specific problem to be addressed (the situation that needs changing, who the situation affects, and the situation's causes, magnitude, and impact on society).
- The strategy/program goal and objectives (or impact and outcome).

Note:

- **The goal** is a broad statement about a desired long-term outcome of the program. For example, improvement in the living standards of children left without parental care or expanding access to community-based family support services for families at risk of separation, could be the program goals.
- **Objectives** are statements of desired, specific, and measurable program results. Examples of objectives are to reduce the number of children in residential care institutions, to introduce foster care practice in all regions, to establish family support community services, etc.

The strategic document also contains:

- Descriptions of the specific interventions to be implemented, their duration, geographic scope, and target population.
- The list of resources needed: financial, human, and those related to the infrastructure (premises for day care centers, equipment, and supplies, budget for salaries and transportation costs, etc.). The conceptual framework or TOC, as discussed in the previous chapter, is a graphic depiction of the factors thought to influence the problem of interest, and how these factors relate to one another and support the implementation of the desired change.

You use the information from the strategic document (policy document or reform strategy document) to write the introduction section of the M&E plan.

For this step, it is important that the strategic document (policy document or reform strategy document) has clearly defined **goals and objectives**. The goals and objectives, together with the problem statement, should be translated into the M&E logical framework, linking the goals and objectives to the interventions. The introduction part outlines the scope of the M&E plan.

The objectives listed in the program description should be "**SMART**"—an acronym that stands for:

- ✓ **Specific**: Is the desired outcome clearly specified?
- ✓ **Measurable**: Can the achievement of the objective be quantified and measured?
- ✓ **Appropriate**: Is the objective appropriately related to the program's goal?
- ✓ **Realistic**: Can the objective be realistically achieved with the available resources?
- ✓ **Timely**: In what time period will the objective be achieved?

The introduction part of the M&E plan should contain:

- The purpose of the program, and the development history that provides information about the motivations of the internal and external stakeholders and the extent of their interest, commitment, and participation.
- The specific M&E activities that are needed and why they are important.
- The underlying assumptions on which the achievement of the program goals depend.
- How M&E will be undertaken, data quality control, the feedback process, and how participation will be ensured.

Here is an example of an objective. Do you think it is SMART (i.e., meets all criteria given above)?

Example of an objective

Objective: Reduce the number of children with disabilities in residential care by 2022.

Specific: No, it is not stated how many children should be taken out of residential care.

Measurable: Yes, if the objective stated how many children should be taken out of residential care, we could quantify and measure its achievement.

Appropriate: Unknown; the program's goal needs to be provided to know whether the objective relates logically to it.

Realistic: Unknown; the resources available to the program need to be known.

Timely: Yes, the time within which the objective is to be achieved is specified.

So this objective is not "SMART," because, although it meets some of the criteria, it does not meet them all.

Developing the M&E Framework

The M&E framework is a table that presents the expected relationships among activities, outputs, and outcomes; provides their conceptual measures/indicators and their definitions; states the frequency of the data collection method; defines the people responsible for monitoring; sets the means of verifications for the results; the data sources; the budget for monitoring and reporting; and the use of monitoring results. The action plan of the strategy document should serve as the basis for developing the LFA. The M&E framework should be defined and written in close cooperation with the stakeholders and intended users. Stakeholders' consensus on the M&E framework is key to ensuring that all parties have a clear understanding of the program's goals and objectives, and how progress toward them will be measured. This, in turn, helps determine the appropriate methods and data sources for collecting and analyzing the data needed to measure the indicators.

When developing the M&E framework, the M&E team should consider the factors that may influence the success of the program because this helps with the selection of indicators and the establishment of realistic targets. Some M&E frameworks also contain assumptions to ease the process.

Table 4.1. M&E framework template

	INDICATOR	DEFINITION How is it calculated?	BASELINE What is the current value?	TARGET What is the target value?	DATA SOURCE How will it be measured?	FREQUENCY How often will it be measured?	RESPONSIBLE Who will measure it?	REPORTING Where will it be reported?
Goal								
Outcomes								
Outputs								

Source: tools4dev, n.d

Defining Indicators and Identifying Data Sources

Indicators are clues, signs, or markers that measure one aspect of a program and show how close a program is to its desired path and outcomes. They are used to provide benchmarks for demonstrating the achievements of a program. The M&E plan should include useful indicators so that they will contribute to effective program management and be useful for program decision making. Indicator selection should consider what is feasible and realistic to collect; this includes considering data availability and identifying data sources. The M&E plan should list indicators for all levels of the program hierarchy. All indicators should have indicator reference sheets (IRS). We discuss the selection and use of indicators in the next chapter.

Data sources are the sources of the information used to collect the data needed to calculate the indicators. It is important to consider the data sources that exist at the time you are developing your M&E plan and whether new data sources/collection mechanisms need to be developed (and whether this is feasible, practical, and realistic). The strength of these systems determines the validity of the information obtained. Potential errors in data collection or in data entry should be carefully considered when determining the usefulness of data sources. Means of verification can be sign-in sheets from training sessions or events, procurement documents, contracts, reports, photos, information in the IT system, pre-and post-training evaluation questionnaires, reports, etc. We discuss data sources, data collection, and data quality in Chapter 6.

Determining Methods for Data Collection

Once the M&E team has developed the M&E framework, defined the indicators, and identified the data sources, the team should determine the appropriate methods by which data will be collected and analyzed. During this process, the M&E team should assess the strategic information needs and the existing information system's capabilities to address those needs to determine what is feasible and what is not. At this point, some adjustments to your M&E framework and indicators may be needed.

You should identify how to collect the information needed to measure your program indicators, whether it will be through existing data collection systems or whether new systems will be developed. You should determine how information will be recorded and reported. You should identify any tools or forms that are needed.

You should also determine whether any special studies will be conducted and what study design will be used. You should carefully consider internal and external capacity to conduct any special studies, including technical capacity and cost considerations.

Data collection and monitoring usually occur on a monthly or quarterly basis. However, some programs require daily, weekly, or annual data collection.

The M&E framework also **identifies a person or the title of the person who will be responsible for monitoring**. This should be clearly defined; it should always be a person, not a division or a unit. The following questions should be answered in M&E framework:

- Who will collect the data?
- Who will analyze the data?
- Who will report the data?
- Who will oversee data collection?
- Who will conduct analysis and reporting?

Budget for monitoring: Cost estimates for the M&E activities are an important precondition for having realistic and successful M&E and a good M&E plan. Obviously, the M&E effort should not be more costly than the program itself. One rule that has been suggested is that approximately five to ten percent **of** the program's total budget should be devoted to M&E. Costs that should be considered are the cost of data collection systems and information dissemination, and their use for M&E coordination. M&E expenses may be higher in the first year because of the resources needed to improve or establish information systems. If new systems or special studies will be conducted by outside agencies, these costs and their timeline should be considered. Those developing the M&E plan also need resources, such as indicator guides, M&E guidelines (manuals, textbooks, etc.), and communication tools. These factors should be borne in mind throughout the development of the M&E plan so that it is realistic and appropriate to the program's needs.

Setting Targets

Target setting for indicators is usually conducted after there is a cohesive draft of the M&E plan. However, setting targets may be done earlier (again, each step is not necessarily independent of the next).

Regardless of when it occurs, target setting should be done in consultation with all stakeholders so that everyone understands what the program is committed to achieving. The target setting process involves orienting stakeholders to the tasks that you expect your program to accomplish and should motivate everyone involved. By setting targets, you will have a concrete measure by which to judge whether your

program is progressing as it should. Target setting is discussed more fully in the chapter on indicators (Chapter 5).

Defining the Reporting System, Utilization, and the Dissemination of Results

Reporting includes the actual writing of an M&E report or providing an update on the indicators. The M&E plan should have a list of who should receive the M&E report and when. The M&E unit may be responsible for disseminating an annual M&E report to all stakeholders and intended users, and coordinating a review of results to assess program performance and to make adjustments. The users of this information should be clearly defined, and the reports should be written with specific audiences in mind. Dissemination channels can include written reports, press releases, stories in the mass media, and speaking events.

Revisions of the M&E Plan and Mid-Course Adjustments

Program changes can and will occur. Program changes can affect the way activities are monitored. The M&E plan should be updated and adjusted accordingly. The changes can also affect the integrity of any impact evaluation design. The changes can be made internally by the M&E team or by the division, rather than depending on external capacity, which would be expensive (require additional costs). By regularly reviewing program progress and results with stakeholders, it is possible to identify areas for adjustment in a timely way.

The M&E plan is a living document and needs to be adjusted when a program is modified.

Tools for the M&E Plan

The M&E plan can also include an indicator tracker, risk monitoring plan, and an evaluation plan matrix. Some advanced M&E plans include diagrams depicting the systems used for data collection, processing, analysis, and reporting.

Indicator tracker: M&E staff usually use an indicator tracking table to track progress toward the achievement of program targets. The indicators are listed according to the hierarchy of the results chain. The indicators have their baseline values, the ultimate targets, and the annual results (can be quarterly, if targets are planned by quarters) showing the percentage achieved toward the annual target.

Table 4.2. Example of an indicator tracking table

Impact/outcome/output	Indicator	Baseline	Ultimate target	Year 1			Year 2		
				Target	Actual	% achieved	Target	Actual	% achieved

Risk monitoring plan: Another advanced tool that is included in the M&E plan is a risk monitoring plan. It should be noted that risk monitoring is not yet common in Armenia. In very few cases, the strategy documents identify risks and plans to mitigate the risks. The risks should be identified according to the hierarchy of the results chain and should have a scale for their impact and probability (high, medium, and low). If a risk has a high probability and high impact, then it should be addressed as soon as possible to prevent the failure of program implementation. The risk mitigation strategy and the responsible staff should be indicated in the plan. Risks may appear during strategy or program implementation. Therefore, updating the M&E plan should also include updating the risk management plan. The date when the risk was first identified, the last update date, and the status should also be specified.

Table 4.3. Example of a risk monitoring plan matrix

Risk	Impact (H, M, L*)	Probability (H, M, L*)	Mitigation strategy	Responsible for risk monitoring	Date when first identified	Latest update	Status

* H=High; M=Medium: L=Low

Evaluation plan matrix: The M&E plan should also consider the type, objective, and timing of evaluation. The evaluation plan provides the specific research design and methodological approaches to be used to identify whether the planned changes in outcomes occurred and whether they can be attributed to the program. For example, if a program wants to evaluate whether the quality of foster care was improved by training providers, the evaluation plan would identify a

research design that could be used to measure the impact of such an intervention. Depending on the objective and type of evaluation, its cost and the implementer should be mentioned in the evaluation plan. The key user(s) and the use of the evaluation report should likewise be indicated in this template.

Table 4.4. Example of an evaluation plan matrix

Evaluation title	Objective	Type of evaluation*	Commissioned by	Estimated start date	Estimated completion date	Estimated cost	Reporting and use of results

*Summative, formative; mid-term, final, ex-post; impact, outcome.

Key Messages

- ✓ Every strategy/program should have an M&E plan.
- ✓ The M&E plan should be useful and serve the practical and strategic information needs of the intended users; it should be realistic and practical, and should provide technically accurate and useful information for decision making.
- ✓ Everyone who will use the information generated by the M&E plan should participate in the M&E plan development process.
- ✓ The objectives listed in the program description should be "SMART."
- ✓ The selection of appropriate indicators is the most critical step in designing an M&E plan.
- ✓ Potential errors in data collection, or in the data themselves, should be carefully considered when determining the usefulness of data sources.
- ✓ The M&E effort should not be more costly than the program itself. One rule that has been suggested is that 10 percent of the program's total budget should be devoted to M&E.
- ✓ The activities described in the M&E plan should be conducted legally, ethically, and with respect for those involved in and affected by them.
- ✓ The M&E plan is a living document.

Quiz 4.1. Answer the following questions to see how much you know about this topic.

1. M&E plans should include:

a. A detailed description of the indicators to be used

b. The data collection plan

c. A plan for the use of the information obtained

d. All the above

e. a and b only

2. The problem statement and goals and objectives of a project should be described in the M&E plan.

a. True

b. False

3. When should the M&E plan be created?

a. During the design phase of a program

b. At the midpoint of the program

c. At the end of the program

d. After all the data have been collected but before they are analyzed

4. The purpose of indicators is to:

a. Demonstrate the strength of the information system

b. Serve as benchmarks for demonstrating achievements

c. Provide program accountability

d. Describe the objectives of a project

5. The results of M&E activities can be disseminated through:

a. Written reports

b. Press releases

c. The mass media

d. Speaking events

e. All the above

6. In the M&E framework of a child protection action plan, the following outcome has been included:

Strengthening the capacity of civil servants to develop quality standards for child protection services.

Tasks:

a. Has this outcome been correctly formulated? If yes, why? If no, why not?

b. If not, reformulate the outcome and related output.

7. Are these outputs adequately formulated?

a. Child-focused vocational training program developed for the community social workers.
b. Improved legislative framework in the area of national adoptions.
c. Mechanism for monitoring the quality of social services is implemented.
d. Strengthened capacity of day care centers in remote communities to ensure the family support services to families with children with disabilities.

Chapter 4. Answers to Quiz 4.1

1. M&E plans should include:

D. All the above (a detailed description of the indicators to be used, the data collection plan, and a plan for the use of the information obtained). Typically, the components of an M&E plan are:

- Introduction, the program description and framework
- A detailed description of the plan indicators
- The data collection plan
- A plan for monitoring
- A plan for evaluation
- A plan for using the information obtained
- A mechanism for updating the plan

2. The problem statement and goals and objectives of a project should be described in the M&E plan.

A. True

The M&E plan should include a problem statement that identifies the specific problem to be addressed, the goal that describes the desired long-term outcome of the project, and the objectives that describe the desired specific and measurable program results.

3. When should the M&E plan be created?

a. During the design phase of a program

M&E plans should be created during the design phase of a program.

4. The purpose of indicators is to:

b. Serve as benchmarks for demonstrating achievements

Indicators provide benchmarks for demonstrating the achievements of a program.

5. The results of M&E activities can be disseminated through:

e. All the above (written reports, press releases, the mass media, and speaking events)

Dissemination channels can include written reports, press releases, stories in the mass media, and speaking events.

6. Formulation of an outcome in the M&E framework of a child protection action plan

Task 1: Has this outcome been correctly formulated? If yes, why? If no, why not?

NOT correctly formulated: formulated like an activity (saying how to do things instead of indicating a change in institutional performance or behavior); unclear what civil servants are talking about.

Task 2: If not, reformulate the outcome and related output.

Outcome: Improved access of children at risk to quality social services.

Output: The specialists working in the Department for Child Rights Protection have the skills to develop minimum quality standards for social services for children at risk.

7. Are these outputs adequately formulated?

a. Child-focused vocational training program developed for the community social workers. **YES**

b. Improved legislative framework in the area of national adoptions. **NO, this is an outcome; it needs reformulation to be an output, (e.g., A proposal for amending the law on national adoption is drafted).**

c. Mechanism for monitoring the quality of social services is implemented. **YES**

d. Strengthened capacity of day care centers in remote communities to ensure family support services to families with children with disabilities. **YES**, but a better formulation could have been: The day care centers in remote communities have an enhanced capacity to provide family support services to families with children with disabilities.

Chapter 4 References

Tools4dev. (n.d.) How to write an M&E framework – Free video tutorial & templates. Retrieved from http://www.tools4dev.org/resources/online-course-how-to-write-a-monitoring-evaluation-framework-step-by-step-lessons/.

CHAPTER 5. INDICATORS

In this chapter, we discuss what an indicator is and why it is useful, provide the typology of indicators, present the characteristics of good indicators, discuss the establishment of a baseline for an indicator and indicator target setting, and describe the content and structure of IRS and their use.

Indicator Definition

Indicators are used in daily life, sometimes without realizing it. Indicators are the clues, signs, and markers about how close you are to your path and how much things are changing. For example, if you drive a car and the gas gauge shows that you are low on gas, it is not actually the gas you are looking at but rather the gas gauge, which is an "indicator" of the amount of gas you have.

An indicator is a variable that measures one aspect of an intervention, program, or project. Let's take a moment to systematically review this definition. First, the purpose of indicators is to show that programs, projects, or interventions are carried out as planned or that an activity or intervention has caused a change or difference in something else. An indicator of that change will therefore be something that you can reasonably expect to vary. Its value will change from a given or baseline level at the time the program begins to another value after the program and its activities have had time to make their impact felt, when the variable, or the indicator, is recalculated. Second, an indicator is a measurement. It measures the value of the change in meaningful units for program management: a measurement that can be compared to past and future units and values. A metric is the calculation or formula that the indicator is based on. Calculation of the metric establishes the indicator's objective value at one point in time. Third, an indicator focuses on a single aspect of an intervention, program, or project. It may be an input, an output, or an overarching objective, but its related metric will be narrowly defined in a way that captures that aspect as precisely as possible.

What to Specify for Each Indicator

For each indicator, you need to specify the unit of analysis (what/who is being analyzed, [e.g., children, caregivers, services, communities]); the baseline level (the value at the beginning of the program or intervention); the target for subsequent comparison; and the expected change in conditions or situations to be observed.

Indicator Use

Indicators demonstrate progress when things go right. They provide early warning when things go wrong.

Box 5.1. Indicators help to:

- Track change along the path to development.
- Describe how the intended results will be measured.
- Force the clarification of what is meant by a specific intended result.
- Assist in identifying changes that need to be made in strategy and practice.
- Inform decision making.
- Facilitate effective M&E.

Indicator Typology

In this section, we describe several types of indicators. Indicators can be factual and numeric. *Factual* indicators "measure" whether a specific achievement has been recorded, using "yes/no" measurement or assignment in classes.

Factual indicators should be supplemented by numeric indicators because the former provide only a raw measurement owing to their limited scale (mostly "yes/no"). *Numeric* indicators use numbers, percentages, or ratios to provide a numerical representation of achievements. Table 5.1 provides examples of factual and numeric indicators.

Table 5.1. Factual and numeric indicators

Factual Indicators ☐ Factual (yes/no) ☐ Existence (yes/no) ☐ Classes (x/y/z)	☐ Policy recommendations submitted for analysis ☐ Draft law developed and submitted for approval to the government ☐ Functional "Social Services" Module in the information system ☐ Social work agency established ☐ Existence of free e-media: free, partly free, not free
Numeric Indicators ☐ Number ☐ Percentage ☐ Ratio	☐ No. of social workers trained in case management ☐ No. of local NGOs participating in the human rights conference ☐ % of GDP allocated to social expenditures ☐ % of rural children with access to preschool education ☐ Ratio of active cases per case manager

Indicators are defined as measures of quantity and are widely used in development interventions because they provide a clear measure of inputs and results and are easily comparable.

Logic models were discussed in Chapter 3. In this chapter, we discuss what is being measured by impact, outcome, output, process, and input indicators, and provide examples for each indicator type.

Impact indicators measure changes in people's lives and development conditions at the national level. The poverty rate, Early Childhood Development Index, and the underweight prevalence rate are examples of impact indicators.

Outcome indicators measure changes in institutional performance and behavior; they focus on what is critical to see happen. For example, to measure changes in the level of discrimination against children with mental disabilities, the following indicators can be used: number of children with mental disabilities reunified with their families; percentage of children with mental disabilities studying at mainstream schools; and the proportion of the population who believe that special schools are the best educational place for children with mental disabilities (based on a survey).

Output indicators measure new skills or abilities, and the availability of new products and services. For example, to measure the extent to which district schoolteachers have improved their teaching skills, the following indicators can be used: number of teachers who completed training by the end of the year; and the percentage of trained teachers rated as more effective in doing their job one year later. To measure the extent to which NGO staff in 10 districts have the resources and skills to contribute to monitoring the child rights protection strategies at the local level, the following indicators can be used: number of NGO staff members who graduated training courses in child rights protection; percentage of trained NGO staff members who believe that they became more effective in undertaking the analysis of the child rights situation at the community level; and the percentage of districts with functioning child rights monitoring commissions.

Process indicators measure how well activities are implemented. Process indicator examples are: the number of people who attended the training courses; number of awareness raising workshops organized; and number of consultations held to finalize the child protection strategy.

Input indicators measure the resources needed for the implementation of activities, such as money, time, human resources, equipment, and materials. Input indicator examples are: the number of textbooks; amount of funds allocated for an activity; number of foster carers; and number of computers in primary schools.

Exercise 5.1. Indicator types

Which type of indicator (impact, outcome, output, process, or input indicator) is each of the following:

1. Percentage of young people certified in web applications
2. Training curriculum
3. Poverty rate of youth for age group X
4. Number of young people who attended a qualification course in JavaScript
5. Number of young people who found a job in e-commerce
6. USD (or local currency) per trainee

Indicator Baselines and Target Setting

The M&E framework states your intended results, the indicators to measure those results, and the baselines for each indicator. Now you need to set targets, which identify the changes you want to make, based on available resources and past program performance. Not only does the results framework help you use existing data to set targets, it also guides trend analyses against targets, and helps you ask more nuanced questions about emerging trends. You cannot set targets without defining your baselines.

Establishing Baselines

Establishing a baseline requires you to use your existing data to help understand who needs what services and whether you are reaching them. This helps you understand what your program is doing in relation to what you intend it to do in the future, as expressed in your goals, objectives, results, and indicators, and documented in your M&E framework. According to Kusek and Rist (2004), "the baseline is the first measurement of an indicator. It sets the current condition against which future change can be tracked."

Decision makers use baselines to understand current conditions before projecting targets for a given indicator and result. Without knowing the starting point, "what our program is currently achieving," you cannot project performance into the future. Once the program is underway, baselines enable decision makers to measure program performance and decide on future investments, based on that performance, by allowing them to see how much progress toward a milestone or target a program has made since it began.

To establish a baseline, you need to use the same data sources, data collection strategies, and databases that the selected performance indicators will use. To produce quality information that accurately reflects the services that are being delivered to specific populations, these data sources need to be grounded in the realities of existing data systems. Part of establishing your baseline is to understand what data are available. You only want to collect baseline data that relate directly to the results you intend to achieve, and the indicators you will use to measure your progress.

The data sources for establishing baselines and setting targets include:

- Register data
- Administrative, budget, or personnel data
- Surveys
- Interviews
- Direct observation data

A time period of anywhere between three months and five years can be used to set a baseline. Baselines can be set using program performance during the last time period, or by combining program performances across different time periods. You can use a measure of central tendency (e.g., a mean or a median) to do this.

You may need to adjust your baselines because of contextual factors or assumptions made about the underlying data. Some factors you may want to keep in mind when calculating your baselines are:

- Seasonality: Are there any regular, seasonal variations in the performance of your indicator? If so, you might consider only looking at certain seasons or quarters in which your indicator has been well captured.
- Stability: How stable has your indicator been over time (representing what normal performance is)? If your indicator has been stable for some time, you could calculate a baseline value by

averaging values across a longer time frame. If your indicator has been gradually increasing (or decreasing) over time, you may want to use a shorter time frame as your baseline period. If there have been unexpected periods of extreme highs and lows, you may want to exclude them from your baseline calculation.

- Frequency of reporting: Data sources for baseline data will vary according to the types of data collected, the methodology, and the frequency of data collection. You need to choose data sources according to what data are available to you in the requisite time periods. For example, if large-scale household surveys are only conducted every three-to-five years, then you would not use them as a data source for a two-year program.
- Representativeness: Are there any gaps in the data (missing reporting periods or reporting units) or concerns about the quality of the data? If data are missing, then you may need to interpolate and calculate a reasonable estimate for the missing data, based on available data. Baselines should be based on valid and reliable data. If there are data quality concerns, subsequent plans to improve the quality of the data will likely affect the measurement of baselines and targets. You may decide to reset the original baseline once better quality data are available or, if the direction of bias is known, you could over- or underestimate your original baseline.

Setting Targets

Although the indicator should be formulated in a neutral language, it is the role of the target to signal how much change is planned to occur and in what direction. Well-formulated targets specify what is being tracked, the expected amount of change or improvement, and a timeframe by which the target will be achieved.

There are two types of targets. An overall target measures expected performance for the life of the program—whether it is one year, three years, or five years. It defines what you want to accomplish for an indicator by the end of the program. For example, the GOA may want the percentage of children in residential institutions who are reunified with their families to reach 31 percent in three years, by 2022.

Annual targets measure the expected performance for each year of the program. For example, in the above scenario, let's say the indicator was at nine percent at the start of the program; achieving 31 percent in three years would be a large increase (22 percentage points). Setting annual targets would help break it down. The program could set the annual targets at 17 percent by 2020, up to 24 percent by 2021, and up to 31 percent by 2022.

Here are the steps for annual target setting:

1. Determine the increase your program needs to achieve to reach your overall target.
2. Divide that number by the number of years in which you would like to achieve the target.
3. Add the number to your baseline indicator for each year.

To set targets, first you need to understand how your area is performing, the resources allocated to activities that are relevant to the indicator and its target, and the relevant contextual factors in your catchment population. When setting a target for your area, based on the national target, you need to include supervisors, program managers, and service providers to understand the context and to gauge what is realistic. At this point, you need to explore available data to determine past and current performance through a trend analysis.

Start with the baseline value. What has been reported against an indicator over the past three months to five years? Consider the desired level of improvement or change applied to a specified period in the future.

Looking at the resources committed to this area, you can crudely divide the output by the input. For example, you could divide the number of children enrolled in the daycare program by the total amount of money spent by the daycare program to determine how much more money you would need to increase your targets. When you think about expanding the number of children enrolled in daycare services by 30 percent, you would then also need to inflate the necessary resources by 30 percent.

Targets are set based on context, experience, programmatic growth, and expected expansion. Although one always wants performance to improve, depending on the specific program, indicator, past performance, and target population, a projected increase may not be feasible. For example, if a school enrollment program has been highly successful in reaching the majority of school age children in a district, it would be unrealistic to continue increasing the number of children enrolled in school as your target because most of the children in your district have already been reached.

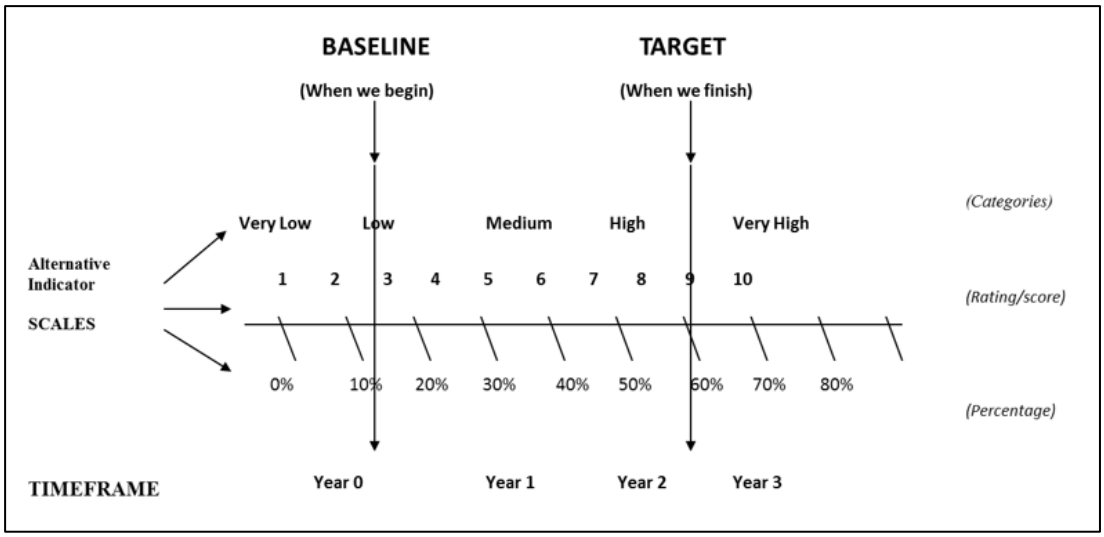
Realistic targets understand unit costs and take them into consideration when considering any increase. If there is no increase in budget allocation for a specific activity, you cannot realistically project an increase. Rather, a realistic target would either be to hold steady or to reduce, based on inflation. You should always set targets based on data that tracks program performance and budget allocation; this includes accurate and timely data on inputs, target populations, and past performance. Setting a target based on "you think" or "you feel" or "you believe" will not result in the program reaching more people more efficiently or with a higher quality service in a way that realistic targets would. To set realistic targets, you should know what you have previously accomplished and with what resources. You can use a unit cost analysis to calculate the number of inputs required to produce a single output. Doing this simple calculation will help you project realistic targets.

Keep in mind that setting targets requires you to consider:

- Existing capacity of staff and service providing organizations
- Staff turnover
- Budget allocations
- Other funding streams, such as bilateral and multilateral donors

Consider the example for setting targets using school enrollment for children with disabilities as an indicator of access to education.

Figure 5.1. Example for setting targets



The intended outcome in this example is: "increased access to education for children with disabilities," which is measured by the indicator, "school enrollment rate." To monitor results, one could start with a baseline of 12 percent enrollment in Year 0, a target of 35 percent in Year 1, and a target of 60 percent in Year 2. Measurement could be done using categories (very low, low, medium, high, very high) or ratings (e.g., from one to ten), instead of percentages.

Please see Appendix 5.C for the learning activity for the indicator target setting.

Characteristics of a "Good" Indicator

Good indicators are:

Specific, defined precisely, in clear and unambiguous terms

Measurable, indicating the desired change, with baselines and targets

Adequate, strictly measuring the results, processes, and resources it intended to measure

Realistic, reasonable about the costs and time needed for measurement

Time-framed, ensuring a regular measurement of progress

Credible, minimizing measurement errors

Comparable, producing the same results when used repeatedly to measure the same aspect

Independent, formulated in a neutral, nondirective manner, being able to vary in any direction

Disaggregated, to the extent it is relevant

Let's review an example and then practice indicator formulation by working on the exercise.

If the outcome is stated as, "increased access of vulnerable children and their families to community-based family support services (healthcare, social rehabilitation, after-school, psychological support) after deinstitutionalization," is the following indicator appropriate to measure the outcome?

Indicator: Number of reunified families who have access to community-based family support services (healthcare, social rehabilitation, after-school, psychological support).

Answer: No, the indicator communicates only the actual number of reunified families that have access to community-based family support services; it does not show what proportion of the families have access to these services.

Moreover, the definition of community-based family support services is broad and includes multiple services. It is difficult to make a decision about the access to what type of services that would need to be improved.

Exercise 5.2. Formulation of good indicators

1. Analyze the adequacy of the indicators (column 2 in the table below) for each result statement (column 1).

2. Explain why the indicators are adequate or inadequate and why. Write down your response in column 3.

3. Reformulate or identify better indicators according to the criteria presented in this chapter. Write them down in column 4.

Result	Indicator	Adequacy (Y/N/Why)	Suggested new/revised Indicator
1	2	3	4
Improved access to family-type care for children from residential institutions	Percentage of children in residential institutions from the total number of children		
Jobs created for poor families in micro-enterprises	Micro-credit funding available in five regions compared with only two regions at the moment		
Psychologists know how to conduct a psychological evaluation of a child victim of violence	Number of psychologists trained sufficiently to cover the needs		
Increased transparency in using public financial resources to set up services for the prevention of	Reduced number of corruption cases		

Result	Indicator	Adequacy (Y/N/Why)	Suggested new/revised Indicator
family-child separation			
Access to specialized family-based care for newborn babies and children with disabilities	Number of foster parents providing specialized services for the target beneficiaries according to identified needs		

Selection of Indicators

In an ideal world, indicators judged to be of the highest quality and most useful are the ones selected and used to monitor and evaluate program activities. However, in the real world and in field settings, many other factors may intervene. Links to program activities, as shown through frameworks, are important, as are the needs of the program for decision making. Ideal indicators may not be practical. The feasibility of certain indicator designs can be constrained by data availability and financial and human resources. Requirements and needs of donors, the government, an organization's headquarters, and others may take priority.

Examples of such considerations are:

Availability of data: Some data may be considered privileged information by agencies, projects, or government officials. Data may be available only on aggregated levels or may already be calculated in indicators that may not be ideal for your program or activities.

Resources: Ideal indicators may require collecting data to calculate an unknown denominator, or national data to compare with project area data, or tracking lifetime statistics for an affected and/or control population, etc. The costs of collecting the appropriate data for ideal indicators are usually prohibitive. The availability of human resources and technical skills, especially for evaluation, may also be constraints.

Programmatic and external requirements: Indicators may be imposed from above by those not trained in M&E techniques. Reporting schedules may not be synchronized (e.g., fiscal year versus reporting year). Different stakeholders' priorities may diverge.

Common Mistakes in Indicator Selection

There are some common mistakes that people make when trying to create or select indicators. Indicators are often not linked to program activities or are poorly defined. Selecting indicators that do not exist and cannot realistically be collected means that they will not be reported.

Process indicators are sometimes used to measure outcomes and impact. Some indicators are not very sensitive to change, for example, nutritional status outcomes. Probably the easiest pitfall to avoid is having too many indicators. Having too many indicators makes it difficult to collect high-quality data and to interpret the data that you have.

How Many Indicators Should My Program Have?

A frequent question is, "How many indicators should my program have?" The best answer is, "that depends."

What does it depend on? Some considerations include the complexity of your goals; the costs of data collection and analysis; and the benefits and practical uses expected for M&E results at different levels.

A reasonable rule of thumb is one or two indicators per result, but this depends on how finely detailed your results may be. You should definitely have at least one or two indicators for every significant activity. Remember, M&E's purpose is to monitor performance and evaluate impact! However, there is a tendency to go into overkill on indicators; again, keep in mind that the focus of your program is your program. M&E that is not going to be fed back into program management or otherwise used to improve performance, effectiveness, or efficiency are not a sound use of program resources. It is wise to vary the data sources used for indicators, either secondary sources or your own data collection efforts, especially for key results. Any number of unexpected events can occur and disrupt an M&E plan, such as budget cuts, delayed surveys, or civil unrest, so diversifying data sources is a good strategy to ensure that some indicators can be tracked over the life of the project.

Indicators are the dashboard of your program. In a car, the components of the dashboard tell you the most important things you need to know while driving: speed, RPM, fuel level, and oil level. It is no mistake that newer cars have less crowded dashboards. Too many features distract the driver from focusing on what is most important. Your program works the same way. You cannot have an indicator for every single thing that your program is doing. Your indicators should reflect only the things that are most important to know. If you have too many indicators, the information will most likely be of lower quality; it will be more difficult to notice important trends or issues that arise; and collecting and analyzing the data will be too great a burden on everyone involved in those tasks.

Indicator Reference Sheet

An IRS is a tool used to define the indicators and ensure indicator data quality and consistency. In this section, we present the minimum information that an IRS should include. The description entails the following: precise definition(s), the unit of measure, the method of calculation, type of disaggregation, if needed, along with the justification. The plan for data collection covers the data collection method, the data source(s), the timing/frequency of data collection, the estimated cost of collection, the responsible organization/individual(s), and the location of data storage. The plan for data analysis addresses the data analysis, presentation of data, review of data, and reporting of data. The plan for data quality checks highlights the plan for the initial data quality assessment, indicates the known data limitations and their significance (if any), and provides actions taken or planned to address the data limitations. A performance table sets the rationale for the selection of baselines and targets.

Appendix 5.A at the end of this chapter provides a template for an indicator reference sheet. Appendix 5.B gives an example of a completed indicator reference sheet.

Key Messages

- ✓ An indicator is a variable that measures one aspect of an intervention, program, or project.
- ✓ Good indicators are specific, measurable, adequate, realistic, time-framed, credible, comparable, independent, and disaggregated, to the extent it is relevant.
- ✓ When selecting indicators for your program, follow these principles:
  - Ensure that the indicators are linked to the information needs for interventions and are able to measure change.
  - Ensure that standard indicators are used, to the extent possible.
  - Consider the cost and feasibility of data collection and analysis.
  - Keep the number of indicators to the minimum that are necessary, and include only those needed for program and management decisions or for reporting.

Chapter 5. Answers to the Exercises

Exercise 5.1. Indicator types

Which type of indicator (impact, outcome, output, process, or input indicator) is each of the following:

1. Percentage of young people certified in web applications
2. Training curriculum
3. Poverty rate of youth for age group X
4. Number of young people who attended a qualification course in JavaScript
5. Number of young people who found a job in e-commerce
6. USD (or local currency) per trainee

Answers:

1. Output indicator
2. Input indicator
3. Impact indicator
4. Process indicator
5. Outcome indicator
6. Input indicator

Exercise 5.2. Formulation of good indicators

1. Analyze the adequacy of indicators (column 2 in the table below) for each result statement (column 1).
2. Explain why the indicators are adequate or inadequate and why. Write down your response in column 3.
3. Reformulate or identify better indicators according to the criteria presented in this chapter. Write them down in column 4.

Suggested answers:

Result	Indicator	Adequacy (Y/N/Why)	Suggested new/revised Indicator
1	2	3	4
Improved access to family-type care for children from residential institutions	Percentage of children in residential institutions from the total number of children	No. It indicates how many children are in residential institutions of the total children in the country instead of the total number of children in alternative care.	Ratio of children in residential institutions to children in family-type alternative services. Alternative indicator (proxy): % of children in residential institutions of the total number of children in family-type services (disaggregated by age, disability).
Jobs created for poor families in micro-enterprises	Micro-credit funding available in five regions compared with only two regions at the moment	No. Availability of funding is a means, not a result. The result refers to job creation and not to the availability of funding. The indicator is not specific enough because it does not make any reference to poor families. It is not disaggregated by sex, which is very important when it comes to labor market opportunities.	No. of adult members of poor families who got a job in micro-enterprises subsidized by the state, disaggregated by sex. Alternative indicator: No. of poor families of whom at least one adult member got a job in micro-enterprises subsidized by the state.
Psychologists know how to conduct a psychological evaluation of a child victim of violence	Number of psychologists trained sufficiently to cover the needs	No. It is neither specific nor measurable, (i.e., "trained **sufficiently**") (meaning?), "to cover the **needs**" (which?). It does not measure what it is supposed to measure.	Number of certified (accredited) psychologists in psychological evaluation of a child victim of violence.
Increased transparency in using public financial resources to set up services for the prevention of family-child separation	Reduced number of corruption cases	No. Not independent. Also, increased transparency may lead to an increase in the number of convictions for corruption (at least during the initial period).	Minutes of procurement commissions made public.

Result	Indicator	Adequacy (Y/N/Why)	Suggested new/revised Indicator
Access to specialized family-based care for new-born babies and children with disabilities	Number of foster parents providing specialized services for the target beneficiaries according to identified needs	No. Not specific "according to **identified needs**" (which?). It does not directly measure what it is supposed to measure (usable as a proxy indicator, if needed).	No. of children from target groups placed in specialized foster care.

Chapter 5 References

Kusek, J.Z., & Rist, R.C. (2004). *Ten steps to a results-based monitoring and evaluation system*. Washington, DC, USA: The World Bank. Retrieved from https://www.oecd.org/dac/peerreviews/World%20bank%202004%2010_Steps_to_a_Results_Based_ME_System.pdf.

Appendix 5.A. Sample Indicator Reference Sheet

Indicator Reference Sheet	
Strategic Objective:	
Intermediate Result:	
Lower-Level Result:	
Indicator:	
Date Established:	**Date Last Reviewed:**
a. Description	
Precise Definition(s):	
Unit of Measure:	
Method of Calculation:	
Disaggregated by:	
Justification/Management Utility:	
b. Plan for Data Collection	
Data Collection Method:	
Data Source(s):	
Timing/Frequency of Data Collection:	
Estimated Cost of Collection:	
Responsible Organization/Individual(s):	
Location of Data Storage:	
c. Plan for Data Analysis, Reporting, and Review (schedule, methodology, responsibility)	
Data Analysis:	
Presentation of Data:	
Review of Data:	
Reporting of Data:	
d. Data Quality Issues	

Initial Data Quality Assessment:
Known Data Limitations and Significance (if any):
Actions Taken or Planned to Address Data Limitations:
e. Performance Data Table
Key to Table: **Rationale for Selection of Baselines and Targets:**

	TARGET/PLANNED	ACTUAL	COMMENTS
2019 (Baseline)			
2020			
2021			
2022			
2023			
Comments			

Appendix 5.B. Indicator Reference Sheet Example

Indicator Reference Sheet 1b

Ratio of children in alternative family-based versus residential care

Indicator Reference Sheet
Strategic Objective*: Protection of rights and interests of children in adversity (in difficult life circumstances) National Strategy on Child Rights Protection of 2017–2021*
Intermediate Result: Improvement of Child's Rights Protection System
Lower-Level Result: Ensure the expansion and development of family-type childcare alternative services for children in difficult life circumstances
Indicator: Ratio of children in alternative family-based versus residential care
Date Established: 2018 **Date Last Reviewed:** 2019
a. Description
Precise Definition(s): The indicator counts the ratio of children who live in family-based alternative care compared with children who live in alternative residential care. **Alternative care is:** the provision of short-term or long-term care services to children left without parental care outside their biological family. **Residential care:** permanent or temporary care of children outside their biological families provided through official referral of Marzpetarans'/Yerevan Municipality Units of Family, Women and Children rights protection**.** Residential care options considered for this indicator are orphanages, night care institutions, special schools, small group homes, temporary shelters, supervised independent living care, and other types of private residential care. **Family-based care**: Children in foster care, kinship care, and adopted children are considered as children in family-based care. Adoption is not alternative care; however, it is preferable that after deinstitutionalization, children who do not have biological family are adopted, therefore, the number of children adopted during the reporting period is included to track the placement of children during the care reform.
Unit of Measure: Ratio
Method of Calculation: **Numerator:** Total number of children in family-based care **Denominator:** Total number of children in residential care
Disaggregated by: age, sex, geographic location, disability – age groups in years: 0 to under 3; 3 to under 6; 6 to under 14; 14 to under 18, 18 to 23. – Sex: boys, girls – geographic location: by marz – disability: yes, no
Justification/Management Utility: Family-based alternative care is recognized as the most appropriate care for children's healthy development. Residential options are generally appropriate for only a small minority of children in care and are often best used on a short-term basis. Regular measurement of this indicator helps local and national authorities determine the extent to which this principle is applied in practice.
b. Plan for Data Collection
Data Collection Method: Data collected for indicator #1 will be sufficient to calculate results for this indicator.
Data Source(s): Data from Indicator #1
Timing / Frequency of Data Collection: Quarterly, by the 10th of each month after the end of the reporting quarter,(e. g., for the first quarter for January to March the report is due on April 10).
Estimated Cost of Collection: Time for a data analyst at the Nork Information Center to calculate proportions based on the indicator #1 data and present results in a table and/or graph format.
Responsible Organization/Individual(s): Administrator of the Manuk Database at the Nork Information Center

Location of Data Storage:
Nork Information Center

c. Plan for Data Analysis, Reporting, and Review (schedule, methodology, responsibility)

Data Analysis: Data analyses will be done every quarter by the Division on Children-Related Issues of the MOLSA.
Data analyses will include frequency distribution and review of trends over time.

Presentation of Data: Using relevant tables and charts

Review of Data: Quarterly by the MOLSA

Reporting of Data: Quarterly by the MOLSA

d. Data Quality Issues

Efforts will need to be made to avoid double counting of children and to ensure the completeness, timeliness, and accuracy of data.

Known Data Limitations and Significance (if any):
It may be difficult to collect data on children in informal kinship care and children supported by private residential care institutions, which have not yet been given access to the Manuk database.

Actions Taken or Planned to Address Data Limitations:
Establish a mandatory reporting system for private residential care institutions giving access to the Manuk database to report the number of children under care quarterly. Establish a system for collecting and reporting data on children in informal kinship care by social workers and Guardianship and Trusteeship Bodies.

e. Performance Data Table

Key to Table:

Rationale for Selection of Baselines and Targets:

The care reform aims to reduce the proportion of children in residential care institutions

	TARGET/PLANNED	ACTUAL	COMMENTS
2018 (Baseline)	0.5		
2019	0.6		
2020	0.8		
2021	1.1		
2022	1.5		
2023	2.1		

Appendix 5.C. Learning Activity for Indicator Target Setting

Scenario–Setting a Family Reunification Target

The MOLSA has set a national objective of improving the well-being of children in residential care institutions by increasing the number of children reunified with their families. The performance indicator is: the proportion of children reunified with their families. We have data on family reunification for the past three years:

Year	Proportion of children reunified with their families (cumulative, by the end of each year)
2017	5
2018	7
2019	10

Given this information:

Step 1: Calculate the baseline

Step 2: Calculate the target for the next year

Using the results of the calculation of the baseline, calculate the target for next year. Make note of your assumptions and justifications when calculating the target for next year.

Baseline	Target, 2020

Step 3: Calculate the targets for the next five years

What proportion of children in residential care institutions you would like to see reunified with their families in five years? What is the target for each year to achieve this goal?

Hint: To set annual targets:

1. Determine the increase your program needs to achieve to reach your overall target.
2. Divide that number by the number of years in which you would like to achieve the target.
3. Add the number to your baseline indicator for each year.

Year	Target
Baseline, 2019	Insert value
2020	
2021	
2022	
2023	
2024	

Example: Let's say the proportion of children reunified with families (population of 1,000) is 10 percent at baseline, or 100 children (0.1 x 1,000 = 100). Given the resources you have available to your program, you think it's reasonable to set the overall target for your five-year program at 30 percent, or 300 children (0.3 x 1,000 = 300). This means that you need to increase your target by 20 percent (30%-10% = 20%), or an additional 200 children (0.2 x 1,000 = 200).

Because there are five years in the program, by dividing the target increase (20%) by five years, you see that you will need a four percent increase every year, or 40 children per year (200/5 = 40). So, if your current proportion of reunified children is 10 percent, you would add four percent, for a 14 percent annual target—or 140 reunified children— for 2020. And then add four percent for each additional year.

2020, 14% = 140

2021, 18% = 180

2022, 22% = 220

2023, 26% = 260

2024, 30% = 300

CHAPTER 6. DATA COLLECTION, REPORTING, AND QUALITY

In this chapter, we discuss the typology of data and data sources, and the processes for and challenges in data collection and reporting. We then review the importance of data quality, present the data quality dimensions, and discuss existing approaches to data quality assessments.

Data collection begins at the time of interaction between service providers and the child or the caregiver. The process of gathering information is first used for case management, then for service provider organization management, and ultimately to improve the overall care system. Data are needed from the community level all the way up to the national level for planning, management, and monitoring.

Typology of Data as Applicable to Care Reform

Depending on the frequency of data collection, data can be routine or nonroutine. Routine data collection refers to data that are collected continuously, with processing and reporting more often than annually. Vital registration is routine data collection on vital events (births, deaths, and migration data); this is an example of routine data. Nonroutine data are episodic and collected for a specific purpose. Examples of nonroutine data sources are household surveys and a national census.

Table 6.1 summarizes routine and nonroutine data.

Table 6.1. Routine and nonroutine data

Routine data	Nonroutine data
Continuous, available at regular intervals	Episodic, collected for a specific purpose
Integrated in a strategy/action plan/ program management	Ad-hoc activity
Examples: • Data from case files, residential homes, government reporting forms • Demographic surveillance	Examples: • Data from national censuses • Data from household surveys • Data from policy analysis
Benefits: • Provide timely information • Can be used to detect and address operational issues during strategy/action plan implementation	Benefits: • Provide more accurate measures of coverage, outcomes, and impact
Limitations: • Hard to get accurate estimates of catchment areas • Quality of data may be poor (incomplete/incorrect record keeping)	Limitations: • Can be expensive • Done on an irregular basis (data are not available when needed and are not regularly available)

There are two categories of data: quantitative and qualitative. Quantitative data are in form of a number or a precise measurement. Examples of quantitative data are data from service statistics, surveys, and registration censuses. Qualitative data are in form of words from observations and transcripts. Examples of qualitative data are transcripts from in-depth interviews or focus group discussions. Quantitative data help with understanding the current situation and trends. Qualitative data help with understanding the context of the trends and the interpretation of quantitative data. Table 6.2 summarizes quantitative and qualitative data.

Table 6.2. Quantitative and qualitative data

Quantitative or "hard" data	Qualitative or "soft" data
Data are in form of numbers or precise measurements	Data are in form of words from observations and transcripts
Reproducible even if data collectors are varied	Rarely reproducible
Objective	Some subjectivity
Analysis involves using statistics, tables, or charts	Analysis involves extracting the themes and organizing the data to present a consistent, coherent picture
With proper sampling, can be used to make inferences	Cannot be used to make inferences

Data Flow

The first step in data management is to understand how the data get from the collection point to the point where they can be used by a program. This is known as "data flow." Data flow is the process of moving data from the point where they are collected to the point where they are processed and used. Data flow helps track the different steps in the data management process, including data collection, entry, synthesis, cleaning, quality check, analysis, dissemination, and use.

The data flow components are: data source points, data storage points, data processes, and data end points. Table 6.3 provides information on each data flow component.

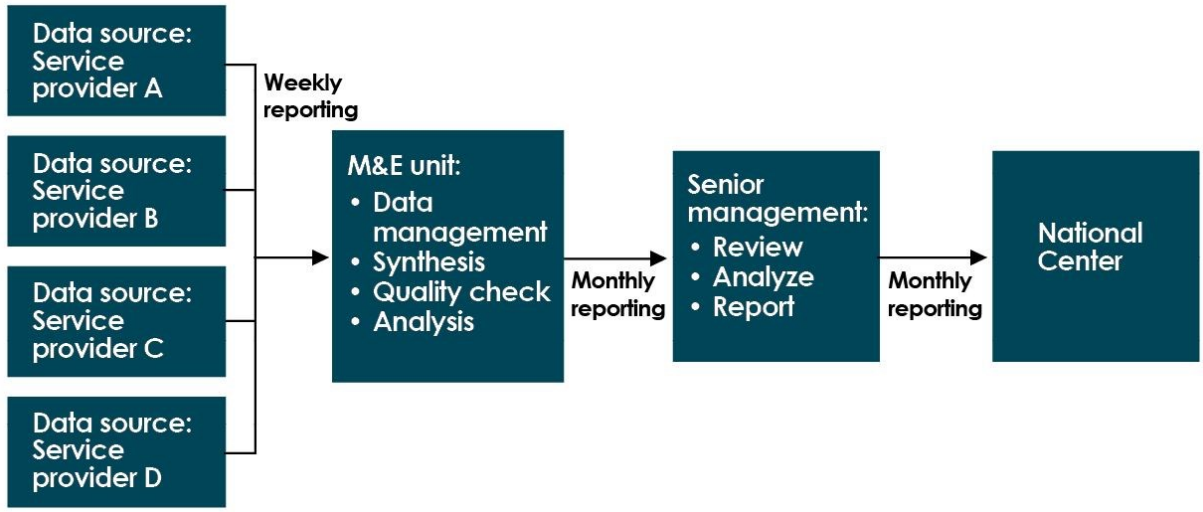
Table 6.3. Components of data flow

Component	Explanation
1. Data source points	Illustrate where the data come from
2. Data storage points	Represent how and where data are stored
3. Data processes	Illustrate when, how, and by whom data are processed
4. Data end points	Represent to whom or where the data are sent Consider also the data flow beyond your program

Data flow can be described visually in a data flow diagram.

Figure 6.1 provides an example of data flow at the regional level.

Figure 6.1. Data flow at the regional level



As the data flow from lower to higher levels, fewer data are required. Data collection normally begins at the level of the organization providing the services. The data should then be sent to the district office. From there, they may go to a regional office and then to a national office. Each level has different reporting needs and requirements. For example, the national level may have international reporting requirements. A service provider may want to know how many food packages are provided on a daily basis, but this information would be irrelevant at the national level. By contrast, information on the number of families supported by reunification services may be important for all levels of the childcare system.

Exercise 6.1 Opportunity to practice. Constructing a data flow diagram

- Graphically map the data collection and reporting system for Armenia.
- Assume that the country's service delivery consists of Guardianship-Trusteeship Body, the service provider organization, region, and national levels.
- Please consider the following issues:

✓ Who will be responsible for data collection or completing each tool?

✓ Who will be responsible for supervising data collection?

✓ Who will be responsible for ensuring data quality at each stage?

✓ How is data quality checked at each stage?

✓ How often are the data collected, compiled, and sent?

✓ What tools/forms are used, if any?

✓ How will data storage be handled?

✓ How will the confidentiality of data be maintained?

✓ How will feedback on data collection and reporting be handled?

Data Collection Tools

The tools needed at each level of the data flow include data collection tools, collation/aggregation tools, and reporting tools.

Specific tools should be developed for each level of the data collection and reporting system. Data are collected about individual beneficiaries (child, family) at **the primary level**. Beneficiary information is collated at **the service provider level** and reported to the district level. **District authorities** aggregate data and report to the regional level. The **regional level** aggregates data and reports to the national level. The national level aggregates data from regions and reports the indicator data.

Box 6.1. A box of tools

Tools used to collect and report data include the following:

✓ Case notification forms

✓ Administrative registries

✓ Training registration forms

✓ Questionnaires

✓ Interview guides

✓ Focus group discussion guides or protocols

✓ Structured observation grid

✓ Statistical forms

✓ Reporting forms

✓ Other (checklists, logs, indicator tracker, etc.)

Appendix 6.A provides examples of data aggregation and reporting tools and instructions.

Data Collection Golden Rules

- Keep the data collection instruments as simple as possible.
- Involve users in their design.
- Standardize definitions and procedures and include them in a user's manual.
- Include appropriate facilitation for data use on the data collection instruments.
- Train care providers as data collectors and data users.

Challenges in Data Collection and Reporting and Possible Solutions

In this section, examples of challenges in data collection and reporting are presented, and solutions to address them are provided.

- ***Complexity of data collection and reporting tools***

  → Simplification of the data collection and reporting tools
- ***Too much data to collect and report on***

  → Refine the information needs based on functional analysis
- ***Lack of supplies (frequent stockouts of tools)***

  → Secure funding for standard tools provision
- ***Lack of written data collection and reporting guidelines***

  → Develop written guidelines (data management and procedures manual)
- ***Existence of multiple data collection and reporting forms for the same staff***

  → Data integration and interoperability
- ***Difference in reporting frequencies and deadlines***

  → Harmonization of frequencies and reporting deadlines
- ***Lack of staff competency***

  → Organize training and supervision
- ***Lack of motivation and reward system***

  → Introduce a motivation mechanism

Data Quality: Definition, Why Important?

What Is Data Quality?

Data quality means that the information collected as part of the program M&E system adequately represents the program's activities. A*dequately represents* means that the information is valid and reliable. (Please see the section below on data quality dimensions.)

Project activities are implemented in the field. The activities are designed to produce results that are quantifiable. **Information systems** represent these activities, by collecting the results that were produced and mapping them to some form of recording system. Data quality shows how well the information system represents the real world.

Why Is Data Quality Important?

Data quality is important because high-quality data are needed at the program level for management decisions. High-quality data allow for the making of timely decisions and enable data use. Moreover, accountability for funding and results reported is becoming increasingly important. Data quality is important at each stage of the program cycle, including for target setting, results reporting, program improvement, and resource management.

Examples of Data Quality Problems

You are probably aware of the following kinds of data quality problems:

- Missing data for specific elements and/or indicators for one or more months
- Inconsistencies between linked data elements
- Inconsistencies over time
- Obvious fluctuations, values outside the expected normal or expected ranges without an explanation
- Same values for more than one month or for more than one organization, indicating duplication and/or incorrect data capture
- Unlikely values, for example, a five-year-old child who weighs five kilos
- Contradictions between values for variables, for example, seven families provided with reunification services in the area where only three families were reunified
- Data include activities funded by other donors, so they overstate results for projects funded by USAID
- Arithmetic errors, such as sums that do not total or percentages greater than 100 percent
- An inappropriate use of zeros, instead of correctly entering N/A or service not offered routinely

Now let's shift the focus and take a broader view to *understand* how data quality is measured.

Dimensions of Data Quality

Think of data quality as a mirror that reflects what is happening in the real world. Keep in mind that **validity**—that you measure what you intend to measure—and **reliability**—that you get the same results if you repeat the measurement—are umbrellas under which any combination of characteristics of data quality should fall.

Valid data clearly, directly, and adequately represent the result that was intended to be measured. The guiding question to determine validity is to ask: *have we measured what we intended to measure*? Validity in routine information systems is maximized by:

- Clarifying the program's intended results
- Selecting indicators that are accurate, reliable, and precise
- Using well-designed IRS to clearly and specifically define what is being measured (see the section below on IRS)
- Using well-designed data collection and collation tools
- Being thoughtful and practical when designing the components of the routine information systems; more sophisticated is rarely better
- Training and supervising staff who collect, collate, and manage data

When your data are **reliable**, you get the same results every time you repeat the measurement. Ensuring reliability means that you carefully design your measurement tools:

- The IRS have clear instructions and definitions for all data collection efforts, at all levels of the process.
- Data collection, processing, analysis, reporting, and quality assurance procedures are well documented.
- Staff who are responsible for collecting, collating, and managing data are aware of the procedures and tools, and follow them from one reporting period to the next.
- Error logs track data errors to their original sources, correct mistakes, and document data quality challenges.
- Staff receiving data from a different level check the data for transcription errors and double check key information.

Completeness of data means the comprehensiveness of data collection. You want to maximize the percentage of all fields on the data collection form that are filled in, and you want to ensure that information on all program recipients and services provided is entered in the system. Guidelines on roles and responsibilities for data entry at all levels are needed to promote the completeness of data.

Accuracy of data refers to whether the data correctly describe the phenomena they were designed to measure. Standard data collection instruments and reporting forms are needed to ensure that the data measure the intended objective. It is important to identify, record, and address data capture, coding, and processing errors, and to document data review procedures.

Timeliness of data refers to whether the data are sufficiently current and frequent to inform management decision making and whether they are received by the established deadline. The following measures may promote timeliness:

- Make a realistic schedule that meets program management needs and enforce it.
- Clearly identify the date of data collection/collation on all forms and reports.

- Clarify the dates of data collection periods when reporting.

Accessibility refers to the ease with which data can be obtained from the organization. Accessibility relies on:

- The availability of functioning information systems to access information.
- Ensuring that the information and metadata are complete and accessible.
- Understanding the needs, formats, and dissemination mode for different types of users.
- The interoperability among different data sources.

Integrity of data refers to the data being protected from deliberate bias or manipulation for political or personal reasons. The following measures can promote data integrity:

- Maintain objectivity and independence in data collection, management, and assessment procedures.
- Require the review of reported data at each stage.
- Treat data as official organizational information and securely store them.
- Manage incentives that could lead to data manipulation.
- Hire IT staff to maintain the technical aspects of the information system.

When outliers, missing data, or potential errors are identified in the data sets, the data are sent back to the original source to verify and recapture. **Data quality assurance** is the process of ensuring the quality of data before and after data collection through a set of internal and external mechanisms and processes, which ensure that the data meet the dimensions of quality. Data quality assurance tasks include planning for quality, controlling quality, identifying threats to data quality, and implementing remedial actions to improve quality. Chapter 7 on data analysis provides further information about data cleaning.

Data Quality Audits

Two types of data quality audits, the data quality audit (DQA) and the routine data quality assessment (RDQA), are briefly discussed below. Table 6.4 summarizes the distinctions between these two approaches.

Table 6.4. Distinctions between DQA and RDQA

DQA	RDQA
• Assessment by funding agency • Standard approach to implementation • Conducted by external audit team • Limited input into recommendations by programs • Program and indicator specific • Utilizes a modified two-stage cluster sampling technique for the selection of health facilities • Every several years priority indicators	• Self-assessment by program • Flexible use by programs for monitoring and supervision or to prepare for an external audit • Program makes and implements its own action plan • Generic to program and indicator • Convenience sampling • Regular (repeated) data quality measurements during routine supervision

DQA tool: This tool for formal data quality audits includes indicator-specific audit templates and guidelines for use by an external audit team to assess a program's or project's ability to report good-quality data on a random sample of units.

P**RDQA tool**: This tool is a simplified version of the DQA that allows programs and projects to assess the quality of their data and strengthen their data management and reporting systems. The RDQA is generic as to indicators and programs, and is intended for use with or without rigorous sampling methods.

More information on DQA and RDQA is provided at https://www.measureevaluation.org/resources/tools/data-quality.

How Good Do the Data Need to Be?

Please note that no data are perfect. Data should be good enough to document performance and to support decision making. If you made decisions about the data quality, make sure to document these decisions and the supporting information.

Strategies to Ensure Good Data Quality

There are several strategies to ensure the good quality of data.

- Have the "right indicators" and standardize them using IRS. Having the "right indicators" means that the program collects data that meets its real needs. IRS provide standardized information for all staff involved in indicator data collection and reporting, including clear definitions for indicators that are understood at all levels.
- Have guidelines. Guidelines help streamline the processes, thereby promoting data quality. Guidelines should include:
    - Roles and responsibilities at all levels
    - Specific reporting timelines
    - Standard forms and registers
    - How to handle missing data, double-counting, loss to follow-up, etc.
    - Storage policy and filing practices
    - How to correctly transcribe into aggregate databases or forms
- Train staff in M&E, data collection, analysis, and use. The training should be targeted to appropriate audiences. Refresher training should be conducted, as needed. Supportive supervision can be used to clarify issues learned in the training, demonstrate processes (e.g., data entry), teach skills, and help eliminate or prevent errors.
- Apply automatic data quality checks at the point of data entry, such as requiring the data to be filled out in a cell before moving to another record or specifying valid data ranges. For example, only age in the range from 0 to 18 is allowed for the child's age.
- Verify data quality. Data quality can be verified by conducting data quality audits (e.g., auditing data against time and number of forms), spot checks, and supportive supervision.
- Clean the data. Information on data cleaning is provided in Chapter 7 on data analysis.
- Provide timely and informative feedback. Data entry staff provide data but often do not receive feedback on the data quality. Providing timely feedback may prevent errors in the future or may encourage the continuation of good performance. When providing informative feedback, a

manager/supervisor may want to point out the areas that work well and those that need improvement. Informative feedback includes suggestions and a timeline for improvement.

- Have an analysis plan. The analysis plan includes the data sources, the data needed, and the timeframe for analysis, thereby providing information for data collectors about the reporting timelines and how the data will be used in the analysis.
- Institutionalize data quality meetings; document changes and improve the system. Regular (monthly or quarterly) data quality meetings that include all relevant staff allow for the review of data quality issues and provide solutions during program implementation. Such meetings can also promote ownership and belief in the data.
- Institutionalize data use meetings. The best way to improve data quality is to use the data!

Exercise 6.2. Data quality strategies and action planning

Please complete the table below. Use the section on the data quality strategies as a reference.

What data quality strategies <u>are missing?*</u>	How feasible are they to implement?	How can they be implemented (guidelines/standard operating procedures?)	Steps involved	Person(s) responsible	General timeline

*See the section above on the strategies to ensure good quality data for the list of strategies.

Key Messages

- ✓ Keep data collection instruments as simple as possible.
- ✓ Data processing and analysis begin at the point of data collection.
- ✓ Data quality assessments help assess a program's or project's ability to report good-quality data.
- ✓ Use data for decision making; collect only essential data that are needed for decision making.
- ✓ Promote data collection for local analysis and use by social workers/case managers/service providers.
- ✓ Implement strategies to ensure good quality data.

Chapter 6 References

MEASURE Evaluation Strategic Information for South Africa (MEval-SIFSA) Project. (2016). Data analysis for routine health data manual. Pretoria, South Africa: MEval-SIFSA.

Appendix 6.A. Sample of Data Aggregation Forms

1. Data Aggregation Form

ID	Data element	Months data												Annual Total
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

2. Service Delivery Provider Monthly Report

District _____ Service Provider: _____Code____

Year _____ Month_____

A.) Number of families supported with family reunification services

Services	Number
Counselling	
Food packages	
Legal services	
Support with school fees	
Vocational training	
Total	

B.) Number of families supported with prevention of family separation services

Services	Number
Counselling	
Food packages	
Legal services	
Support with school fees	
Vocational training	
Total	

C.) Number of families supported with services, by service type

Services	Number
Family reunification	
Prevention of family separation	

CHAPTER 7. DATA ANALYSIS

In this chapter, we present the most common types of quantitative analyses for routinely collected data. We also provide adaptable Microsoft Excel tools to support the analyses. Countries vary with respect to whom, how, and where data are analyzed. Raw data are often reported up to the national level where they are analyzed and reported. The extent to which analyzed data are then presented back at subnational levels varies. However, with some basic understanding of data analysis methods, staff at local and/or district levels can conduct their own analyses to better understand their client population and performance.

Definition of Data Analysis

Data analysis involves turning raw data into useful information. Even the greatest amount and best quality data mean nothing if they are not properly analyzed or if they are not analyzed at all.

Data analysis means looking at the data in light of the questions you need to answer. Let's consider how you would analyze data to determine: "Is my program meeting its objectives?"

Question: Is my program meeting its objectives?

Analysis: Compare program targets and actual program performance to learn how far you are from your targets.

Interpretation: Why have or have you not achieved your targets and what does this mean for your program?

Data Analysis Plan

A data analysis plan is used to guide the analysis. It identifies the questions to be answered (what you want to know), defines the data to be examined, describes the frequency of data collection, and defines the analysis techniques to be used. Last, it lists the information products to be produced from the data. An example of data analysis guidance is available at https://www.measureevaluation.org/resources/publications/ms-14-65.

Types of Data Analysis

There are three types of data analysis: exploratory, descriptive, and inferential. The first two involve basic skills in Excel; the third usually requires a higher skill level and is not covered in detail in this guide.

Exploratory Data Analysis

Exploratory analysis is a first step in the data analysis process to help ensure that data are ready for descriptive or inferential analysis. Table 7.1 gives illustrative questions that exploratory analysis can help answer.

Table 7.1. Exploratory analysis questions

Illustrative Questions	Type of Analysis	Next Steps
Do the data seem accurate? Are the data ready to be analyzed?	Exploratory – distribution of variables	Data cleaning Create variables, recoding

This type of analysis involves showing the distribution of key variables to pinpoint problem areas in the data, such as whether there are outliers in the data (i.e., invalid, impossible, or extreme values—for example, a child with a reported age of 75 years is certainly inaccurate) or missing data (e.g., blank cells). Such problems need to be addressed before any additional analysis can be conducted.

Data Cleaning

Examples of data quality problems are often found in the routine data you work with, such as missing data, outliers (values outside the expected ranges), and consistent data capture. You can address some of these problems through data cleaning. You clean data to remove or recode entries that do not make sense so they do not skew the data. For example, a child with a reported age of 75 years is inaccurate. You clean the data to remove such nonsensical entries before analysis is done to avoid inaccuracies in the mean age of children in your population. The first data cleaning step is to run a frequency command on each variable in the database, or a univariate analysis. Univariate analysis examines one variable at a time. Its purpose is to see how many of what values your data produce. The example in Table 7.2 is a frequency distribution for the number of home visits by social workers in the last quarter.

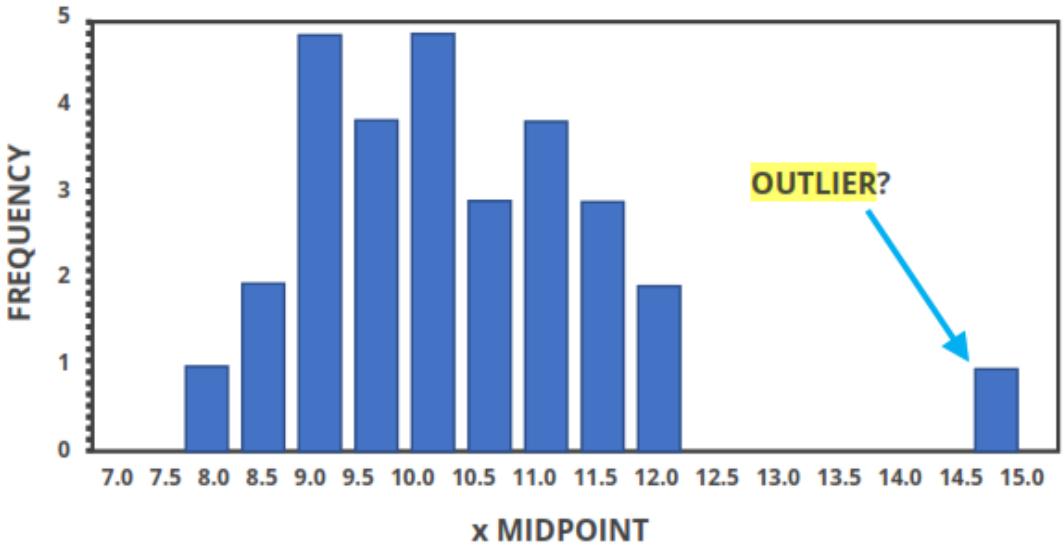
Table 7.2. Number of home visits by social workers in the last quarter

Category	Number of visits
Social worker A	30
Social worker B	20
Social worker C	25
Social worker D	150
Social worker E	19

In this example, social worker D has a much higher number of home visits compared with the other social workers. Before working with this data set, you would need to examine the data closely to discover whether the data set contains duplicate records for this social worker.

The histogram (Figure 7.1 is an example) shows you any potential incorrect data entry and/or missing value codes that you may want to exclude from your analysis. You can also identify potential outliers and visually examine whether the data are skewed.

Figure 7.1. Using the histogram to identify outliers



If you find outliers, nonsensical, and unexplained or missing values, refer back to the source—either the district office, if you are in a provincial office, or the service provider, if you work in a district office. Determine whether the questionable value is valid or arises from a data entry error and/or a collation error. If it is an error, discuss it with the office that submitted the data to you to determine what to do. Remember to document all errors, inconsistencies, and corresponding corrections for future reference. The original uncleaned data file should remain intact and accessible for future reference.

Below are the types of issues you may find with the data and how to handle them:

Missing data

Missing values are common. When cleaning data, you need to determine why the data are missing. Sometimes you can replace the missing value with a "Don't Know" or a "Not Applicable" value, after consulting with the source of the data. Sometimes the missing value may be the result of a data entry error. For example, there were 100 parents who received parenting skills training in the area during the reporting period but the data file indicates zero trained parents for this area. After verifying this information with the service provider, you can replace the zero with 100 for this area. If you cannot identify a reason for the missing value, you should enter a missing value code. Never replace a missing value with a "0." Zero is a valid value that you should include in your analysis. If you enter zero incorrectly, it will skew your analysis. You need to review missing values to ensure that you code them correctly. The following are standard conventions for missing value codes:

- 98 = not applicable, which means that the value is not applicable
- 99 = system missing, a value should be there but is not and you cannot determine why it is blank

Outliers

Keep in mind that sometimes they are plausible observations. When an observation is outside the expected range but is still plausible, it is called an outlier. Outliers are valid observations that should be included in your analyses and should not be removed because they fall outside the expected range. For example, if all social workers in the area visited between 15 and 25 homes in the last month but one social worker visited 60 homes, the information should be verified with the social worker's home visit register and kept in the data set if it is accurate.

However, sometimes outliers need to be cleaned. For example, if you have three children— one age 10, another age 13, and another data entry point of age 75— the average would be 32 years, which does not make sense for children. You need to either correct the 75 if you can get the correct age for that child, or code it as missing, in which case your average age would be 11.5 years.

Box 7.1. What outliers may represent:

- Data entry error
- Random fluctuation
- Members of a population other than the ones to whom you are providing services
- True outliers exist
- Should decide whether to include or exclude them and document the reasons for exclusion or inclusion

Consistent data capture

Data are cleaned to ensure that all coding is consistent and correct. For example, if you have an alphanumeric field for the service provider address, you want to ensure that they are all physical addresses with street number, street name, city or town, and province in the same order using the same abbreviations or spellings. Sometimes it is easier to make new variables when cleaning data for this reason. Thus, if some records have the name of the village in the beginning of the physical address and other records have it at the end, and if the village name is the variable of interest for the analysis, it makes sense to create a new variable that will contain only data on the name of the village.

Descriptive Data Analysis

Descriptive data analysis is the most common type of data analysis that summarizes findings and describes the population being served (such as children in adversity and families at risk of separation) or services being provided (e.g., family reunification services). Because this type of analysis is the most common and most appropriate for the subnational level, we go into further detail later in this chapter. In the meantime, Table 7.3 provides information about the types of questions that can be answered using descriptive statistics.

Table 7.3. Descriptive analysis questions

Illustrative Questions	Decision to Make	Type of Analysis	Next Steps
Do we have enough placements for children? What are the demographic	How many children have been separated and not provided with alternative care? Are there sex differences among	Descriptive, frequency distribution	Determine additional analysis needed

Illustrative Questions	Decision to Make	Type of Analysis	Next Steps
characteristics of children in a residential institution? How old are the children in a residential institution? How many are male/female? Is there a difference in the number of children separated over the last three years?	children in a residential institution?	Descriptive, trend analysis	Bring key findings to decision makers

Descriptive analysis helps:

- ✓ Tell you what the data look like (e.g., what is the maximum and minimum number of home visits made by a social worker in the reporting period?)
- ✓ Tell you what the relationships are between the different variables (e.g., it allows you to examine a relationship between an age group and the likelihood of being adopted or a relationship between sex and placement in a residential institution).
- ✓ Present quantitative descriptions in a manageable form.
- ✓ Reduce lots of data into a simpler summary.
- ✓ Provide a powerful summary that may enable comparisons across different organizations or areas or comparisons over time (e.g., you can compare the number of families that received prevention of family separation services during the reporting period in two or more areas).

Inferential Data Analysis

This type of analysis allows you to draw conclusions about the larger population from which the sample is drawn. Inferential statistics test hypotheses about the data and may permit you to generalize beyond your data set. Examples are comparing means (averages) for a given measurement among several different groups or among the same people across time.

We focus on the descriptive data analysis in this chapter.

Methods of Data Analysis

The methods of data analysis are determined by your data types and variables of interest, the actual distribution of the variables, and the number of observations. Depending on the questions of interest, different analyses may be performed on the same data set.

Appropriate Analysis for Data Types

Quantitative data use numbers to describe information that can be counted or measured.

Counting answers the "how many" questions, for example, to know the number of children in a residential care institution, you count the number of children in the register. Data that are counted are called **discrete** data. Or, you can take a **measurement** to answer the "how much" question. For example, you may be interested in knowing how much time from the moment of family separation it takes for a child to be placed in alternative care. Measurement data are called **continuous** and these data can take any value in a range.

If data are divided into groups, they are called **categorical**. Examples of categorical variables are sex (male or female), age group (e.g., 0–2; 3–7; 8–11), and educational level (primary, secondary, post-secondary, none).

Table 7.4 presents information on the analysis type for various types of data.

Table 7.4. Analysis type for various types of data

Type of Data	Analysis Type
Count Categorical	Ratio Percentage Proportion Rate Rate of increase Frequency distribution
Continuous	Mean Median

Review of Basic Descriptive Analysis for Count and Categorical Data

For data to be useful for decision making, they need to be processed and summarized in information. You transform raw data into information by processing, organizing, analyzing, and presenting the data in a way that is useful for decision makers.

Following the exploratory analysis and data cleaning, the first step in data analysis is summarizing the data to describe the population. This is called descriptive analysis. Many of the indicators to monitor care reform represent descriptive statistics used to summarize the delivery of services to different groups. This section provides a short review of the most common types of descriptive statistics used to summarize routine data. These basic descriptive statistics include ratios, proportions, percentages, and rates.

Ratio

A ratio is a comparison of two numbers expressed as a to b, a per b, or a:b. It is used to express such comparisons as case workers to families.

The formula for calculation is a/b.

Example: In region X, there are 50 case workers and 40,000 families. What is the ratio of families to case workers?

Answer: 40,000/50=800 families per case worker, a ratio of 800:1

Then you would compare it to a standard and make decisions about staff allocation.

Exercise 7.1. Calculation of ratios

In marz Y, there are 150 case workers and 600,000 families.

What is the ratio of families to case workers?

Proportion

A proportion is a ratio in which all people in the numerator are also included in the denominator. The formula for this is (a/a+b), where the numerator is "a" and the denominator is "a + b." It is used to compare part of the whole, such as the proportion of all children (denominator) who are under 10 years of age (numerator).

Example: If 20 of 100 children in a special school are under 10 years of age, what is the proportion of these children in the school?

Answer: 20/100 = 1/5

Exercise 7.2. Calculation of proportions

If 12 girls and 8 boys were reunified with their families in a reporting period, what is the proportion of boys?

Percentage

A percentage is a way to express a proportion. It refers to a proportion that is multiplied by 100. It expresses a number in relation to the whole.

Example: Boys comprise two-fifths of the children, or 40 percent of the children are boys (0.40 x 100)

The percentage allows you to express a quantity relative to another quantity. You can therefore compare different groups, facilities, or countries that may have different denominators. For example, if two districts report 50 children each being separated from families during the reporting period but District A has 1,000 families and District B has 8,000 families, it would be misleading not to take into account the population size in each district and compare only the numerators (50 children in each district). If you take into account both numerators (number of children separated) and denominators (number of families), you will see that five percent of families in District A were separated compared with less than one percent in District B. You may then want to investigate the reasons for this high percentage of families separated in District A and plan for actions to improve the situation.

Rate

The rate is measured with respect to another measured quantity during the same period. It is used to express the frequency of specific events in a certain period (fertility rate; mortality rate) and is often expressed as a ratio (e.g., per 1,000). Please note that the numerator and denominator should be from the same period.

Example: Calculating the family reunification rate

In 2018, 4,000 children were ready for family reunification. Of these children, 75 were reunified during that year. What is the family reunification rate?

Answer: The calculation of the family reunification rate is the number of children reunified divided by the number of children ready for family reunification in the same time period, and then multiplied by 1,000. You can express the family reunification rate in units per 1,000 children.

So, to calculate the family reunification rate, divide 75 by 4,000 and multiply by 1,000 = .0187 x 1,000 = 18.7

The family reunification rate is nearly 19.

Exercise 7.3. Calculation of the family reunification rate

In 2017, region X had 3,155 children ready for family reunification. During that same period, 600 children were reunified with their families. What is the family reunification rate?

Rate of Increase

The rate of increase is the total number of increase divided by the time of increase. It is used to calculate monthly, quarterly, or yearly increases in service delivery. For example, it can be used to report the rate of increase in the number of new children in a type of alternative care or the number of commodities distributed.

Example: Support for children with disabilities was provided to 200 children in January; as of June, it was 1,100. What is the rate of increase?

Answer: (1,100 – 200)/6 = 900/6 = 150 (150 children per month)

Exercise 7.4. Calculation of the rate of increase

In June, 50 children were ready for adoption, and in October, 75 were ready. What was the rate of increase (per month) from June to October?

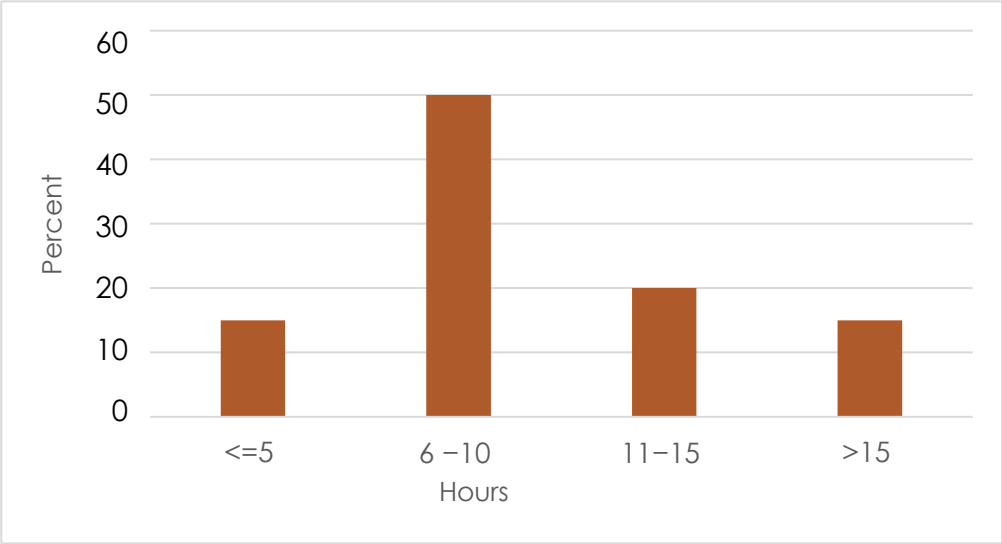
Frequency Distribution

Frequency distribution is one of the most common ways to describe a single variable. All data values can be represented or grouped into categories (e.g., hours). Typically, values are grouped into ranges and the frequencies are determined. Frequency distributions can be depicted in two ways: as a table or as a graph (often referred to as a histogram or bar chart). Table 7.5 and Figure 7.2 provide examples.

Table 7.5. Hours of radio airtime that have been allocated to organizations for broadcasting care reform-related content

Category	Percent
5 hours or less	15%
6–10 hours	50%
11–15 hours	20%
>15 hours	15%

Figure 7.2. Hours of radio airtime that have been allocated to organizations for broadcasting care reform-related content



Cross Tabulations

Using frequencies, you can produce cross-tabulations that examine the relationship between two variables by summarizing the frequencies in a table. For example, you can produce cross-tabulations for the presence and absence of family reunification services based on the sex of the child. Let's use two illustrative variables:

- Provision of family reunification services
- Sex of the child

Provision of services	Sex of the child		
	Girls	Boys	Total
Provided	35	41	76
Not provided	28	50	78

You can use percentages to help interpret and compare the absolute numbers in the table.

Provision of services	Sex		
	Girls (n, (row %))	Boys (n, (row %))	Total
Provided	35 (46%)	41 (54%)	76
Not provided	28 (36%)	50 (64%)	78

For example, of the 76 children who received family reunification services, 41 were boys. This means that the proportion of boys who received these services (54%) was greater than the proportion of girls (46%).

Sometimes you have a question that can have multiple responses, not just yes or no. For example, you may want to know where children who have multiple needs are referred for various services. You also want to know whether these referrals were successful, that is, whether the client went, got the needed services, and whether the providers reported back to the initiating provider. This will require a more involved cross tabulation, such as that shown in the following table:

Type of Service Referred for	Feedback Received by Initiating Provider by Type of Facility Referred to											
	Hospital			Health Clinic			NGO			All Facilities		
	%	n	N	%	n	N	%	n	N	%	n	N
Rehabilitation	25%	10	40	10%	3	31	33%	5	15	21%	18	86
Nutrition	25%	15	61	25%	5	20	20%	2	10	24%	22	91
Psychosocial Support	11%	10	90	50%	10	20	40%	8	20	22%	28	130
Total	18%	35	191	25%	18	71	33%	15	45	22%	68	307

According to the cross tabulation shown above, nutrition service providers provided feedback on 24 percent (n=22) of the referrals from all facilities (N=91). They provided feedback on 25 percent of the referrals from hospitals and health clinics, and on 20 percent from NGOs. NGOs received feedback from all providers (N=45) on 33 percent of their referrals (n=15), and the highest proportion of feedback on referrals was provided to NGOs by psychological support providers (40%).

Review of Basic Descriptive Analysis for Continuous Data

Data can be described and summarized in meaningful ways using univariate analysis, which means looking at one variable at a time.

Measures of Central Tendency

Measures of central tendency provide you with a single value that is typical of the entire data set, or the value at the middle of a distribution of data. Measures of central tendency are often compared between different populations, or subcategories of populations, to look at differences or similarities between them. Measures of central tendency are useful for describing continuous values, such as age, weight, height, depression, well-being, and other scores. You can work with three measures of central tendency: mean, median, and mode.

Mean

The mean or average is the most frequently used measure to describe data.

The mean takes into consideration the magnitude of every value, which makes it sensitive to extreme values. If there are data in the data set with extreme values—extremely low or high compared with most other values in the data set—the mean may not be the most accurate method to use in assessing the point around which the observations tend to cluster. Median would be a more appropriate measure in this case.

To calculate the mean, you add all your figures and divide by the total number of figures.

Calculating the mean: Mean = Sum of X/Number of X

Example: Given the set of numbers 22, 18, 30, 19, 37, 33

The mean =(22+18+30+19+37+33) ÷ 6 = 159 ÷ 6 = 26.5

Job Aid 7.1. Calculating the mean using Microsoft Excel

To determine the **mean** using Excel:

Click the **Insert Function** (**fx**) button to open the dialogue box

1. Double-click **AVERAGE** to open the **Function Arguments dialogue box**
2. Identify the data array for which you want to find the mean. Select the range of cells.
3. Click **OK** to close the **Function Arguments dialogue box**

   -OR-

Pick an empty cell

4. Type **=AVERAGE(**
5. Highlight the data array for which you want the mean
6. Type a closed parenthesis—the formula will look something like this: **=AVERAGE(B2:B21)**
7. Hit enter and the MEAN value will appear

Median

Median is the middle of a distribution (when numbers are in order: half of the numbers are above the median and half are below the median). The median is not as sensitive to extreme values as the mean.

For an odd number of numbers, the median is the middle number. For example, the median of 2, 4, 7 = 4.

For an even number of numbers, the median is mean of the two middle numbers. Thus, the median of 2, 4, 7, 12 = (4+7) /2 = 5.5

Job Aid 7.2. Calculating the median using Excel

To determine the median using Excel:

1. Pick an empty cell
2. Type **=MEDIAN(**
3. Highlight the data array for which you want the median
4. Type a closed parenthesis—the formula will look something like this: **= MEDIAN (B2:B21)**
5. Hit enter
6. The MEDIAN value will appear

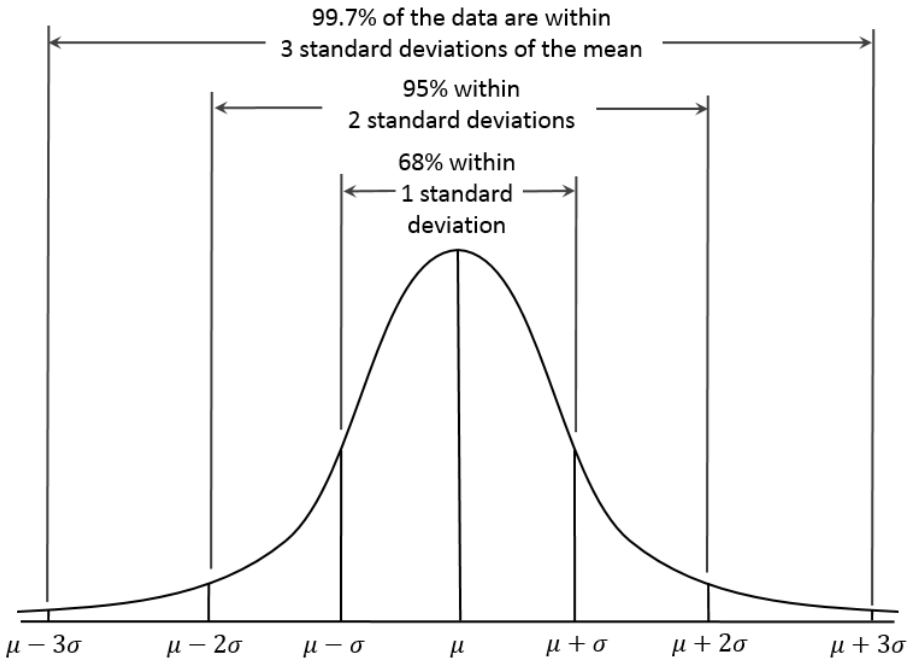
Mode

The mode is the most frequently occurring value in a set of observations. If all the values are different, there is no mode. Unlike the mean and median, a data set may have more than one mode, if two or more observations have the same value.

Example: Given the set of numbers **9**, 11, 20, 18, **9**, the mode is 9.

If the distribution is truly normal—that is, a **bell-curve (Figure 7.3)**—then the mean, median, and mode would be the same.

Figure 7.3. Bell curve



Source: Wikipedia, 2019.

Dispersion

This term is used to describe how data observations fall around the measure of the central tendency. There are three common measures of dispersion: range, variance, and standard deviation.

The **range** describes how wide the dispersion of values around the mean is. The range is calculated by subtracting the **maximum** value in the data set from the **minimum** one. You may also want to describe the range as just the maximum and minimum values with the mean and/or the difference in values. The range is more appropriate when the data are skewed, and it is often reported with the median.

Remember, calculating the mean is a great way to summarize data, but it does not give the full picture. **Variance** tells you how each number differs from the overall average—so as an eyeball test, the larger the variance, or the standard deviation, the more each value differs from the group mean.

Illustratively, let's consider the time spent during home visits by two different groups of social workers. Both groups have a mean time of 30 minutes. In the first group, the social worker actually spends 30 minutes during each home visit. In the second group, there are many different times—times that are much greater than 30 minutes, times that are around 30 minutes, and times that are less than 30 minutes. But the mean in this group is also 30 minutes. The variance for this second group should be relatively large, with social worker's time differing from the overall average, with only a few actually spending 30 minutes during a home visit.

Variance tells you whether most values are clustered around the mean or are more widely distributed. Among the first group, they are tightly clustered around the mean, whereas values from the second group are widely distributed.

Variance is the mean of the squares of the individual differences from the mean.

Job Aid 7.3. Calculating variance using Excel

To calculate the variance for a **sample** of a population:

Type **=VAR(**

Highlight the data array for which you want the variance

Type a closed parenthesis—the formula will look something like this:
=VAR(B2:B21)

Hit enter

The VARIANCE value will appear

The standard deviation also shows the relation that the set of values has to the mean of the sample. A low standard deviation indicates that the data points tend to be close to the mean, whereas a high standard deviation indicates that the data are spread out over a large range of values. The standard deviation is calculated simply by taking the square root of the value that you get when you calculate the variance.

The standard deviation, as the square root of the variance, produces a value that is in the same units as the original values, which makes it much easier to work with, and easier to interpret in conjunction with the concept of the normal curve. Assuming that the distribution of scores is roughly normal (bell curve), the following conclusions can be reached:

- Approximately 68 percent of the scores in the sample fall within one standard deviation of the mean
- Approximately 95 percent of the scores in the sample fall within two standard deviations of the mean
- Approximately 99 percent of the scores in the sample fall within three standard deviations of the mean

Job Aid 7.4. Calculating the standard deviation using Excel

To calculate the standard deviation for a sample using **Excel**, follow the steps below:

Type **=STDEV(**

Highlight the data array for which you want the standard deviation

Type a closed parenthesis—the formula will look something like this: **=STDEV(B2:B21)**

Hit enter

The STANDARD DEVIATION value will appear

Values that do not fall within three standard deviations of the mean are data points that occur outside the expected normal ranges. For example, if the mean time spent during a home visit is 30 minutes, the

standard deviation is five minutes, then any values that are lower or higher than three standard deviations of the mean will likely be outliers. In this example, three standard deviations are equal to 15 minutes. With the mean of 30 minutes, all values that are below 15 minutes or above 45 minutes (i.e., 30 plus or minus 15) need to be examined to identify whether the data point represents an error or is still a plausible observation.

Variance tells you about the stability of the data—low variance in your performance data means that over time, the changes that you observe in your data are occurring within the ranges of each data point. Therefore, when setting baselines, using data from a short or long time period will give you similar answers. High variance means that there is variability in performance data over time. Hence, when setting baselines for key indicators, short-term data are desirable because there is less "noise" in the data compared with long periods.

In summary, understanding the distribution of your data helps you understand whether extreme values are within an acceptable range for the indicator, outliers, or perhaps a data entry error. Understanding whether data are skewed can help you determine whether to use a mean, median, or mode when calculating your baseline for indicator target setting. (See Chapter 5 on indicators for information about baselines and targets.) Understanding the spread of data can also help you set targets by identifying what a meaningful change in the indicator may be, and establishing what data points you can use when calculating your baselines.

You can also produce these measures of central tendency and dispersion in a summary statistics table. This table reduces your data to single, essential values that help express information about your population of interest. You can also easily compare summary statistics between different groups in a table format.

Job Aid 7.5. Generating a summary table using Excel

To produce the descriptive statistics summary table, follow these steps:

Highlight the data array to be analyzed

Click **Data Analysis** in the **Analysis** group on the **Data** tab in Excel 2016. (If the Data Analysis command is not available, you need to load the Analysis ToolPak add-in program.)

The **Data Analysis dialogue box** will open

Highlight **Descriptive Statistics**

Click **OK**

The **Descriptive Statistics dialogue box** will open

Under **Input Range**, select the data array to be analyzed

Group by columns

Select **New Worksheet Ply** under **Output Range**

Name the new worksheet with a meaningful name, such as ***SumStats-Var22***

Select the **Summary statistics** check box

Click **OK** and your summary statistics will appear:

Example of a summary statistics table

Mean	20.3
Standard error	1.3
Median	19.5
Mode	17
Standard deviation	5.6
Sample variance	31.7
Range	25
Minimum	11
Maximum	36
Sum	405
Count	20

Trend Analysis

Remember that you want to use your routine program data to monitor care reform progress and describe service delivery in terms of person, place, and time. You should therefore take repeated monthly or quarterly measures. You can use the indicator data and time periods to build a chart to help you graphically:

- Observe the overall pattern of change in an indicator over time: whether the implementation of services has increased, decreased, or remained static over time, and the rate at which this occurred. This is helpful for identifying progress to date and determining whether you are on track to meeting your targets.
- Reveal patterns in observed data according to seasonal variations or identify outliers and high/low performance over certain periods of time.
- Compare one time period with another time period, especially to see the effect before or after an event (e.g., start of program, policy change, introduction of a new service).
- Predict future projections to help with program planning and target setting.

Trend analysis helps you understand the progress that your program is making toward its intended targets. Trend analysis also helps you project future results. When you conduct a trend analysis, you need the same indicator that you measured in the same way, and drew from the same type of data source before. For example, you may want to compare the number of children placed in foster care with the number of children reunified with families. You also need to carefully ensure that the data you select for your trend analysis come from the same time period. Months and quarters in your analysis should match when the data were collected. For example, if a program reports July data in August, you want to ensure that the point on your trend line corresponds to July data and not to August data.

Trend analysis helps you interpret data because you can see increases, decreases, or static performance, such as the number of children in alternative care. Trend analysis can also help you do a quick projection

of data and determine whether you are on track to meeting your targets. Some questions that can help you interpret your trend analysis are:

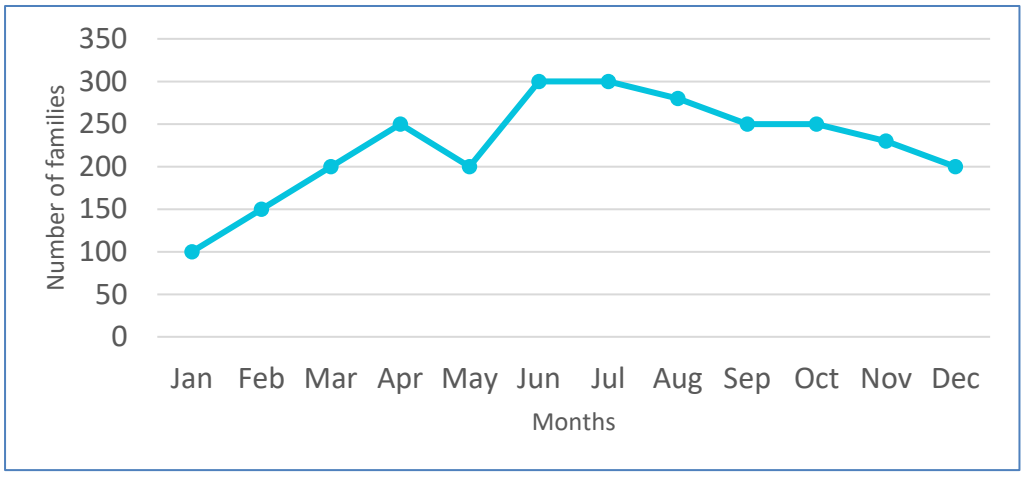
- What is the general shape of the trend?
- Can you identify any inflection points? What policy, intervention, or programmatic change could this represent?
- Are there any outliers or unexpected data points?
- How would you describe progress on this indicator to date? Have you reached your intended targets?

When conducting a trend analysis, you make comparisons. A comparison considers the similarities or differences between two or more things or groups. Examples of trend analyses are provided below that compare different time periods and sites.

Trend Analysis Comparing Periods

You can compare performance across periods. The example in Figure 7.4 shows the number of families supported with reintegration services in one region. In setting your targets, you can consider fluctuating targets, with lower targets at the beginning and higher targets at the end of the year.

Figure 7.4. Proportion of families supported with reintegration services in Region A, Year 1

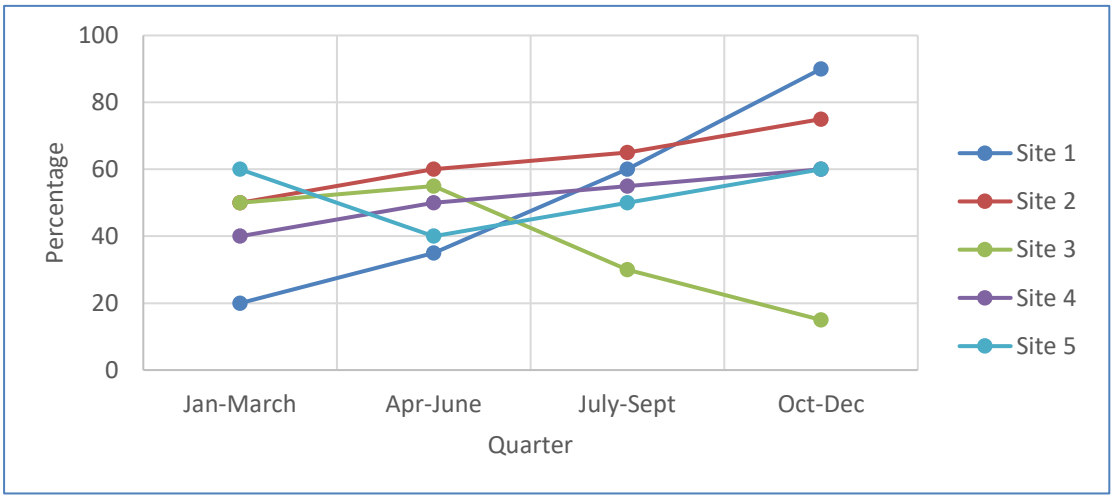


Trend Analysis Comparing Sites over Time

You can compare regions based on one indicator across a timeframe, such as quarters in a year or multiple years. You can make the same types of comparisons across sites.

Figure 7.5 illustrates a trend analysis of the indicator at five different sites.

Figure 7.5. Proportion of families supported with reintegration services in Region A, Year 1, by site/district



Pivot Tables

You can think of a pivot table as a user-created summary table of your original Microsoft Excel spreadsheet. You can create the table by defining which fields to view and how the information should be displayed. Excel organizes the data so that you see a different view of them, based on your field selections. Appendix 7.A provides information on how to create pivot tables and using them as a tool to summarize data.

Key Messages

- ✓ The purpose of data analysis is to provide answers to programmatic questions.
- ✓ Descriptive analyses describe the target population.
- ✓ Descriptive analyses do not define causality; they tell you what, not why.

Chapter 7 References

GCFLearnFree.org. (n.d.) Excel 2016-Intro to PivotTables. Retrieved from https://edu.gcfglobal.org/en/excel2016/intro-to-pivottables/1/.

MEASURE Evaluation Strategic Information for South Africa (MEval-SIFSA) Project. (2016). *Data analysis for routine health data manual.* Pretoria, South Africa: MEval-SIFSA.

Wikipedia. (2019, December 29). Normal distribution, Retrieved from https://en.wikipedia.org/wiki/Normal_distribution.

Appendix 7.A. Introduction to Pivot Tables as a Tool to Summarize Data

Learning objectives for the practice session

- Learn how to create a pivot table
- Learn how to filter the pivot table data
- Learn how to change the pivot table data

For this session, you will use the data below.

Table 7.A.1. Data for the session on pivot tables

Site	Region	Number of families visited to prevent unnecessary family separation	Number of visits made to prevent unnecessary family separation	Number of food packages distributed
Site A	1	700	2000	1000
Site B	1	1000	3000	1500
Site C	2	500	1500	1000
Site D	2	600	2000	1000
Site E	2	300	1000	800
Site F	3	200	800	500
Site G	3	100	500	200
Site H	4	370	1500	1000
Site I	4	430	1600	1500
Site J	4	600	1000	900
Site K	4	800	2000	1500

What Is an Excel Pivot Table?

You can think of a pivot table as a user-created summary table of your original spreadsheet. You create the table by defining which fields to view and how the information should be displayed. Excel organizes the data so that you see different views of them, based on your field selections.

How to Create a Pivot Table

To create a pivot table, follow these steps:

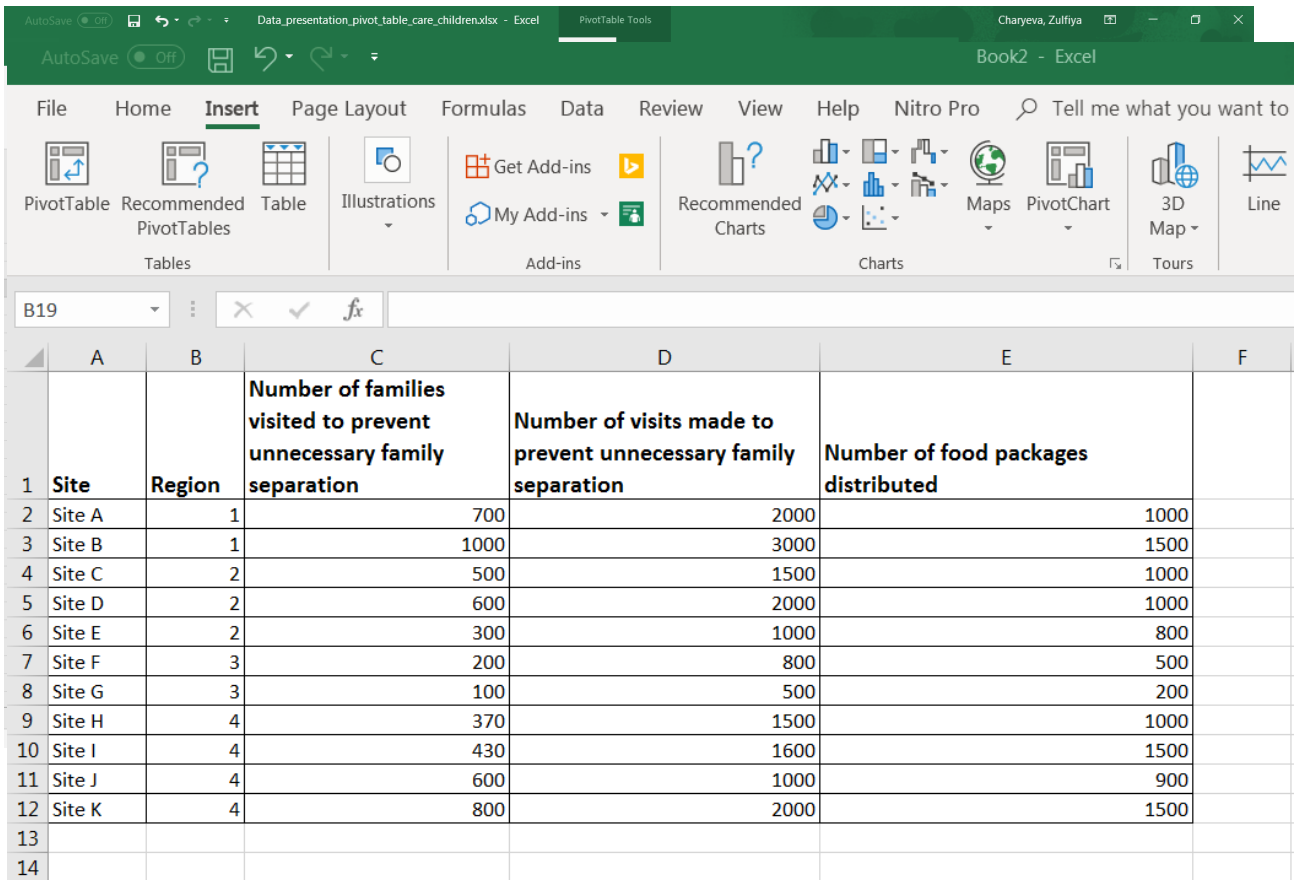
1. Open your original spreadsheet and remove any blank rows or columns.

2. Make sure that each column has a heading, because it will be carried over to the Field List.

3. Make sure that your cells are properly formatted for their data type.

4. Highlight your data range.

5. Click the **Insert** tab.



	A	B	C	D	E	F
1	**Site**	**Region**	**Number of families visited to prevent unnecessary family separation**	**Number of visits made to prevent unnecessary family separation**	**Number of food packages distributed**	
2	Site A	1	700	2000	1000	
3	Site B	1	1000	3000	1500	
4	Site C	2	500	1500	1000	
5	Site D	2	600	2000	1000	
6	Site E	2	300	1000	800	
7	Site F	3	200	800	500	
8	Site G	3	100	500	200	
9	Site H	4	370	1500	1000	
10	Site I	4	430	1600	1500	
11	Site J	4	600	1000	900	
12	Site K	4	800	2000	1500	
13						
14						

6. Select the **PivotTable** button from the **Tables** group.

7. Select **PivotTable** from the list.

The **Create PivotTable** dialog box appears.

8. Doublecheck your **Table/Range:** value.

9. Select the radio button for **New Worksheet**.

10. Click **OK**.

A new worksheet opens with a blank pivot table. You'll see that the fields from your source spreadsheet were carried over to the **PivotTable Field List**.

Adding Data to the Pivot Table

The data areas in the *Pivot Table Field List* panel are linked to corresponding areas of the pivot table. As you add the field names to the data areas, your data are added to the pivot table.

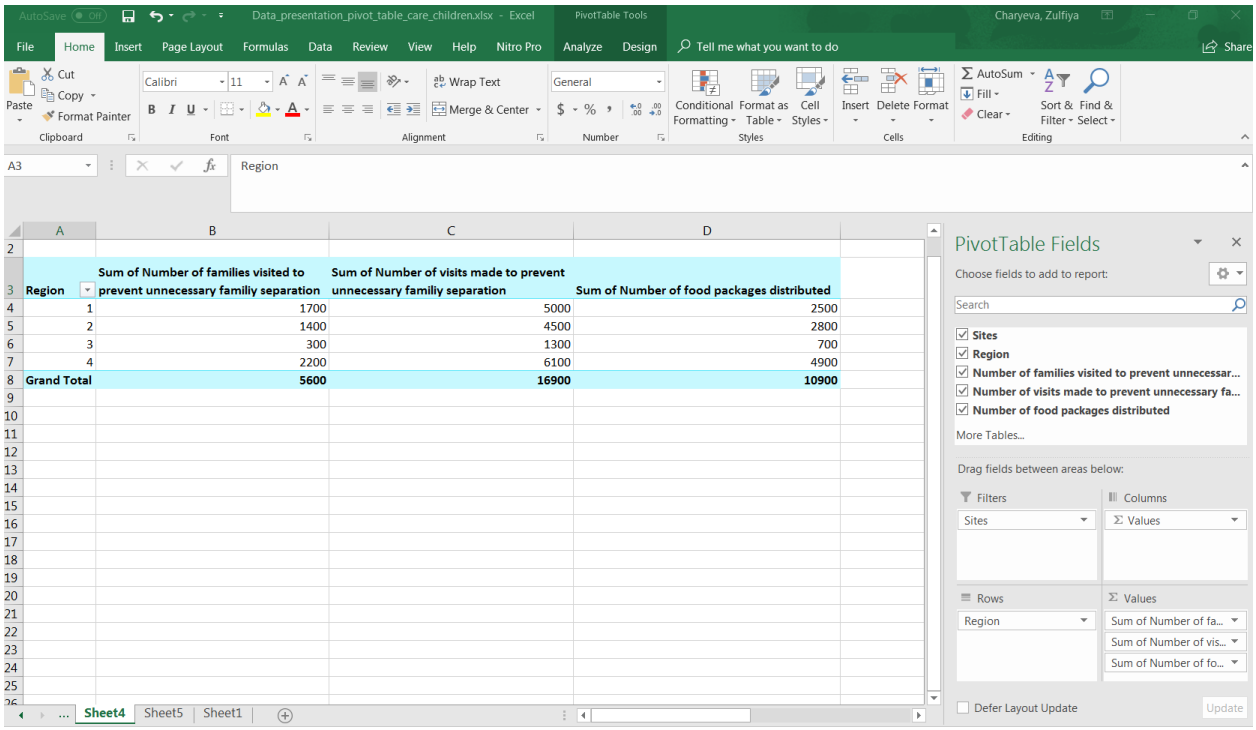
Depending on which fields are placed in which data area, different results can be obtained.

For this tutorial:

1. Drag the field names to these data areas:

- Site to the *Filters* area
- Region to the *Rows* area
- Number of families visited to prevent unnecessary family separation to the *Values* area
- Number of visits made to prevent unnecessary family separation to the *Values* area
- Number of food packages distributed to the *Values* area

2. Once completed, the pivot table should have the data laid out in the following order:



Filtering the Pivot Table Data

The pivot table has built-in filtering tools that can be used to fine-tune the results.

Filtering data involves using specific criteria to limit the data that the pivot table displays.

For this tutorial:

1. Click on the down arrow next to the *Region* heading in the pivot table to open the filter's drop-down list.
2. Click on the check box next to the *Select All* option to remove the check mark from all the boxes in this list.
3. Click on the check boxes next to the *1* and *2* options to add check marks to these boxes.
4. Click OK.
5. The pivot table should now show only the totals for the indicators in Regions 1 and 2.

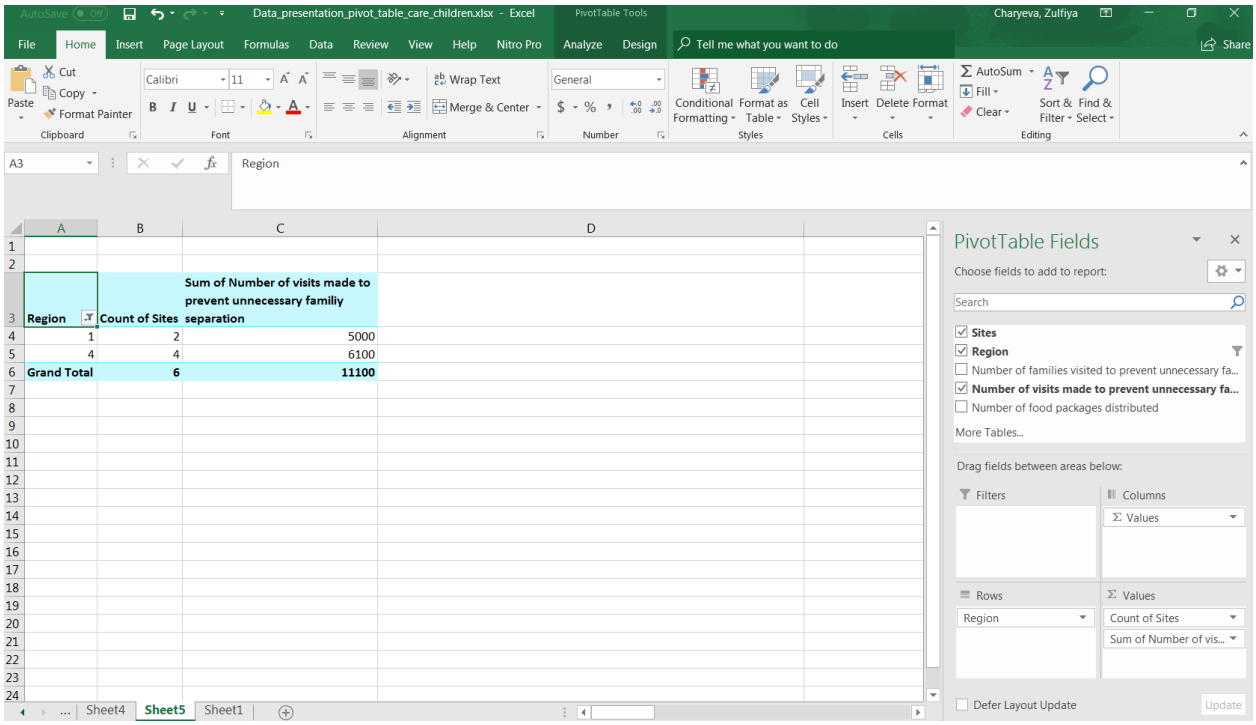
Changing the Pivot Table Data

To change the results shown by the pivot table:

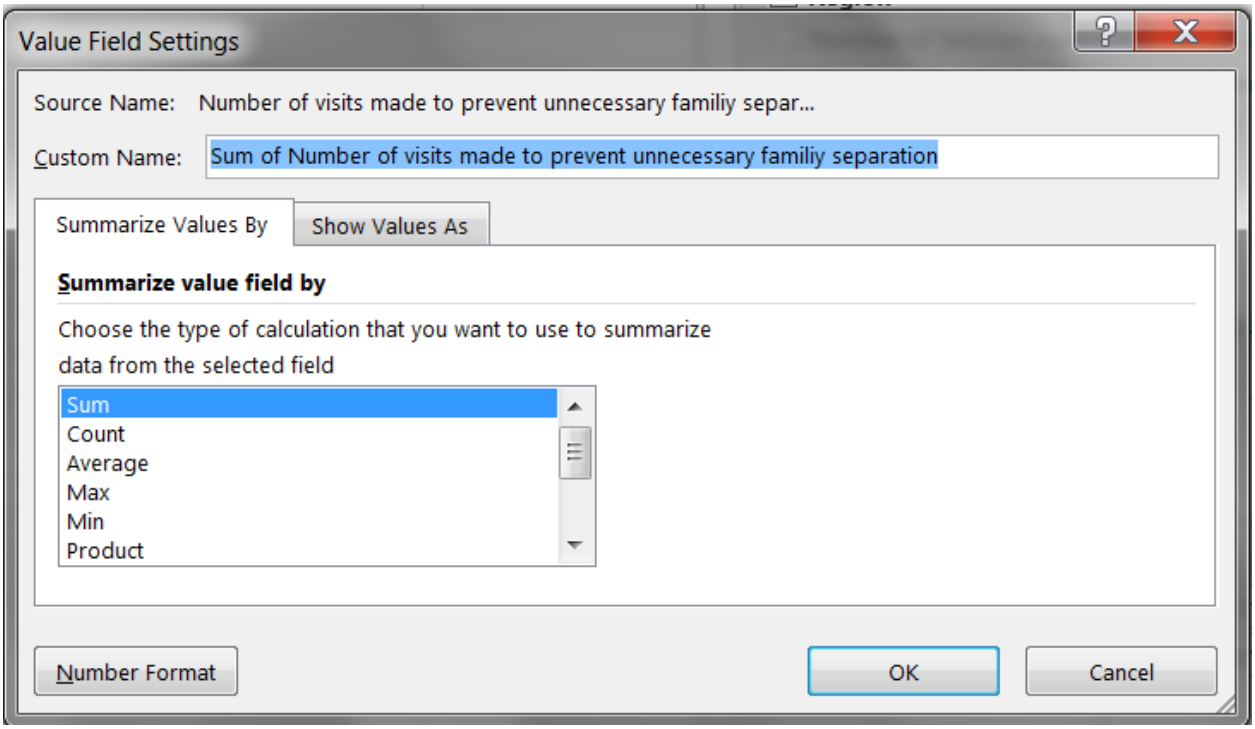
1. Rearrange the pivot table, by dragging the data fields from one data area to another in the Pivot Table Field List panel.
2. Apply filtering to get the desired results.

For this practice session:

1. Drag the field names to these data areas:
    - Region to the *Rows* area
    - Number of visits to the *Values* area
    - Sites to the *Values* area
2. Click on the down arrow next to the *Region* heading in the pivot table to open the filter's drop-down list.
3. Click twice on the check box next to the *Select All* option, first to add and then to remove the check marks from all boxes in this list.
4. Click on the check box next to the *Region 1 and 4* option to add a check mark to this box.
5. Click OK.
6. The pivot table should now show the number of sites and number of visits in Regions 1 and 4.



Note: By clicking the arrow next to the variables in the Values area and choosing Value Field Settings, you can choose the type of calculation that you want to use to summarize data from the selected field (e.g., count, max, min, average, and standard deviation).



Source: GCFLearnFree.org, n.d.

Exercise 7.5 Pivot table calculations

Calculate the following using the data for the session on pivot tables given in Table 7.A.1:

1. Average number of visits to families, by region.

2. Maximum number of food packages distributed, by region.

3. Show the sites that had fewer than 500 families visited (Hint: Use Value Filters when you click on the arrow next to the Row Variable in the pivot table.)

Chapter 7. Answers to the Exercises

Exercise 7.1. Calculation of ratios

In marz Y, there are 150 case workers and 600,000 families.

What is the ratio of families to case workers?

Answer: 4,000 families per case worker

Exercise 7.2. Calculation of proportions

If 12 girls and 8 boys were reunified with their families in a reporting period, what is the proportion of boys?

Answer: 8/20 or 2/5

Exercise 7.3. Calculation of family reunification rate

In 2017, region X had 3,155 children ready for family reunification. During that same period, 600 children were reunified with their families. What is the family reunification rate?

Answer: 190 per 1,000 children

Exercise 7.4. Calculation of the rate of increase

In June, 50 children were ready for adoption, and in October, 75 were ready. What was the rate of increase (per month) June to October?

Answer: 5 new children per month.

Exercise 7.5. Pivot table calculations

Calculate the following using an Excel data file "Exercise_pivot_tables":

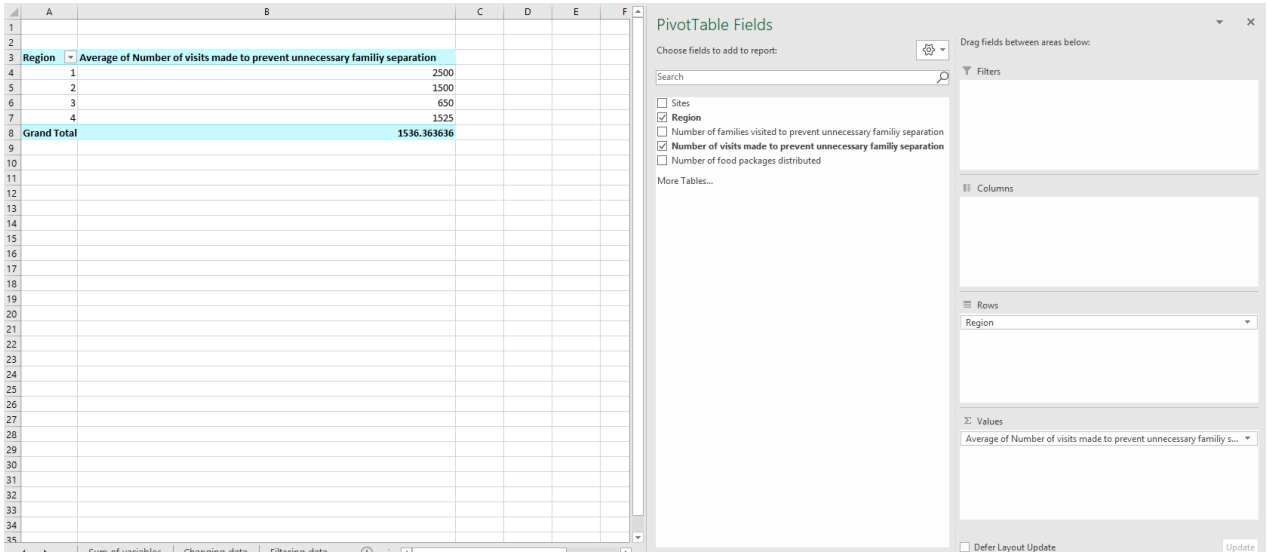
1. Average number of visits to families, by region.

2. Maximum number of food packages distributed, by region.

3. Show the sites that had fewer than 500 families visited (Hint: Use Value Filters when you click on the arrow next to the Row Variable in the pivot table.)

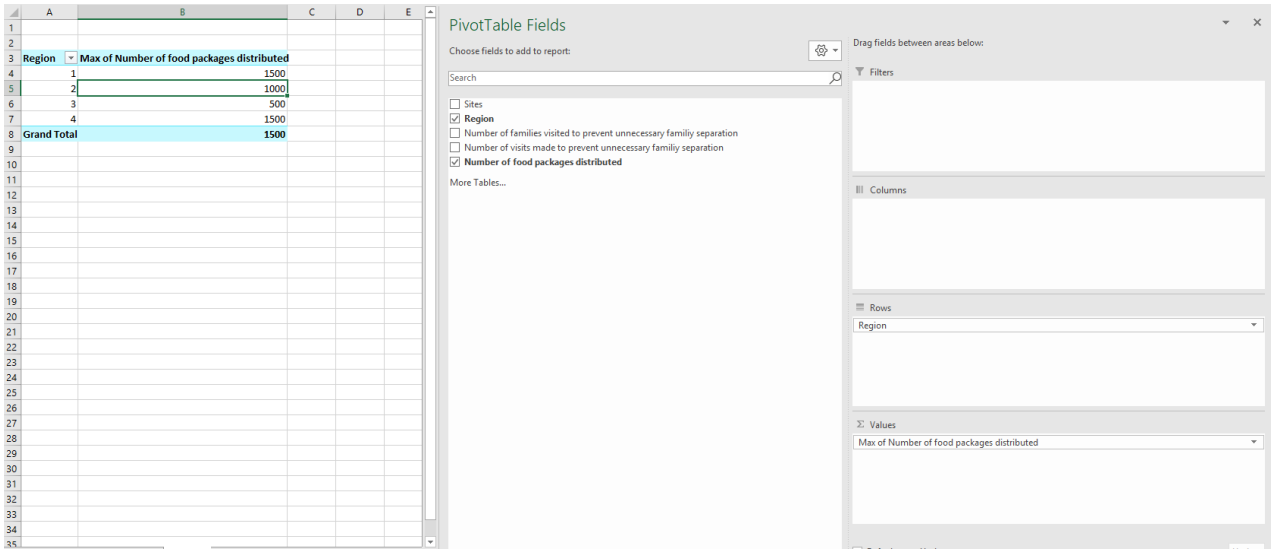
Answers to the exercise on using pivot tables

1. Average number of visits to families, by region



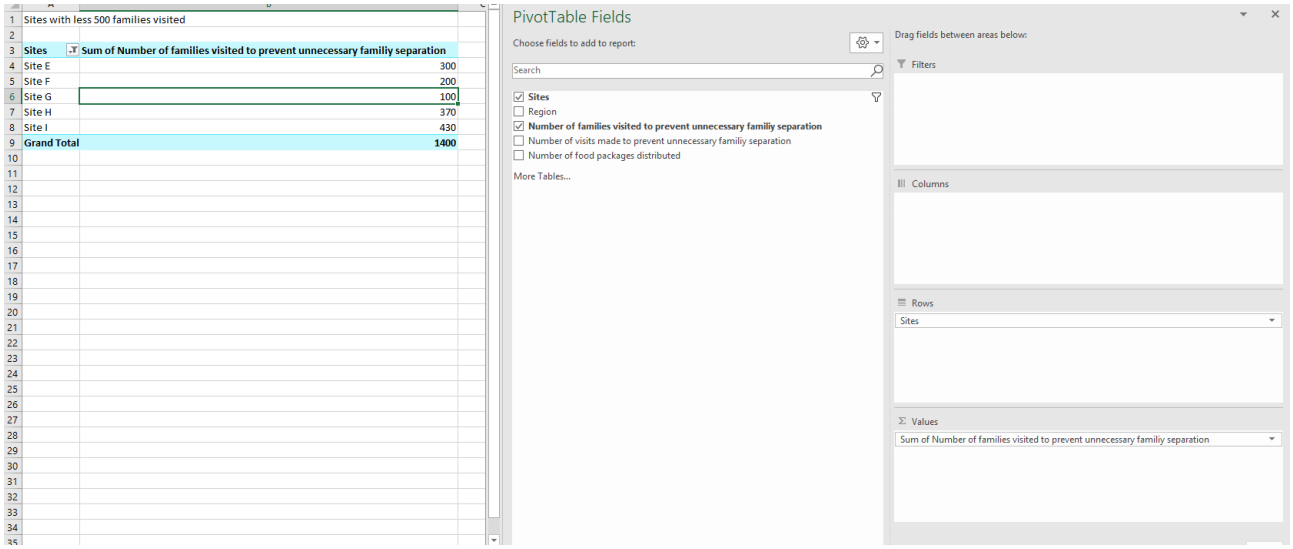
Region	Average of Number of visits made to prevent unnecessary familiy separation
1	2500
2	1500
3	650
4	1525
Grand Total	1536.363636

2. Maximum number of food packages distributed, by region



Region	Max of Number of food packages distributed
1	1500
2	1000
3	500
4	1500
Grand Total	1500

3. Show the sites that had fewer than 500 families visited (Hint: Use Value Filters when you click on the arrow next to the Row Variable in the pivot table.)


Sites with less 500 families visited
Sites
Sum of Number of families visited to prevent unnecessary familiy separation
Site E 300
Site F 200
Site G 100
Site H 370
Site I 430
Grand Total 1400
PivotTable Fields
Choose fields to add to report:
Search
Sites
Region
Number of families visited to prevent unnecessary familiy separation
Number of visits made to prevent unnecessary familiy separation
Number of food packages distributed
More Tables...
Drag fields between areas below:
Filters
Columns
Rows
Sites
Values
Sum of Number of families visited to prevent unnecessary familiy separation

CHAPTER 8. DATA DEMAND AND USE

Data demand is stakeholders actively and openly requesting data. Data demand requires that stakeholders and decision makers specify what kind of information they want to inform a decision and proactively seek that information.

Data use is decision makers and stakeholders explicitly considering the information during one or more steps of the policymaking process, program planning and management, or service provision, even if the final decision or actions are not based on that information.

DDU contributes to program success. The DDU strategy provides guidance on identifying opportunities for and constraints to effective and strategic data collection, analysis, availability, and use to effectively inform programmatic decisions.

Data have value only when they inform decisions and the decision-making process. Decision making is the process of making choices by identifying decision points, gathering information, and assessing alternative resolutions. Using a step-by-step decision-making process can help you make more deliberate, thoughtful decisions by organizing relevant information and defining alternatives.

For example, you want to know whether family-type care or supervised independent living is a more suitable service arrangement for youth ages 14 to 18. You need data that will compare the outcomes of care in these two settings:

- How many children are cared for in family-type care and in a supervised independent living center?
- What is their satisfaction with the living arrangements?
- What is the number of conflicts in each type of care?
- In what type of care are these children happier/less depressed?
- In what type of care do these children show a higher school performance (in a family- type setting or in supervised independent living)?

To answer these questions, you need data. You can consult with service providers and schoolteachers, and you can collect data on school performance and other indicators. If you make decisions based on your gut feelings, without consulting these data, you may end up inappropriately placing all children in any of these settings. The critical decisions about program design, implementation, and funding require the use of data. There are four types of decision areas in any service delivery program. They pertain to:

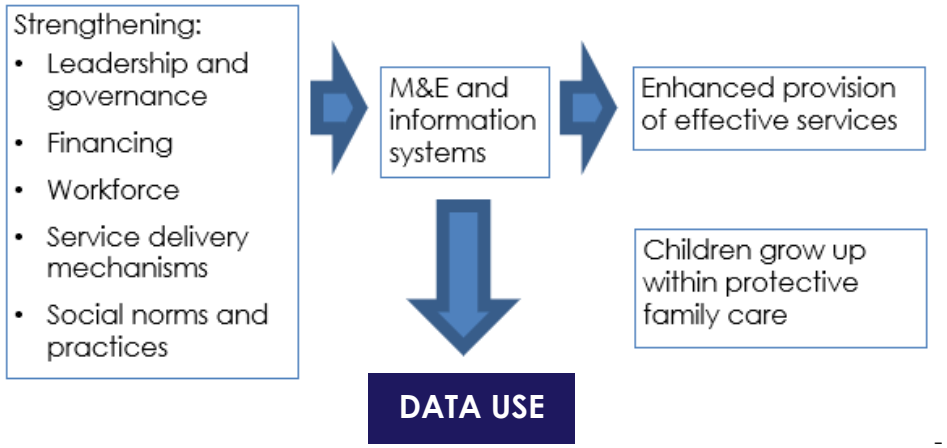
- Program design that meets the needs of a target population. For example, selecting key messages for an awareness campaign about children having the right to live with families.
- Program management and performance improvement. For example, deciding how best to allocate resources in a program or determining which areas to focus on to strengthen program implementation.
- Program evaluation and strategic planning. For example, determining whether an implementation approach is effective, identifying the geographic areas of greatest need, or developing new collaborations with other organizations to expand services.
- Advocacy and policy development. For example, quantifying underserved populations to demonstrate a priority issue.

The Armenia Alternative Care Context

USAID, DCOF, and the MEASURE Evaluation project developed a framework for assessing alternative care for children in Armenia based on United Nations guidelines. The framework is shown in Figure 8.1. It outlines the building blocks, which if strengthened, result in:

- Enhanced provision of effective services that promote appropriate and protective care through a variety of interventions.
- More children growing up in protective family care, free from deprivation, exploitation, and danger.

Figure 8.1. Alternative care framework



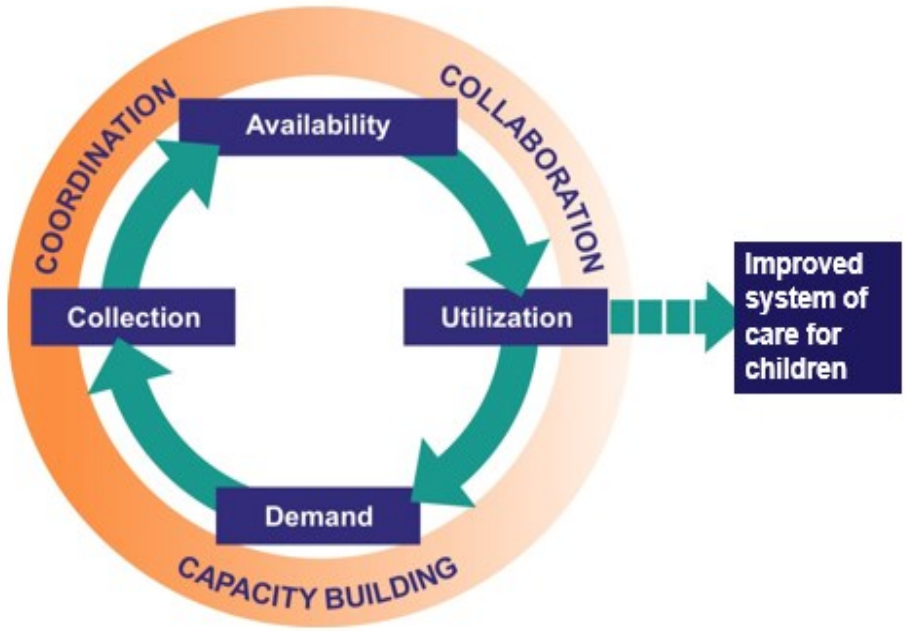
One of the building blocks is M&E and information systems. It is an overarching part of the system, because it affects all other aspects of the alternative care system. Data are available now more than ever, as a result of historic improvements in M&E systems, including tools, concepts, and indicators, combined with increased and renewed global commitment to accountability in development, using such targets as the Millennium Development Goals and the Sustainable Development Goals (SDGs).

In Armenia, new, digitized data resources, such as the Manuk database, which has been expanded to include multiple children-related and alternative care services, mean that more and better data are available to decision makers. (At least 80% of children in alternative care in the country are being tracked by the Manuk database.) However, the data are not necessarily harnessed appropriately. The data are frequently collected but are not translated into information needed for decision making, and many important decisions that should be based on data are not.

The Decision-Making Cycle

DDU always starts with a decision. Decision makers should demand data to make a decision, then use the data to make the decision. Figure 8.2 presents a framework for DDU as a cycle. This framework connects data demand and data collection with analysis, information availability, and data and information use.

Figure 8.2. Data-informed decision-making cycle



Source: MEASURE Evaluation, https://www.measureevaluation.org/resources/tools/data-demand-use/data-demand-and-use-conceptual-framework.html

In this cyclic process, increased information use stimulates greater demand for data which, in turn, leads to more information use, leading to more demand. The idea of a cycle of evidence-based decision making starts with basic M&E systems and the collection of information, including ensuring that the information is available and in a format that is easily understood by relevant stakeholders so that it can be interpreted and used to improve policies and programs. Because M&E systems are highly complex, with multiple international development partners, government agencies, and CSOs contributing to them, collaboration, coordination, and capacity building are essential and support the decision-making cycle.

Coordination is needed between data users and data producers. Data users are those whose decisions at least consider data translated into information. Data producers are those who collect, collate, analyze, and report data. Coordination involves ensuring that management systems and other organizational structures facilitate data-informed decision making. For example, a technical working group can coordinate data collection, collation, and data quality assurance activities to ensure that an annual report contains data that were collected in a complete, concise, correct, and timely manner for all relevant stakeholders. Next, data producers disseminate this report to data users with guidelines explaining how to use the report in key decision-making processes, such as budget allocations.

Next in the DDU framework, we see that demand leads to collection then to availability and next to use. Data demand describes the information that stakeholders are actively and openly requesting. Data demand requires that stakeholders and decision makers specify what kind of information they want to inform a decision, and proactively seek out that information.

Data collection and analysis describe the various methods and tools used to fill data and information gaps. Raw data are seldom useful for decision making. They need to be translated into information that is usable and that relates to the issue being addressed. Data collection, the transformation of data into information, and their use in decision making should be open to using both positive and negative findings.

Information availability includes ways that data and information are disseminated and made publicly available in a format that is understandable and useful to the user during a decision-making process.

Data Use Interventions

Box 8.1. Eight data use interventions

The MEASURE Evaluation project developed an eight-part data use intervention guide to address the "black box" challenge of data use: the data are available but are not used as they should be. The eight components of data use are mutually reinforcing. They are a mix of traditional information system-strengthening activities, coupled with linkages to decision makers and decision-making functions. The eight interventions are listed in Box 8.1 and are described below.

Assess the Data Use Context

The first intervention is a rapid assessment of the data use context. The assessment examines the organization: its policies, procedures, staff roles, and responsibilities. It also looks at current data use practices. The aim is to tailor data use interventions to the context, know what aspects should be improved, and have a baseline to measure progress toward greater data use. The assessment should result in a data use improvement plan.

The MEASURE Evaluation project designed a toolkit to help data users, producers, and policymakers understand the barriers that impede widespread data use and develop action plans to address them. The toolkit can be found at: https://www.measureevaluation.org/resources/publications/ms-18-134. It includes a semi-structured interview guide, self-assessment survey, group assessment tool, and a site visit checklist. Using these tools can help identify existing barriers and constraints to data use and factors that facilitate data use, and help design and prioritize an action plan to address the barriers and constraints to data use. The data can then be organized in a table, such as the one shown in Table 8.1.

Table 8.1. Example of a data use improvement plan format

Challenge:		Indicators:		
Activities	**Name of person responsible**	**Expected start and completion dates**	**Resources needed**	**Activity completed?** Date/comments

Engage Data Users and Data Producers

Data producers are people who acquire, collect, and analyze data. They prepare data for distribution to an audience of data users. Data producers can be researchers, M&E specialists, and anyone else who designs and manages information systems, or who conducts data entry in an information system. Data producers who engage with data users and understand the purpose of data collection produce better quality data.

Data users are those who use the data for programmatic decision making, such as program managers, policymakers, program directors, and CSOs. Data users who understand what are involved in data collection, collation, analysis, and presentation make better use of the data available to them and are more likely to demand additional data.

The closer the relationship between the data producers and the data users, the greater the value that both groups place on data. When the perceived value of data increases, the sense of ownership of the data increases and programs improve. Frequent meetings of ministry staff with regional staff or service providers improve the mutual understanding of data needs and the quality of collected and reported data.

Identify Information Needs

An overwhelming amount of information is accessible to decision makers and yet not all needed information is available. It is therefore important to identify specific information needs so that decision makers receive only the data they need. This will improve their use of the data. Potential activities to understand and identify information needs are:

- The identification of data needed to report on the implementation of strategies and action plans/programs and government commitments to the implementation of the United Nations Alternative Care Guideline, conventions, and SDGs at national and subnational levels
- Consultations on the availability of data at regional and community levels
- Arranging visits to regions and to service providers to develop questions based on the review of their data
- Conducting a workshop to help generate decisions/questions (MEASURE Evaluation has developed several tools to help guide this process, available here:

https://www.measureevaluation.org/our-work/data-demand-and-use/data-demand-and-use-publications)

- Involving key stakeholders (data producers and users) in identifying information needs.
- Helping monitor indicators

Improve Data Quality

Data quality refers to how well the data reflect program reality. Quality is a subjective term. It should therefore be defined by a set of criteria that measure how accurate and complete are the data. There is no standard prescription for what are "good enough" data, simply because environments differ so widely when considering resources, policies, programs, and skills. However, there are standard criteria to use when assessing data quality.

To improve data quality, you need to identify data quality problems when they happen and recognize where the problems originate in the process. You can then work with those collecting, collating, analyzing, submitting, and reporting the data to address the challenges. To do this, you should consider the following dimensions of data quality: relevance, integrity, timeliness, accessibility, reliability, completeness, validity, coherence, and comparability. Data quality has already been discussed in
Chapter 6.

Improve Data Availability

To inform decision making, the data should be available when they are needed, and in a format that users can understand and explain to others. Activities that can improve the availability of data are:

- Link databases for interoperability.
- Create clear data sharing guidelines.
- Create data dissemination and/or communication plans.
- Create information products in user-friendly formats that meet the needs of targeted people or organizations (matching them by level of detail, complexity, intensity of interest, and role in the decision-making process).
- Create information products that synthesize information in user-friendly formats.
- Ensure that multidirectional feedback mechanisms are in place.
- Produce a national system to register and make new research accessible.

Build Data Use Core Competencies

For data to be a routine a part of decision making, people at all levels of the system should have the skills to analyze, interpret, synthesize, present, and use data. Activities that can contribute to this are:

- Develop or implement a capacity building plan for M&E/DDU.
- Conduct training in M&E/DDU skills (analysis, interpretation, synthesis, presentation, and communication).
- Conduct training in DDU skills (concepts and tools, advocacy, leadership, and managing change).

- Conduct training in developing and implementing DDU procedures, guidelines, policies, and support mechanisms.
- Document changes in skill levels.

Strengthen Organizational Infrastructure

An organization's data use infrastructure encompasses the policies, procedures, and structures in place to support data-informed decision making, such as guidelines and policies that support or relate to data use.

Without sufficient well-trained and competent staff to lead, implement, and supervise an M&E system, data will not be available for use in decision making. Activities that can strengthen organizational infrastructure are:

- Develop an organizational mission, vision, and strategic plan that reflects DDU.
- Create or support advocacy efforts to strengthen DDU in the organization.
- Create or assist in the implementation of organizational supports (policies and procedures to support DDU, data sharing guidelines, roles of staff and how they relate to DDU, etc.).
- Document DDU successes and encourage users and producers in the organization to do the same.

Evaluate and Communicate Success

To understand the effect of data use interventions and to educate and encourage others about the ease and added value of using data to improve performance, it is important to assess the impact of DDU activities throughout the life of a project. This can be done by conducting periodic DDU assessments, writing and promoting DDU success stories, and documenting data on DDU interventions.

Stakeholders in Policy and Program Decisions

To be effective in your efforts to improve evidence-based decision making, you need to understand your stakeholders and their different information needs.

When possible, you should conduct a more formal stakeholder analysis to help identify the appropriate set of stakeholders and their roles in supporting evidence-based decision making by letting you know who is doing what, where, when, and what their stake may be in your planned efforts. This enables you to ensure stakeholder involvement in the data use process. You can then tailor your data collection and use efforts to the specific needs of individual stakeholders and groups of stakeholders. This increases the relevance of the data use activity to different needs at the different levels in which informed decisions are made and promotes the necessary buy-in to move the decisions forward. Stakeholder involvement strengthens the information cycle and highlights the value of data to program improvement.

It is not always easy to engage the right number of stakeholders and to focus on their data needs. The MEASURE Evaluation project has developed the Stakeholder Engagement Tool to guide you in selecting and engaging stakeholders. It is available here: https://www.measureevaluation.org/resources/publications/ms-11-46-e. The tool considers the following elements for each stakeholder:

- Personal details, including name and contact information

- Which organization the individual belongs to, including mandate, services provided, services coordinated, and contributions to M&E
- Mandated responsibilities relevant to the work
- Key information the individual has access to
- Level of knowledge
- Level of influence
- Access to resources and the level of resources
- Constraints associated with the stakeholder

Identifying Opportunities and Barriers to Data Use

DDU always start with a decision and the data needed to make the decision. Decisions are not made at one specific moment in time. Information needs are identified; data are collected, analyzed, synthesized, shared, and reviewed; **and then** a decision can be made. Several stakeholders are involved in this process, including many who are not the true decision makers, in that they do not necessarily have the authority to allocate funds or alter programs.

The decision-making process is often influenced by external factors, including, for example, political ideology and favoritism, public opinion, and other economic, social, and cultural factors. Empirical data can provide a basis for discussion and influence these external factors to enhance opportunities and minimize the effect of barriers on data use over time.

Understanding what can enable, reinforce, or inhibit the functioning of the DDU cycle is important. Many factors can be considered determinants of data use, that is, they are causal factors that are directly linked to data use. They can be broadly classified into organizational, technical, and behavioral factors.

Organizational factors are the context that supports (or not) data collection, availability, and use. Organizations need to define and disseminate clear roles and responsibilities for the people who collect, collate, analyze, disseminate, and use data. For data use to occur, members of an organization should understand their specific roles and responsibilities for data use tasks.

Data use can be affected by the organization's budget for M&E and by how the organization shares information internally. Organizations that promote open sharing and learning tend to have stronger information cultures than ones in which people face negative consequences for sharing. How an organization chooses to make information available—who receives information and who does not—also affects data use. Organizational determinants are closely linked to the quality of organizational leadership.

Technical determinants refer to the technical aspects of data collection: processes, such as tools, forms, infrastructure, and staff capacity in M&E tasks and data use tasks. Data systems that are the foundation of data-informed decision making should be well designed. Indicators should be relevant and well defined. Data quality assurance protocols need to be in place. Without them, stakeholders will not trust or want to use the data that the M&E system produces.

Moreover, individual skills, such as data analysis or computer literacy, are critical to ensuring data use. Adequate human resources should exist to support M&E functions. The presence of key M&E infrastructure, such as computers and virus protection software, are important to the integrity of data and, therefore, to data use.

Behavioral determinants refer to the behavior of decision makers and of the people who produce the data. This includes their attitudes, values, and motivation. The attitudes of these people toward the

decision-making process affect how they participate in that process. If decision makers have no interest in using data, they will make decisions based on other factors; if those who collect the data do not perceive the decision-making process to be clear and inclusive, they may not value the task of collecting quality and timely data.

The attitudes that people have about data and the value of data also influence the use of data in decision making. An environment where the value of data to program improvement is understood, and where collecting data and making them available is not perceived to be a burden, is conducive to data use. Positive attitudes toward data and decision making contribute to the functioning of a strong data use culture. Personal motivation to collect quality data, analyze the data, and use them is also directly related to the successful use of data.

Ideally, an assessment of the barriers to data use in your organization is conducted when developing a strategy to improve data use.

There are many ways to integrate data use into your workplace. The combination of approaches you select depends on how information is currently shared across stakeholders, and whether you want to strengthen the existing process or create a new strategy. Considering how complex the alternative care issues are, and how many stakeholders are involved, it is even more critical to think about how to plan and create a structure for data use. Basic steps can take data use from a web of communication lines to a more organized and effective process:

- Engage stakeholders
- Institute regular meetings
- Review and discuss data
- Follow up on action plans
- Identify data gaps
- Document and communicate data use success stories

Seven Steps in Using Information for Decision Making

The seven steps framework, developed by the MEASURE Evaluation project, presents an approach that facilitates the use of information in the decision-making process

Box 8.2. Seven steps in using information for decision making

Step 1: Identify questions of interest

Step 2: Prioritize key questions of interest

Step 3: Identify data needs and potential sources

Step 4: Transform data into information

Step 5: Interpret information and draw conclusions

Step 6: Craft solutions and take action

Step 7: Continue to monitor key indicators

(https://www.measureevaluation.org/resources/training/capacity-building-resources/building-leadership-in-data-demand-and-use-a-facilitators-guide/handouts-and-slides-for-session-4/view). When these steps

are followed, data can be used more effectively to fulfill stakeholders' key information needs. The approach provides concrete steps that lead to data-informed decision making. It encourages more strategic and effective use of data, and ensures the involvement of both data producers and data users in the DDU process. The seven-steps are shown in Box 8.2.

The seven steps approach should be used when a programmatic decision is pending because it facilitates the efficient use of information to make a decision. It can also be applied when new data become available and you need to understand the implications of the findings.

Key Messages

- ✓ Data demand is stakeholders actively and openly requesting data. Data use is decision makers and stakeholders explicitly considering information during one or more steps of the policymaking process, program planning and management, or service provision. Taken together, DDU contributes to program success.
- ✓ Data can be used to create or revise a program or strategic plan, develop or revise a policy, advocate for a policy or program, allocate resources, and monitor a program.
- ✓ Data use interventions are: assess the data use context; engage data users and data producers; identify intervention needs; improve data quality; improve data availability; build data use core competencies; strengthen organizational infrastructure; and evaluate and communicate success.
- ✓ The seven steps to data-informed decision making are:
  1. Identify questions of interest
  2. Prioritize key questions of interest
  3. Identify data needs and potential sources
  4. Transform data into information
  5. Interpret information and draw conclusions
  6. Craft solutions and take action
  7. Continue to monitor key indicators

CHAPTER 9. EVALUATION

This chapter presents the typology of evaluations. It also reviews the processes of planning, preparing, implementing, and using evaluation results for care reform.

"Evaluation is the systematic collection and analysis of information about the characteristics and outcomes of programs and projects as a basis for judgments, to improve effectiveness, and/or inform decisions about current and future programming. Evaluation is distinct from assessment, which may be designed to examine country or sector context to inform project design, or an informal review of projects" (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2010).

Evaluations that are well designed and executed can systematically generate knowledge about the magnitude and determinants of performance, permitting the governments, donors, or CSOs that design and implement them to refine designs and introduce improvements in future efforts to reform the childcare system (USAID, 2011).

Types of Evaluations

Depending on the purpose, there are several types of evaluation.

Process evaluation: "A type of evaluation that focuses on program or intervention implementation, including, but not limited to access to services, whether services reach the intended population, how services are delivered, client satisfaction and perceptions about needs and services, management practices" (UNAIDS, 2010). An examples of questions asked is: Are activities delivered as intended and are the right participants being reached? A process evaluation examines the ways of improving and enhancing the implementation and management of care interventions. It is primarily conducted for the benefit of those managing the intervention, with the intention of improving their work. Process evaluations are usually carried out during the implementation of a childcare strategy, action plan, program, or project in the area of care reform. For example, the ministry in charge of coordinating a five-year national childcare strategy is conducting a formative evaluation two years after the start of its implementation to make sure that the work is progressing according to intermediate targets and milestones, and that the stakeholders are satisfied that their perceived needs have been well addressed thus far. The ministry could also draw some lessons, map drawbacks, and identify good practices.

Outcome evaluation: Is "a type of evaluation that determines if and by how much, intervention activities or services achieved their intended outcomes." It focuses on "outputs and outcomes (including unintended effects) to judge program effectiveness, but may also assess program process to understand how outcomes are produced. It is possible to use statistical techniques in some instances when control or comparison groups are not available (e.g., for the evaluation of a national program)" (UNAIDS, 2010). Examples of questions asked: To what extent are desired changes occurring due to the program, and who is benefiting? Outcome evaluation is conducted for the benefit of external actors (groups who are not directly involved in the management of a program, action plan, etc.), for reasons of accountability or to assist with the allocation of budgetary resources. Outcome evaluations are usually carried out at the end of an intervention (or a phase of an intervention). For example, an international donor that has co-funded a national program on child deinstitutionalization is commissioning an external evaluation at the end of program implementation to learn whether it was worth investing the money in the program, (i.e., to what extent the program was relevant for the key stakeholders [institutionalized children and their families,

professionals, decision makers, etc.]); whether it reached its planned results (e.g., proportion of children in institutions placed in foster care and proportion of those reintegrated in their biological families); to what extent these results are likely to be sustainable, (e.g., six months after the end of the program, no reintegrated child returned to an institution); whether the money was used in a cost-effective way; and whether the financial management was sound. The outcome evaluation would provide recommendations for future support, based on the lessons learned from past interventions. One example of an outcome evaluation is "An Outcome Evaluation of the Success for Kids Program" (available at https://www.rand.org/content/dam/rand/pubs/technical_reports/2010/RAND_TR575-1.pdf).

Impact evaluation (IE): Measures the change in an outcome that is attributable to a defined intervention by comparing actual impact to what would have happened in the absence of the intervention (the counterfactual scenario). IEs are based on models of cause and effect. They require a rigorously defined counterfactual to control for factors other than the intervention that may account for the observed change. There are a range of accepted approaches to applying a counterfactual analysis, although IEs in which comparisons are made between beneficiaries that are randomly assigned to either an intervention or a control group provide the strongest evidence of a relationship between the intervention under study and the outcome measured to demonstrate impact (United States President's Emergency Plan for AIDS Relief [PEPFAR], 2014; PEPFAR, 2012). An example of an IE is " Livelihood Empowerment Against Poverty Program Impact Evaluation" (available at https://www.unicef.org/evaldatabase/files/Ghana_2013-003_LEAP_Quant_impact_evaluation_FINAL.pdf).

Performance evaluation: Examines what a specific intervention achieved, how it was implemented, how it was perceived and valued, the contribution of external assistance to the results achieved, possible unintended outcomes from external assistance, and other questions pertinent to intervention design, management, and operational decision making. An example of a performance evaluation is "End-Line Performance Evaluation: Deinstitutionalization of Orphans and Vulnerable Children in Uganda (DOVCU)" (available at https://bettercarenetwork.org/sites/default/files/DOVCU_Endline%20Evaluation%20Final_.pdf.)

Among other types are evaluations by timing (such as mid-term, final, ex-post), by agent (such as internal, external), and by scope (such as program, sector, country).

Evaluation Criteria

When evaluating interventions on alternative care for children, it is useful to consider five key evaluation criteria: relevance, effectiveness, efficiency, impact, and sustainability.[3]

➔ **Relevance:** This criterion looks at the relationship between the needs and problems in society and the objectives of the intervention. The evaluation of relevance examines the extent to which the childcare intervention as a whole, or a specific expected outcome, is consistent with national and local policies and priorities in the area of child protection; the needs of intended beneficiaries (especially those of children and their families) and target groups (e.g., professionals, governments, service providers); and international commitments of the country (notably human rights standards, including the United Nations Convention

[3] These criteria are also known as "DAC criteria" because they were first laid down by the Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) for the evaluation of programs and projects implemented as part of development assistance. (Read more at http://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm.)

on the Rights of the Child). It also examines the extent to which an intervention's implementing bodies responded to changing and emerging development priorities and needs in a responsive manner, (i.e., relevance in time).

➔ **Effectiveness:** This is a measure of the extent to which the intended results of the childcare intervention (outputs and outcomes, see Chapter 3) were achieved according to set targets and contributed to the achievement of planned objectives. The evaluation of effectiveness examines the factors that facilitated the achievement of expected results (advocacy for children's rights; effective leveraging of relationships with the government, parliament, oversight bodies, civil society, and international development partners that have shaped policy on specific alternative care issues; ability to frame policy issues and options in ways that are sensitive to national policymakers' institutional and political contexts and priorities of the country in the area of care reforms; inclusion of capacity building in interventions; simultaneously addressing the knowledge, attitudes, and practices of beneficiaries of child protection reforms; building on successful results achieved in child deinstitutionalization, etc.) or, on the contrary, which hindered it. The effectiveness evaluation also checks whether the approaches and instruments used during implementation produced any unexpected effects (positive or negative, direct or indirect), for example, job creation in social services, leveraging of resources for care reform, women returning to the labor market as a result of developing crèche services for children under three, volunteering by students in residential care facilities.

➔ **Efficiency:** This criterion looks at how economic resources (staff, purchases, time and money spent, fixed costs, running costs, administrative and regulatory burden, etc.) were converted into results. It assesses the quality of the technical and financial management of the implementation team, the extent to which the intervention was coherent and synergetic with other similar interventions, and the contributions of partners and of cooperation with other actors. The evaluation of efficiency also examines the way the intervention was approached and conducted because different ways of doing things can have a significant influence on the results, making it useful to assess whether other choices achieved the same benefits at less cost (or greater benefits at the same cost), (i.e., a cost-effectiveness analysis).

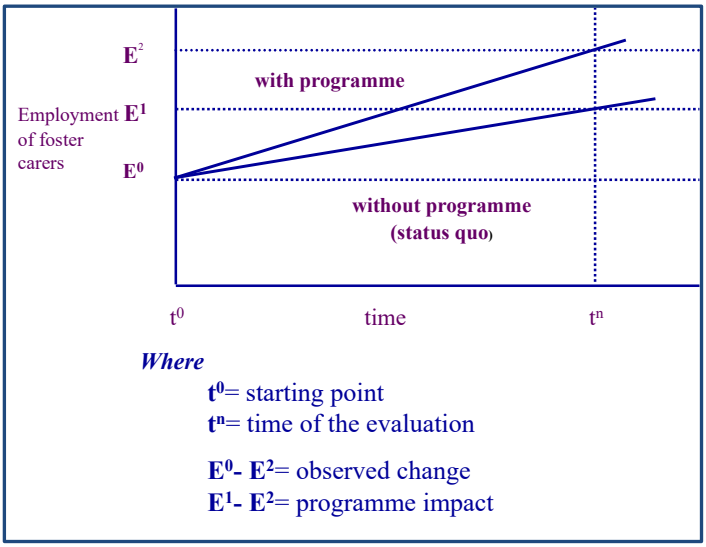
➔ **Impact:** This relates to the changes that are expected to happen due to the implementation of an intervention, among other things. Impact evaluation measures the changes in human development and children's well-being that were brought about by the implementation of childcare interventions, directly or indirectly, intended or unintended, positive or negative. The impact evaluation can be theory-based or counterfactual, involving a contribution analysis and an attribution analysis, respectively (Box 9.1).

Box 9.1. Contribution and attribution analyses in impact evaluation

The contribution analysis, used in theory-based evaluation, aims to demonstrate whether the evaluated intervention is one of the causes of observed change in children's human development and well-being. It responds to the question, "Did things work as expected to produce the desired change for children?" It relies on a chain of logical arguments that are verified through "confirmatory analysis" meant to disentangle several causes (the intervention and external factors) to demonstrate the existence and/or assess the magnitude of the effect on children. Theory-based evaluations often incorporate before-after comparisons, but generally lack a rigorously defined counterfactual. (Additional resources on theory-based methodologies are provided at the end of this chapter.)

Attribution analysis is used to assess the net impact of an intervention (counterfactual evaluation) because it confirms whether benefits for children can be directly attributed to the implementation of a childcare intervention. It responds to the question, "How would things have been for children without the intervention?" Figure 9.1 illustrates a schematic presentation of a counterfactual evaluation of the impact of a program on the employment of foster carers. (Additional resources on counterfactual methodologies are provided at the end of this chapter.)

Figure 9.1 Counterfactual evaluation



➔ **Sustainability:** This criterion relates to the continuation of benefits from a childcare intervention after major support (e.g., from donors) has ended. The evaluation of sustainability examines the probability of continued long-term benefits for children and the resilience to risk of the net benefit flows over time. Sustainability is analyzed from various angles: policy (strategies, legislation, policy documents, etc.); institutional (skills, infrastructure, guidelines, etc.); and financial. The sustainability evaluation involves examining the extent to which relevant social, economic, political, institutional, and other conditions are present and, based on that assessment, making projections about the national capacity to maintain,

manage, and ensure the results obtained for the benefit of children, their families, and other local and national stakeholders.

Depending on the type of evaluation, some of the above criteria can be more prominent or, on the contrary, can be absent. For example, in the case of an impact evaluation, the focus would be on the impact criterion; relevance or efficiency would not figure in the evaluation brief. Sustainability would figure mainly in an outcome evaluation rather than in a process evaluation.

Planning, Preparing, and Implementing an Evaluation

Planning Evaluations

As discussed in Chapter 4 on the M&E plan, a good M&E plan for a policy document on childcare includes a multiyear evaluation plan. The plan should provide an overview of the planned evaluation(s), especially their objectives; the commissioning agency; the estimated start and completion dates; the estimated cost and source of funding; when the results will be available; and how they will be used. An example of an evaluation plan is in Appendix 9.A.

The evaluation plan should be prepared in close consultation with the relevant stakeholders/users of the evaluation results (e.g., ministries, donors, CSOs, representatives of affected groups of children and families). It should be updated every year, based on new evaluation needs that emerge from childcare strategy alterations, changes in conditions in the country, and changes in programs. Additional needs may arise from requests for information from the government or other stakeholders.

Preparing Evaluations

To assess the relevance, effectiveness, efficiency, impact, and sustainability of an intervention, the agencies that commission evaluations should prepare a terms of reference (TOR). The following content for the TOR is suggested for commissioning an evaluation of a childcare intervention:

- ✓ The title of the evaluation
- ✓ Background and context of the evaluation (relevant policy, legal, and institutional framework, problem analysis, international commitments of the country, etc.)
- ✓ Evaluation type, purpose, objectives, and scope (why is the evaluation needed at this specific time?; what it aims to achieve; evaluation boundaries in terms of the implementation period to be considered; geographic scope; specific target groups and beneficiaries)
- ✓ The intervention logic of the topic of the evaluation (reconstructed, if needed)
- ✓ Intended uses and main users and stakeholders of the evaluation (who will be informed/use the evaluation findings and recommendations and for what purpose?)
- ✓ Key evaluation/research questions, grouped under each evaluation criterion selected for the respective evaluation. The evaluation questions could be:
    - Descriptive questions: Intended to observe, describe, and measure changes (what happened?)
    - Causal questions: Striving to understand and assess relations of cause and effect (how and to what extent is that which occurred attributable to the intervention?)

- Normative questions: Compare what is to what should be (are the results and impact satisfactory in relation to targets, goals, etc.?)
- Predictive questions: Attempting to anticipate what will happen as a result of planned interventions
- Critical questions: Intended to support change, often from a value-committed stance (e.g., what are the effective strategies to reduce the social exclusion of children with disabilities?) (European Commission, 2016).

Exercise 9.1 at the end of this chapter provides an opportunity to practice the formulation of evaluation questions.

Box 9.2. Evaluation questions
A good evaluation question should be clear, researchable, and useful for the evaluation purpose. Ambiguous terms, such as "effective," "sustainable," "efficient," "relevant," "objective," or "success" should be avoided or clearly defined. There should be a way to generate objective evidence to answer the evaluation question with social science methods that will likely be applied based on the methodology section of the TOR and evaluation resources. The evaluation questions should be linked to the evaluation purpose and developed by involving the key stakeholders (USAID, 2015).

- ✓ Suggested evaluation methods or techniques to be used (e.g., desk research, questionnaire-based surveys, in-depth interviews, focus groups for primary data collection), only if needed.
- ✓ Evaluation deliverables (e.g., reports, field data, summary paper with main policy recommendations, roadmaps, PowerPoint presentation).
- ✓ Quality control and quality assurance (who will review and approve the draft and final reports; reference to evaluation standards, guidelines, and ethical codes).
- ✓ Timeframe for the submission of each deliverable.
- ✓ Indicative budget (or volume of person days)
- ✓ Evaluation team (composition, required qualifications, and experience)
- ✓ Structure of the technical and financial offer (to guide tenderers in developing their offer for submission).
- ✓ Information on management responsibilities for the evaluation.
- ✓ Submission rules (deadline, address, format, etc.) and selection criteria.
- ✓ A list of relevant publicly available documentation (complete with functional links).

As mentioned in Chapter 2, the introduction to M&E, learning is a major purpose of any evaluation. It is therefore very important to build clear learning prerequisites in the TOR for the evaluation of childcare interventions. The process of designing and focusing an evaluation should be as participatory as possible by involving all key stakeholders. Deliverables should include policy implications and learning points

aimed at a wide audience. The TOR for the evaluation should also include diverse reporting and dissemination methods for key stakeholders to ensure a follow-up by assigning responsibilities for the implementation of recommendations. Building in a review of the evaluation process likewise supports the learning purpose of an evaluation of childcare interventions.

Implementing Evaluations

An evaluation is conducted in several phases, as illustrated in Figure 9.2.

Figure 9.2. Evaluation phases

The *inception phase* aims at clarifying the issues of the evaluation; revising and/or reconstructing the intervention logic of the object of the evaluation; finalizing the evaluation questions and overall framework for analysis; and agreeing on the workplan, budget, and evaluation team. It is the backbone of the evaluation and outlines the set of objectives against which the relevant intervention(s) will be assessed.

The *desk phase* aims at completing data collection and analysis; identifying information gaps; providing a preliminary answer to the evaluation questions; identifying preliminary hypotheses and assumptions to be tested in the field; refining the data analysis methods and detailing potential limitations of the analyses; discussing potential amendments to the selection of interventions and/or case studies identified during the inception phase; and proposing the methodology to carry out field visits.

The *field phase* aims at completing the data collection; contributing to answering the evaluation questions; validating or revising the preliminary hypotheses and assumptions formulated in the desk phase; and assessing whether there is need for further research and interviews to prepare the synthesis report, especially the conclusions and recommendations chapter.

The *synthesis phase* entails the analysis of the data collected during both the desk phase and the field visits to complete the answers to the evaluation questions, and the preparation of the synthesis report, which includes the final conclusions and recommendations of the study.

Using the Evaluation Results for Care Reforms

Learning and taking informed decisions are the overarching purposes of evaluations.

Results of evaluations should be used for the improved design of policies, more effective and efficient implementation of strategies and action plans, and more relevant and sustainable solutions for children's well-being and protection in a caring environment. Well-designed and implemented evaluations generate knowledge that enable governments, donors, and CSOs to improve future efforts to reform the childcare system. Box 9.2 presents an example of how policy responses for children can be informed by evaluation results.

Box 9.2. Using evaluation results to understand bottlenecks and adapt policy responses for children

The monitoring data from a government's early childhood education program revealed that children with special education needs were not attending kindergarten for reasons unknown. The registries at social work centers also indicated an increasing trend in institutionalization for this category of children.

The program management team decided to commission an evaluation to understand the causes.

The evaluators reviewed program documentation and progress reports, available statistical data, conducted interviews with kindergarten staff (directors and educators) and social work centers' specialists, visited the kindergartens, and conducted focus group discussions with parents to identify the causes of attendance failure.

The evaluation revealed that kindergartens had a policy that discouraged the enrollment of children with special education needs. Parents were also concerned that staff at the kindergartens were unable to take proper care of their children. They also could not return to the labor market because they could not leave their children unattended at home, hence, the families had less income.

Based on the results of this evaluation, the program amended the enrollment criteria for kindergarten, hired specialized educators, adapted the education infrastructure, and encouraged parents to enroll their children.

Evaluation Report

The utility of an evaluation also rests on the quality of reporting. The results should be communicated clearly, accurately, and appropriately. The report should be reader friendly, accessible to all intended users, and be self-contained, thereby allowing people who have not followed the entire evaluation process to understand the findings. Independence, impartiality, and evidence for the findings and conclusions are also essential to ensure the credibility of the work, making the report an instrument usable by users for future childcare improvements. The value of an evaluation report is also given by its action-oriented capacity. Recommendations therefore have to be clear, implementable, and structured in such a way that the interested parties can get inspired from them. Their quality impacts the follow-up processes. Chapter 10 provides information on report writing.

Ways to Ensure that the Evaluation Findings Are Used

There should be an agreed policy to follow up on the evaluations to maximize the probability that they feed back into the decision-making process at whatever level is appropriate. Another option is to transpose the evaluation recommendations in the format of a specific action plan complemented by a standardized follow-up procedure. Box 9.3 presents the usual steps that are needed to develop a post-evaluation action plan.

Box 9.3. Steps to develop a post-evaluation action plan

1. Review the key findings, conclusions, and recommendations of the evaluation in a systematic manner.

2. Determine and document whether the conclusions and recommendations are accepted or supported by the intended users of the evaluation (e.g., governments, donors, service providers, professional associations).

3. Identify any management or other actions needed based on the evaluation findings, conclusions, and recommendations. This could take the form of revisions to existing strategies, action plans, projects, or other planning frameworks; amendments to legislation and institutional frameworks; financial allocations; capacity building activities, etc.

4. Assign responsibility and a time frame for the completion of each set of actions.

5. Document the expected actions based on the evaluation, responsibilities, time frames, and completion of actions in a post-evaluation action plan.

Adapted from USAID, 2019.

Key Messages

- ✓ Learning and making informed decisions are the overarching purposes of evaluations.
- ✓ Depending on the purpose, there are several types of evaluation: process, outcome, impact, and performance evaluations.
- ✓ Evaluation criteria are relevance, effectiveness, efficiency, impact, and sustainability.
- ✓ The results of evaluations should be used for the improved design of policies, more effective and efficient implementation of strategies and action plans, and more relevant and sustainable solutions for children's well-being and protection in a caring environment.

Quiz

Answer the following questions to see how much you know about this topic. Go to the answer section below to see the correct answers.

1. The purpose of an evaluation of a childcare program is:
    a. Accountability
    b. Auditing the use of funds for the program's activities
    c. Learning and generating knowledge about the magnitude and determinants of performance
    d. Making informed decisions on resource allocation and other key aspects of care reform
    e. Identifying challenges in program implementation

2. An outcome evaluation measures:
    a. The relevance of the program for the needs of target groups
    b. The timeliness of a program's activities
    c. The results of a program's activities
    d. The sustainability of program's results
    e. How closely a program kept to its budget

3. The Ministry of Health has been tracking the country's HIV/AIDs epidemic among children ages 0 to 3 in residential care institutions since its beginning. It wants to investigate whether the decline of the epidemic is a function of the national AIDS program. Identify the type of evaluation for this situation:

    a. Impact evaluation
    b. Performance evaluation

4. The TOR of an outcome evaluation of a project on promoting family-type care for children deprived of parental care contains the following evaluation question: "To what extent has the project been effective in increasing the foster care services?" Is this question well formulated?

    a. Yes

    b. No.

    If no, why not?

Exercise 9.1. Evaluation questions

The project, "Towards Family Reunification," aims to contribute to the creation of favorable conditions for the social integration of children in adversity, ensuring their right to live in a family environment.

The project has two expected outcomes: 1,200 children living in residential childcare institutions are reunified with their biological families, and 340 children from vulnerable families are prevented from institutionalization.

To achieve these outcomes, the project has delivered a wide range of services to targeted children and families, implemented awareness raising campaigns to fight against institutionalization, and carried out intensive advocacy to shift budgetary allocations from residential care to prevention and family support services.

The project had a duration of five years and a budget of XX million USD. It was implemented by the line ministry with the support of international technical assistance.

The project will end next month and the ministry intends to commission an external final evaluation to assess the relevance, effectiveness, efficiency, impact, and sustainability of the project. For this purpose, the ministry will need to draft terms of reference (TOR) for contracting an external evaluation team. One of the TOR chapters should include the evaluation questions.

Task:

Write two to three evaluation questions for each of the evaluation criteria mentioned above that you think the ministry will need to include in the TOR. Check your answers against some typical examples of evaluation questions in the section with the exercise answers at the end of this chapter.

Chapter 9. Answers to the Quiz and Exercise

Answers to the quiz:

1) a, c, d

2) a, c, d

3) a

4) b. If you ask if a project is "effective," does this mean you are asking if monitoring targets were reached or that the intervention had a causal effect on increasing the number of foster carers, or simply that stakeholders perceived it to be successful? You have to define terms. Otherwise, the evaluator will define the term for you in ways that are neither transparent nor match your understanding of the terms.

Answers to Exercise 9.1.

Typical examples of relevance questions:

- To what extent was the project aligned with the country priorities on child protection and international commitments?

  (e.g., United Nations Convention on the Rights of the Child, The Convention on the Elimination of all Forms of Discrimination Against Women, European Union accession, SDGs)

- To what extent has the project addressed the underlying causes of child institutionalization and responded to the needs of target groups?

  (children in institutions and their families, children living in vulnerable families, professionals, service providers, local authorities, etc.)

- How flexible were the project design and its activities in adapting to subsequent changes in the context in which it was framed (changes in policies, emerging needs, etc.)?

Typical examples of effectiveness questions:

- What was the achievement level of the planned results?

  (quantitative and qualitative, results at the level of outcomes and outputs)

- To what extent do the observed results correspond to the objectives?

- What were the main factors that contributed to or hindered the achievement of the intended outcomes?

- Has the implementation of the project produced any unplanned effects?

  (positive or negative, direct or indirect)

Typical examples of efficiency questions:

- How well has the implementation of the project been managed?

  (technical and financial management, respecting deadlines and the timetable, monitoring, resource leverage)

- Were there other ways of using resources that have produced more results or have used resources sparingly, yet maintained the same level of achievements?
- How did the project ensure coherence with other relevant interventions supported by different agencies to encourage synergy and avoid overlap? What were the areas and ways of cooperation with other agencies concerning the development of services for targeted children and families?
- To what extent has the project promoted partnerships and strengthened cross-sectoral cooperation at both national and local levels to improve its performance?

Typical examples of impact questions:

- What changes has the project produced for children in adversity? Which of these changes are long-term?
- To what extent have the causes of unnecessary child-family separation been addressed by the project?
- To what extent has the project changed the attitudes and knowledge of citizens about family-based alternatives for children deprived of parental care?
- To what extent have the achievements of the project fed into national-level policy dialogue and supported the environment for the implementation of child rights?

Typical examples of sustainability questions:

- To what extent are the results (benefits) of the project likely to be maintained over time?
- What prerequisites have been created to ensure that the results produced by the project last after it ends?
  (evidence of exit strategies and measures undertaken to ensure ownership and sustainability of results [legal/policy, financial and institutional/capacities]; ensuring that sustainability is a subject matter regularly discussed by the project management team with the government; risks to the sustainability of the project results have been identified and addressed)

Additional Resources

Further reading on theory-based methods:

Chen, H.T. (1990). Theory-driven evaluations. London, UK: Sage.

Connell, J.P., Kubisch, A.C., Shorr, L.B., & Weiss, C.H. (eds*). New approaches to evaluating community initiatives: Concepts, methods, and contexts*. New York, NY, USA: The Aspen Institute. Retrieved from https://eric.ed.gov/?id=ED383817.

Rogers, P.J. (2008). Using programme theory to evaluate complicated and complex aspects of interventions. *Evaluation, 14* (1), 29–48. Retrieved from https://journals.sagepub.com/doi/pdf/10.1177/1356389007084674.

Weiss, C.,H. (1995). Nothing as practical as a good theory: Exploring theory based evaluation for comprehensive community initiatives for children and families, in Connell, J.P., Kubisch, A.C., Shorr, L.B., & Weiss, C.H. (eds). *New approaches to evaluating community initiatives: Concepts, methods, and contexts*. New York, NY, USA: The Aspen Institute. Retrieved from https://www.scribd.com/document/150652416/Nothing-as-Practical-as-a-Good-Theory-Exploring-Theory-Based-Evaluation-for-Comprehensive-Community-Initiatives-for-Children-and-Families.

Weiss, C.H. (1997). Theory-based evaluation: Past, present and future, in Rog, D.J. (ed.), *Progress and future directions in evaluation*. San Francisco, California, USA: Jossey Bass. Retrieved from https://onlinelibrary.wiley.com/doi/pdf/10.1002/ev.1086.

USAID. (2019). ADS Chapter 201. Program cycle operational policy. Retrieved from https://www.usaid.gov/sites/default/files/documents/1870/201.pdf.

Further reading on counterfactual methods:

Berk, R. (2005). *Randomized experiments as the bronze standard*. Los Angeles, California, USA: University of California at Los Angeles, Department of Statistics. Retrieved from http://repositories.cdlib.org/uclastat/papers/2005080201/.

Campbell, T.D. (1969). Reforms as experiments. *American Psychologist,* 24(4), 409–429. Retrieved from https://www.sfu.ca/~palys/Campbell-1969-ReformsAsExperiments.pdf.

Khandker, S.R., Koolwal, G.B., & Samad, H.A. (2010). *Handbook on impact evaluation. Quantitative methods and practices*. Washington, DC, USA: The World Bank. Retrieved from http://documents.worldbank.org/curated/en/650951468335456749/pdf/520990PUB0EPI1101Official0Use0Only1.pdf.

Morris, S., Tödtling-Schönhofer, H., & Wiseman, M. (2013). *Design and commissioning of counterfactual impact evaluations. A practical guidance for ESF managing authorities*. Luxembourg: Publications Office of the European Union. Retrieved from https://www.researchgate.net/publication/284187570_Design_and_Commissioning_of_Counterfactual_Impact_Evaluations_-_A_Practical_Guidance_for_ESF_Managing_Authorities.

United Nations Evaluation Group. (2013). *Impact evaluation in UN agency evaluation systems: Guidance on selection, planning and management*. New York, NY, USA: United Nations Evaluation Group. Retrieved from http://www.uneval.org/document/detail/1433.

USAID. (2019). ADS Chapter 201. Program cycle operational policy. Retrieved from https://www.usaid.gov/sites/default/files/documents/1870/201.pdf.

Chapter 9 References

European Commission. (2016). Directorate General Neighbourhood and Enlargement Negotiations (DG NEAR) Guidelines on linking planning/programming, monitoring and evaluation. Retrieved from https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/pdf/financial_assistance/phare/evaluation/2016/20160831-dg-near-guidelines-on-linking-planning-progrming-vol-1-v-0.4.pdf.

United States President's Emergency Plan for AIDS Relief (PEPFAR). (2012). *Supplemental guidance on implementation science/impact evaluation*. Washington, DC, USA: PEPFAR.

United States President's Emergency Plan for AIDS Relief (PEPFAR). (2014). *2014 country operational guidance*. Washington, DC, USA: PEPFAR.

The Joint United Nations Programme on HIV/AIDS (UNAIDS). (2010). *Basic terminology and frameworks for monitoring and evaluation*. Geneva, Switzerland: UNAIDS. Retrieved from https://www.unaids.org/sites/default/files/sub_landing/files/7_1-Basic-Terminology-and-Frameworks-MEF.pdf.

USAID. (2011). *USAID evaluation policy*. Washington, DC, USA: USAID. Retrieved from https://www.usaid.gov/sites/default/files/documents/2151/USAIDEvaluationPolicy.pdf.

USAID. (2015). Tips for developing good evaluation questions (for performance evaluations). Retrieved from https://usaidlearninglab.org/sites/default/files/resource/files/tips_for_developing_good_evaluation_questions_2016.pdf.

USAID. (2019). ADS Chapter 201. Project Cycle Operational Policy. Retrieved from https://www.usaid.gov/sites/default/files/documents/1870/201.pdf.

Appendix 9.A. Evaluation Plan (Example)

Evaluation title	Objectives	Type of evaluation*	Commissioned by	Timing**	Estimated cost and source of funding	Reporting and use of results
Mid-term evaluation of the National Strategy for Child Protection 2014–2020	Provide feedback to the Ministry of Labor and Social Affairs and its partners on progress and results to date of the strategic approach in promoting and protecting the rights of children in adversity	Process, mid-term, internal	Ministry of Labor and Social Protection	July – September 2018	XXX USD State budget	Evaluation report, including operational recommendations for the remaining implementation period. Use findings and recommendations to amend/adapt the action plan for the implementation of the strategy to the needs of its beneficiaries during the remaining implementation period.
Final evaluation of the National Strategy for Child Protection 2014–2020	1) Assess the relevance, effectiveness, efficiency, impact, and sustainability of approaches used to achieve the planned results. 2) Identify good practices and lessons learned and provide recommendations to accelerate the achievement of equitable and sustained outcomes for the most vulnerable children in the new strategy 2021–2026	Outcome, final, external	Ministry of Labor and Social Affairs	June–October 2020	XXX USD State budget and UNICEF matching funds	Final report, including strategic and operational recommendations for identified stakeholders and suggested timelines. Use findings and recommendations to guide strategic and program intervention prioritizing in the new programming period 2021–2026.

*Outcome, process; mid-term, final, internal, external; project, program, country, sector, etc. ** Estimated start date and completion date.

CHAPTER 10. REPORT WRITING

In this chapter, we discuss the purpose of the report and the report elements, and provide suggestions on how to produce a good report.

What Is a Report?

A report is written for a clear purpose and is directed to a specific audience. Specific information and evidence are presented, analyzed, and applied to a specific problem or issue. The information is presented in a clearly structured format making use of sections and headings so that the information is easy to locate and follow (University of Leicester, n.d.).

What Makes a Good Report?

The final report summarizes all your efforts. The report should be:

Clear. It should be organized logically. It should be concise and suitable for the intended audience.

Professional. It should be statistically correct, with correct spelling, and produced with a decent word processor.

Illustrated appropriately. All figures and tables that aid understanding should be integrated with the text.

To write a report:

- Develop an outline that proceeds logically and follows the standard report structure (Table 10.1).
- Respect your work and your reader's time: write as clearly as you can and use reviewers' feedback to revise the report.
- Develop clear, streamlined tables and figures.
- Proofread the report and then run Microsoft Word's "Spelling & Grammar" tool to catch issues that you might have missed.
- Cite and reference all materials used or quoted in the report.

Who Is Your Audience?

Each report should be written for a specific audience. The following are suggestions on the needs that various audiences may have.

- High-level government officials, such as ministers and deputy ministers: These decision makers want just the main message. Keep the report short and clear.
- Staff responsible for the project: These people are interested not only in the main message but also in the analysis of your findings that led you to that message. They do not want all the technical details.
- Technical experts: This audience wants the whole story: your evaluation questions, the methods you used to answer them, your results, and your analysis of the results.

How to Satisfy the Various Audiences

Your report should have the following sections:

Decision makers will want an abstract and/or an executive summary that states your main study/evaluation question and why it matters, how you answered it, what you found, and what should be done in response to the findings.

Program managers will want the more detailed information in these main sections of the report:

- Introduction: Background on the situation prompting the study and a summary of findings from prior, related research.
- Methods: A description of the research techniques you used and why they were appropriate; you can summarize their limitations for your study's purposes here or in the discussion section.
- Results: This is likely to be the longest section of your report; tables and graphics are concise ways to present the data you collected.
- Discussion and recommendations: Your analysis of the results: what they mean and what they show is needed in the short-term and the long-term.

Technical experts will want a technical *appendix* with more detailed data.

Put these sections together and your report will satisfy the needs of your main audiences. Table 10.1 gives more information on the elements of the report.

Table 10.1. The elements of the report

Title	Should be concise, informative, and compel attention
Table of contents	Lists the document's sections, with page numbers
Abstract/executive summary	Abstract (1-2 paragraphs) describes the work Executive summary (1-2 pages) explains what was done and the key findings/ recommendations
Introduction	States the evaluation question, presents the background that prompted it; outlines the study/evaluation approach, the results, and their significance
Methods **Results**	Describes the techniques you used to answer the question Presents the main findings, organized under subheads in a logical sequence
Discussion	Repeats the study question; summarizes the findings in the context of how they answer the question
Recommendations	Should be realistic and follow logically from the discussion
References	Presents bibliographic information on all sources cited
Technical appendix	Presents more detailed data, often in the form of tables and figures

How to Tell a Compelling Story

To tell a compelling story:

- Develop an outline before you start writing that follows the structure shown Table 10.1.
- Stick to your outline and use headings and subheadings to support it.
- Plant signposts in the text that let your readers know where the report has been and where it is headed.
    - Tell them what you are going to say.
    - Say it!
    - Tell them what you have said.
    - Tell them what it means—why they should care.

Tips for the Table of Contents

This section helps the reader navigate your report.

- Update the Table of Contents every time you change headings in the text, to make sure that they match.
- In Microsoft Word, use the "References" – "Insert Caption" – "Insert Table and Figures" tabs to automate numbering and set up lists of tables and figures with hyperlinked page numbers.

Getting the References Right

- In Microsoft Word, choose the "References" tab, and then "Insert Citation" to enter your sources in the body of the report.
- In "Style" under this same tab, choose the reference style you prefer from the drop-down menu.
- Also under the "References" tab, click "Bibliography" to create a list of references automatically from all the sources you have cited in the text.

Golden Rules for Figures and Tables

- Describe the chart in the text (integration); make sure it matches the description.
- Make sure that the chart conveys the desired message clearly: keep it simple!
- Cite each figure and table used in the body of the report (not in the appendixes) in the paragraph that precedes it and explain what it shows.
- Title each figure and table concisely and clearly.
- If a figure or table presents data from a source other than your study, cite the source.

Formatting Tables

- Always label and give a caption ***over*** the table.
- Be aware of these rules for good tables:
    - Avoid vertical lines.
    - Use rounding to minimize the number of decimal places.
    - Compare columns, not rows.
    - Choose colors that are consistent with the palette that you established for the report as a whole.

Formatting Figures

- Choose a figure style from Microsoft Excel (bar chart, graph, etc.) that allows the reader to see at a glance what you want to show.
- The simpler and more streamlined, the better!
- If a symbol (e.g., for percentages or currency) applies to all points on an axis, cite it in the legend once rather than multiple times along the axis.
- Use colors drawn from the palette that you established for the report as a whole, and consistent with the ones you use in the tables.

Key Messages

- ✓ A report should be written for a clear purpose and for a specific audience.
- ✓ The report should be organized logically; it should be concise and suitable for the intended audience.
- ✓ It should be illustrated appropriately. All figures and tables that aid understanding should be integrated with the text.

Additional Resources on Report Writing

For more information on report writing, see

University of Leicester (n.d.). Writing reports. Retrieved from https://www2.le.ac.uk/offices/ld/resources/study-guides-pdfs/writing-skills-pdfs/writing_reports_v1%200%20-2.pdf.

Chapter 10 References

University of Leicester (n.d.). Writing reports. Retrieved from https://www2.le.ac.uk/offices/ld/resources/study-guides-pdfs/writing-skills-pdfs/writing_reports_v1%200%20-2.pdf.

GLOSSARY OF M&E TERMS

The list below provides the most common terms used in M&E along with their definitions.

Activities: What we do to obtain the stated outputs.

Data aggregation: A process in which information is gathered and expressed in a summary form for purposes such as statistical analysis.

Data disaggregation: A process in which data are broken down into component parts or smaller units of data. For example, data on children served may be shown by sex, (i.e., for girls and boys separately).

Data analysis: Involves turning raw data into useful information.

Data demand: When stakeholders actively and openly request data. Data demand requires that stakeholders and decision makers specify what kind of information they want to inform a decision, and proactively seek out that information.

Data flow: The process of moving data from the point where they are collected to the point where they are processed and used. Data flow helps track different steps in the data management process, including data collection, entry, synthesis, cleaning, quality check, analysis, dissemination, and use.

Data quality: Means that the information collected as part of the program M&E system adequately represents the program's activities.

Data quality audit tool: Includes indicator-specific audit templates and guidelines for use by an external audit team to assess a program's or project's ability to report good-quality data on a random sample of units.

Data use: When decision makers and stakeholders explicitly consider information during one or more steps in the process of policymaking, program planning and management, or service provision, even if the final decision or actions are not based on that information.

Evaluation: A rigorous and independent assessment of either completed or ongoing projects, programs, action plans, and strategies to determine the extent to which they are achieving or have achieved stated objectives and planned results.

Indicator: A variable that measures one aspect of an intervention, program, or project.

Indicator reference sheet: A tool that is used to define indicators and ensure indicator data quality and consistency.

Inputs: The resources used to carry out activities, such as funding, technical expertise, relationships, staff, information, equipment, and buildings. Input indicators measure the resources needed for the implementation of activities, such as money, time, human resources, equipment, materials, etc.

Impact: Long-term program results. It is the substantial change that you aim to achieve. It is a change in human development measured by people's well-being, and is usually called "strategic objectives" or "goals" in policy documents. Impact indicators measure changes in people's lives and development conditions at the national level.

Impact evaluation: Measures the change in an outcome that is attributable to a defined intervention by comparing actual impact with what would have happened in the absence of the intervention (the counterfactual scenario).

Logical framework: A type of logic model that illustrates a program (implementation) level understanding of the change process.

Logic model: A graphic or visual depiction of the logic of a program or strategy about how the activities could realize the expected results using the resources available.

Monitoring: An ongoing process by which stakeholders obtain regular feedback on progress being made toward achieving goals and objectives of a specific project, program, strategy, or action plan. It is used to inform actions and decisions during implementation.

Nonroutine data: Episodic data that are collected for a specific purpose. Examples of nonroutine data sources are household surveys and a national census.

Outcome evaluation: "A type of evaluation that determines if and by how much, intervention activities or services achieved their intended outcomes" (UNAIDS, 2010).

Outcomes: Intermediate program results. They are what you wish to achieve, the actual or intended changes in development conditions that an intervention (project, program, action plan, strategy) is seeking to support. Outcome indicators measure changes in institutional performance and behavior; they focus on what is critical to see happen.

Outliers: Data points that differ significantly from other observations.

Outputs: The immediate results obtained by a program. Outputs are the products that the program produced or delivered, such as: the deliverables of the project or program or the operational changes that resulted from program implementation; new skills or abilities of staff or beneficiaries; the availability of new products and services in the community, etc. Output indicators measure new skills or abilities, and the availability of new products and services.

Performance evaluation: Examines what a specific intervention achieved, how it was implemented, how it was perceived and valued, the contribution of external assistance to the results achieved, possible unintended outcomes from external assistance, and other questions pertinent to intervention design, management, and operational decision making.

Processes: The set of activities undertaken by a program. Process indicators measure how well activities were implemented.

Process evaluation: "A type of evaluation that focuses on program or intervention implementation, including, but not limited to access to services, whether services reach the intended population, how services are delivered, client satisfaction and perceptions about needs and services, management practices" (UNAIDS, 2010).

Results-based management: A management strategy by which organizations ensure that their processes and resources contribute to achieving improved performance and results that can be demonstrated (outputs, outcomes, impact).

Routine data: Data that are collected continuously, with processing and reporting more often than annually. Vital registration is routine data collection on vital events (births, deaths, and migration data), for example.

Routine data quality assessment tool: A simplified version of the DQA that allows programs and projects to assess the quality of their data and strengthen their data management and reporting systems. The RDQA is generic as to indicators and programs, and is intended for use with or without rigorous sampling methods.

Strategic planning: A systematic process by which organizations, communities, or partnerships (in your context, the ministries) identify the priorities for development or action based on stakeholders' expectations, set goals or strategic objectives, and make fundamental decisions on mobilizing resources to achieve the goals in a continuously changing environment.

Theory of Change: "A tool and methodology to map out the logical sequence of an initiative, from activities through to the changes it seeks to influence" and at the same time it is "a deeper reflective process: a mapping and a dialogue-based analysis of values, worldviews and philosophies of change that make more explicit the underlying assumptions of how and why change might happen as an outcome of the initiative" (Vogel, 2012).

Vogel, I. (2012). *Review of the use of 'theory of change' in international development: Review report.* London, UK: Department for International Development. Retrieved from http://www.theoryofchange.org/pdf/DFID_ToC_Review_VogelV7.pdf.

UNAIDS. (2010). *Basic terminology and frameworks for monitoring and evaluation. UNAIDS monitoring and evaluation fundamentals.* Geneva, Switzerland: UNAIDS. Retrieved from http://www.unaids.org/en/media/unaids/contentassets/documents/document/2010/7_1-Basic-Terminologyand-Frameworks-MEF.pdf.

MEASURE Evaluation
University of North Carolina at Chapel Hill
123 West Franklin Street, Suite 300
Chapel Hill, North Carolina 27516
Phone: +1-919-445-9359 • measure@unc.edu
www.measureevaluation.org

This publication was produced with the support of the United States Agency for International Development (USAID) under the terms of MEASURE Evaluation cooperative agreement AID-OAA-L-14-00004. MEASURE Evaluation is implemented by the Carolina Population Center, University of North Carolina at Chapel Hill in partnership with ICF International; John Snow, Inc.; Management Sciences for Health; Palladium; and Tulane University. Views expressed are not necessarily those of USAID or the United States government. MS-20-185

USAID
FROM THE AMERICAN PEOPLE

MEASURE
Evaluation