



Evaluation Guide

for HRSA Project Officers



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PREFACE

The *Evaluation Guide for HRSA Project Officers* was developed to provide HRSA project officers an overview of program evaluation.

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Established to support the efforts of HRSA's National Center for Health Workforce Analysis (NCHWA), HWTAC provides technical assistance to states and organizations that engage in health workforce planning. HWTAC conducts a number of initiatives each year designed to provide assistance with health workforce data collection, analysis, and dissemination. HWTAC is based at the Center for Health Workforce Studies (CHWS) at the School of Public Health, University at Albany, State University of New York (SUNY), and was formed as a partnership between CHWS and the Cecil G. Sheps Center for Health Services Research at the University of North Carolina.

The views expressed in this guide are those of HWTAC and do not necessarily represent positions or policies of the School of Public Health, University at Albany, SUNY, or the University of North Carolina.

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BACKGROUND

The Purpose of the Evaluation Guide

The purpose of this guide is to give Health Resources and Services Administration (HRSA) project officers an overview of program evaluation, by:

- Providing background on program evaluation
- Defining the different types of evaluation
- Describing the components of each type of evaluation
- Illustrating the use of a logic model in program evaluation

To the extent possible, HRSA programs have been used as examples to explain the various concepts presented in this guide.

Key Words and Definitions

A number of key terms have been used throughout this guide. While they are defined within the text, they are also listed and defined in Appendix A.

Why is Program Evaluation Important?

Evaluations assist project managers in understanding the links between goals, activities, resource consumption, and outcomes. Program evaluation can also assist project managers in:

- Defining priorities
- Understanding how projects potentially fit within the organization's mission, vision, and values
- Making the best use of resources, both financial and staffing, especially when those resources are limited

Projects that are not meeting their goals while utilizing valuable resources may become less of a priority for an organization. Program evaluation can be a useful tool for informing funders and other stakeholders of project progress and goal achievement as part of required reporting. Finally, program evaluations can aid funding entities or project managers in identifying both successes and challenges and suggesting potential corrective actions, which may include¹:

- Expanding the project, consolidating components, or replicating the components found to be most cost-effective
- Adjusting funding and resources, which may entail reallocating existing funding within the project, increasing project funding, or reducing project funding
- Streamlining, refining, or redesigning the project (eg, to meet changes in project funding)
- Setting more realistic objectives for the project
- Discontinuing ineffective project components
- Discontinuing the project

Additionally, program evaluation may assist project managers, funders, and other stakeholders in determining whether the project, or parts of the project, can be replicated and under what circumstances. While independent program evaluations are designed not necessarily to recommend changes to activities or policies but to inform potential decisions, recent HRSA guidelines require a recommendation section as part of an evaluation. Ultimately, however, project managers/officers are responsible for interpreting evaluations findings and determining if and how the project could be altered to better address stated goals.

EVALUATION METHODS

Program evaluation (and research in general) consists of 2 types of designs, experimental and non-experimental. Depending on time, funding, and anticipated results, each has advantages and disadvantages.

Experimental design assesses the project's intervention,* comparing it against a control group that did not receive the intervention. The control group should be matched as closely as possible to the group receiving the intervention by demographic or clinical characteristics to ensure that confounding factors† such as diagnosis, age, and race/ethnicity do not influence the results. In a true research project, the intervention and control groups are randomly assigned. In an evaluation, the intervention group may already have been identified; thus, matching between the 2 groups becomes much more important. Experimental evaluation is seen as the “gold standard” of designs. Nevertheless, it does have a few limitations:

- It is very expensive to implement and may not be feasible
- “Loss to follow-up” (evaluation participants who cannot be tracked throughout the entire length of the evaluation or research) is common and may lead to biased results
- Difficulties may arise in randomly assigning subjects to intervention and control groups due to ethics

Non-experimental program evaluation does not include a control group. This makes understanding results more difficult, as confounding factors may influence outcomes to a greater degree than the intervention itself. Four types of non-experimental designs are commonly used:

- **Pre-test/post-test:** Evaluators assess the project before and after the intervention to determine what effect the intervention had
- **Time series:** Evaluators assess changes over multiple time points to determine trends. These multiple time points should occur both before and after the intervention. This type of project assesses aggregated data, not participants (ie, rates of cancer over time)

* An intervention is an activity or action that is designed and implemented in the context of a program or project to bring a change in behavior, health status, education, etc to specific individuals.

† Confounding factors are those characteristics (eg, race/ethnicity, geography, comorbidities) that may influence both the cause and the results of research or an evaluation but are not in the causal pathway.

- **Longitudinal:** Evaluators assess changes over multiple time periods, tracking the same participants. Loss to follow-up can be an issue with this type of study
- **Post-test only:** Evaluators assess the project at one point in time after the intervention. This is the weakest approach

Evaluations can be quantitative, qualitative, or mixed. As the evaluation design is formulated, the evaluator needs to consider how to best address the purpose of the evaluation and answer the evaluation question(s). All of these topics will be discussed in greater depth later in this guide.

Quantitative evaluations ask the questions *How many participants?*, *What were the outcomes?*, and *How much did it cost?* Quantitative evaluations include analysis and presentation of data and results using either descriptive and/or inferential statistics. These types of evaluations are more generalizable—that is, the findings can be more readily applied to other settings—than qualitative studies. Quantitative studies are more structured in the design of the evaluation and in the analysis of the data. Results from quantitative evaluations are presented in an unbiased manner.

Qualitative evaluations ask the questions *What is the value added?*, *When did something happen?*, and *Why did something happen?* Qualitative analysis is an assessment of nonmeasurable data through interviews, focus groups, case studies, and observation to understand people’s experiences, thoughts, and viewpoints on a particular issue. Interviews, focus groups, and case studies are designed to be less structured than quantitative analyses, with the basic questions used as guidance in directing the conversation and ad-hoc follow-up based on the need to obtain more clarity or information.

Ultimately, the intervention being assessed and the purpose of the evaluation, as discussed later, will determine the type of evaluation.

DEFINING PROGRAM EVALUATION

Program evaluation is a “systematic method for collecting, analyzing, and using data to examine the effectiveness and efficiency of programs and to contribute to continuous program improvement.”²

Basically, program evaluations assess activities and characteristics (what was done and how it was done), the outcomes of the project, the impact it had, and ultimately how project performance could potentially be improved. In some cases, program evaluation identifies the gap between “what is” and “what should be.”

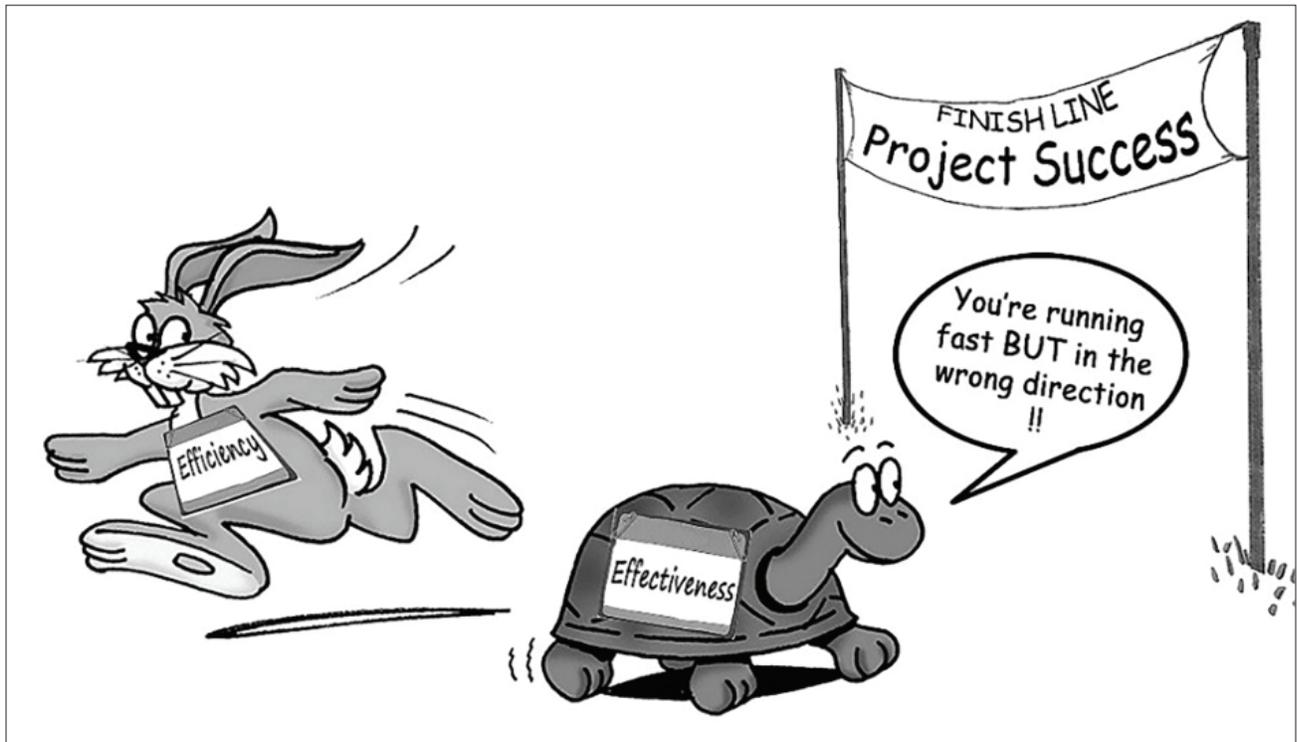
A program evaluation may assess a single project, a cohort of projects, or a funding program. Specifically, program evaluation assesses whether a project, a group of projects, or a funding program is:

- Performing activities as agreed to or as outlined in approved work plans[‡]
- Achieving or exceeding goals or objectives
- Spending funds in an appropriate manner
- Operating efficiently
- Operating effectively

[‡] As outlined in the Notice of Funding Opportunity (NOFO) or approved in the terms and conditions of the Notice of Award.

Before proceeding further, let's define the terms *efficiently* and *effectively*. Peter Drucker stated that "efficiency is doing things right; effectiveness is doing the right things."³ Efficiency can include conducting a project cost effectively or without errors, while effectiveness is about achieving the stated goals or having success, including serving the correct target population. A project can be efficient without being effective and vice versa, and an evaluation may appropriately assess efficiency while ignoring effectiveness. Ultimately, both need to occur for the project to be successful.

Figure 1. Efficiency Vs Effectiveness



TYPES OF PROGRAM EVALUATION

Program evaluations can be formative, designed to assess the process or activities of the project, or summative, designed to assess the outcomes, the impact, or the cost-effectiveness of the project. In many cases, evaluations may be both formative and summative. Additionally, program evaluations can use mixed methods that include both quantitative analysis (statistics) and qualitative analysis, which may include interviews, focus groups, or case studies.

Needs assessment can also be considered program evaluation, either as a stand-alone evaluation or as part of a formative and/or summative program evaluation. Needs assessment identifies the gap between “what is” and “what should be.” Additionally, needs assessment could be part of a formative evaluation by identifying who could be assisted by the specific project or what activities might address the need. Table 1 briefly describes each type of evaluation.

Table 1. Types of Evaluation

Types of Evaluations	Focus	Description
Formative	Process	<p>Assess the extent to which project activities are completed as intended</p> <p><i>Did the activities follow the original project design as approved by the funder?</i></p>
Summative	Outcomes	<p>Assess the extent to which program outcomes are achieved</p> <p><i>Did the program activities produce the desired outputs^a and/or outcomes^b?</i></p>
	Impact	<p>Assess the effect of the program compared with having no program</p> <p>Assess the unintended consequences of the program</p> <p><i>Did the program make a difference? What were the unplanned outcomes of implementing the project?</i></p>
	Cost-effectiveness	<p>Assess the cost of meeting the outcomes of the program overall or per participant compared with other potential activities and/or projects</p> <p><i>What is the cost per outcome or participant? How does the cost per outcome or participant differ from that of alternative strategies or projects?</i></p>
	Cost-benefit ^c	<p>Assess the total cost of a project to the community compared with the total value of the benefits to the community</p> <p><i>What are the costs of the project compared with the total benefits of the project in terms of dollars? Benefits may be both tangible and intangible and may include both direct and indirect results of the project.</i></p>
Needs Assessment	Gap analysis	<p>Assess the differences between “what currently is” and “what could be” or “what is needed” to solve the defined problem</p> <p><i>What is the current need, and are programs and funding sufficient to address that need? What more is required to address that need?</i></p> <p><i>Are project activities meeting the need as defined in the scope of work?</i></p>
<p>^a Outputs are products of project activities such as webinars, training materials, meetings, hiring of staff, etc.</p> <p>^b Outcomes are the desired benefits or changes incurred by implementing the project.</p> <p>^c For this guide, cost-benefit analysis will not be discussed beyond its mention as a type of evaluation.</p>		

SYNCHRONIZING THE PROJECT AND THE EVALUATION

One of the key problems in developing program evaluations is timing. Many organizations develop the evaluation well after the start of the project, thus creating disconnects between the project implementation plan and the evaluation.

First and foremost, initial project parameters should describe an evaluation, at least in broad terms, in addition to identifying project activities and setting project goals or outcomes. Ultimately, project activities and outcomes must be linked to and measured by the evaluation through identification of data elements and data sources that can be used to assess the specific project, including both activities and outcomes.

While the evaluation process could begin after the project has begun, there are limitations to implementing program evaluation in that manner. In summative evaluations, data and data sources must be linked to specific outcomes in order to accurately measure them. Thus, a program implementation plan that does not identify the data needed to assess outcomes at the beginning of the project may potentially limit the evaluation. The evaluator must decide whether existing data can answer the evaluation questions or if he or she needs to conduct primary data collection to establish a baseline and assess outcomes, thereby potentially adding to the cost of the evaluation.

EVALUATION COSTS AND TIME

The cost of the evaluation and the time needed to complete the evaluation must be considered when developing the evaluation. Costs vary widely depending on:

- The purpose of the evaluation and the evaluation question(s) being posed
- Who is conducting the evaluation
- Evaluation design and scope
- The method(s) of data collection (if needed)

The evaluation design and scope can have a significant impact on the cost of the evaluation. An evaluation assessing both processes and outcomes may be more expensive than one that only focuses on outcomes. Finally, an evaluation using secondary (existing) data will generally be less expensive than one that involves primary data collection, which will require more staff resources and consequently more funding.

Funders may dictate the amount of financial resources available for the evaluation, which may determine the type and breadth of the evaluation. Funders may also have specific time frames for completing the evaluation. There is ultimately a delicate balance between the funding and the time available to conduct the evaluation and the scope of the evaluation. Understanding available resources and time from the beginning of the project assists in designing an appropriate evaluation.

SELECTING THE EVALUATOR

Part of conducting a program evaluation is determining who will do the evaluation. Will the program evaluation be completed by internal staff, an external consultant, or a hybrid of the two? In making this decision, the pros and cons of various factors should be considered, as outlined in Table 2.

Table 2. Assessing Who Will Conduct the Evaluation

Factors to Consider ⁴⁻⁶	Type of Evaluator	
	Internal	External
Availability of data	May have better understanding of and access to internal data	May have better knowledge of external data if needed
Availability of funding	Generally less expensive	
Commitment to the organization	More committed to organizational goals	
Evaluation expertise		May have more expertise in program evaluation
Internal staff capacity	May not have staff time or expertise to conduct evaluation	
Knowledge of the project/subject	May have better knowledge of the project	May have better overall knowledge of the subject
Need for independence/objectivity		May be perceived as more independent or objective
Project perspective	May better understand what project changes are acceptable within the organization	May offer new approaches to or perspectives on project activities
Time constraints	Less lead time needed to understand project and for evaluation	
Understanding of/working with stakeholders	May have a better working relationship with and understanding of stakeholders	May be in a better position to mediate differences among stakeholders

Ultimately, the decision of who will be conducting the program evaluation is an important one that must take into account a number of internal and external organization factors. Caution and time should be taken in weighing the options.

PROGRAM EVALUATION FRAMEWORK

The program evaluation process is cyclical, with one step leading to the next step in the process. Project activities and potential outcomes help define the evaluation. Similarly, the findings from a program evaluation inform project staff of the need for potential changes to the project. As such, program evaluation, along with program implementation, is a systematic process that includes ongoing assessment and feedback and, ultimately, adjustments to project activities as needed to ensure efficiency and effectiveness in achieving project goals.

The Centers for Disease Control and Prevention (CDC) developed a framework for program evaluation (Figure 2) that outlines the steps and processes involved in creating an evaluation.⁷ This framework includes 6 steps for program evaluation (outer ring) as well as 30 standards grouped into 4 categories for assessing the quality of the evaluation (inner circle). More detailed information on the evaluation framework can be found in the September 1999 issue of CDC’s Morbidity and Mortality Weekly Report and on the CDC evaluation website.^{7,8} This framework will serve as the basis for describing the evaluation process in this guide.

Figure 2. Program Evaluation Framework



ENGAGING STAKEHOLDERS

The first step in the evaluation process is identifying potential stakeholders who have an interest in the program or project. Stakeholders are individuals, groups of individuals, or organizations that have an interest in or concerns about the program, project, and/or evaluation, including a financial interest. As depicted in the program evaluation framework, engaging stakeholders is a key aspect of program evaluation. As with developing the evaluation purpose statement, knowing the audience or the stakeholder(s) of the program evaluation is important. Who are they? What are their interests, roles, and expectations in the evaluation and in the project? Stakeholders can include:

- Consumers
- Federal, state, and local governments
- Health care providers
- Health care professionals
- Provider or professional organizations
- Payers
- Other researchers

Stakeholders will potentially have different views on the importance of the project, potential funding needed for the project, target population, project activities, desired outcomes of the project, and so on. These differences must be taken into account when developing the program evaluation (as well as when developing the project itself). The primary user(s) of the evaluation should be identified early in the process to take into account their issues or concerns with the project as well as their goals for the evaluation—that is, what they hope to learn from the evaluation.

These differences of opinion can cause problems for the evaluator, such as not understanding the purpose of the evaluation or how to develop an evaluation to assess the project. Additionally, stakeholder involvement may impact on the time required to develop the evaluation. Continual stakeholder input can increase the time and costs needed to conduct the evaluation. Ultimately, the evaluator may need to manage the expectations of multiple stakeholders in developing the evaluation, which may complicate the processes of designing the evaluation and producing reports on the evaluation.

DESCRIBING THE PROGRAM

The next step in the evaluation framework is to describe the project. The evaluator must understand the activities within the project, the resources needed to carry out those activities, and the overall objectives or goals of the project. Additionally, the evaluator must understand the time frames for implementing the project as a whole as well as for the individual activities within the project. Finally, the evaluator must understand how the project fits into the organization's overall mission. As stated above, stakeholders may have differing opinions on project goals, and they need to be reconciled prior to developing the evaluation.

CHAPTER 2:

Designing the Evaluation

DESIGNING THE EVALUATION

Evaluation Purpose Statement

The first step in designing an evaluation is developing an evaluation purpose statement that identifies the overall goals of the evaluation in broad terms. What is being assessed, why, and how? The purpose statement should identify both the type of evaluation (formative, summative, or needs assessment) and the potential uses for the evaluation findings.

As the purpose of the evaluation is identified, the audience for the evaluation must be considered—that is, for whom is the evaluation meant? An evaluation for the finance department may focus on project costs, while an evaluation for project officers may assess the activities or outcomes. Ultimately, the evaluation purpose and purpose statement must consider the stakeholders and other interested parties.

While the evaluation purpose is considered part of the development of the overall evaluation, it should also be considered during project development. As discussed previously, the evaluation, at least in broad terms, should be discussed during project development.

Examples of evaluation purpose statements include:

- **Formative (Process Evaluation)**

The purpose of the evaluation is to assess whether project activities for Regional Telehealth Resource Center Program-funded projects were completed within the approved time frames.

- **Summative (Outcomes Evaluation)**

The purpose of the evaluation is to determine whether the project objectives for the Federal Home Visiting Program were met.

- **Summative (Impact Evaluation)**

The purpose of the evaluation is to determine whether the Grants to States to Support Oral Health Workforce Activities initiative increased access to oral health services in underserved communities.

- **Summative (Cost-Effective Evaluation)**

The purpose of the evaluation is to assess the cost-effectiveness of the Area Health Education Center's pipeline activities in successfully recruiting high school students into health care careers.

- **Needs Assessment (New Program)**

The purpose of the evaluation is to determine whether there is an adequate number of nursing faculty to train the number of current and future nursing students and, if not, how to best address that need.

- **Needs Assessment (Existing Program)**

The purpose of the evaluation is to identify the activities that are needed by projects funded under the Nursing Workforce Diversity Program to increase the racial and ethnic diversity of the nursing workforce.

Evaluation Question(s)

Once the general purpose of the evaluation is identified, the next step in the program evaluation process is to develop the evaluation question(s). This takes the initial purpose statement further and starts to focus the evaluation.

The evaluation question(s) should consider the causal relationship hinted at by the purpose statement, such as “how” or “why” or “the impacts,” as well as possible methods for conducting the evaluation. Each type of evaluation may require its own set of questions.

- The process (formative) evaluation should identify and assess a project’s “who” (was responsible), “what” (were the activities), “when” (did the activities occur), “where” (did the activities occur), “why” (did the project and the activities occur) and “how” (did the activities occur).
- The summative (outcomes, impact, and cost-effective) evaluation should assess effects, impacts, and costs.
- The needs assessment should focus on what the current needs are, whether the current projects are meeting those needs (including who is operating the projects to meet those needs and how), and what activities are occurring within existing projects to meet those needs.

The evaluation question(s) may include multiple levels of complexity, starting with a more general or broader question and then adding more specific underlying questions. In some cases, such as the impact analysis, the research questions may focus on understanding both the outcomes of the project and the potential impact of meeting these outcomes to the target population.

Examples of evaluation questions for the purpose statements previously identified include:

- **Formative (Process Evaluation)**

Purpose: Assess whether project activities for Regional Telehealth Resource Center Program-funded projects were completed within the approved time frames

Research questions: How are projects funded under the Regional Telehealth Resource Center Program being implemented? What are the specific activities, how are staff carrying out those activities, and how do the activities relate both to the timeline and to the approved work plan for the project?

- **Summative (Outcomes Evaluation)**

Purpose: Determine whether the project objectives for the Federal Home Visiting Program were met

Research questions: Did each of the projects funded under the Federal Home Visiting Program meet its objectives, and what were the impacts on the eligible families? How did the organizations that received funding through the Federal Home Visiting Program benefit from meeting their objectives?

- **Summative (Impact Evaluation)**

Purpose: Determine whether the Grants to States to Support Oral Health Workforce Activities initiative increased access to oral health services in underserved communities

Research questions: Did projects that received Grants to States to Support Oral Health Workforce Activities increase access to care in identified underserved areas? How did the individual projects identify underserved individuals? How many individuals who were defined as underserved did the individual projects serve?

- **Needs Assessment (New Program)**

Purpose: Determine whether there is an adequate number of nursing faculty to train the number of current and future nursing students and, if not, how to best address that need

Research questions: What is the current and future need for registered nurses? What is the current and future need for nursing faculty to support the current and future need for registered nurses? Do established nursing programs meet the current need and potential need for nursing faculty? What is that gap between (current and future) production of nursing faculty and need for nursing faculty?

- **Needs Assessment (Existing Program)**

Purpose: Identify the activities that are needed by projects funded under the Nursing Workforce Diversity Program to increase the racial and ethnic diversity of the nursing workforce

Research questions: What are the current activities funded under the Nursing Workforce Diversity Program? Are these activities addressing the lack of diversity in the nursing workforce, and if not, what other potential activities are needed to address the lack of diversity in the nursing workforce?

Setting Short-term and Long-term Objectives

While setting project objectives is not inherently part of an evaluation, understanding what the project objectives are (and how they were set) is extremely important in creating the evaluation. Project objectives that are incomplete and thus unable to be measured are problematic for evaluators. Setting objectives should also be part of developing the evaluation. For purposes of this discussion, however, understanding project objectives is necessary for developing the evaluation.

There are 2 types of objectives:

- **Short-term objectives:** Incremental project milestones that can be reached over a short period of time and that will eventually lead to the overall long-term project objectives
- **Long-term objectives:** The overall goal of the project. Long-term objectives must align with the mission, vision, and values of the organization and support its strategic goals

As project objectives are being developed, the following should be considered:

- **Time:** A time frame should be set in which the objective should be reached. The time frame should be reasonable and reachable.
- **Measurability:** All objectives need to be measurable to ensure that there is an actual change
 - What is being measured?
 - How is the outcome being measured (survey, secondary data, focus groups, etc)?
 - Where are the data coming from to measure the objective?
 - What is the baseline for measurement if the evaluation needs to include a pre- and post-intervention comparison?
- **Activities:** What actions are needed to complete the objective?
- **Resources/inputs:** What is needed to support the activities (staff, internal or external financial resources, organizational infrastructure, etc)?
- **Who is responsible:** Who is going to direct the activities to reach the objectives?
- **Outputs:** What are the expected direct products of the project activities?

To better understand how to develop good project objectives, examples are provided below of “bad,” “better,” and “the best” objectives.

A Bad Project Objective

Hospital president will create a committee to increase staffing satisfaction.

In this first example, there is no indication of how staffing satisfaction is defined or how it could be measured. It misses on all 6 of the criteria listed above. The evaluator would struggle to assess this objective.

A Better Project Objective

Staffing turnover will decrease by 10% within the next 18 months. Director of Human Resources will head committee to review staff turnover issue.

Unlike the example above, this objective is measurable and has a time frame. It provides some detail on who will be involved and gives direction to the evaluator as to where the project is going.

The Best Project Objective

Staffing turnover will decrease by 10% within the next 18 months. Director of Human Resources will head committee to review staff turnover issue that will include Director of Nursing, Chief Financial Officer, and other staff as identified by Chief Operating Officer. Turnover will be assessed using HR personnel information, and status reports will be prepared for the Chief Executive Officer and Board of Directors at month 9 and within 2 months of closing the project.

This objectives defines the outcomes, gives some direction on how the process will be completed, and provides some specifics on what is due to whom and when. The evaluator could use this objective to design both an outcome and a process evaluation to understand if the hospital met this goal. The evaluator would need to determine what data to collect and how to collect that data, but this project objective clearly provides direction.

Using a Logic Model to Develop an Evaluation

One method for designing an evaluation plan is through the use of logic models. Logic models, of which there are several variations, can assist the evaluator in understanding the different facets of the project, from the initial purpose of the project through the means of identifying the impact of the project and how they interconnect. A framework for the logic model is included in Appendix B, with the different components described below. Useful information on developing logic models can also be found on the W.K. Kellogg Foundation website.⁹

As the different logic model components are described, notice the similarity between these components and concepts previously discussed in this guide.

- **Program/project objectives:** The first component of a logic model is to describe the program or project objectives or goals. What is the program or project trying to accomplish? Again, detail in the objectives can aid the evaluator in understanding the steps needed to accomplish the task.
- **Resources/inputs:** What resources are needed to accomplish the objectives and activities? As indicated earlier, they may include staff, internal or external financial resources, equipment, other organizational infrastructure, etc.
- **Activities:** What are the program or project actions that are supported by the resources and inputs that will accomplish the objectives? These activities could include but are not limited to trainings, curriculum development, relationship building, meetings, webinars, other events, etc.
- **Outputs:** What is produced as a result of the activities—that is, what are the immediate consequences of program or project implementation? How many more patients were served? How many webinars or trainings were provided? How many new partnerships were developed?
- **Outcomes:** What is the expected benefit or change as a result of the activities and outputs? Outcomes could be related to a change in behavior, skills, knowledge, status, ideas, etc and could be a direct or indirect result of implementing the objectives. For example, a direct result of a diabetes education project could be a change in diet. An indirect result of a program to reduce the number of emergency room visits could be an increase in the number of ambulatory care visits.

Outcomes can be short term, intermediate, and long term. While many programs or projects may define outcomes in terms of years, programs or projects of limited duration many define outcomes in terms of months. For a program with a 3-year duration, short-term outcomes could be assessed at 1 year, intermediate outcomes at 2 years, and long-term outcomes at 3 years. Again, the time frames for determining the outcomes are based on the program or project duration.

- **Impact:** What is the ultimate result of the activities, outputs, and outcomes? Impact should be considered long term, such as a fundamental change in how individuals are trained or how they access care.
- **Indicator(s):** What are the data used to measure the objective? If the evaluator is measuring the number of additional students in a pipeline program, what data can the evaluator use to assess that outcome?
- **Source(s):** What are the sources of the data being used to assess the outcome? Equally important, where are the data coming from to assess the outputs, outcomes, and impacts? Are they data that already exist or data that need to be newly collected? (We'll have more to say on that below.)

Tables 3 and 4 that follow provide examples of logic models for both programs (cohorts of projects) and individual projects that could be used for a process evaluation or an outcome evaluation, respectively.

Evaluating a HRSA program or a cohort of projects attempts to understand if overall program goals were met collectively by assessing individual projects against their approved work plans. While the impact of the program and the projects should be similar, the cohort evaluation is assessing resources/inputs, activities, outputs, and outcomes more broadly than the specific project evaluation, attempting to understand if the individual projects succeeded as planned and approved.

Table 3. Evaluation Assessing Process and Achieving Activities

	Program (Cohort of Projects)	Individual Project
Objective	Increase the training of nurse practitioners (NPs) in primary care specialties and increase the use of NPs serving vulnerable populations	Establish telehealth network infrastructure and educational website for NP students at preceptor sites within 12 months of grant approval
Resources/ inputs	Grant funding to implement approved projects Potential outside resources to assist in implementing the approved projects Staff for implementing approved projects	Grant funding to purchase equipment Staff for designing Web content and for training Consultants for reviewing Web content and for designing website Staff for operating technical assistance support center
Activities	Receiving grant funding Finalizing work plans and objectives Implementing project activities based on approved work plans Providing quarterly status reports and updates on project deliverables, including highlighting changes in work plans	Purchasing and installing equipment Drafting and finalizing website content Providing training to organizations on using equipment Creating technical assistance support center for NP students using website or teleconferencing equipment
Outputs	Project deliverables as outlined in individual project approved work plans	Teleconferencing equipment at each partner organization Web page content Website Two half-day trainings for each of 10 partner organizations Technical assistance support center
Outcomes	Project outcomes as outlined in individual project approved work plans	NP students will have immediate access to preceptors through teleconferencing NP students will have website Preceptor sites and NPs will have access to technical assistance support for using website and teleconferencing equipment
Impact	Increase in access to health care for vulnerable populations through the use of NPs Increase in use of NPs by community providers	Increase in access to health care for vulnerable populations through the use of NPs Increase in use of NPs by community providers
Indicator(s)	Compare dates of achievements against approved work plan objectives Understanding reasons for meeting or not meeting approved work plan objectives	Compare dates of achievements against approved work plan objectives Understanding reasons for meeting or not meeting approved work plan objectives
Source(s)	Interview(s) with project officer(s) Interviews with staff at grant site(s)	Interviews with staff at precepting sites Interviews with staff at grant site(s)

Table 4. Evaluation Assessing Outcomes

	Program (Cohort of Projects)	Individual Project
Objective	Strengthen the primary care workforce by increasing the number of residency slots in primary care settings	Increase the number of primary care residency slots overall and increase the number of primary care providers and organizations accepting residents
Resources/ inputs	Grant funding to implement approved projects Potential outside resources to assist in implementing approved projects Staff for implementing approved projects	Staffing to coordinate rotations Grant funding to support training of preceptors Grant funding to support preceptors at primary care providers and organizations
Activities	Receiving grant funding Finalizing work plans and objectives Implementing project activities based on approved work plans Providing quarterly status reports and updates on project deliverables, including highlighting changes in work plans	Developing or identifying mechanism for tracking primary care residents across multiple organizations Identifying and developing relationships with new organizations to accept primary care residents Creating training program for new primary care preceptors Developing and finalizing curriculum for primary care residents Developing orientation package for primary care residents
Outputs	Project deliverables as outlined in individual project approved work plans	Fund and hire overall primary care resident coordinator Increase the number of organizations accepting primary care residents by 5 Fund and hire primary care resident coordinator at each new training site Increase the number of preceptors for primary care residents by 20 Increase the number of residents by 8 (first year), 8 (second year), and 8 (third year)
Outcomes	Increased number of residents going into primary care Increased number of ambulatory care sites providing residency slots	Increase in residents graduating from program Increase in primary care providers remaining in the immediate community
Impact	Increase in access to care for vulnerable populations Increase in providers working in ambulatory care settings as primary care providers	Increase in access to care for vulnerable populations Increase in providers working in ambulatory care settings as primary care providers
Indicator(s)	Compare the outcomes as outlined in the approved work plan against achieved outcomes	Graduations from program Physicians remaining in local community
Source(s)	Individual project data collection	Residency training database Survey of program graduates 1 year after completing residency by primary care resident coordinator

CHAPTER 3:
Evidence, Conclusions,
and Application

GATHER CREDIBLE EVIDENCE

Collecting credible evidence is an important component of the evaluation process. To ensure that the evidence gathered is credible and usable for the evaluation, the following should be considered:

- **Indicators:** What data elements are being used to assess the program or project? Are the data available at baseline (if appropriate) and available throughout the life of the program or project and thus obtainable by the evaluator? Do the indicators measure what needs to be measured? If, for example, the project is increasing the number of dentists practicing in underserved areas, has “underserved areas” been defined and identified, and what information is available on the number of dentists and their practice location? It is critically important to match the outputs, outcomes, and impacts with specific data indicators.
- **Sources:** What is the source of the data being used to assess the outcome? How are the data being collected? Are there data currently available to assess the program or project or do new data need to be collected for that purpose? The indicators used to assess the program or project to a great extent dictate the data sources. Data for an evaluation can be from primary or secondary sources:
 - **Primary data:** Indicators that are specifically collected by the organization for the purpose of evaluating the program or project. Primary data collection could include surveys, observation, focus groups, interviews, etc. While primary data collection may directly address the program or project objectives, it is generally more costly and time consuming and uses more staff resources. Primary data requires organizational infrastructure to collect, clean, and compile.
 - **Secondary data:** Indicators that are collected by someone who is not the user of the data. Examples of secondary data include the US Census, graduation data from the Integrated Postsecondary Education Data System (IPEDS), and hospitalizations or visits from hospitals or federally qualified health centers. While secondary data are less expensive to collect than primary data and are generally available for historical analysis, they may not directly answer the question being asked. Additionally, privacy and confidentiality may limit what data can be analyzed and how the data can be reported.

- **Quality:** What is the quality of the data? Are the data reliable, valid, and informative for their intended use? The better defined the indicators and evaluation, the higher the quality of the data.
- **Quantity:** Are there enough data to draw conclusions? Are there enough data to be confident about the results and to derive meaningful conclusions from the evaluation as a whole? Additionally, are the data being collected for the time periods needed, especially for a time-series or pre- and post-test evaluation?

JUSTIFY CONCLUSIONS

Once data have been collected (if applicable) and analyzed, the next step is to determine results and identify conclusions. In part, the conclusions reached must be judged against the needs of the program or project and the evaluation, as defined by the stakeholders and by generally acceptable evaluation standards. Additionally, the evaluation should demonstrate excellence in:

- **Interpretation:** What does the evidence gathered in the evaluation mean? Did the evaluation identify the correct conclusions based on the data presented?
- **Analysis and synthesis:** Did the evaluation isolate important findings or trends (analysis) and combine sources of evidence to understand the larger picture (synthesis)?
- **Judgment:** What does the evidence suggest about the evaluation's merit, worth, or significance? Do the data gathered in the evaluation match, exceed, or fall short of the original standards set? In essence, did the evaluation do what it was intended to do? Did the evaluation and the selected indicators measure what they were designed to measure?
- **Recommendations:** Do the recommendations align with the conclusions of the evaluation? Did the recommendations go beyond the data and elucidate how the organization could implement the recommendations and how environmental issues such as health care policy and reimbursement could impact the recommendations? Finally, do the recommendations align with stakeholders' values? If not, the stakeholders will not view the evaluation as credible.

Recommendations and conclusions should both inform the program or project and serve as a stepping stone for further assessment of the program or project if needed.

USE AND SHARE LESSONS LEARNED

Lessons learned as well as the general purpose and design of the evaluation should be communicated on a periodic basis, with the time between the periods of communication determined by the length of the evaluation. To ensure the appropriate communication of the evaluation and its results and conclusions, consider and/or discuss the following 5 elements:

- **Design:** Describe in general terms the purpose, methods, and process of the evaluation. Consider the components of the evaluation as previously discussed to ensure that the final results and conclusions are considered appropriate and relevant. An evaluation that is poorly thought out and conducted creates poor results and conclusions.
- **Preparation:** Rehearse potential use(s) of the evaluation findings. Consider how stakeholders and others may interpret or use the findings in overall decision-making or in program or project implementation or redesign. This is especially important if the results are negative or contrary to the intended objectives or goals of the program or project.
- **Feedback:** There should be continuous communication between everyone involved in the evaluation, which leads to an atmosphere of trust among stakeholders. Consider periodic feedback throughout the entire evaluation process, especially as each objective is completed.
- **Follow-up:** Follow-up is required during the evaluation and after stakeholders and others receive evaluation findings. This assists those parties in reviewing the results, the purpose of the evaluation, and the planned use and prevents the potential misuse of information from the evaluation.
- **Dissemination:** Develop a communication and dissemination plan that provides information to stakeholders and others throughout the entire evaluation process. Create a communication and dissemination plan that includes “who” (gets the information), “what” (information they receive), “how” (they receive the information), and “how often” (the information is communicated). These will vary depending on who is receiving the information. Groups to consider in developing a communication plan include:
 - Stakeholders
 - Organizational leadership
 - Staff

- The general public (if needed to be informed based on the evaluation)
- Funding agencies (if additional financial support comes from an outside source)

As the communication and dissemination plan is developed, also consider other individuals who may be able to carry the message. The individuals communicating these messages should be “champions” of the evaluation who can explain the different components of the evaluation as described throughout this guide. The champion should understand both the program or project and the evaluation. The champion may differ depending on to whom the evaluation and its results and conclusions are to be communicated. For example, consider a well-respected (by fellow employees) employee as a champion when communicating to staff. If communicating to the general public, consider a newscaster or reporter who may be an expert in health care or in community issues.

Also consider developing an “elevator speech” for the evaluation (and for the project). An elevator speech is a brief overview of the evaluation that could be given riding between 2 or 3 floors in an elevator. Describe the main points of the evaluation design, results, and conclusions in a brief 60 to 90 seconds. Remember to keep the elevator speech as simple as possible, relaying only the information absolutely necessary to understand the evaluation.

STANDARDS FOR EFFECTIVE EVALUATION

The final component of the evaluation framework is the inner circle, which identifies the standards for conducting and evaluation. These standards help avoid creating an imbalanced evaluation (eg, creating an evaluation that is very accurate but is not feasible due to the cost to conduct). These standards include utility, feasibility, propriety, and accuracy, and are described below.

- **Utility:** The evaluator needs to ensure that an evaluation will serve the informational and program/project needs of its intended users. As utility is considered, think about the following:
 - Who are the stakeholders that need to be informed, and what are their needs?
 - Is the evaluator competent to conduct the evaluation?
 - Is the information that is being collected pertinent to the purpose and scope of the evaluation?
 - Are the perspectives, methods, and rationale used to interpret results clearly identified?
 - Do the evaluation reports clearly describe the report?
 - Are the interim findings, status reports, and final reports disseminated in a timely fashion?
 - Was the evaluation designed and conducted and were the results reported in a manner that encourages use by the stakeholders?

- **Feasibility:** The evaluator needs to ensure that the evaluation will be realistic and economical and should make certain that:
 - Data are being collected, including keeping project disruptions to a minimum
 - The varied viewpoints and cooperation of stakeholders and other interested parties are considered during the development and implementation of the evaluation
 - The evaluation makes the best use of the resources allotted to it

- **Propriety:** The evaluator needs to ensure that the evaluation is conducted legally and ethically while respecting the rights and welfare of the evaluation participants, including those individuals who may be affected by the results. In the interest of propriety, the evaluator should ensure that:
 - The needs of the organizations and the individuals served by those organizations are addressed.
 - All organizations involved in the evaluation understand their roles and responsibilities as negotiated and outlined in writing.
 - The rights and welfare of the evaluation participants, if applicable, are protected, including receiving appropriate consent.
 - All interactions with others conducted by the evaluator are respectful.
 - The evaluation is conducted in a fair and impartial manner, including appropriately identifying strengths and weaknesses of the program or project.
 - Findings, including relevant limitations, are accessible to all relevant parties, including those affected by the evaluation.
 - Conflicts of interest are disclosed in an appropriate manner and handled openly and honestly.
 - Expenditures related to the evaluation are accounted for in an appropriate manner.
- **Accuracy:** The evaluator needs to ensure that the evaluation is conducted in an unbiased and appropriate manner and conveys all information correctly, including:
 - Identifying the program or project being evaluated
 - Identifying that potential influences on the program or project that may help explain the results and conclusions
 - Documenting the purposes of the evaluation, as outlined in the purpose statement, and describing and monitoring the evaluation itself

- Describing the sources of information
- Developing and implementing data collection tools and procedures
- Describing the data collection tools and procedures
- Ensuring that all data collected, processed, and included in the results are reviewed and cleaned of errors as appropriate
- Ensuring that the quantitative and/or qualitative data used in the evaluation are analyzed using appropriate methodological procedures
- Ensuring that conclusions reached are justified based on the assessment of the information collected
- Ensuring that results identified are based on the evaluation conducted and not biased based on personal beliefs or the beliefs of stakeholders or others involved in the program, project, and/or evaluation
- Ensuring that the evaluation is assessed against these and other relevant standards to, in turn, ensure an appropriate review of the program or project

A more in-depth review of the standards described above can be found on the CDC website.^{7,8}

APPLYING THE FRAMEWORK

The evaluation framework, as well as other information in this guide, provides guidance on developing an evaluation for a project or program (group of projects). As the evaluation is being considered, think about:

- What is the purpose of the evaluation, and what are the evaluation questions?
- What evaluation method is best for answering these questions?
- What is being learned from the evaluation, and how can it inform the project or program being implemented?

This guide and the framework provide a starting point for understanding evaluation. Evaluations can be useful tools but can be expensive and time consuming if not done properly. As an evaluation approach is being considered, think not about what it is thought to be but what it can be, as outlined in Table 5.¹⁰

Table 5. Thinking About the Evaluation

Evaluation Is Thought to Be:	Evaluation Can Be:
Expensive	Cost effective
Time consuming	Strategically timed
Tangential	Integrated
Technical	Accurate
Not inclusive	Engaging
Academic	Practical
Punitive	Helpful
Political	Participatory
Useless	Useful

One final thought about evaluation: Developing the evaluation team is important not only in completing the evaluation but in outreach to stakeholders and other interested parties. The evaluation team should include individuals with board backgrounds and skills and who understand and can communicate with the stakeholders, the program or project staff, and the evaluation participants. Understanding the methods and processes for collecting data and determining results is as important as understanding the context or environment that influences the program or project.

KEY WORDS AND DEFINITIONS

Accuracy

A standard of evaluation or research that ensures that the assessment of the program or project is conducted in an unbiased and appropriate manner and conveys all information correctly

Activities

A component of a logic model that identifies the actions that are needed to complete the (program or project) objective

Confounding Factors

Those characteristics (such as race/ethnicity, geography, and comorbidities) that may influence both the cause and the results in research or an evaluation but are not in the causal pathway

Control Group

A group of individuals in an experimental study or an evaluation that does not receive the intervention and is used for comparison

Cost-Benefit

A type of evaluation that assesses the total cost of the program or project to the community relative to the total value of the benefits to the community

Cost-Effectiveness

A type of evaluation that assesses the cost of meeting the outcomes of the program overall or per participant compared with other potential activities and/or projects

Descriptive Statistics

Findings from research or an evaluation that describe the central tendencies of a population (eg, means, medians, counts, etc) but do not draw inferences about the population

Effectiveness

Ensures that a program or project is achieving its goals or having success, including serving the correct target population

Efficiency

Ensures that a program or project is operating cost-effectively or without errors

Evaluation Purpose Statement

A brief statement that identifies the overall goals of the evaluation, the type of evaluation (formative, summative, or needs assessment), and the potential uses for the evaluation findings

Evaluation Question(s)

Questions that take the initial evaluation purpose statement further and help to focus the evaluation. The evaluation question(s) should consider the causal relationship hinted at by the purpose statement, such as “how” or “why” or “the impacts,” as well as possible methods for conducting the evaluation

Experimental Program Evaluation

Assesses the outcomes of a program or project using a matched control group to explain the potential influence of confounding factors and results

Feasibility

A standard of evaluation or research that ensures the assessment is realistic and economical to perform

Formative (Process) Evaluation

A type of evaluation that assesses the processes or activities of the program or project as intended

Generalizability

A standard of evaluation or research that assesses whether findings or results can be applied to other settings

Impact

A component of a logic model that identifies the long-term results of the activities, outputs, and outcomes of a program or project. Impact assesses fundamental changes, such as how individuals access care

Indicators

The data elements that are used to assess the program or project

Inferential Statistics

Findings from evaluation or research that make predictions about a population based on a sample of data taken from that population

Intervention

An activity or action that is designed and implemented in a program or project to bring a change in behavior, health status, education, etc of specific individuals

Longitudinal Evaluation

A type of evaluation or research that assesses the same participants multiple times over a designated time period, tracking the results

Long-term Objectives

Identify the overall goal of a program or project. Long-term objectives must align with the mission, vision, and values of the organization and support its strategic goals

Loss to Follow-up

A concept in evaluation or research where participants who were assessed at the beginning of the study could not be tracked throughout the length of the study due to death, moving, refusal to participate, etc

Needs Assessment (Gap Analysis)

A type of study that identifies the difference between “what is” and “what should be.” Needs assessments could study whether existing programs or projects are meeting needs or identify what is potentially needed to address a defined problem

Non-experimental Program Evaluation

Assesses the outcomes of a program or project without the use of a matched control group

Objectives

Short- and long-term goals or milestones set by programs or projects to achieve a desired outcome. The objectives should include reasonable time frames for reaching the goals or milestones; be measurable; and identify activities, resources needed, who is responsible for carrying out the activities, and the expected products

Outcomes

A component of a logic model that identifies expected benefits from a program's or project's activities and outputs. Outcomes can be short term, intermediate, or long term

Outputs

A component of a logic model that identifies expected direct products of the activities of a program or project

Post-test Evaluation

A type of evaluation that assesses the participants after the intervention at one point in time

Pre-test/Post-test Evaluation

A type of evaluation that assesses the same participants before and after the intervention

Primary Data

Indicators that are specifically collected by the organization for the purpose of evaluating a program or project. Primary data collection could include surveys, observation, focus groups, interviews, etc

Program Evaluation

A systematic method for collecting, analyzing, and using data to examine the effectiveness and efficiency of programs and to contribute to continuous program improvement

Propriety

A standard of evaluation or research that ensures that the assessment of the program or project is conducted legally and ethically and that the rights and welfare of the evaluation participants are respected

Qualitative Analysis

An assessment of nonmeasurable data through interviews, focus groups, case studies, and observation to understand people's experiences, thoughts, and viewpoints on a particular issue

Quantitative Analysis

An analysis and presentation of data and results using descriptive and/or inferential statistics

Resources/Inputs

A component of a logic model that identifies what resources are needed to accomplish the objectives and the activities, including staff, internal or external financial resources, equipment, other organizational infrastructure, etc

Secondary Data

Indicators that are collected by someone who is not the user of the data. Example of secondary data include the US Census, graduation data from colleges, hospitalizations or visits from hospitals or federally qualified health centers, etc

Short-term Objectives

Incremental project milestones that can be reached over a short period of time and that will eventually lead to the overall long-term program or project objectives

Stakeholders

Individuals, groups of individuals, or organizations that have an interest in or concerns about the program, project, and/or evaluation, including a financial interest

Summative Evaluation

A type of evaluation that assesses the outcomes and/or impact of a program or project

Time-Series Evaluation

A type of evaluation that assesses changes over multiple time points to determine trends. These multiple time points should occur both before and after the intervention. This type of project assesses aggregated data, not participants (eg, rates of cancer over time)

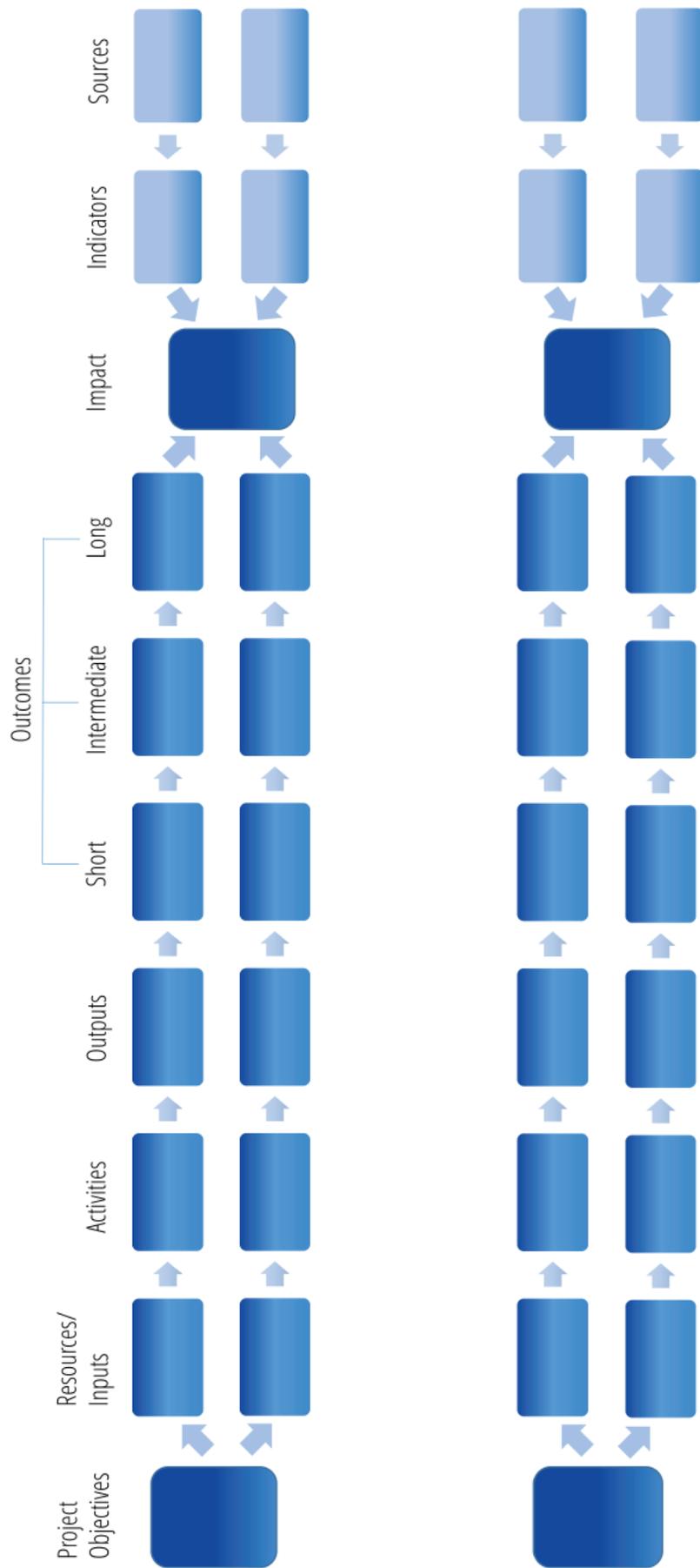
Utility

A standard of evaluation or research that ensures that the informational and program/project needs of its intended users will be served

APPENDIX B:

Example of a Logic Model

EXAMPLE OF A LOGIC MODEL



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