CHAPTER V

**PROGRAM EVALUATION AND
PERFORMANCE MONITORING**

In the previous chapter we described how to develop outcome and process objectives, performance measures, an action plan and a timeline, and how to estimate the cost of program implementation activities. Before beginning program implementation, it is important to determine the type(s) of evaluation that will be conducted and to develop an evaluation plan. This assures that baseline and follow-up data can be collected and that stakeholders will understand how the program will be evaluated.

This chapter provides an overview of public health program evaluation with a focus on program performance monitoring. It describes how to plan an evaluation. The chapter includes:

- An Introduction to public health program performance evaluation
- An overview of types of program evaluation
- Key elements of a program performance monitoring evaluation
- Steps in the program evaluation planning process
- Developing the evaluation plan

AN INTRODUCTION TO PUBLIC HEALTH PROGRAM PERFORMANCE EVALUATION

Public health program performance evaluation is the systematic investigation of the quality, effectiveness and costs of health programs. It is not research, individual assessment or program audit, although there may be circumstances in which these are also conducted. The term *program* in public health is used to describe any organized intervention (action) or set of interventions designed and implemented with the intent of improving identified outcomes for a whole community or specific subgroups. Although this chapter provides an overview of needs and assets assessment and formative evaluations, its primary focus is on the evaluation of program performance.

The characteristics of *public health program performance evaluation* are:
- Program performance is described by compiling and summarizing data using predetermined criteria (e.g., performance measures)
- Program performance is compared with standards (e.g., objectives: national, state, or regional standards; professional criteria) or a theory/hypothesis
- A systematic process of data collection and analysis is employed
- Unlike research evaluation, program evaluation provides continuous feedback to assist program improvement and quality assurance and it may be participatory which means that stakeholders, such as community members and agency partners, may participate in the evaluation process or analysis.

This chapter presents information relevant to the evaluation of broad public health programs, as well as specific programs within the broader effort. For example, there may be a broad MCH

program with multiple interventions designed to improve a particular health outcome such as the reduction of infant mortality. There may also be a specific program, which is a component of the larger effort, developed to reduce SIDS in the African American community. The broader program will have a process and outcome evaluation of its objectives and intervention strategies and the "component" program may also have an evaluation appropriate to its specific interventions and target population.

Integrating Evaluation and Program Planning

As discussed in the previous chapter, policymakers, the public, and funders are demanding accountability for program results. They want programs to demonstrate that they have reached their program objectives and to explain what has or has not worked and why. Program managers, staff and clients want to improve their programs and to demonstrate to funders that their programs are worthwhile.

To achieve this accountability requires an inclusive, systematic planning process that produces viable, measurable program objectives, a logical program theory, complete action plans and reporting and feedback systems that work. The same planning that produces an effective program will also provide the foundation of a good evaluation. We urge you to integrate evaluation and program planning; these should not be separate processes.

Include your program evaluators early in any program planning effort. Evaluators can be helpful in the processes of developing indicators, conducting a problem analysis and developing a program. If your program does not have a designated evaluator, it is important that you (and others you assign) take an evaluation perspective. Key persons involved in coordinating or facilitating the program planning process should be aware of and address evaluation concerns. While evaluation expertise is important, program evaluation is most effective and valued when it involves program staff and stakeholders.

If evaluation has not been integrated into program development, then a special evaluation team or workgroup will be needed. This group will need to review the problem analyses, program proposals and program descriptions including the objectives, and consult stakeholders, including staff, to understand the program and the interests of stakeholders. It will also be important to involve program staff in the review of all data collection measures and the methods that require their cooperation to implement.

For simplification, throughout this chapter we will refer to the evaluator; however, we urge you to consider this an inclusive term that may encompass an expert in evaluation, a person within your program designated in charge of the evaluation and/or a team designated to the task.

AN OVERVIEW OF
TYPES OF PROGRAM EVALUATION

There are different types of program evaluation. The type or types selected will depend on the purpose of the evaluation, the questions asked by your stakeholders, the proposed uses of evaluation findings, the stage of program development and the resources available for

evaluation. The major types of program evaluation are described below. There may be variations and combinations of these.

Needs and Assets Assessments

Needs and assets assessments provide a profile of the health status of the community and the population of interest and identify health, health access, and health care problems and strengths. The usual methods used to assist a needs and assets assessment are the development and tracking of population health indicators using secondary data sources, surveys/questionnaires and focus groups. Chapter II describes a community level needs and assets assessment in detail.

Formative Evaluations

Formative evaluations are used during the initial intervention planning or early stages of program implementation to determine the feasibility of implementing the intervention activities and to assist in refining or redefining activities to make them more effective. Formative evaluations are useful in answering questions about the validity of the theory of change that has guided the intervention development and the way that the intervention design puts that theory into practice. They are also helpful in assessing whether an intervention is acceptable to the target population. The usual methods used to assist in this type of evaluation are surveys, focus groups, literature review, logic models and process (activity) monitoring.

Process Evaluations

Process evaluations are used in the early stages of implementation of a program to assist in determining whether the planned resources (inputs) have been actualized and whether the expected program services (outputs) are being delivered. A process evaluation is also used on an ongoing basis, providing periodic feedback, to assist further program development and management. It tells us whether the program is implemented and operating as planned and assists in identifying program delivery problems. It does *not* assess the outcome or results of program activities. The methods used are identification of process measures (measures of resources and service delivery), their tracking and comparison with objectives, activity targets or plans. Surveys such as satisfaction surveys, case studies and informal internal assessments may also be used.

Performance Monitoring Evaluations

Performance monitoring evaluations examine the operations (services and activities) and the outcomes (results) of a program. Performance monitoring evaluations can be used throughout a program's life to track the quantity, the quality and characteristics of services and clients, and the short, intermediate and long-term outcomes related to its program interventions. Performance measures are used to compare actual performance with target objectives or standards that the program is meant to achieve. Performance monitoring tells us whether the interventions are being implemented as intended, are of the quality planned and whether the desired outcomes are being achieved. *Be aware that a monitoring evaluation does not test whether the program interventions caused the observed effects.* The use of

performance monitoring to evaluate the "success" of a program is based on the assumption that the program theory has been proven (as shown in the research or best practices literature), and, consequently, that the program can achieve success. Therefore, the purpose of the evaluation is to assess whether the program is being implemented correctly, as designed, and to"monitor" whether the desired results are occurring. The methods used are the identification of process and outcome measures, collection of data on these measures and comparison to objectives or standards. Program data, secondary data sources, surveys, questionnaires, and observations are examples of the data sources that can be used.

Outcome Evaluations

Outcome evaluations are used immediately following the conclusion of a program activity or program cycle to assess the net effects of the intervention efforts and then assessed at intervals over the life of a program. Net effects are effects that can be attributed to the program, with the influence of confounding effects from other sources accounted for or controlled. Outcomes can be short-term, (e.g., increased knowledge immediately following an education session); intermediate (e.g., reported or observed behavior change); and long-term (e.g., change in health status or condition) results. Quantitative and qualitative methods of data collection may be used, including the collection of statistics from program records and secondary sources, surveys and questionnaires, observations, and case studies. Evaluations of demonstration programs or programs specifically funded to test cause and effect relationships employ experimental or quasi-experimental evaluation designs. Experimental, quasi-experimental, and non-experimental designs are discussed in Appendix V-A.

Efficiency / Economic Evaluations

Efficiency/economic evaluations are used after a program has begun to generate outcome data to assess the cost effectiveness (i.e., cost per desired outcome) and cost/benefit (i.e., cost per overall benefit to the community vs. the cost of the consequences of not intervening) of a particular program. These analyses can allow comparison to other programs designed to achieve the same outcomes.

Sequence for Selecting and Implementing the Types of Evaluations

Program evaluation, in contrast to research evaluation, incorporates continuous feedback and is staged to facilitate program changes. The stage of a program's development or implementation, as well as available resources to conduct an evaluation, must be considered in selecting the type of evaluation to be conducted.

> The logical sequence for selecting and implementing the types of evaluation is consistent with the stage of a program's development: the measurement of need to support rational planning, the assessment and refinement of concepts and design to produce a logical program, the monitoring of process to assure the program is implemented as planned, the evaluation of outcomes to assure the expected results are achieved, and the analysis of cost effectiveness or cost/benefit to determine that the results produced are worth the resources expended.

KEY ELEMENTS OF A
PERFORMANCE MONITORING EVALUATION

We are discussing performance monitoring evaluation in this section in more detail because it is a commonly used type of local public health department program evaluation; it usually meets funder's requirements for evaluation; it generally, can be conducted within program resources; and the results can be informative and useful for program improvement. It is an appropriate type of evaluation for local MCH programs that are required to assess their performance to comply with federal Title V funding reporting requirements. If programs are following the planning process presented in this guide, a problem analysis of those priority problems identified in a community needs assessment resulted in the identification of the most potentially effective intervention points and strategies. From those, outcome objectives and then program activities and process measures were developed. A review of the program and research literature, combined with the experience of local epidemiologists, program staff and community representatives, contributed to program theory. A process and outcome performance monitoring evaluation will meet the requirement of accountability. It also provides program managers with information to identify program implementation problems and for continuous quality improvement. The types of questions that performance monitoring can answer are:

- Are program services and activities being delivered as planned?
- Is the program reaching the target population?
- Is the quality of the program services adequate?
- Does the program outcome data indicate the program is achieving its desired results?
- Is there a significant difference in program performance between participant groups, e.g., race/ethnic or economic groups?

Limitations of Performance Monitoring

While the periodic measurement of program performance over time can show improved outcomes and suggest correlations between services and outcomes, this monitoring is *not sufficient to prove* that the program activities have caused the observed changes. However, if progress is tracked to show implementation of the interventions and the desired change occurs *it can be inferred* that the program is responsible for the outcomes, especially if there have been peer reviewed research studies of these interventions showing positive outcomes. The correlation between program services and positive outcomes is strengthened when additional evaluation methods are used such as pre and post tests of interventions or comparison to a comparable group that is not receiving the program services. To demonstrate cause and effect relationships, an experimental or quasi-experimental evaluation design would be used. See Appendix V-A for an overview of the evaluation designs that are used to evaluate cause and effect. If an intervention has not been proven or is being applied to a different group or in a different way than in the research studies from which the program rationale was derived, you may want to develop a demonstration project and expand the evaluation to demonstrate cause and effect. This expanded outcome evaluation usually requires increased evaluation funding.

Key Elements

There are two key elements for a valid performance monitoring evaluation. They are *objectives and their performance measures* and *credible program theory*. Program theory evolves from the problem analysis process and the strategies identified in the research as well as best practices literature, experts in the field, and local experience. If program theory is sound and the program objectives and performance measures accurately capture the implementation processes and outcomes of a program, a credible performance monitoring evaluation can be conducted.

Later in this chapter, we discuss the steps of planning a program evaluation. In the process of planning a performance monitoring evaluation, it will become evident that these two elements are essential to being able to describe the program and focus the performance evaluation.

Objectives and Their Performance Measures

Measurable objectives and meaningful, explicit performance measures are a prerequisite to a performance monitoring evaluation. Outcome objectives are developed from the problem analysis once the precursors to the problem are identified and the potentially most effective intervention strategies have been selected. Process objectives and measures are identified as the specific activities of the intervention are defined. Participation by stakeholders in their development is recommended and techniques for including these stakeholders were suggested throughout the previous chapters.

Before designing the evaluation, it is important that stakeholders agree that the program's objectives adequately reflect the desired program outcomes and the activities developed to produce those outcomes, and that the performance measures can provide sufficient data to assess progress towards program achievements. Be sure that the measures are understood and viewed as credible representations of objective achievement. The objectives, activities and any previously developed performance measures should be reviewed and, if necessary, refined. If performance measures were not developed during the program development process, they will be developed now, as part of the monitoring and evaluation planning process. In this case it will be especially important to check back with program stakeholders to be sure the performance measures will capture the data necessary to evaluate the achievement of the objectives.

Chapter IV included definitions of terms used to describe different types or levels of objectives. Please refer to these definitions. The following terms are useful in understanding performance measurement.

Objectives are specific statements of desired achievements that are expected to occur as a result of an intervention or program. These desired achievements are the standards against which program performance is evaluated. An objective tells us what significant accomplishment the program is meant to achieve. Objectives are derived from the identified intervention points and strategies selected as a result of a

problem analysis. The objectives serve as the guidelines for the development and evaluation of the program. If objectives are met, the program can claim success.

Performance Measurement is the collection, reporting and interpretation of quantifiable measures related to how well a program performs in achieving results (outcomes) or implementing its intended activities or delivering services (process).

Performance Measures are measures of the intended results or services of a program. They are used for tracking changes in knowledge, environment, attitudes, health behaviors, or health status of program participants; changes in systems and policies affecting health status; or changes in the adequacy of implementation of intervention activities/service delivery and should be compared to a baseline or standard. A set of performance measures is often identified to assess the achievement of a program objective. Performance measures are generally divided into two types of measures:

> **Outcome measures** quantify the achievement of results (e.g., knowledge, attitude, behavior, environmental, health status changes) within a specific time frame from the specific interventions being undertaken.

> **Process Measures** quantify the resources used, the population reached or activities accomplished (e.g., plan produced or number served) over a specific time frame. In logic models resources are referred to as *inputs* and activities or services delivered as *outputs*.

A performance measure or set of measures translates an objective into its very specific measurable parts. While the name of a measure may be used in the program action plan, the evaluator should have a worksheet that includes, for each objective, its measure or set of measures. For each measure, the worksheet should specify, in addition to the measure name, (e.g., parents in the program who use child seats), the calculation to be used for the measure (e.g., percent or rate); the numerator and denominator for the calculation, (e.g., parents in the program who use car seats/parents in the program); and the data source, (e.g., record of staff observation on a designated day). In some cases, an objective may be simply to produce a product, (e.g. a plan) or to complete a targeted number of services (e.g., three trainings). In these cases the numerator is sufficient as a measure (e.g., a completed plan and the number of trainings provided).

A program performance monitoring evaluation assesses progress towards achievement of the outcome or process objectives by comparing the performance measure data with the objective or a standard and reporting back findings on a predetermined schedule. To be credible it must use objectives and performance measures that are both meaningful to stakeholders and explicit enough to assure they can be measured. Examples of objectives and their explicit performance measures follow.

Examples of Objectives and Explicit Performance Measures

The following objectives were developed for a county-wide infant mortality prevention program aimed at reducing deaths due to SIDS associated with incorrect infant sleep positioning.

Long Term Objective
By June, 2007, reduce by 25% deaths in the county attributed to SIDS, in which infant sleep positioning was an identified factor

Intermediate Objective
By June, 2005, increase by 50% the number of pregnant women and mothers of infants less than 6 months of age surveyed who report using the correct infant sleep positioning to prevent SIDS

Outcome Measure
The percent of infant deaths classified as SIDS related to infant sleeping position

Performance Measure
The percent of deaths classified as SIDS, related to incorrect sleep positioning of infants, born to mothers who had at least 5 prenatal visits plus one postpartum visit with one of the targeted prenatal care providers (during a specified time period)

Process Objective
By June, 2006, increase by 25% from baseline the percentage of women giving birth to a live born infant who report having received counseling or information on correct infant positioning for sleep from a health care provider during their pregnancy

Note: Sometimes explicit process objectives may not have been developed. In this case, the process measures are derived from the program activities listed in the action plan (or a program logic model). For example, an *activity* might read:

Health care providers provide counseling and/or SIDS materials to 1000 postpartum women during year 1 of the project.

Process Measure developed from the objective (or the activity statement):

The percentage of postpartum women who report having received counseling or information on correct infant positioning for sleep from a health care provider during their pregnancy (during a specified time period following implementation of the intervention)

Refer to Chapter IV for a discussion of the development of objectives (long term, intermediate and short term) and performance measures as well as additional examples.

Program Theory

Program theory tells us how the program will operate and what it is meant to achieve. A performance monitoring evaluation is based on the premise that the program theory is logical and that there is evidence in the social, behavioral, or health sciences research literature that the interventions will work. An important task of the evaluator is to be sure that the theory of the program matches what stakeholders really want to happen and that the theory makes sense. Before proceeding to the design and implementation of a performance monitoring evaluation, it is very important to review the program theory and assess whether it is: 1) logical; 2) based on well supported assumptions as derived from research literature, expert opinion and/or the experience of successful intervention; 3) feasible to implement;, and 4) matches what stakeholders expect to happen.

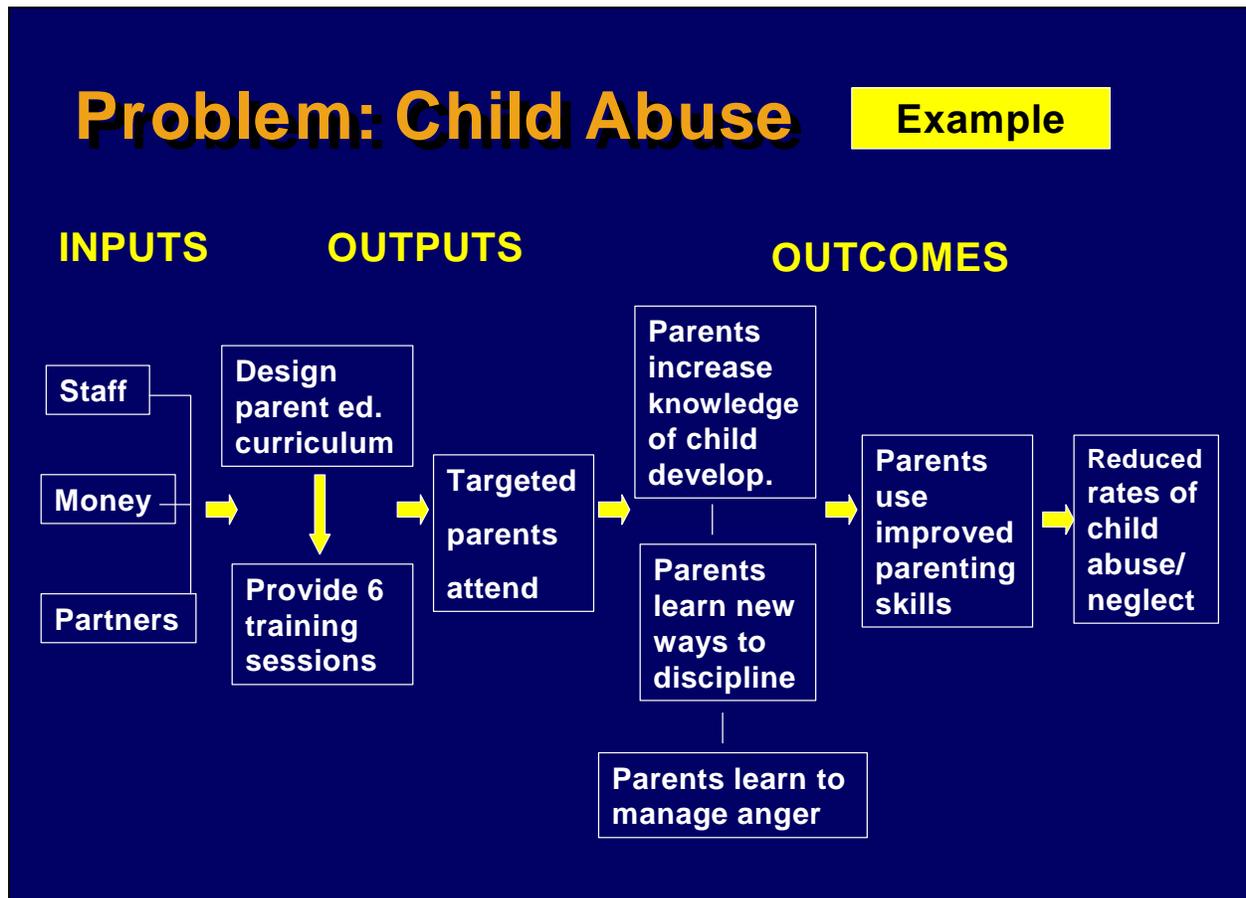Questions to guide this assessment are:

- Does the theory address the targeted problem's cause(s) or risk factor(s)?
- Is the theory valid? Supported by research / local experience?
- Is the progression from resources to outcomes logical?
- Is the theory specific enough?
- Is it reasonable to expect to implement the theory?

If the program theory does not meet these criteria, there is no reason to proceed with this type of evaluation. The evaluator should try to redirect the evaluation, suggesting a problem analysis and/or a formative evaluation.

A program logic model as described in Chapter IV is a very useful tool that can be used to illustrate how the program is meant to work and how the desired results will be achieved. A logic model captures the theory of a program in a way that is visual and easy to understand. It is a way of organizing information. It may be a flow chart, table, or diagram.

Diagram 1 is an example of a very simple logic model depicting a program to reduce child abuse by providing training to parents in child development and parenting practices.

Diagram 1: Example Logic Model

Problem: Child Abuse **Example**

INPUTS **OUTPUTS** **OUTCOMES**

Staff

Money

Partners

Design parent ed. curriculum

Provide 6 training sessions

Targeted parents attend

Parents increase knowledge of child develop.

Parents learn new ways to discipline

Parents learn to manage anger

Parents use improved parenting skills

Reduced rates of child abuse/ neglect

This logic model shows that if the program has staff, partners, and funding, a parenting curriculum can be identified or designed and six training sessions for parents of children in the target population can be implemented. As a result, it is expected that parents will have increased knowledge of child development and will learn new techniques of parenting and disciplining their child. It is intended that parents will use these improved parenting skills and as a result there will be reduced rates of child abuse and neglect.

Refer to Chapter IV, the section titled *Definitions* and *Using Logic Models,* and Appendices IV-A-1, IV-A-2 for other examples of logic models, V-B-1 for an example of a logic model tool used during the evaluation stage and V-B-2 for directions on how to use the tool.

If the program theory is logical, supported by research and/or experience, congruent with stakeholder's expectations and feasible to implement, then the evaluator can proceed to assess the degree of conformity between the program's design and how it is implemented. Well developed written objectives and performance measures will assist this task.

STEPS IN THE PROGRAM EVALUATION PLANNING PROCESS

The following evaluation planning process is adapted from the Centers for Disease Control and Prevention Framework for Program Evaluation. It is a generic process that can be used to plan a program evaluation. It should be used for planning the performance monitoring evaluation described in this chapter, as well as for planning other types of program evaluation.

> ### The Process of Planning an Evaluation
>
> 1. Engage stakeholders
> 2. Describe the program and develop or review a program logic model
> 3. Focus the evaluation design
> 4. Prepare to gather and analyze credible evidence
> 5. Prepare to justify conclusions
> 6. Ensure use and lessons learned: Plan for effective distribution of evaluation results

Step 1. Engage Stakeholders

The stakeholders are people or organizations with an investment in what will be learned from the evaluation and what will be done with the findings. Stakeholders should thoroughly understand the program's logic model and how program success will be evaluated. Examples of stakeholders are those who set policy, those affected by the evaluation findings, such as staff and clients, funders, advocates, and representatives of other organizations with related goals.

Building a constituency that will support a meaningful evaluation will also help to address and mitigate the constraints that plague public health program evaluation. These constraints are: 1) limited funds and emphasis on using available funds to provide direct services; 2) annual budget cycles and regular budget crises that make long-term or costly evaluation impractical; 3) the fast program start-up times that lead to an evaluation component being added on after the program has been designed and initiated; and 4) concerns about using experimental designs or the selective provision of services when the populations are poor or racial and ethnic minority populations. By integrating evaluation planning into program planning, stakeholders build interest, commitment, and trust in the evaluation process. They are more likely to value and commit resources to evaluation. This involvement increases the likelihood that evaluation findings will be used to improve programs. As mentioned previously, if the evaluation development has not been integrated into the planning process, you may find it helpful to have a small group of representative stakeholders as consultants to the evaluator.

Step 2. Describe the Program and Develop or Review a Program Logic Model

The purpose of the program description is to enable stakeholders and evaluators to understand the problem(s) the program addresses and the program theory--how the program is designed to work to impact those problems and what results it is meant to achieve. Additional information, such as the organizational and political context in which

the program operates, will be valuable. For program theory to be understood and assessed, it must be described clearly. The evaluator will want to be sure that the narrative description is accurate. The health assessment, the problem analyses, any theory(ies) of change, program objectives, and the action plan(s) provide the basis for describing and understanding the expected program results and how the program is expected to operate.

The program action plan, as described in Chapter IV, includes the long term and intermediate objectives, the program activities, the agency or person responsible for implementation and a timeline for implementation. It may also include the performance measures that correspond to each objective. This level of action plan is appropriate for a program such as an MCH program that may have oversight for multiple interventions, some for which it is directly responsible and others that are implemented by component programs. A component program's action plan will be a more detailed plan specific to its service delivery activities and their process measures and outcomes.

The evaluator should review the program objectives and the performance measures to assure that they are measurable, and if they are not, to work with a group of stakeholders to develop or refine them. The program objectives must be meaningful to stakeholders, SMART (Specific, Measurable, Attainable, Reliable and Time-framed) and their performance measures must be exact. See Chapter IV, the section *Developing Objectives and Performance Measures* for a detailed discussion.

It is very important to have a shared understanding of the program theory. Tools, such as a program logic model can be used to illustrate how a program is meant to work to achieve its objectives and performance standards. We recommend using a logic model. A description of a logic model is provided earlier in this chapter in the performance monitoring evaluation section. See Appendix V-B-1 for an example of the logic model tool we use. Appendix V-B-2 is the accompanying step-by-step program logic model guide to use when a program has already been developed. It can help evaluators and stakeholders to understand how a program is working to achieve its outcomes and to confirm that the evaluation should be based on the elements presented in the model.

There is sometimes a need to evaluate an existing program. If the program has been operating for some time, it will be important to find out why an evaluation is being requested at this time. It will also be necessary to review old documents and descriptions with current staff and stakeholders to see whether the program has changed over time and whether the original objectives still apply and program activities as initially planned are still being implemented. Be sure to describe and consider in the evaluation design any changes in program implementation from the original plan.

Step 3. Focus the Evaluation Design/Plan

Determine What Will Be Evaluated

Evaluations should always have a clear purpose and use. Otherwise, resources -- time, energy and funds -- are wasted and the value of meaningful evaluation is compromised. The following factors should be considered when determining the type and scope of an evaluation.

> ### *Determining the Type and Scope of a Proposed Evaluation*
>
> 1. What do stakeholders most want to know?
> 2. What is the current stage of program development?
> 3. How difficult will it be to collect the data necessary to answer the evaluation questions?
> 4. What resources are available to conduct the evaluation?
> 5. What is the evaluation timeline?

1. What Do Key Stakeholders Most Want to Know?

Public health agencies are usually accountable to a number of constituencies and the needs of these constituencies should be considered. For example, an MCH Title V funded program is required to do a community needs assessment, identify priority problems, and develop objectives and interventions designed to improve targeted outcomes. Funded agencies are then required to report annually on progress in meeting their stated process and objectives. If one of the evaluation stakeholders is a local governing body that is faced with a depressed economy, then it may be desirable to have an efficiency (e.g., a cost effectiveness) evaluation. If a community group is involved, then client acceptability and access to services will probably be their concern. If a particular component program has applied for and received funding to contribute to research findings (e.g., a program funded by the Centers for Disease Control and Prevention for the purpose of developing and testing innovative interventions) a "scientific" experimental evaluation with a control or comparison group is necessary.

When thinking about the evaluation design, content, and timeline determine in which of the following ways the evaluation will be used. Will it be used to:

- Show that the program has been implemented in a manner consistent with the proven interventions on which it is based?
- Report back to a funding agency on the overall use of a block grant?
- Report the results of a new pilot program?
- Make a case for program effectiveness to advocate for funding or expanded funding?
- Monitor and improve program services?
- Assist program management?

Examples of the evaluation questions stakeholders may have:

- Is the program operating as conceived?
- Are the program objectives being met?
- Are the intended services being delivered to the intended clientele? How many times or how often?
- Are sufficient numbers of clients being served?
- Which of the program activities are effective? Which work best? Are some recipients affected more by the program than others? Why?
- What is the impact of the program on the community as a whole?

- Is the program cost-effective? Cost-beneficial? How does it compare with other alternatives, if any exists?

2. **What is the Current Stage of Program Development?**

   This question is related to the purpose of the evaluation. Determine whether the evaluation findings will be used to assist program development, for performance monitoring, to evaluate program results or to determine how much it is costing to achieve the benefits of the program. The types of evaluation and their uses were described earlier in the chapter.

3. **How Difficult Will It Be to Collect the Data Necessary to Answer the Evaluation Questions?**

   This is a preliminary assessment of the availability and accessibility of data that may be needed for the evaluation. Another assessment will be necessary at the point of evaluation design.

4. **What Resources Are Available to Conduct the Evaluation?**

   Your ability to implement the program evaluation will depend largely on the resources available to conduct it. If there is a shortage of resources within the program, there may be ways to augment your resources, such as:

   - Find other staff beyond your department or agency who are interested in evaluation
   - Look for other funding for evaluation
   - Contact a local university to identify graduate students interested in program development and evaluation
   - Look for similar programs conducting evaluations to combine efforts/resources
   - Identify and use instruments that have already been tested and developed

   Take time to do an assessment of your program evaluation resources. Be realistic. What resources will be available to conduct the evaluation? Are they adequate to support the evaluation being considered?

5. **What is the Evaluation Timeline?**

   Is there a time by which evaluation results must be available? How much information can feasibly be collected and analyzed within the evaluation timeline?

In summary, the type or types of evaluation that will be implemented should be chosen based on the above assessment. For example, is there interest in whether the program is being implemented as designed? (Implement a process evaluation) Is it important to track both results and how those results were attained? (Implement a performance monitoring evaluation). Are you conducting research to demonstrate that the interventions chosen will cause the desired results? (Implement an outcome evaluation

using an experimental or quasi-experimental design). The evaluation should also be matched to the stage of the program's development. A formative evaluation may be done before process and outcome evaluations. Finally, the resources and cooperation needed to conduct the evaluation should be considered.

Develop the Evaluation Design

Once the evaluator, in collaboration with the stakeholders, has identified the appropriate type and scope of the evaluation and prepared or reviewed program information and theory, work on the evaluation design can begin. The evaluation literature and experts sometimes differentiate between an *evaluation design* (exactly how the evaluation will be constructed, particularly what will be compared and how achievements will be determined) and an *evaluation plan,* (the systematic process of conducting public health and social program evaluations). In this guide, we use evaluation design to mean the construction of the evaluation. The evaluation plan is the document that describes the design, discusses and addresses issues, defines roles and responsibilities and guides the evaluation implementation process.

The basic evaluation design types include experimental, quasi-experimental, and non-experimental design. The designs specify how the evaluation is constructed to show the effectiveness of the program intervention. Implementation of the more rigorous of these designs usually requires the involvement of staff or consultants with specific training and experience in the areas of epidemiology or experimental evaluation. See Appendix V-A for a description of these designs.

When developing an evaluation design be sure to do the following:
- Provide background by conducting a literature search to identify evaluations of similar programs and to show what evaluation methods they used.
- Articulate the program theory or hypothesis and identify what will be measured. Define the standards and measures that will be used. Determine how factors or events external to the program may impact either the implementation or the outcomes of the planned program and whether and how the evaluation can control for those factors.
- Identify sources of data (quantitative and qualitative).
- Select the intervention measurement methods/data collection instrument.
- Determine the process and timeline for data collection.
- Develop policies and procedures to protect client privacy and guarantee confidentiality of client specific information.
- Determine data analysis methods (to the extent possible at this time).

As discussed previously, in multifaceted public health programs — such as an MCH county program responsible for implementing a variety of interventions -- the evaluation will generally be a performance monitoring evaluation that includes process evaluation and monitoring of outcomes. In this case the evaluation design includes a measurement of change from a baseline or simple comparison to an objective or standard. Sometimes there will be a need for a more rigorous outcome evaluation of a specific component program. For example, if those developing a program have not found a proven intervention or one relevant to their community in the literature review

or consultation with experts, they may decide to implement a demonstration project to test a new or modified intervention.

Determine Measurement Methods and Data Sources

When selecting measurement methods and instruments it is important to think about their strengths and limitations. Is the method being considered feasible?

For example, if an objective of a program is to change a behavior, you would consider the following:

- Can the expected behavior change be measured? What instruments or methods could capture the change (e.g. self-assessment survey, evaluator, or other person's observation)?
- Is there an existing, already tested, measurement method/instrument, or data source used by similar programs to collect this information? How difficult will it be to implement this method in the program being evaluated?
- How will data be analyzed? What resources are available to compile and analyze the data? Is it doable?

Based on these considerations, the evaluator can assess the strengths and limitations of the options available and decide what evaluation methods and instruments will be used. The more complex the evaluation methods, the more likely the evaluation will require an expert evaluator and the consultation of an epidemiologist.

As discussed extensively in Chapter II, there are qualitative and quantitative methods of gathering information. Qualitative methods include open-ended questionnaires and interviews with individuals or small groups, detailed descriptions from documents or observations, and/ or case studies. Findings are reported in narrative form. Analyzing results requires special skills in interpretation and preparing reports. See Appendix II-G for a detailed discussion of qualitative methods.

Quantitative data collection methods are those that use numerical values, ratings, and statistical analysis to understand the program and its results. They may also include questionnaires, surveys, observations, and program records, the results of which are analyzed quantitatively. Many evaluations employ both qualitative and quantitative evaluation methods.

The choice of using quantitative and/or qualitative data is based on what questions or issues are of most interest as well as which techniques best will provide an answer. *Many evaluations will benefit from the use of a mix of quantitative and qualitative data collection.*

> *A List of Potential Measurement Methods/Tools*
>
> - Encounter forms
> - Surveys/questionnaires
> - Interviews
> - Tests/measures of knowledge, attitude, skill, behavior change
> - Observations
> - Group Techniques, e.g., focus groups
> - Case Studies
> - Photographs
> - Testimonials
> - Logs, diaries
> - Judgments/satisfaction of staff, participants or staff
> - Physical examinations
> - Information from program administrative records, e.g., client records, meeting minutes, financial records, sign-in sheets, statistical records, services utilization records
> - Other institution's records/statistics, e.g., completed referrals, community health indicators
> - Ethnographic investigation

Step 4. Prepare to Gather and Analyze Evidence

Collecting Data

This step is a continuation of the process begun in Step 3, "Determining Measurement Methods and Data Sources". When preparing to gather and analyze the data, the issues listed below should be considered. Review these now and as you formalize your data collection and analysis plans.

- What data sources will be used? Are there existing sources for the data you need? What sources can provide the best quality data at the intervals needed? Which sources are likely to be easy to access?
- What data collection methods will be used? How expensive will it be to collect the data from each source? Which methods are least disruptive to clients and staff? What confidentiality protections are needed? Are there cultural or convenience considerations in the type of instrument or method of data collection used? Are there protocols and procedures to assure uniformity in data collection and ease of collection or do they need to be developed
- Who will collect and record the data?
- At what points in program implementation will data be collected? Can the data be collected routinely and reported at specified intervals? When will data collection start and end?
- Can a program record-keeping system be easily established? Is the data needed available from the program's automated MIS or other database?
- Can baseline data be collected prior to program implementation?

When evaluating data sets, consider the factors discussed in the Chapter II, the section *Evaluating Data Sources* and Appendix II-E. Most of these criteria also apply to identifying and collecting evaluation data.

It is very helpful to program staff, as well as the program evaluators, to have a data collection plan. The plan should be created to specify, for each indicator, the program objective, performance measure or evaluation question, the data source, the collection schedule, who will collect the data, how the data will be collected, where it will be collected, and how often it will be compiled. This plan should be used to guide and monitor the data collection process. See Appendix V-C, an Example Data Collection Plan Worksheet.

Identify a process for staff input, provide written data collection procedures and provide training in the use of data collection methods and other evaluation tools, such as surveys. Document in the evaluation plan what will be done. Plan to provide periodic review and assessment of the accuracy and quality of recordkeeping and determine how recommendations for improvements, if indicated, will be facilitated.

Analyzing Data

Determine how the data collected will be organized, compiled and analyzed. Consider and plan for the following:

- How will information be compiled? Computer? Hand? Are the necessary equipment, technology, and expertise that you need available? Who will enter data?
- What kind of analysis will be needed? Will narrative data (qualitative) be analyzed? Will statistical techniques be used?
- Is the expertise necessary to analyze the data available? How much time will it take? What will be the cost?
- What will be analyzed and included in periodic data reports (used for program management and problem identification). Who will receive this these reports?

What factors will be looked at for their influence on the observed outcomes, e.g., race/ethnicity, neighborhood, age, gender, SES, risk factors? Determine who will be responsible for compiling the information, analyzing and interpreting the results, and reviewing and providing insight into findings. There should be a schedule or agreed upon timetable for the periodic analysis and reporting back of data to the program and stakeholders.

Common Ways to Analyze Data

Quantitative Data	Qualitative Data
- Frequency Tables - Mean, mode, median - Multiple regression - t-Test - Analysis of Variance - Chi-square	- Content Analyses - Identifying major themes - Cutting and Pasting

Step 5. *Prepare to Justify Conclusions*

This step builds in time to review and reflect on the design of the evaluation, the analysis of specific findings (e.g., the program's effect on participants knowledge or its effect on long term behavior), and the relationships and synthesis of the different findings to achieve a greater understanding of the program and its effect. The emphasis of this step is to extract the meaning of the evaluation results. Often, the same information can be interpreted differently. Determine in advance who or what group will interpret the results of the data analysis and who will be included in determining the recommendations. It is helpful to have key stakeholders review draft findings to assure that the agreed upon evaluation questions are answered according to the standards and design agreed upon. They can provide insight to assist the development of conclusions and recommendations.   Consider having a meeting(s) to discuss the preliminary findings before conclusions and reports are completed*.*

Step 6. *Ensure Use and Share Lessons Learned: Plan for Effective Reporting of Results*

Based on stakeholders needs and evaluator's judgment, agree on and document the method of data presentation, the interval of reporting findings, the format of progress and final reports and the planned dissemination of findings. Keep in mind that a succinct, organized, easy to understand presentation or report is more likely to result in its use.   For more technical reviewers and for those who wish to study the actual data and analyses have data in appendices that can be sent to individuals who request more detailed information.

THE EVALUATION PLAN

A written plan should be prepared to guide the evaluation and the assignment of staff and resources for the evaluation. The plan should be useful not only to the evaluator, but to program administrators and staff. As much as possible, provide easy to use tables and check-off lists that can be used during the implementation of the evaluation as a reference and working document, to assure implementation is on track. An example of a working document is the Data Collection Plan Worksheet in Appendix V-C.

There should be a well-organized narrative description. The plan narrative should be concise and, generally, no more than 2 pages. In some cases an evaluation outline would suffice. In either case, the following format could be used:

    I.   The evaluation purpose, proposed uses, and the type of evaluation
    II.   Evaluation questions, objectives, and measures (or hypothesis if testing a new intervention)
    III. The evaluation design (including a discussion of confidentiality protections and Institutional Review Board requirements if applicable)
    IV. A brief discussion of any data collection issues (e.g., how data sources will be selected, what training may be required by individuals collecting the data, what data management systems will be needed)
    V.   A summary of how data will be analyzed, including anticipated methods
    VI. A description of how evaluation results will be reported and disseminated

VII. Identification of evaluation resource requirements including a description of any collaborative efforts necessary to implement the evaluation. A bulleted list or a table of the roles and responsibilities agreed upon among those who will execute the plan should be included.

As indicated above, tables or matrices are very useful to both evaluators and program implementers. They can be used to display the program objectives or standards and corresponding measures, data sources, methods of data collection, including data collection instruments, sites and intervals, and who will collect the data. They can also be used as monitoring tools to assure evaluation activities are occurring as planned and on schedule. See Appendix V-C for an Example Data Collection Plan Worksheet. Other tools that can be developed are a reporting schedule and a plan for dissemination of findings.

If the evaluation plan is part of a larger program planning document, as described in Chapter VI, *Putting It All Together*, the program description, the objectives and corresponding measures may be integrated into the action plan. However, an evaluation narrative and evaluation tools should be included as a separate section or appendix.

CHAPTER V
SUMMARY

In this chapter we have provided a basic overview of the key evaluation concepts, described program performance monitoring evaluation, and described an evaluation planning process and the contents of an evaluation plan.

Key Points to Remember:

- Integrate program development planning and evaluation planning whenever possible.
- Identify the interests of key stakeholders and the proposed uses of evaluation findings. Use them to determine the scope and type(s) of evaluation needed.
- Ensure that objectives and performance measures are meaningful to stakeholders and explicit.
- Create an evaluation design that provides the structure and organization of the evaluation.
- Recognize that complex evaluations require the expertise of an evaluator.
- Document agreement on the expectations for the evaluation in the evaluation plan.

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