CHAPTER 1

Purpose

CHAPTER OBJECTIVES

By the end of this chapter, students will be able to:

- Discuss the steps in evaluation
- Prepare a review of the literature for a specific topic
- Develop specific questions for research and evaluations
- Evaluate goal statements and objectives
- Produce a logic model
- Evaluate the positive and adverse influence of stakeholders
- Differentiate the various types of evaluations

KEY TERMS

Goals and objectives
Research questions
Needs assessment
Literature review
Logic model
Stakeholders
Types of evaluations

Introduction

This chapter begins with a discussion about the differences and similarities between evaluation and research. Because this text covers both topics, it is important to learn the definitions of both concepts. The next discussion presents an overview of how to develop research questions and the purpose of conducting a needs assessment. Program planning involves identification of the type and design of program needed; achieving consensus from individuals providing or participating in the program; securing essential financial, personnel, and location resources; and sustained program implementation by staying true to the original design, also called program fidelity. Program evaluation is used for determining the day-to-day program management, short-term results, and long-term program impact. Program evaluations involve data collection and analysis to influence changes to improve program effectiveness.[1] As the first step, researchers read the published literature to determine research questions, whereas evaluators read the published literature to learn about the best practices related to their proposed goals for the planned program. Whether an individual is evaluating a program or conducting research, after reading the published literature, the investigation begins to take shape.

If you are wondering why you need to know about research and evaluation, let's explore the practical side of these skills. Suppose that you are interested in purchasing a new computer. You will plan, research, and evaluate your options prior to making a purchase. The same basic steps are used in research and evaluation.

1. How did you determine that you need a new computer? (Needs assessment)
2. What consumer rating reports will you read to gain information? (Literature review)
3. What questions need to be answered prior to your decision? (Research questions)
4. How will you map out your strategy for making this decision? (Logic model)
5. When visiting stores, what questions will you ask a salesperson? (Qualitative data)
6. What type of numerical data will you obtain online? (Quantitative data)
7. What questions do you ask your friends about their computers? (Qualitative data)
8. Are there budget constraints or stakeholders influencing your decision? (Budget and stakeholders)
9. What type of evaluation is most appropriate? (Evaluation)

10. How will you merge the data and make your final decision? (Data analysis)
11. Purchase a computer, install software, and read the manual. (Final report)

Once you realize the usefulness that research and evaluation skills play in daily life, this text becomes more practical and beneficial. You will learn skills and methods to assist with a wide range of program planning, research, and evaluation methods in your personal and professional lives.

Difference Between Research and Evaluation

Let's begin with some simple definitions followed by more details about the similarities and differences between research and evaluation. Research creates new knowledge[2] with the intention of generalizing results from a sample to the population.[3] Evaluations are conducted to improve an internal situation with no intent to generalize to another population.[2] Now let's compare a few more specific similarities and differences between research and evaluation. Because this text introduces the concepts of both research and evaluation, it is not expected that the reader already understands all of the information provided in **Table 1-1**. Understanding and proficiency will increase as you move through each chapter.

Table 1-1 A Comparison of Research and Evaluation

Research	Evaluation
Creates new knowledge	Improves program effectiveness
Reviews the literature to determine questions that remain unanswered on the topic	Reviews the literature to determine best practices of similar programs
Tests hypotheses	Utilizes facts
Uses a theory for framework and research design	Uses a logic model
Answers specific questions	Answers general questions
Seeks to be value-free[4]	Assigns value to a program[4]
Generalizes results from sample to a population	Recommends improvement for an existing program with a target audience
Uses primary and/or secondary data	Uses primary and/or secondary data
Utilizes statistical test for data analysis	Utilizes statistical test for data analysis
Draws conclusions	Provides useful feedback
Determines what might be significant	Determines what is important
Researcher publishes results	Evaluator writes report for stakeholders

Data from Doherty, T. Research and Evaluation? It's Complicated! Population Health. Department of Health and Human Services of Australia. Available at: www.menzies.utas.edu.au/pdf/Nov%202011%20MRI_final.pdf6. Accessed January 9, 2012.

Because this text covers both evaluation and research topics, the terms related to evaluation and research are presented throughout each discussion. As noted in Table 1-1, many of the same skills, such as development goals or research questions, data collection, data analyses, and report writing, are used in both evaluation and research.[5]

Purpose of Evaluation

Over the past 20 years, because of advances in evaluation, we know that "one size fits all" programs are not effective, and therefore, program planners currently design tailor-made programs to address the unique needs of individuals in a defined community. Keep in mind that the word *community* ranges from students in one specific department, to the employees at a corporation, to the population of an entire city. According to Rossi and Freeman,[6] any tailor-made design requires the evaluator to explore how the proposed program affects individuals and communities. It is also useful to investigate the possible political ramifications and sustainability of the program within the defined community. For example, in 1982, one of first school antidrug programs was initiated by First Lady Nancy Reagan when she developed the "Just Say No" campaign.[7] By 1989, researchers realized that this program was too simplistic to meet the needs of students in diverse cultural, geographic, economic, and social settings. Therefore, it became important to design targeted programs for each population.

Although it seems logical to start any program with the planning phase and end with the evaluation, this logic is not correct. It is essential to design the plan and its implementation in parallel with the evaluation. For example, it is not possible to implement a program that has not been fully planned, nor it is possible to create an evaluation after the implementation phase is complete. Because each phase is intertwined with the other program components, it is important to begin thinking about the following questions related to cost during the planning phase of the program:

- What type of data collection is needed to answer the question?
- Is the target population easily assessable?
- What is the geographical area of the program? Is extensive travel involved?
- Will a control group be used?
- How many staff members will be required to complete the designed program?
- Will incentives be given to recruit participants?
- Are the participants going to be followed over time?

As evaluators begin planning and evaluating a program, there are numerous decisions to make during the initial phase. Before moving into the remainder of this chapter, let's review what types of projects are not either evaluation or research.

As previously stated, research focuses on answering research questions and gaining new knowledge, whereas evaluations concentrate on identifying unmet needs and services, planning effective program implementation, investigating how to improve program services, and assisting staff with program decisions based on cost-effectiveness. Theories are developed, established, and emphasized in research. Although evaluations benefit from using theories, theories are not developed as an evaluation product. So now that research and evaluation have been compared, let's add one more category, called *audit*, that utilizes basic statistics, but is not research or evaluation. Audits are linked to compliance, accreditation, laws, and regulations. For example, the Government Accountability Office utilizes agency and institution data to determine level of culpability in an agency receiving federal funding. Another example is The Joint Commission (TJC, formerly known as the Joint Commission on Accreditation of Healthcare Organizations [JCAHO]). This organization conducts performance and standard measures, health services research, and accountability measures for healthcare institutions across the United States.[8]

The rest of this chapter introduces how to review the literature, conduct a needs assessment, develop questions, identify the type of evaluation, and determine the role of stakeholders in planning programs and evaluations.

Needs Assessment

The purpose of a needs assessment is to identify the strengths, weaknesses, opportunities, and threats (SWOT) in the organization or community. The needs assessment is conducted in collaboration with the stakeholders, such as staff members, community leaders, neighborhood organization members, and political leaders. The goal is to obtain a broad range of opinions about the benefits and worries, because a concern for one group may be an asset for another group.

The first step of the needs assessment is to form a partnership with individuals involved in the organization or community. It is advisable to include at least one member with expertise in conducting a needs assessment to offer an outside perspective to the process. At the introductory meeting, it is important that every member is treated equally and with respect. The neighborhood housing member's opinion and contribution are given the same weight as the city council member's. After getting to know each other, they should coalesce around a few

common goals for the needs assessment. It is advisable to focus on two or three goals, so the effort is not too ambitious. After establishing the goals, team members need to address the following questions:

- Who is the target audience for the needs assessment?
- Are there sufficient personnel to staff the needs assessment?
- What funds are available to finance the needs assessment?
- What are the roles, responsibilities, and expectations of each team member?
- Are there data available to ascertain what has been accomplished on this topic previously?
- What is the optimal timeline of the needs assessment?

Once the team answers these questions, it is time to move to the next step. Data collection begins with exploring what types of data are necessary to complete the needs assessment. Generally, data are divided into two categories: qualitative (words) and quantitative (numbers). Qualitative data include but are not limited to focus groups, interviews, town hall meetings, and public forums. The conversations at these events are recorded, transcribed, and analyzed for themes. On the other hand, with quantitative data, the survey responses are converted into numerical data for analysis. For example, the survey question "How would you rate your health today?" provides four scaled choices: excellent (4), good (3), fair (2), and poor (1). The responses are added together and divided by the number of individuals responding, to obtain a mean score or average. In addition, demographic data can be converted to numbers. When asking the respondents how long they have lived in the community, the choices would be: 10+ years (4); 5–9 years (3); 1–4 years (2); less than 1 year (1). As you can see, any type of data may be converted into numbers for quantitative analysis. Besides surveys, quantitative data may come from secondary data sources. When data is collected by another researcher or organization, it is called secondary data. Anyone using secondary data develops her own research objectives and questions. Examples of secondary data include census data, county property tax data, birth and death records, motor vehicle records, acute and chronic disease rates, professional organization licensure data, and so on. These data are public records and are available on city, county, state, federal, organizational, and institutional Internet sites (see **Table 1-2**).

Once the qualitative and quantitative data are collected and analyzed, the team reconvenes to examine the data for direction on how best to proceed with the planning process. Data results also guide refinement of the goals.

Table 1-2 Useful Data Resources

American Cancer Society	www.cancer.org
American Heart Association	www.heart.org
American Medical Association	www.ama-assn.org
American Nurses Association	www.nursingworld.org
American Physical Therapy Association	www.apta.org
Annie E. Casey Foundation: Kids Count	www.kidscount.org
Association of Schools and Programs of Public Health	www.aspph.org
Centers for Disease Control and Prevention	www.cdc.gov
Department of Health and Human Services	www.hhs.gov
Department of Labor	www.dol.gov
Environmental Protection Agency	www.epa.gov
Food and Drug Administration	www.fda.gov
March of Dimes	www.marchofdimes.com
National Institute for Occupational Safety and Health (NIOSH)	www.cdc.gov/NIOSH
National Institutes of Health	www.nih.gov
National Library of Medicine	www.nlm.nih.gov
Physicians for Social Responsibility	www.psr.org
U.S. Census Bureau	www.census.gov

Literature Review

The next step is to review the current published literature. Both researchers and evaluators need to know what other information is published on their topics of interest. Researchers search for what is already known about their topics and what questions remain unanswered. For example, researchers may discover that antidepression Drug A has never been studied on a group of adolescents, even though it has been proven to be effective for adults. This would then suggest a new area of research on antidepression Drug A to see if it would also be effective in adolescents. On the other hand, evaluators review the published literature to discover the best practices on their topics. Best practices are methods or techniques that have consistently been shown to be more effective than others and may be considered benchmarks in a field. For example, evaluators may discover a publication that describes a best practice initiative that reduced back injuries among employees working with elderly patients in assisted-living facilities. At this point, it may be tempting to simply enter your topic into an Internet search engine. Although this technique yields hundreds of websites related to the topic, it does not produce material suitable for a review of the literature. Keep in mind that the constant expansion of information available on the Internet does not mean that it is reliable, because anyone can post information, and it may serve

as an infomercial to sell a product, service, or even one individual's opinion on a topic. Generally, a quick way to discern if a website offers valuable information is to glance at the ending of the website address. If the web address ends with .gov, .edu, or .org, chances are the site presents reliable information. However, if the web address ends in .com or .net, you need to proceed with caution when incorporating the information into your literature review.

Rather than entering the topic into a search engine, it is important to read reliable publications that professionals and researchers have written on the topic of interest. This process yields a peer-reviewed literature review. When academic or scholarly colleagues write a manuscript about their research or best practices and submit the manuscript to a professional journal, the journal editor reviews the manuscript and sends it to several other professionals with expertise on the topic. The peer experts examine the manuscript, review the content, inspect for wrong or erroneous information, edit, and decide if the manuscript is suitable to the specific journal. They write comments back to the editor. The editor shares the reviewer comments with the manuscript's authors. If the manuscript is accepted with revisions, the suggested changes are made and the manuscript is resubmitted, reviewed again, and published. This process allows scholarly peers to review the research of their colleagues prior to publication; thus, academic journals are called *refereed* or *peer-reviewed journals*. In contrast, documents posted on Internet sites are not reviewed through a peer-reviewed process and therefore often lack academic rigor, consistency, and attention to detail.

A compelling literature review involves delving into a variety of credible professional reference materials. This process is best accomplished by visiting a university campus library and gaining access to the professional sources through online databases as well as assessing printed materials at the library. If you are not familiar with using databases that house peer-reviewed journals, it is recommended that you review the available tutorial modules or ask a librarian for assistance. As previously discussed, when conducting a peer-reviewed literature review, it is not acceptable to enter the topic into an Internet search engine and use whatever information appears on the screen. This technique yields unreliable information.

To begin a literature review, you need to become familiar with the databases used in health, including but not limited to MEDLINE, CINAHL, FirstSearch, Ovid, and PsychLit. After you access the appropriate database, you may use the "keyword" option to begin your search. This type of search may be limited further by choosing from the following search forms: "any of the words," "at least one of the words," or "must contain all of these words." For example, if you are interested in knowing what has been written about the global efforts to eradicate

malaria over the last 10 years, you may wish to use the "must contain all of these words" option. If you do not know much about your selected topic, use the "any of the words" option and cast a wide net related to the topic. Let's say you are interested in childhood obesity. The "any of the words" search results will be voluminous and will not provide the exact information you need, but this search option allows you to explore a wide variety of publications. By reading through a wide variety of publications, you gain knowledge about what research has been done on the topic previously.[9]

In addition to searching by keyword, you can limit your database search by years, language, subjects, or reviews. For example, you can search publications between 2002 and the present, written in English, and limited to human subject research. In addition, you have the choice of selecting review publications. The review publications are useful when starting your search because they provide an overview of the literature written on a specific topic. When you find a few specific and recently published peer-reviewed publications, you learn how other researchers investigated the same issue, including the methods used for the investigation, limitations and challenges, results, conclusions, and suggestions for further research. Although the literature review process is time consuming initially, it saves time later by helping you avoid the mistakes made by other researchers. If you find a peer-reviewed publication of particular interest, you may contact the author to discuss the publication in greater detail. Generally, authors are pleased to discuss their research findings.

To further limit the scope of your search to the most recent publications, it is useful to conduct a Boolean search. This time-saving technique allows you to limit your search efficiently by using three logical operations: OR, AND, and NOT. Keep in mind that some database search engines offer simpler methods, but not identical forms of search statements. It is useful to try a few different search statements until you become accustomed to the database you are using. If you get confused, refer to the help pages provided by the search engines.[10]

Boolean search:

Example 1

Topic:	malaria rates
Boolean logic:	AND
Search:	global AND international malaria rates

Example 2

Topic:	air quality
Boolean logic:	NOT
Search:	indoor NOT outdoor air quality

Example 3

Topic:	sports medicine
Boolean logic:	OR
Search:	adolescent OR teen sports medicine

In addition to using peer-reviewed journal databases, it is also helpful to use other library resources for your review of the literature. The following discussion provides the advantages and disadvantages of printed materials.

Books

Books provide a good starting point for a review of the literature because they offer a valuable general overview on specific subjects. Even though the information is less up-to-date because of publishing time, books should be included in any thorough literature review.

Government Documents

Depending on your field of study, many government documents are posted online through specific agency websites. These documents are extremely useful for a wide variety of topics. For example, if the investigation involves a historical view of HIV/AIDS, it is useful to research political documents to track the success and failure of legislative bills over the years. If you are not familiar with various government databases related to your topic, the reference librarian will offer valuable assistance.

Non-Governmental Organization (NGO) Documents

These organizations post valuable trend data and information related to specific topics. For example, the March of Dimes webpage[11] offers valuable maternal and infant health indicators. If you are not familiar with NGOs, it is best to seek the advice of a reference librarian.

Newspapers

Although newspapers are written for a general audience, the information provides the public a perspective on current events and summaries of recent trend data, such as political polls. It is useful to contrast newspaper articles with other sources for a comparative review of the literature.

Magazines

Like newspapers, magazines are intended for a general audience with the sole purpose of selling advertisements. Unless the topic involves investigating how a

specific topic is portrayed in magazines, generally this information is not useful for scholarly literature reviews.

Theses and Dissertations

Because these documents are not published, they are usually only available from the library or through interlibrary loan. Keep in mind that this type of research was conducted by students, so the findings need to be viewed with caution.

Once you have completed your literature research, it is time to compile the information into an organized document. One common mistake made by new researchers is confusing the terms *annotated bibliography* and *review of the literature*. An annotated bibliography contains a brief summary of each citation followed by a short evaluation. The document includes the strengths or weaknesses of the material presented in the citations. For an annotated bibliography, the source citations are presented in alphabetical order, and each citation is presented as a new paragraph. Because citations are provided with each summary, there is no need for a reference page at the end of the document. A review of the literature is a compilation of multiple resources presented in narrative format. The literature review presents all sides of an argument to avoid bias, and areas of dispute are emphasized for the reader. Literature reviews are usually organized around topics rather than presented in chronological order by year of publication. The citations are presented at the end of the paper.

Development of Research Questions or Goal Statements

Once the review of the literature is complete, the next step involves development of research questions or goal statements. Keep in mind that researchers ask questions with the primary goal of generating new knowledge. Evaluators write goal statements and objectives with the purpose of improving an existing program. It is common for new investigators to propose research questions or goal statements that are broad and implausible. After narrowing the topic, it is useful to stop and critically evaluate the proposed project. To assist with this process, refer to **Table 1-3** and read the descriptions for A, B, C, and D. For your topic, circle the letter that best defines your study.

If B, C, or D is circled, the proposed research or program needs reconsideration and modification. With limited resources and time, programs need to concentrate on important and changeable issues. Regardless of which letter is circled, it is useful to reconvene the needs assessment committee to confirm, change, or refute the goals prior to moving forward with the program planning.

Table 1-3 Decision Box

	Important	Not Important
Changeable	A	B
Not Changeable	C	D

A = Important and changeable (Strong)
B = Not important, but changeable (Weak)
C = Important, but not changeable (Weak)
D = Not important and not changeable (Very weak)

It is not unusual for team members to refine the evaluation or research several times prior to finalizing.

Another way to assess program planning is to use the results of the needs assessment and the literature review to answer the following questions:

- What is the perception of the proposed program?
- Do people think the problem is more severe than it might actually be?
- Has a needs assessment confirmed the extent of the problem?
- Are there reliable data available to show the severity of the problem?
- Given limited resources, should this program have high priority?
- Are there other problems that need immediate resources more than this problem?
- Does the long-term or longitudinal data show an increasing trend of this problem?
- What percentage of the population is affected by this problem?
- Will this program solve a portion of the problem?

Finally, by refining the goal and answering the questions in **Box 1-1**, the questions become focused for researchers or evaluators.

BOX 1-1

Research- and Evaluation-Focused Questions

Who?	Identify the target population.
What?	Describe the main purpose of the research or evaluation.
When?	Ascertain the time frame or length of the research or evaluation.
Where?	Describe the specific location.

Let's look at a few examples of focused research questions.

What is the preferred method of health education for newly diagnosed diabetic patients living in a rural area?

Who: Diabetic patients
What: Preferred method of health education: Group class, one-on-one education, self-paced workbook, Internet education modules
When: Newly diagnosed
Where: Rural area

Does participation in six weeks of in-house physical therapy prior to a total hip replacement decrease recovery time for elderly patients at their retirement community wellness center?

Who: Elderly patients
What: Physical therapy
When: Six weeks prior to a total hip replacement
Where: Retirement community wellness center

When comparing the use of Brand A surgical bandages with Brand B surgical bandages, which bandage is shown to have lower wound infection rates in the first five days following abdominal surgery?

Who: Brand A and Brand B surgical bandages
What: Lower wound infection rates
When: First five days postoperative
Where: Abdominal surgery sites

The process of writing excellent research questions involves numerous drafts and discussion with team members. Because team members may not have time to physically meet to write the research questions, it is advisable to send drafts via email to receive comments during the process. Once everyone agrees on the wording, it is valuable to schedule a meeting to revisit the results of the literature review and finalize the research questions.

Evaluation: Goals and Objectives

Once the best practices are identified in the literature review, it is time to refine the goal statements and write measureable objectives. For your program, there may be one or more goal statements describing the final impact or outcome of the program. The purpose of each goal statement is to describe an activity using

BOX 1-2

Test Your Skills

Write two goal statements for a program related to decreasing the number of patients who experience falls in a residential nursing home. For each goal statement, write two objectives.

measurable words such as *increase*, *improve*, *decrease*, *establish*, *deliver*, *provide*, and *produce*.

Examples of goal statements:[12]

Poor: The course will teach patients about diabetes.

Better: The course will increase the patients' knowledge about diabetes.

Best: The six-week course will increase the diabetic disease management knowledge and blood glucose monitoring for adults recently diagnosed with diabetes.

Once the goal statements are written, objectives are added to describe each of the steps required to accomplish the goals (see **Box 1-2**). Objectives are stated in terms of outcomes rather than processes. Each objective is measurable, identifies the target audience, and specifies the result of the activity with time restrictions.

Examples of objectives:

Poor: Patients attending the diabetic class should understand how to monitor their blood glucose levels.

Better: Patients attending the six-week diabetic course should be able to demonstrate how to monitor their blood glucose levels.

Best: By Week 2, 90% of patients attending the six-week diabetic course should be able to explain the signs and symptoms of low blood sugar and provide a return demonstration of how to monitor their blood glucose levels using their personal monitors.

Now that the evaluation team members have conducted the needs assessment, identified the best practices in the literature, and finalized the goal statements and objectives, it is time to explore the role of stakeholders.

Evaluation: Role of Stakeholders

Because stakeholders such as staff members, community leaders, neighborhood organization members, and political leaders shape how a program is planned, implemented, and evaluated, team members consider the level of influence and

power held by stakeholders.[13] Stakeholders have specific roles. When stakeholders learn these roles, each phase of the program design meets diverse needs. Traditionally, stakeholders were viewed as policymakers, program sponsors, program management, evaluation staff, or program staff. Even though target participants were often included in the list of stakeholders, they were not necessarily viewed as equal partners. Over time, the target audience has gained status and equal partnership. Now these stakeholders are viewed as being empowered to sustain community development projects by embracing disenfranchised groups.[14] As shown in **Table 1-4**, stakeholders with low power and high legitimacy represent service recipients or frontline staff. When the high power and low legitimacy stakeholders omit the less empowered individuals from the program design, there is less utilization and sustainability.[15]

Over the past few decades, evaluators have recognized the importance of stakeholder involvement. When stakeholders participate from the first program planning meeting through the evaluation, they are more likely to anticipate problems, provide legitimacy to community partners, share data resources, and assist with final decisions.[14] Stakeholder participation may pose some challenges in addition to these advantages. For example, program funding sponsor (high power) stakeholder opinions may differ from clinic staff (high legitimacy) stakeholder opinions. According to Guba and Lincoln,[15] the team should not avoid such conflict, but rather welcome dissimilar opinions and encourage open dialogue for greater understanding of perspectives. Here are some questions to consider when determining the role of stakeholders:

- How will the low power/high legitimacy stakeholders be assured of equal power throughout the planning and evaluation process?
- How and when will stakeholders be invited to participate in the planning phase?

Table 1-4 Stakeholders and Power

Low Power/High Legitimacy	High Power/Low Legitimacy
Recipients	Policymakers
Frontline staff	Funding agencies
Disenfranchised individuals	Evaluation staff
Target population	Program sponsors
Program staff	Program competitors

Data from Mark MM, Shotland RL. Stakeholder-based evaluation and value judgments. *Evaluation Rev*. 1985;9:605–626.

- Are meetings held at convenient times and locations for low power/high legitimacy stakeholders who have less flexible work schedules?
- Is the program methodology flexible and open to change based on stakeholder opinion?

Stakeholders with various roles and power are critical to the success and sustainability of programs whether in an organization, neighborhood, or community. However, different perspectives and vested interests cause clashing viewpoints for most programs. To overcome this potential conflict, it is essential to find some agreement on common ground among all members. Until all stakeholders agree on the goal statements, there is no purpose in moving forward. Once agreement is achieved on the goal statements, the specific objectives are modified to include diverse views on how to reach the goals. For example, community-based teen pregnancy prevention programs are a common controversial topic at school board and parent-teacher meetings. When the discussion centers around which specific curriculum should or should not be taught, no agreement is reached. However, once the stakeholders agree that a rising teen birthrate is unacceptable in their community, the planning process begins to explore ways to enhance self-esteem and redirect teen activity toward community service projects and part-time opportunities.

Now that the planning process is starting to take shape, it is necessary to introduce the basic components of the evaluation process. As stated at the beginning of the chapter, the evaluation is designed in the context of the program plan. The evaluation should never be an afterthought once the program has been completed. Without incorporating the evaluation in the first step of planning, serious and unresolvable problems will result in the end.

Evaluation: Implementation

After the planning phase is complete, it is time to begin the implementation process. Implementation is defined as the execution of the plan, or simply doing what was planned. The implementation entails a detailed step-by-step process. Think of the implementation with the same level of detail needed for a computer program. Each line of computer code must be correctly executed before the next line of code is read by the computer. The same process is true for implementing a program plan. Although this section focuses on implementation of an evaluation, it is important to note that researchers use the same steps when starting a research study. Research, like evaluation, must follow a detailed plan, so that the research study is completed in a timely and organized manner without omitting any critical details.

To ensure that each step of the plan is considered and implemented, it is useful to develop a timeline. Timelines are developed as a team process, so everyone shares their thoughts, ideas, and concerns. It is essential that team members take responsibility for action items; otherwise, the implementation is delayed. Once the timeline is finalized, it is posted as a visual cue. However, after a timeline is finalized, it is typically expanded and modified throughout the entire implementation process. Some teams use a whiteboard to post the timeline, so it can be easily changed as needed. Depending on the implementation size, timelines are displayed by month, week, day, or even hour, if necessary. In addition, teams may develop a timeline for each phase of the implementation. **Table 1-5** illustrates an example of a timeline for staff training.

Table 1-5 Staff Training Timeline

Month	Week	Action Item	Details	Person Responsible
July	7/3	Team meeting	Finalize implementation timeline	Team leader: JL
	7/10	Curriculum	Order adequate number of copies	Clerk: SA
	7/17	Staff training	Meet with 8 department supervisors to discuss staff training sessions	Team member: FC
	7/24	Staff training	Finalize 16 staff training sessions (2 per department); determine team members who will conduct the staff training	Team member: DE
	7/31	Design observation checklist	Three team members meet to design observation checklist for use during observations	Team members: BR, CD, LR
August	8/7	Practice staff training	Two team members schedule practice training sessions with other team members to finalize timing and quality; receive feedback	Team members: BR, CD
	8/14	Staff training	Two team members complete 16 staff training sessions; ensure fidelity in training by following protocol	Team members: BR, CD
		Track data	Log how many staff members in each department; log how many staff members attended each session	Team members: BR, CD
		Staff members not trained	Schedule additional training dates; contact staff members who did not receive training via in-house email; provide additional training dates and times	Clerk: SA
	8/21	Observations	Using the checklist, assign 4 team members to each randomly observe 2 trained staff members teaching patients	Team members: LR, DE
		Additional staff training sessions	Conduct make-up staff training for those unable to attend previously scheduled training sessions	Team members: BR, CD
	8/28	Fidelity	Team members review results of observation checklists for fidelity	Team members: BR, CD

As shown in Table 1-5, the implementation timeline includes every possible detail, so team members know the expectations for each week. Once one phase has been completed, it is necessary to develop a new timeline for the next phase. Even for large, multiyear programs, it is advisable to develop a timeline for the entire project and then break each segment into workable components for managing daily and weekly activities.

Besides a timeline, the implementation phase entails a method to ensure program fidelity. This method involves the development of all written policies and procedures. For example, as mentioned in Table 1-5, checklist observation documents program implementation. Other written policies include but are not limited to procedures for obtaining informed consent documents, specific instructions, or any procedure that requires adherence to a step-by-step implementation for program fidelity. Once the policies and procedures are in place, the implementation process continues throughout the duration of the program. Parallel to the implementation data collection process, evaluation data are collected at each step of the program. The following discussion introduces the types of evaluation used to assess each phase of programs.

Types of Evaluations

The main purpose of any evaluation is to improve program effectiveness. The complexity of the program and the evaluation determine the type and quality of the decisions. Whether the evaluation is simple or complex, each one requires rigorous and detailed design for success.[16] Although there are numerous types of evaluations, this chapter focuses on the most common types of evaluations: formative, summative, process, outcome, and impact.

Formative Evaluation

Formative evaluation is also called exploratory evaluation. It focuses on the elements of the program and is conducted during the planning and implementation phase. Think of a formative evaluation as ensuring that the program is "formed" correctly. The issues of concern are related to the appropriateness and feasibility of the program materials, messages, and methods used to conduct the program for the target audience. Formative evaluation includes qualitative or quantitative data or a mixture of the two. At each point through the planning, implementation, and evaluation phases, data are collected from the target audience (see **Box 1-3**). For example, during the needs assessment and planning phases, surveys

are pilot tested, revised, and completed by a small sample of participants. Such preliminary data determine what changes are needed to improve the readability and understanding of the final survey. Later, during the implementation phase, interviews or focus groups are conducted to confirm the usefulness of the messages and materials. Throughout the program, formative data are collected and portions of the program are modified as needed to address identified concerns.[17]

Summative Evaluation

Summative evaluation determines if the program met any combination of measurement about impact, outcome, or benefits. This type of evaluation is frequently conducted by external evaluators. Generally, quantitative data are used for summative evaluations, because standardized surveys are best suited for

BOX 1-3

Formative Evaluation Questions

Questions for administrators where the program will be implemented:
- What do you know about this program?
- What are the benefits to your facility for agreeing to implement this program?
- What problems do you foresee with the implementation of this program in this facility?
- What will your staff need to implement this program?
- What are the costs associated with the implementation?

Questions for staff in the facility:
- What do you know about this program?
- What have you heard about this program?
- What are the benefits of this program to the staff?
- What are the program barriers experienced by the staff?
- What are the benefits of this program to the participants?

Questions for potential participants:
- What made you decide to attend this program?
- What is most appealing about this program?
- What do you think you will gain by participating in this program?
- Why did you decide to come to this facility for the program?

BOX 1-4

Summative Evaluation Questions

What type of statistical test was used to analyze the data?
Were statistically significant results found? If so, explain.

measuring specific objectives. For example, a hospital institutes a new discharge planning program to ensure that all patients are educated about their discharge medications. Recently discharged patients are mailed the satisfaction survey along with a self-addressed stamped envelope to return the completed survey. The survey is limited to specific questions about the patient's level of satisfaction related to knowledge about their discharge medications. These data provide a summary of the impact, outcome, and benefits of the hospital's new discharge planning program (see **Box 1-4**).

Process Evaluation

Process evaluation examines all aspects of program implementation. In some situations, this evaluation investigates the organizational and administrative aspects of the program. During a process evaluation, the evaluation monitors the feedback of the program by investigating the issues that influence the implementation as well as the environment surrounding the implementation (see **Box 1-5**).[18]

BOX 1-5

Process Evaluation Questions

Is the program staying true to the original design (in other words, is there *program fidelity*), and is it maintained in the implementation process?
Are the quality and quantity of the services and products maintained at the capacity level expected?
Is the level of satisfaction sustained across participating groups?
Is there any identified reason why one group of participants is no longer participating?

Outcome Evaluation

Outcome evaluation obtains program data to document short-term results. These descriptive data define output activities, such as the number of individuals calling the toll-free number following a local public service advertisement campaign. Also, data access the short-term program results for the target audience, such as percentage of middle school students showing an increase in awareness of healthy cafeteria food choices after a school health intervention. Other information obtained from outcome evaluation includes knowledge, attitude, or behavioral changes or institutional policy changes (see **Box 1-6**). According to Stead, Hastings, and Eadie,[19] health literacy, social influence, and health policy are the types of action needed for health promotion outcome. Health literacy relates to an individual's knowledge and understanding of a health issue or concern. Social influence explores the availability of personal support and community empowerment. Health policy relates to how strategies are incorporated into organizational practice.

Impact Evaluation

Because of excessive costs and lengthy time commitment, impact evaluations are rarely possible. When feasible, impact evaluation is the most inclusive type of evaluation because of its focus on outcome objectives. Because of external influences, the results are not always attributable to directly to the program. Impact evaluation provides results related to long-term data such as recidivism rates, changes in morbidity and mortality data, or long-term maintenance of a behavioral change (see **Box 1-7**).

BOX 1-6

Outcome Evaluation Questions

Were the short-term goals achieved by the program?

What was the stakeholder's level of satisfaction in the program implementation?

Did specific health knowledge and motivation increase participation among the target population?

Did availability of social support positively affect the participant's health outcome?

BOX 1-7

Impact Evaluation Questions

What external influences affected the results?
What percentage of participants were lost to follow-up over the longitudinal study?
Was the expected behavior change sustained over the expected period of time?
How did the expected cost compare to the actual cost of the impact evaluation?

Evaluation: Logic Models

Now that the team members have completed the previously discussed tasks, it is time to organize the data and information on one spreadsheet. Even though there are numerous types and designs, all logic models are a graphic depiction of a program from the planning phase through evaluation. Logic models link research questions, goal statements, and objectives to interventions and outcomes. Such models are an excellent way to communicate the big picture to others. This type of communication facilitates buy-in from stakeholders, personnel, and the target audience. Keep in mind that there are whole books written about logic models. See **Table 1-6** for a basic overview of a logic model.[20] It is intended to merely introduce the concept of logic models.

Questions: The questions are listed across the top of the logic model. Each column of the logic model influences how the research questions are answered.

Goal Statements: The goal statements and objectives provide the program overview. Each goal statement is listed and followed by the measureable objectives.

Inputs and Resources: The inputs are defined as the resources available for the program. Inputs include human resources and stakeholders, such as funders, community partners, program staff, collaborators, and volunteers. Fiscal resources are funding, donations, and special grants. Physical resources provide office space and equipment, office and storage space, computers and software, and other special tools, such as cameras and recording devices. Knowledge resources are teaching materials, curriculum, learning competencies, and certification requirements. By listing every resource under the inputs category, it is easy to determine what is missing and needs to be obtained for the program to begin.

Table 1-6 Example of a Logic Model

Questions						
Goal Statements	**Inputs/Resources**	**Activities**	**Outputs/Process Evaluation**	**Outcomes/Impact and Outcome Evaluation**		
				Short-term Impact	**Intermediate Impact**	**Long-term Impact**
Overview and objectives	Human resources and stakeholders	Needs assessment	Products	Baseline data collection: knowledge, attitudes, behaviors, and beliefs	Track participation	Documentation of improved outcomes
	Fiscal resources	Baseline data	Services provided	Income generated	Retention and follow-up rates	Decreased costs due to improved conditions
	Physical resources	Recruitment	Themes	Knowledge gained	Implementation strategies for future events	Policy changes due to intervention
	Educational resources	Focus groups	Profits	Stakeholder satisfaction		Strategies for institutional changes
		Surveys	Number of persons trained			
		Interviews				
		Number of training sessions				
External influences: social media, environment effects, political impact						

Modified from McCawley P. University of Idaho Extension. Logic Models. Available at: http://www.uiweb.uidaho.edu/extension/LogicModel.pdf. Accessed January 12, 2012.

Activities: Activities involve what needs to be accomplished to achieve the objectives. For example, if an objective requires the development of a community coalition, the activity describes a detailed plan for forming a community coalition. If the objective involves teaching a health course, the activity explains how the resources are used to advertise the course, schedule the date and time, recruit and enroll students, collect fees, invite guest speakers, and so on for the course to be a success.

Outputs: Outputs link the goal statements and objectives to the short-term, intermediate, and long-term outcomes. Outputs may also be viewed as the process evaluation. Although outputs include products, goods, and services as well as the people served by the program, process evaluation monitors the overall implementation activities. Products, goods, and services are webpages, fact sheets, publications, software, curriculum handbooks, community events, courses, and demonstrations. The people served are described by their demographics and characteristics; percentage of target population reached; change in knowledge, attitude, beliefs, and behavior achieved; and overall level of satisfaction expressed.

Outcomes: Outcomes are expressed as short term, intermediate, or long term. Each phase communicates the effect of the program thus far. Short-term outcomes reflect awareness of the issue, motivation to change, and knowledge, attitudes, skills, beliefs, and behaviors needed to make the desired change. Intermediate outcomes build on short-term outcomes and track participation and practices of the target audience; changes in policies within institutions, business, and government agencies; and implementation of strategies by individuals and groups. Long-term outcomes or program impacts follow intermediate outcomes by documenting improved economic, health, educational, social, environmental, or political conditions that relate back to the goal statement. Impact determines permanent change beyond the end of the program. It is the lasting effect of change of institutional policies. For example, over time, the smoke-free indoor air quality goal statement produced a permanent nationwide ban of smoking in restaurants, bars, and domestic air flights.

External influences either support or oppose the goals. Because of the levels of institutional, community, and participant opinions of the goal statement, the program planning process changes to better match the baseline opinion of the community. For example, if the community supports building a free walk-in clinic for the homeless population, the inputs, activities, outputs, and outcomes will differ than if the community opposes a free clinic. If the community has the opinion that a free homeless clinic will increase the number of homeless people, then the program starts at a completely different place. Another type of external

influence includes similar and competing programs or services, socioeconomic conditions, governmental policies, and so on.

Summary

This chapter provided an overview of similarities and differences between research and evaluation, starting with the development of questions. The basic difference is that research generates new knowledge, whereas evaluation seeks to improve existing programs. Following a discussion about needs assessments and how to review existing published literature, the remainder of the chapter focused on the identification of program type and design, consensus building among individuals participating in the program, and resources needed such as funding, personnel, and location resources. Program evaluation was defined as day-to-day program management, short-term results, and long-term program impact. Program evaluations include data collection and analysis.

Case Study: Healthy Food/Healthy People

The administrator of a large urban hospital wanted to offer healthier food options in the cafeteria but was not sure what changes needed to occur in the cafeteria. She decided to conduct a needs assessment. Volunteers were recruited from the clinical, financial, administrative, and environmental service staff to serve on the committee. After writing a few broad goal statements, the committee conducted several focus groups with employees from each shift, because night shift food choices may be different from day shift choices. The focus group results showed some general themes, so the committee developed a short survey. The survey was printed on postcards and was made available on the cafeteria tables, at the condiment station, and near the checkout cashier registers. Drop boxes were available at each exit to collect the postcard surveys. This method also allowed both the employees and hospital visitors to participate. The survey was also made available online and on the employee website.

continues

CASE STUDY *continued*

While the survey data were collected over a three-week period, the committee worked with the cafeteria manager. The committee requested secondary data about the most popular and least popular food choices, sodium and sugar content of popular items, and availability of fresh fruit and vegetables. They ranked the current purchased food choices by popularity, cost, and health factors. This grid was compared to the focus group and survey results. After analyzing the needs assessment data, the committee wrote a goal statement and three measureable objectives.

Goal Statement

The hospital administration will change three aspects of the available food and drink choices to encourage healthy eating.

Objectives

1. By the end of May, the hospital cafeteria will offer 50% more fresh fruit and vegetables compared to the baseline data.
2. By the end of June, the hospital cafeteria will replace foods and drinks with excess sodium and sugar with low-sodium and low-sugar foods.
3. By the end of July, the hospital cafeteria will modify its soft drink company contract to exchange the purchase of high-sugar drinks to lower sugar or sugar-free flavored water drinks or pure water.

The committee collected data from the cafeteria manager throughout the first three-month pilot study phase of the cafeteria changes. The baseline data were compared to the pilot study data. The final report was presented to the hospital administrator as the first step in modifying the cafeteria food choices. The results showed that the employees and visitors were spending the same amount of money in the cafeteria, but were purchasing the healthier food choices offered. The committee members agreed that the needs assessment provided valuable baseline data rather than merely making decisions based on a best guess of potential food changes in the cafeteria. Lastly, they expressed high satisfaction from the opportunity to serve on the committee; because it was a representative group of all employees, they got to know people from

continues

CASE STUDY *continued*

other departments, and the process was employee-driven rather than a top-down approach.

Case Study Discussion Questions

1. Discuss other options that might have been used for the data collection.
2. What other types of data could be collected to address the objectives?
3. Now that the baseline data has been collected, what might be the next steps for the committee?

Student Activities

Cubing is an activity that involves exploring one issue from six different directions.[21] For this exercise, divide the class into equal groups of six students per group. Allow each group to select a health science topic of their choice. For this example, the topic is "Bachelor of Science in Health Science (BSHS) degree." Each student is assigned one of the following six questions:

1. *Describe:* What is the Bachelor of Science in Health Science degree?
2. *Compare:* How does the BSHS compare to other undergraduate degrees?
3. *Associate:* What does the BSHS degree make you think of?
4. *Analyze:* What should we look for in the ideal BSHS degree?
5. *Apply:* Apply what we know about undergraduate college degrees to the BSHS degree.
6. *Argue for and against it:* Identify arguments for and against the BSHS degree.

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