Logic Models for Planning and Evaluation

A Resource Guide for the CDC State Birth Defects Surveillance Program Cooperative Agreement

Acknowledgments

The logic model, indicators, and resource tools were developed for the state birth defects surveillance program cooperative agreement by CDC's Division of Birth Defects and Developmental Disabilities state birth defects work group:

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State Birth Defects Surveillance Resource Guide
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INTRODUCTION

The Division of Birth Defects and Developmental Disabilities (DBDDD), Centers for Disease Control and Prevention (CDC), developed this resource guide to help state birth defects surveillance grantees build effective programs through thoughtful planning and to improve these programs through focused evaluation. The premise behind this guide is simple―success doesn't just happen! Achieving intended program outcomes is a continuous and circular process of planning and evaluation.

The objectives of this guide are to help the reader:

1.   Identify the major components of a logic model.
2.   Recognize the benefits of using logic models for program development, implementation, and evaluation.
3.   Identify the components of the birth defects surveillance conceptual logic model to be included in the state-level logic model.
4.   Develop state-level birth defects surveillance and referral activities that incorporate or build on, or both, the indicators of progress that are common among the state birth defects surveillance cooperative agreement grantees.
5.   Understand the basic steps related to evaluation development.

The resource guide contains two sections and an appendix.

Section 1 presents an overview of the birth defects surveillance conceptual logic model and the overarching performance indicators that will be used to evaluate the progress of the programs funded through the state-level birth defects surveillance and referral cooperative agreement.

Section 2 presents a basic guide to logic models as iterative tools for program planning and evaluation. This section is not intended to be a comprehensive source, but rather a launching point to help grantees develop a logic model that communicates the relationship between their program inputs, activities, outputs and intended outcomes.

The appendix contains:

1. The state birth defects surveillance conceptual logic model
2. Evaluation and indicator worksheets
3. The partnership matrix worksheet
4. Additional resources
5. Logic model examples

BACKGROUND

The Birth Defects Prevention Act of 1998 directed CDC to carry out programs to collect data on birth defects and provide information to the public about the prevention of birth defects. As a response, CDC awarded cooperative agreements to states to improve the timely ascertainment of major birth defects.

Through a cooperative agreement process, DBDDD currently funds 15 states to build and strengthen their capacity to track major birth defects and use these data for public health action through improved access to care and preconception prevention messages.
The key activities common to the states funded through the cooperative agreement are:

- Surveillance
- Capacity development
- Prevention and referral
- Evaluation

USING A LOGIC MODEL TO BRING TOGETHER PLANNING AND EVALUATION

Planning and evaluation go hand in hand. A useful tool for program planning and evaluation purposes is the logic model. For planning purposes, the logic model structure helps grantees articulate the parameters and expectations of their program, as well as, the changes among participants, systems, or organizations that are expected to result from program activities.

As an evaluation tool, the logic model allows planners to make program design decisions that will influence the trajectory of the evaluation. For example, with continuous improvement in mind, the logic model allows precise communication about those aspects of the program that would benefit from evaluation findings. Once the activities and processes to be evaluated have been identified, planners can then determine what types of data will be available (or can be generated), how data will be collected and analyzed, and when and by whom data will be collected. This process is iterative and it is most useful when stakeholders revisit and revise their logic models as often as necessary. An evaluation is most useful when it has been developed and implemented thoughtfully.

Why is it important to build in an evaluation process during program development? Evaluation planning helps to ensure that the data collected throughout the lifecycle of a program are meaningful to stakeholders and can be used for ongoing program improvement purposes. A focused evaluation is designed to reflect the specific information needs of various users, and functions to:

- Demonstrate accountability to diverse stakeholders.
- Generate a shared understanding of the program and the intended outcomes.
- Document program processes.
- Determine progress toward short, mid-term, and long-term outcomes.

STATE BIRTH DEFECTS SURVEILLANCE PROGRAM COOPERATIVE AGREEMENT CONCEPTUAL LOGIC MODEL

The state birth defects surveillance logic model (see Figure 1) was created to provide stakeholders with an overview of the activities funded through the cooperative agreement surveillance program and the intended outcomes. This model enables stakeholders to work from a shared conceptual framework of the main activities, outputs, and outcomes of the cooperative agreement. Moreover, it establishes a common thread about the logical links among these program components and illuminates the array of activities that are potential levers for change.

Health promotion and prevention activities often are based on theories of change. Theories of change are explanations of why and how planned activities will lead to the intended outcomes. A logic model articulates the assumptions that are thought to be needed for the success of a program. The birth defects surveillance logic model depicts the assumption that links system changes with individual-level behavioral changes. In other words, the underlying assumptions are that building better birth defects surveillance systems and strong community partnerships for collaborative planning will, in turn, lead to data-driven public health action for referral and prevention actions, which will in turn lead to changes in the knowledge, attitudes, behaviors, or practices of individuals or in the aggregate for the population or system.

ELEMENTS OF THE CONCEPTUAL LOGIC MODEL

Figure 1: State Birth Defects Program Conceptual Logic Model

State Birth Defects Program Cooperative Agreements

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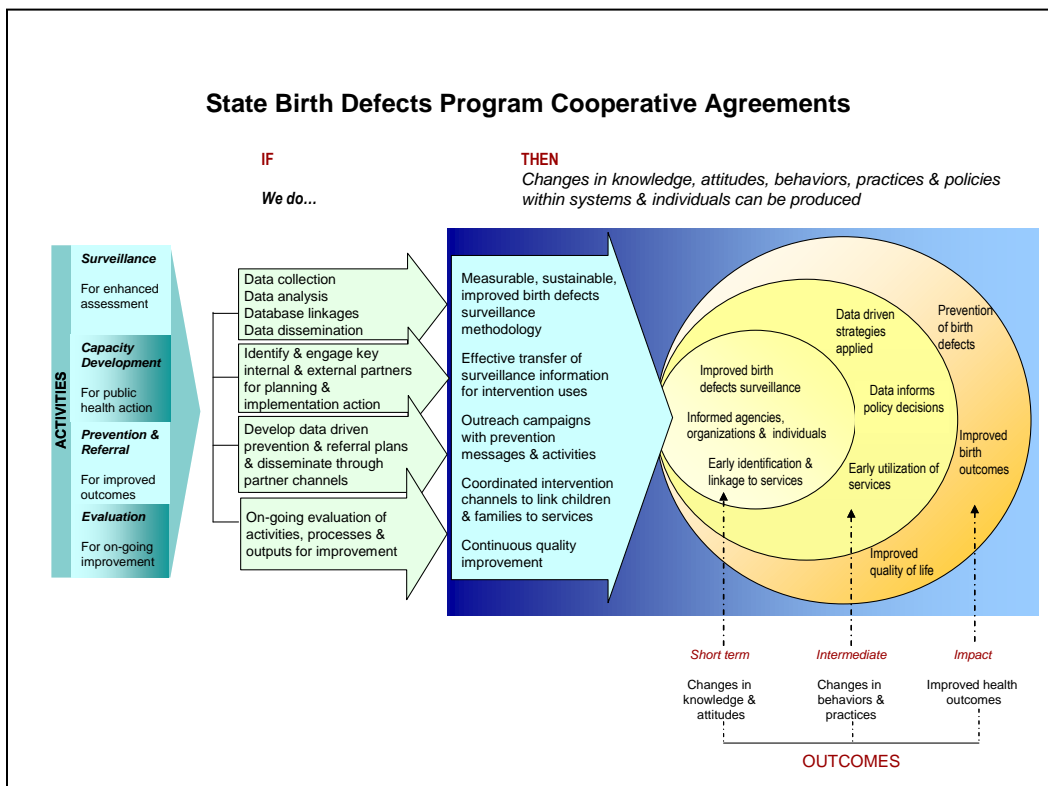
Activities

The birth defects surveillance conceptual logic model reads from left to right, beginning with *Activities*. The core program activity components under the activities column are:

- *Surveillance*—The first step toward preventing birth defects, and reducing associated problems, is identifying babies with birth defects. We do this through population-based birth defects tracking. This activity involves the collection, analysis, and dissemination of accurate and timely birth defects data.

- *Capacity Development*—This activity involves the identification and engagement of internal and external partners for public health action, specifically for the development and execution of data-driven action plans.

- *Prevention*—The focus of this activity component is dissemination of birth defects prevention messages or efforts that reach target audiences through partner channels.

- *Referral*—This activity is aimed at enhancing the referral process and practices for early linkage of children and families with services.

- *Evaluation*—This activity is focused on the ongoing collection of meaningful program data for program improvement purposes.

Outputs

Moving across the logic model, the *outputs* generated from the activities are:

- Measurable, sustainable, and improved birth defects surveillance methodology.
- Effective transfer of surveillance information for intervention uses.
- Outreach campaigns with prevention messages and activities.
- Coordinated intervention channels linking affected children and families with services.
- Continuous quality improvement.

Outcomes

Activities lead to *short-term outcomes* and then to *midterm outcomes* for individuals, systems, and organizations. The three nested circles represent the sequence of intended changes.

The first circle, called the short-term outcome, relates to the early changes in the knowledge and attitudes of individuals and systems as a result of participating in the activities. The short-term outcomes are improved birth defects surveillance; informed agencies, organizations, and individuals; and early identification of and linkage to services.

Proceeding to the *midterm outcomes*, the middle circle depicts the next level of change within individuals and systems as a result of using the new knowledge or awareness. The midterm outcomes are: (1) data driven strategies for birth defects prevention and referral are integrated into state and community planning and implementation efforts; (2) data informs policy decisions; and (3) services are used early by children and families.

The last ring in the outcomes circle depicts the *long-term outcome*s of the birth defects surveillance program which are prevention of birth defects, improved birth outcomes, and improved quality of life.

SELECTING MEANINGFUL INDICATORS TO MEASURE PROGRESS

The conceptual logic model was used to develop meaningful measures—or indicators—of progress toward the intended outcomes across all the CDC state surveillance cooperative agreements.

The indicators were established to help grantees assess progress toward meeting core program targets, while simultaneously contributing to a better understanding of the characteristics of state-level birth defects surveillance data and public health action.

Indicators are useful tools that provide feedback necessary for program improvement. These indicators will be useful to grantees in that they serve as guideposts for program development, management, and evaluation. Grantees are encouraged to integrate these indicators into all of their planning activities.

There are hundreds of indicators from which to choose as measures of "success". These indicators were selected because they are appropriate regardless of whether grantees are developing, expanding, or enhancing their state birth defects surveillance program.

Indicators for surveillance

- Quality and timely data are produced and disseminated.
- Quality assurance for completeness of data is tested through ongoing improvement efforts using statistical methods.

Indicators for capacity development

- A matrix identifying capacity building objectives, strategies, and partner lists is developed and approved.
- Data-driven prevention and referral plans are developed through partnership engagement.
- Ongoing partner meetings take place to exchange progress information and make midcourse modifications.

Indicators for prevention

- A data-driven list identifying at-risk populations is developed to guide prevention efforts.
- Appropriate prevention partners are engaged and a plan to reach target audiences is developed.
- Targeted audiences are reached using appropriate prevention and intervention strategies.

Indicators for referral

- Referral protocols are tested for effectiveness and timeliness.
- Baseline data are available to indicate changes in the number of referrals and the number of people receiving early intervention and special education services.
- Timely referral to services is evidenced.
- Gaps in referrals are identified using appropriate methods (e.g., qualitative research using focus groups).

The indicators grew from a series of drill-down exercises by the DBDDD program staff. To get to the right indictors for this program, the following questions were asked:

- Why are birth defects surveillance program operations important at the state and federal levels?
- What does success look like and what measures demonstrate progress in achieving the intended outcomes?

This type of drill-down questioning often is used throughout program planning and evaluation to reexamine a program's true purpose and what its desired outcomes look like. This questioning also helps to determine what really needs to be measured. For the cooperative agreement program, we identified indicators that would provide a standard approach for assessing the:

- Quality of information the surveillance system produces.
- Effectiveness of the surveillance system in supporting the programs they serve.
- Completeness and accuracy of the surveillance information in supporting data-driven decision making.

WHERE TO BEGIN

*...thought Alice and she went on, "Would you tell me, please, which way
I ought to go from here?"*
"That depends a good deal on where you want to get to" said the Cat.
"I don't much care where-" said Alice.
"Then it doesn't matter where you go" said the Cat.
" – so long as I get somewhere" Alice added as an explanation.
"Oh, you're sure to do that" said the Cat. "If only you walk long enough."

(Carrol, 1865)

LOGIC MODEL DEFINED

A logic model is a visual "snapshot" of a program (or project) that communicates the intended relationship between program goals, activities, outputs, and intended outcomes. Logic models are an iterative tool useful for planning and evaluation purposes. Simply put, logic models graphically describe the theory—or logic—of how a program is supposed to work.

The term *logic model* often is used interchangeably with other names that are similar in concept. Some of these other names for a logic model are:

- Blueprint
- Causal chain
- Conceptual map
- Model of change
- Program theory
- Rationale
- Roadmap
- Theory of action
- Theory of change

WHY IT IS IMPORTANT TO DESCRIBE A PROGRAM

Stakeholders often have very different perspectives about the purposes of a program, and the strategies to be used to foster the desired outcomes. These differences often surface during the planning or expansion phase of a program. Having a clear description of how a program is intended to work and how success will be measured is foundational for achieving the intended program goals and objectives.

A program is more likely to succeed when there is consensus among stakeholders about the strategies and chain of events that need to occur in order to realistically accomplish

these goals and objectives. The practical application of a logic model is to get everyone on the same page about the program and the approach the program will take to produce change.

The process of developing a program logic model is a useful tool to encourage systematic thinking about the necessary actions and the critical pathways a program must take in order to bring about change.

Involving key stakeholders in the logic model development process helps to build capacity and ensure that stakeholders share a common understanding of the program. The logic model process is used to clarify:

During program planning

- What the program will do.
- Who will participate in and benefit from the program activities.
- How the program will address unmet needs or existing gaps (in the surveillance system, referral process, and prevention efforts).
- How the program components (activities, outputs, and outcomes) logically fit together.
- When specific activities will unfold and for which target audiences.

During evaluation planning

- How progress and success will be defined and measured.
- What will be evaluated; when the evaluation activities will take place; and who will be responsible for gathering, analyzing, and disseminating the findings.
- How lessons learned will be shared and used for ongoing improvement.
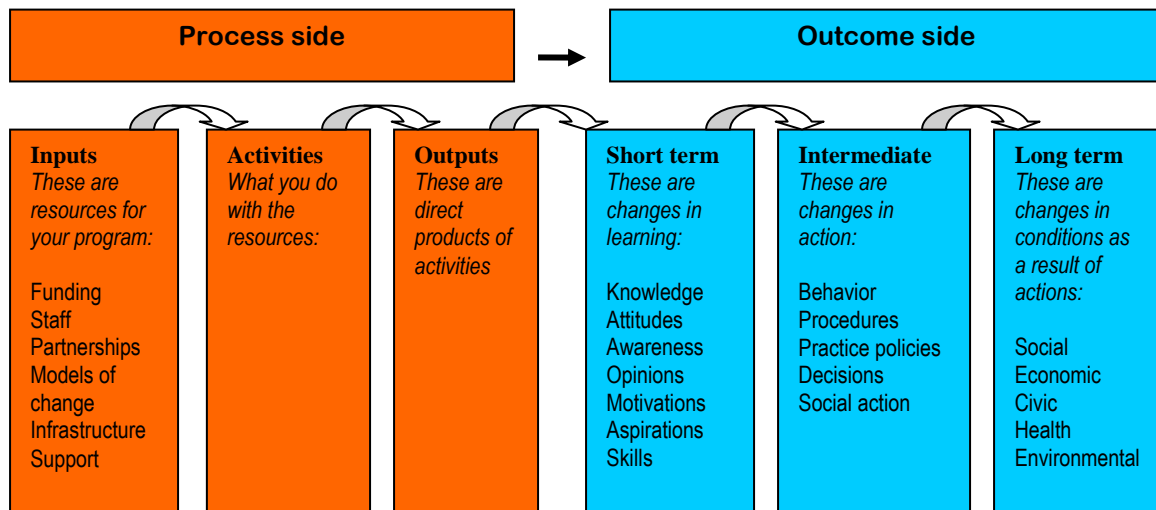
CONSTRUCTING A LOGIC MODEL

What needs to be included?

How is the information arranged?

A basic logic model has two "sides"—a process side and an outcome side. When viewed as a whole, these two sides visually depict a program's sequence of processes and activities, the outputs of these activities, and the intended changes resulting from these activities. Typically, change is represented at three levels of outcomes—short term, midterm, and long term.

Logic models layouts are as diverse as the programs they depict and examples of other layouts can be found in the appendices. Figure 2 illustrates a generic logic model.

Figure 2. Generic logic model layout

Process side	→	Outcome side

Inputs	Activities	Outputs	Short term	Intermediate	Long term
These are resources for your program:	*What you do with the resources:*	*These are direct products of activities*	*These are changes in learning:*	*These are changes in action:*	*These are changes in conditions as a result of actions:*
Funding			Knowledge	Behavior	Social
Staff			Attitudes	Procedures	Economic
Partnerships			Awareness	Practice policies	Civic
Models of change			Opinions	Decisions	Health
Infrastructure			Motivations	Social action	Environmental
Support			Aspirations		
			Skills		

The generic logic model example reads from the left side of the page to right side. The process side identifies:

Inputs—These are the resources available for a program, such as funding, staff, and leadership, expertise, program infrastructure, scientific knowledge and evidence-based strategies, and partnerships.

Activities—These are what a program actually does to bring about the intended change, such as surveillance, formation of partnerships for capacity development, referral to services, and the dissemination of prevention messages for healthy birth outcomes.

Outputs—These are the products or direct services resulting from the program activities. Outputs are the direct evidence of implemented activities. Some examples of the outputs of state birth defects surveillance programs might include: improvement in surveillance methodology, dissemination of surveillance information, the number of families linked to services, the number of partnerships channels for referral linkages, and the number of implemented prevention activities.

The outcomes side of a logic model identifies the sequence of changes, that is, the results expected to be achieved by the program.

Short-term outcomes represent the most immediate effects attributable to a program, such as changes in learning, knowledge, and attitudes. Examples include: knowledge and awareness of local birth defects surveillance, and referral and prevention messages through improved dissemination of accurate and timely information to organizations, agencies, and individuals.

Midterm (intermediate) outcomes reflect the changes in actions, such as in behaviors and practices, that are a result of increased knowledge and awareness; for example, an increased number of families linked to birth defects services use these services.

Long-term outcomes are the conditions that change as a result of actions. Long-term outcomes are what the program is expected to affect, such as the prevention of birth defects, improved birth outcomes, and improved quality of life. These outcomes are more distant in time, less attributable to the program, and harder to measure.

ELEMENTS THAT AFFECT THE LOOK OF A LOGIC MODEL

Logic models come in many shapes and sizes, and convey varying levels of detail. While many logic models are designed to be read from left to right, a model does not need to be in a linear format; a vertical model that reads from bottom to top might better express a program or the sequencing and relationship of the components. The one "rule" of logic models is that they are no more than one page. If a logic model becomes too complex, *nested models* that each capture varying levels of detail about the program might be needed.

The layout and level of detail for a logic model vary depending on the purpose of the logical model. Programs often create multiple logic models to use with different audiences. However, these aren't different logic models; rather, they contain different levels of elaboration. A good rule of thumb is to remember who the intended user of the logic model is. Only the information users will need to help keep focused on unfolding the program as it was intended should be included.

HOW TO DEVELOP A LOGIC MODEL

There is no one correct way to create a logic model. There are two major approaches that typically are used in combination to create a logic model:

- Reverse logic—Asks "but how" questions.

- Forward logic—Uses "if . . . then" statements.

While logic models are read starting from the left side of the page (the process side) to the right side of the page (the outcomes side), they often are created in the reverse order. In other words, logic models start with the end in mind. This right-to-left approach, also called reverse logic, starts by identifying the desired outcomes and working backwards to develop activities and inputs. Beginning with a focus on the intended outcomes helps to ensure that the conducted activities logically link to the intended outcomes if the relationships are well founded. This approach is particularly useful for helping stakeholders to think beyond their existing program structures and activities. **To avoid the pitfalls of developing a logic model that describes only the status quo, stakeholders should remember that the purpose of creating the logic model is to describe how the program will create change.** Figure 3 illustrates the reverse logic process used for program planning.

Figure 3. Program planning using the reverse logic approach
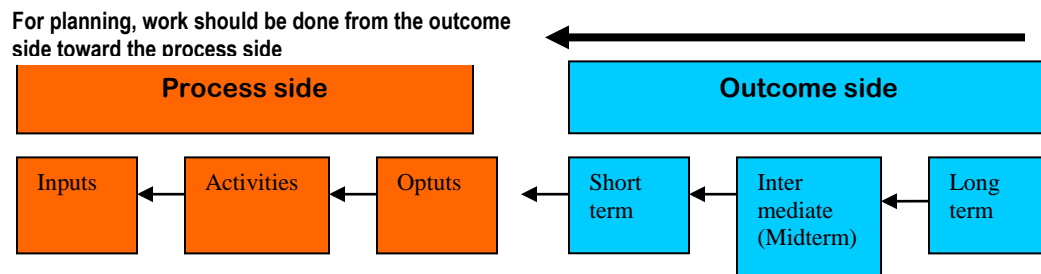
To use this approach, the long-term outcome should be identified and the question "How (can this be achieved)"? should be asked. In other words, stakeholders should systematically work their way from right to left across the logic model asking, "How"?

The forward logic approach uses "if . . . then" statements, starting on the left side (the inputs) and working systematically across to the right side of the logic model. The "if . . . then" approach is used most often when there is a clear picture of what the inputs and activities will be. Using the program components of the cooperative agreement program to illustrate the forward logic approach, the logic model would communicate, "If we strengthen state birth defects surveillance systems and develop capacity, then the public health infrastructure will have timely and accurate data available for referral and linkage of children and families with services. If children and families use services early, then individuals will have improved quality of life. If birth defects prevention messages that reach target audiences are implemented, then participants will be better informed and increase their preconception birth defects prevention practices for healthy birth outcomes."

USING THE LOGIC MODEL FOR EVALUATION PURPOSES

What Gets Measured Gets Done

The ultimate goal of any evaluation effort is to improve how an activity works, not merely to prove that it was accomplished. Evaluation is ongoing—it is not an end product of a program. The evaluation findings are useful to determine whether midcourse corrections are necessary. Evaluation findings are powerful decision-making tools when used to identify gaps and make necessary changes to activities, strategies, and budgets.

Deciding What To Evaluate

Different types of evaluations and evaluation questions will be posed at different stages of a program's lifecycle. A formative evaluation process will focus on questions about components, activities, and target groups, whereas an outcome evaluation will focus the evaluation questions on short, midterm, and long-term outcomes.

In many cases, the outcomes of a program might not be realized for many years. In some cases, this can be addressed by identifying meaningful output-oriented milestones that can lead to achieving long-term outcome goals.

Deciding what to evaluate depends on the evaluation needs of stakeholders. A list of key evaluation questions should be developed, followed by a determination of what types of information will be available to answer such questions. *Tip: Planners should ask— What strategic decisions can be made based on the data that will be generated?*

The evaluation matrix located in the appendix provides examples of questions, indicators, data sources, and data collection responsibilities. This matrix should be used as a guide for developing a local evaluation plan.

Indicators

The state birth defects surveillance logic model and process indicators chart (located in the appendix) overlays the indicators with a more detailed version of the birth defects surveillance conceptual logic model. These indicators represent progress in each activity. However, it's important to recognize that these indicators are not representative of outcomes; rather, they are measures of progress that are critical steps toward achieving the outcomes!

The following six steps can be used to build a program logic model for planning and evaluation (see figure 4 for an overview).

Figure 4: Overview of the six-step process for developing a logic model
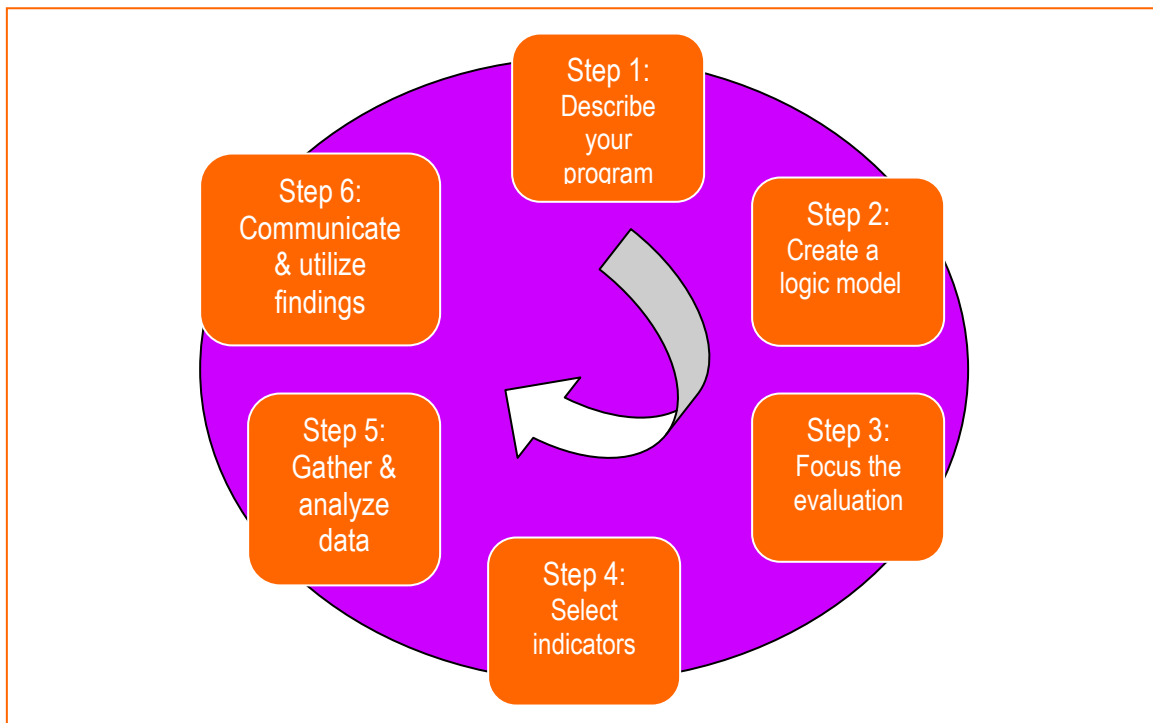
Step 1: Describe the program.

Generally, it's a good idea for planners to begin by sketching a broad overview of the program. Following are some questions that will help things get started:

Step 1: Describe your program

- What changes (outcomes) does the program want to accomplish?
- What needs to be in place for change to occur?
- What strategies or broad approaches will be used?
- Who are the target audiences for the planned activities?
- What does "success" look like?
- How will information gleaned from activities be disseminated and used for improvement purposes?
- How will gaps in the program be identified?

Step 2: Layout a simple logic model.

Step 2: Layout & sequence activities, outputs, outcomes

- Six columns should be drawn on a sheet of paper and the activities, outputs. and outcomes identified. The program description should be used to help fill in each column. The model should be kept simple.
- Next, some sequencing should be done. Program components should be linked by drawing arrows or other visual methods that depict sequence, interactions, or relationships between activities and outcomes.
- The layout should be revised until the model communicates a fairly accurate description of how the program is intended to work.

Step 3: Focus the evaluation.

What will be evaluated? To help determine the evaluation focus, planners should:

Step 3: Focus the evaluation

- Identify the information needs stakeholders have.
- Identify how the information produced by the evaluation could be used.
- Identify the evaluation questions for the program.
- Determine what will be measured, the level of data needed, when data will be collected and by whom, and how the findings will be disseminated. *Tip: Planners should use the evaluation template, located in the appendices, to assist in designing an evaluation plan.*

Step 4: Select indicators of progress toward activities and outcomes.

Step 4: Select indicators

- For each activity component identified on the logic model, indicators should be selected that measure progress toward implementation and outcomes.
- Objectives, indicators, and data sources should be linked to each other across time.
- Data sources should be identified—What data will be available for evaluation? Issues of timing should be considered—Throughout the program lifecycle, when are the data available?

Step 5: Gather and analyze evaluation data.

**Step 5:
Gather &
analyze data**

- Process and outcome data should be collected.
- The data gathered should be useful in answering the evaluation questions.
- The data should be analyzed using appropriate methods.

Step 6: Communicate and use the findings for program improvement.

**Step 6:
Communicate
& utilize
findings**

- Evaluation findings should be prepared for a variety of audiences. Planners should know who their audience is and should tailor reports to provide useable information.
- Findings should be reviewed with internal partners, The discussion should include how to best incorporate findings for continuous program improvement purposes.
- Finding information should be disseminated via multiple venues.

Things to Remember

➢ For a logic model to be useful it must be designed with stakeholder input and be robust enough to enable use for a variety of purposes.

➢ Program activities should be planned with the end goal in mind.

➢ Data should be used to identify where efforts should be focused.

➢ Planning should be practical.

➢ A target audience should be identified for each activity—will this activity and this strategy help achieve objectives?

➢ Logic models should be created with the user in mind—how much information do they need?

➢ The logic model should be revised as needed—if the activity plans have significantly changed, then corresponding changes should be made to the evaluation plans.

➢ Documenting activities and their outputs tells planners what was done, but doesn't tell how well it was done. It's easy to get caught up with counting everything and assume this is a sufficient evaluation. Planners should remember that not everything that gets counted counts, and not everything that counts get counted.

➢ Evaluation activities should be planned with the end user in mind. Planners should determine WHO needs the information and HOW the information gathered will be used.

GLOSSARY

Activities—Activities are what a program does with its inputs (resources).

Data—Data are specific information or facts collected to show how a program works and its effects.

Evaluation—An evaluation is the systematic collection and analysis of data needed to make decisions; for example, "I need to know this (X) because I need to decide this (Y).

Evaluation plan—This is a document (table) that details strategies for the systematic collection of information that will be used to answer critically important questions about a program. An evaluation plan provides a framework for developing indicators for program outcomes, and determining how evaluation information will be collected.

Evaluation question—An evaluation question is tied to a program's outcomes, outputs, indicators, or other definition of success. The goal of an evaluation effort is to answer one or more evaluation questions; for example, "To what extent are the activities being implemented as planned? If not, why?", or "To what extent are the prevention messages and activities reaching the intended audiences?"

Formative evaluation—A formative evaluation typically involves collecting a combination of information about a program's activities, outputs, and outcomes. Information is collected throughout the program and, therefore, can be used for continuous program improvement purposes.

Goal—A goal is a broad statement that describes the "big picture" or ultimate effect a program desires to accomplish. Examples of goals might be "to reduce alcohol use rates among youth", "to prevent birth defects", or "to improve birth outcomes".

Indicator—An indicator is an observable and measurable marker that a certain condition or circumstance exists, and that certain outcomes have been achieved. Indicators tell how much progress or change has been made toward a particular goal, outcome, or output.

Logic model—This is a graphic depiction of the relationships between a program's inputs, activities, outputs, and outcomes. The three types of logic models are: program level, program component, and nested. Program-level logic models depict an overview of the entire program, whereas program-component models zoom in on one component of the program (e.g., a particular objective, activity, or phase). Nested logic models depict in greater detail a specific component (such as professional development) that is part of a larger program model.

Objectives—These are statements that specify what a program will accomplish, and to what degree and within what time period. Well-written objectives specify in measureable terms WHO will be able to do WHAT, as well as HOW it will be done and by WHEN. One example of this is, "Increase the percentage of children who are linked to early birth defects services from X% in 2008 to Y% in 2009. Another example is, "By 2009,

negotiate the placement of at least one prevention message related to birth defects in each of the colleges in the state."

Outcomes—These are the (sequence of) intended changes that result from the program activities. Typically, outcomes are divided into three categories of change—short-term, midterm (often called intermediate or interim), and long-term.

Short-term outcomes are the immediate effects of program activities and reflect changes in learning, such as knowledge, awareness, or skills. Changing knowledge, awareness, or skills is the first step toward changing behavior
rs, practices, and policies. For example, a short-term outcome for a health improvement program might be increased skills in weight control and nutrition to reduce the adverse affects of diabetes. A short-term outcome for birth defects referrals might be increased linkage of families with birth defects services.

Midterm outcomes (also called intermediate or interim outcomes) are changes in behaviors, practices, and policies. Intermediate outcomes are the actions individuals and systems take as a result of gained knowledge, awareness, or skills. Using the previous nutrition example, a midterm outcome might be improved daily consumption of fruits and vegetables and increased daily physical activity. And, the birth defects example, the early utilization of services by children whose families were linked to available services, or the consumption of folic acid supplements after being exposed to prevention messages.

Long-term outcomes (often called impacts) are the conditions intended to change as a result of actions. Given their broader scope, these outcomes often take longer to achieve and they are generally the outcomes over which your program has less direct influence.

Outcome indicators—These are measures used to demonstrate the changes that have occurred (i.e., the achievement of an outcome).

Outputs—These are the tangible products that result from program activities such as prevention campaigns, surveillance systems, surveillance reports, and conferences. For evaluation purposes, outputs typically are expressed in terms of data about activities (number of campaigns, percentage of children served within the target population, or percentage of families contacted). Early outputs such as prevention and referral plans often are used as documentation of a program's progress toward reaching its intended outcomes.

Process evaluation—This is a systematic collection of information used to determine how well a program is planned and operating.

Process indicators—These are specific items of information (observable, measurable characteristics) used to demonstrate that a program is "on track" and making progress toward the planning and implementation of activities that will produce the outputs. These indicators are useful for management purposes to identify processes or activities that might require midcourse corrections in order to get the program back on track.

Stakeholders—These are organizations and individuals with a vested interest in the outcomes of the evaluation
- people developing and using the program
- intended users of the program's evaluation (intended users have specific information needs

Summative evaluation—This focuses on a program's midterm outcomes and effects.

Surveillance—This is the ongoing, systematic collection, analysis, and interpretation of data about a health event, risk factor, exposure, or hazard.

Utility—The extent to which an evaluation informs relevant audiences and have beneficial effects on their work.

REFERENCE

Berra, Y. (1998). The Yogi book: "I really didn't say everything I said." New York: Workman.

ADDITIONAL RESOURCES

The following links can be explored for further information about logic model development for planning and evaluation purposes.

Logic models—The following sites provide links to an extensive variety of planning and evaluation resources available on the Web:

Centers for Disease Control and Prevention
http://www.cdc.gov/eval/resources.htm#logic%20model

Program Development and Evaluation
University of Wisconsin-Extension
http://www.uwex.edu/ces/lmcourse/interface/coop_M1_Overview.htm
http://www.uwex.edu/ces/lmcourse/#

W.K. Kellogg Foundation
Logic Model Development Guide
http://www.wkkf.org/Pubs/Tools/Evaluation/Pub3669.pdf

EVALUATION RESOURCES

Centers for Disease Control and Prevention
Evaluation Working Group
http://www.cdc.gov/eval/

Framework for Program Evaluation in Public Health. MMWR [online], 48(No. RR-11). Available from URL:

http://www.cdc.gov/eval/framework.htm

Community Tool Box
The University of Kansas
http://ctb.ku.edu/en/

How to Plan Your Evaluation
U.S Department of Health & Human Services, substance Abuse and Mental Health
Services (SAMHSA)
http://www.captus.org/Western/resources/bp/step7/eval4.cfm

Program Development and Evaluation
University of Wisconsin-Extension
http://www.uwex.edu/ces/pdande/evaluation/index.html

W.K. Kellogg Foundation
Evaluation Handbook
http://www.wkkf.org/Pubs/Tools/Evaluation/Pub770.pdf