Program Evaluation in Environmental Health

About the Print Version

This print version of the module includes all the substantive content from each screen, except for the directions for the interactive graphics. It does not include the Check Your Understanding exercises, the Apply Your Knowledge pages, or the final quiz.

Introduction to Program Evaluation

Program evaluation can help you make sure that all your hard work on your environmental public health program is paying off. This section will give you some background on program evaluation—the who, what, when, and why—and then take you through a set of steps for planning and conducting a program evaluation.

After you go over some basic information about program evaluation, you will meet Joe Jones, an environmental public health manager. Joe has been given the task of evaluating his food safety program. As Joe plans and conducts his evaluation, you'll get to see the evaluation process in action.

What Is Program Evaluation?

Evaluation is a systematic way to collect information about the characteristics, activities, and results of a program in order to make decisions about the program. In other words, you use evaluation to gather evidence to determine the value of a program—is it worthwhile, useful, or important?

In environmental health, evaluation helps you answer the question: "Is the program making a difference?"

Why Evaluate?

Program evaluation should happen in all environmental health programs.

Evidence you collect through evaluation enables you to be **accountable** to funders and to the public. It allows you to **communicate** clearly about what you do, to **document** a program's progress, and to **measure** its results.

Evaluation findings can help you **improve** your program, **plan** future programs, and make decisions about how to use your program resources.

When to Evaluate?

Evaluation is useful at different points in the life of a program.
- In the **design phase,** when a program is being planned, evaluation procedures can help you decide what form the program might take and what program activities are most likely to be effective.

- During the **early implementation period,** when you are testing and refining the program's activities, an evaluation can help determine what modifications may be needed.

Design   Implementation   Sustained program

- During the **established, sustained period,** an evaluation can help you decide if a program is meeting expectations—Are the goals being met? Are the expected results being achieved? Are there ways the program can be made more efficient or effective?

Who Should Do the Evaluation?

Before you can start an evaluation you have to decide who will do the evaluation. To help make this decision, ask these questions:

Who has a thorough understanding of the program?

The person may be an environmental health program manager with a solid understanding of the program objectives and activities or an environmental health specialist who is closely involved with daily program activities and records.

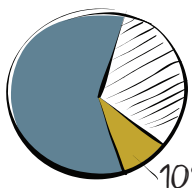**Who has the skills needed to plan and carry out the evaluation?**

The person should be someone who has experience with program evaluation or someone who is knowledgeable about program planning and data analysis. The purpose of this training module is to help you develop the knowledge and skills to conduct successful program evaluations.

Who has the necessary time available?

Keep in mind that the evaluation process usually requires program staff time, so the evaluation plan should be sure to include time for staff involvement. Although most environmental health units may not have dedicated time to conducting an evaluation, it's important to realize that program evaluation is essential for program improvement, and you should put effort into making it happen.

Are financial resources available?

A general rule is to set aside ten percent of program resources for evaluation. These funds may be used to hire outside or inside experts to develop an evaluation plan as well as to help with analyzing findings. Unfortunately, many units don't have financial resources to dedicate to evaluation. But with a little study and some work, you can evaluate your program. This module provides instructions and tools to conduct a successful program evaluation without needing to rely on a ten percent set aside.

10%

Tip: If financial resources are available, you may want to consider hiring an external evaluator. See the Toolkit for more information about hiring an evaluator.

Using an Evaluation Framework

Many frameworks exist to guide public health professionals through the process of program evaluation. Some frameworks are geared toward certain types of

Tip: The Toolkit has links to other evaluation frameworks.

programs (such as tobacco prevention) or specific systems (such as surveillance or information systems).

This module uses the CDC Evaluation Framework. The CDC Evaluation Framework has been used with great success by many different kinds of public health programs, including environmental public health programs.

The CDC Evaluation Framework outlines an approach to program evaluation that has six components. All of the Framework's components are important, but the components may overlap. You may find that you are working on more than one component at a time. The six components are:

- Engage stakeholders
- Describe the program
- Focus the design
- Gather evidence
- Justify conclusions
- Ensure use

CDC has created a list of 30 standards for assessing the quality of your evaluation activities. To help your evaluation be more effective, check to see if your evaluation activities meet the standards CDC recommends for usefulness, feasibility, legality, ethics, and accuracy. For more information about the Standards for Effective Program Evaluation, see the CDC Web site.

Engage stakeholders: Involve people who are connected to the program.

Describe the program: Organize the background information about your program.

Focus the design: Plan what components of the program you will evaluate.

Gather evidence: Gather data and information about the program.

Justify conclusions: Compare evaluation results to program expectations.

Ensure use: Inform people about the evaluation results.

Standards for Effective Program Evaluation http://www.cdc.gov/eval/standard.htm

Meet Joe Jones

Joe Jones is the manager of the Food Inspection Program at the DeBoma County Health Department. Joe has three staff members: two environmental health specialists and an administrative assistant.

The **goal** of the Food Inspection Program is to protect the public's health from foodborne outbreaks. The program accomplishes this goal through a variety of **activities,** including:

- Inspecting food service establishments
- Partnering with the local high schools to train and certify students in food handling
- Developing and distributing educational materials, including maintaining an up-to-date Web site
- Providing technical assistance to food establishments
- Investigating suspected foodborne outbreaks

As part of the annual budget review process, the health department director has selected the Food Inspection Program to be evaluated this year. She's asked Joe to conduct the evaluation, rather than hire an outside evaluator.

Joe knows the evaluation will give him an opportunity to learn how well his program is performing, and he is ready to take on the challenge. Although Joe does not have a lot of experience with evaluation, he believes he can find useful resource materials, and he knows that evaluation expertise is available in the department to help him if he needs it. He decides to use the CDC Framework as a guide, because he knows colleagues who have used it and found it helpful.

Where to Begin

Before you begin the evaluation, you will need to do some background work. You need to know:

- **Who the evaluation will affect**
- **What exactly you are going to evaluate**
- **What the program you want to evaluate is trying to accomplish**

In this section you will explore who the evaluation will affect (your stakeholders) and what you are going to evaluate (reviewing and describing your program). Knowing this will help you make sure you have the background information you need to design your evaluation plan. You will also see how Joe handles these first steps.

Who Are Stakeholders?

Stakeholders are the people who are involved with the program and who will want to know the results of the evaluation. The first component of the CDC Framework is to engage your stakeholders in the evaluation process from start to finish.

Programs have three primary groups of stakeholders, who should each be represented in the evaluation process.

- **People who support and carry out the program** (sponsors, collaborative partners, administrators, managers, and staff).
- **People the program affects or serves** (clients, families, businesses, other service providers, or organizations).
- **Decision-makers** (people who are in a position to create change, take actions, or decide funding based on the evaluation findings).

Involve Your Stakeholders

Engaging your stakeholders doesn't mean just telling them what you plan to do. It means actually getting them involved in the entire evaluation process, from

planning the evaluation all the way to taking action based on the results.

You can involve stakeholders in group meetings or individually. Regardless how you do it, it's important to let stakeholders know what's happening and get feedback from them as the evaluation proceeds.

If you engage your program stakeholder groups early, you can:

- Bring into the evaluation the different stakeholders' perspectives on the program.
- Get their help in clarifying program goals and objectives, which are the basis for measuring the program's effectiveness.
- Address stakeholders' various needs for the evaluation; they may want different kinds of information for different purposes.
- Establish common expectations for the evaluation—what it will and will not accomplish.
- Heighten stakeholders' interest and increase their involvement in the evaluation.
- Help to ensure that the evaluation findings will be used.

Who Are Joe's Stakeholders?

Joe knows he has to engage his stakeholders. But who are they and how to engage them? Joe starts to think about the people in the department and in his community who have a stake in the program. Joe also knows about the FDA National Retail Food Regulatory Program Standards, which provide some guidance about who these people should be.

http://www.cfsan.fda.gov/~dms/ret3toc.html
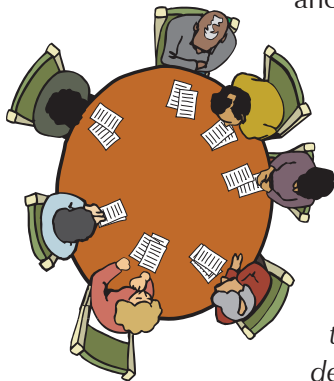
He decides to start his planning for the evaluation by forming a taskforce and inviting his stakeholders to a kick-off meeting. He talks to his program staff and the department's Web master *(those involved in program operations)*. Then he calls the vocational training teacher at a local high school, a representative from the local restaurant association, a representative from the general public *(those served or affected by the program),* and the health department director *(the decision-maker).*

Review the Program

Before you can begin to evaluate your program, you have to review your program to be clear about its purpose, activities, and intended results.

This step corresponds with the second component in the CDC Framework: to describe the program you plan to evaluate. The description will help you choose the design of the evaluation. Be sure to get others to help you with this review step, such as people who are knowledgeable about the program's purpose and history and how the program operates.

To begin, you should review the **need** and rationale for your program. What is the problem or opportunity the program addresses? Why did those who started the program select the current activities to address that need?

Next, review your program's **objectives.** The more specific and measurable the objectives are, the easier it will be to design your evaluation and interpret your findings. When you've gathered your background information, you're ready to describe your program. Here are four useful categories for describing a program:

Tip: If your program doesn't have written objectives or you want more information about program objectives, the Toolkit has some resources on writing good objectives.

- **Inputs,** or resources, such as costs, materials, and personnel required to carry out the program

- **Activities** that are carried out by the program

- **Outputs,** or things the program is intended to produce, such as the number of services or the number of people reached and other results you can observe or measure

- **Outcomes,** or what the program is ultimately expected to accomplish, such as changes in behavior or environmental changes

One way to organize the description of your program is with a logic model. We'll look at logic models in the next few screens.

Developing a Logic Model

A logic model is a visual way to organize your program description. The logic model usually takes the form of a diagram that illustrates the sequence of **inputs** (resources) …. that allow you to do **activities**…. that generate **outputs** (what the program produces and the more immediate results, often things that you can count like the # of people served.)…. that lead to **outcomes** that the program hopes to achieve. [Note: in some logic models, outcomes are further broken down into "intermediate outcomes", which lead to "long-term outcomes" or "impact"].

INPUTS ➡ **ACTIVITIES** ➡ **OUTPUTS** ➡ **OUTCOMES**

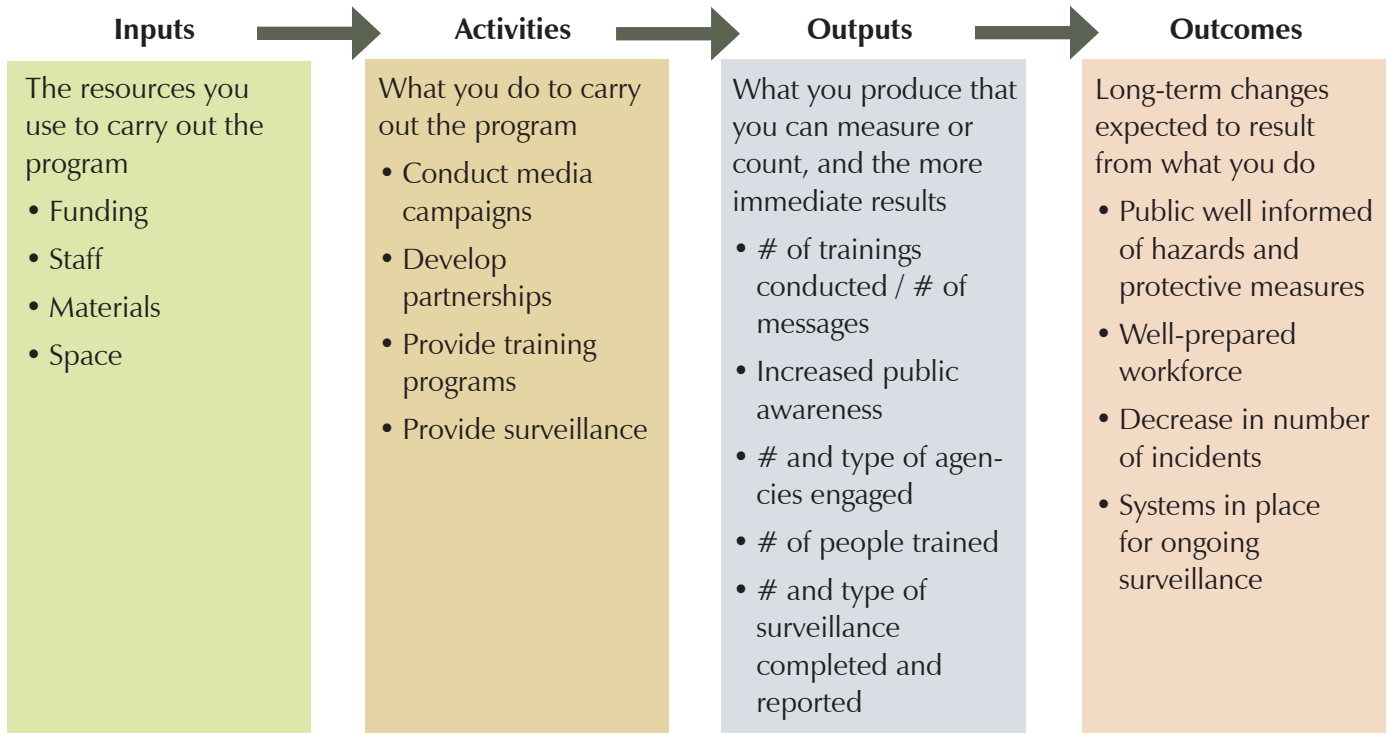A logic model helps you see connections between the program elements, processes, and outcomes. You can focus an evaluation on any or all of the logic model's elements. For example, you may evaluate whether specific activities are being carried out as planned or whether specific outcomes are being achieved.

A logic model provides a roadmap to help you decide which parts of a program to evaluate and how you might measure them.
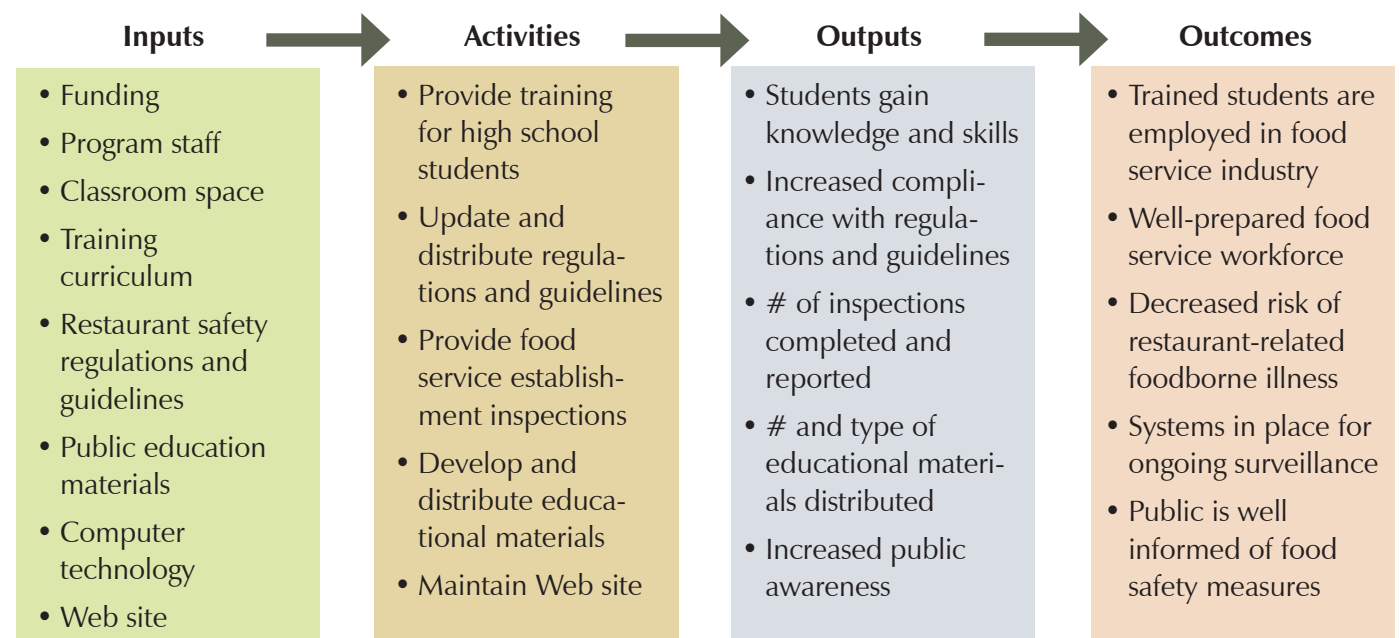
More on Logic Models

Let's take a more detailed look at a logic model. The diagram shows the sequence of the four basic elements—inputs, activities, outputs, and outcomes.

Inputs →	Activities →	Outputs →	Outcomes
The resources you use to carry out the program • Funding • Staff • Materials • Space	What you do to carry out the program • Conduct media campaigns • Develop partnerships • Provide training programs • Provide surveillance	What you produce that you can measure or count, and the more immediate results • # of trainings conducted / # of messages • Increased public awareness • # and type of agencies engaged • # of people trained • # and type of surveillance completed and reported	Long-term changes expected to result from what you do • Public well informed of hazards and protective measures • Well-prepared workforce • Decrease in number of incidents • Systems in place for ongoing surveillance

Joe Describes His Program

Joe puts together a draft logic model of the Food Inspection Program to discuss at the taskforce meeting. Here is his logic model.

Inputs →	Activities →	Outputs →	Outcomes
• Funding • Program staff • Classroom space • Training curriculum • Restaurant safety regulations and guidelines • Public education materials • Computer technology • Web site	• Provide training for high school students • Update and distribute regulations and guidelines • Provide food service establishment inspections • Develop and distribute educational materials • Maintain Web site	• Students gain knowledge and skills • Increased compliance with regulations and guidelines • # of inspections completed and reported • # and type of educational materials distributed • Increased public awareness	• Trained students are employed in food service industry • Well-prepared food service workforce • Decreased risk of restaurant-related foodborne illness • Systems in place for ongoing surveillance • Public is well informed of food safety measures

Because the expected outcomes match up with his program's objectives and contribute toward his program's goal (to encourage safe food handling practices in food service establishments and by the general public), he feels confident about the reasoning behind his logic model.

Plan to Evaluate

Now that you have the background information you need and you have determined how to organize it, you are ready to discover what else goes into the **evaluation plan.** This is the time to focus on **what parts of your program you want to evaluate** and what you will do to evaluate them. You will have some decisions to make regarding this part of the evaluation plan. The more thorough your background information is (especially your logic model), the easier the next steps will be.

The evaluation plan also includes **how you will collect the data and evaluation information.** Again, you will have to make some decisions about which kind of information collection methods will be best for you.

By the end of this section, you should know most of elements that go into an evaluation plan.

Decide Your Purpose

Your overview of the elements of your program will help you design your evaluation. The following information corresponds with the third component of the CDC Framework: focusing the evaluation design. This component starts with deciding what elements of the program you will evaluate and then developing the questions about those elements that you want the evaluation to answer.

Deciding what elements to evaluate

To get started, consider this question: What purpose will the evaluation have for you and your stakeholders?

You have to know why you want to do the evaluation and what you want to get out of it in order to design a useful evaluation.

Maybe the program must achieve certain standards in order to receive continued funding. Maybe some stakeholders want to know if it is a successful program. Or maybe you simply want to improve the effectiveness of your program.

Evaluating every aspect of a program is neither necessary nor realistic. In your program, time, staff, and funds are probably limited. You must decide how best to use your resources for an evaluation.

Choose the Evaluation Focus

Let's take a look at the two main categories of evaluation: **process** and **outcome.**

An evaluation may focus on the program **process.** For example, if you are most interested in how well the program is performing, the evaluation questions may include:

• Are you reaching the people you intended?

- How many services were provided compared to what was projected?
- What was the cost per service provided?
- How can you strengthen the program to reach a broader audience?
- Have we correctly categorized our food establishments based on risk?

An evaluation that looks at program **outcomes** may ask questions such as:

- Have we achieved the levels of public awareness needed?
- What systems are in place and to what extent are they functioning effectively?
- What effect have we had on decreasing the number of incidents?

Say you want to focus on the food service inspections aspect of your program.

A **process evaluation question** might be: Are we inspecting as many establishments each week as we are able to?

An **outcome evaluation question** might be: Are food establishments changing their practices in response to our inspections?

Tip: An evaluation may include questions about both the program's process and its outcome.

Develop Questions

A program evaluation can quickly grow larger than you can manage, so you will need to work on maintaining a realistic scope. Developing and prioritizing possible questions will help set the scope. Your stakeholders can help you develop good questions.

When selecting your evaluation questions, it is important to consider how realistically and reliably you can answer them. One way to do this is to ask about each question:

Tip: The Toolkit has more information about designing evaluation questions.

- What information would you need to answer the question?
- Is good information available or can you get it at a reasonable cost?
- How will the information be used for making decisions?

An additional factor to consider in prioritizing **outcome** evaluation questions is the amount of control the program has over an outcome. If the program is one of many interventions that contribute to achieving a long-term outcome (such as decreased incidence of food-related illness), focusing the evaluation on that outcome may not provide an accurate reflection of the program's effect because too many other factors determine the results.

In general, you may want to focus on intermediate outcomes that could be directly attributed to the program. For example, a media campaign related to household hazards might have an intermediate outcome of increasing the use of hazardous material disposal sites.

Joe Develops Questions

Joe knows that he has to narrow his focus and decide what part of his program he wants to evaluate. Should he do a **process** evaluation and focus on the

program activities and outputs—such as figuring out whether they are doing things the way they said they would? Or should he do an **outcome** evaluation and look at how the program has contributed to a change in food safety practices in DeBoma County?

With the advice of his taskforce, Joe decides to ask a combination of process and outcome questions to evaluate his program. He develops three evaluation questions, one for each of his program activities.

1. How effective is the program in ensuring that restaurants meet food safety regulations and guidelines? (outcome)

2. To what extent is the community being reached with public education information and materials? (process)

3. To what extent are the high school students that were trained well prepared for employment in the food service industry? (outcome)

He's fairly certain that the data exists to answer the questions and that he and his staff can handle the work involved in collecting the data.

These questions are all things he and his stakeholders want to know about his program, and he's sure that the answers will help him improve the program.

Choose Indicators

Indicators are the measures you will use to help answer your evaluation questions.

For example, indicators that can help you answer the question *"Are resources sufficient to meet the demand to conduct on-site sewage inspections each month?"* could be:

• Number of onsite sewage system inspections conducted each month

• Average number of days for an onsite sewage system inspection request to be processed.

• Number of complaints about untimely processing of onsite sewage system permits.

• Percentage of initial inspections requiring corrections and return inspections.

Indicators that can help you answer the question, *"Have we achieved the levels of public awareness needed?"* could be:

• Number of people who request information packets

• Number of requests for program services

• Number of individual visitors to the Web site

In selecting indicators, think about how **feasible** they are (how readily will you be able to get this information?), how **valid** they are (will they measure what you need them to measure?), and how **useful** they are (will they enable you to answer the evaluation questions?).

Joe Chooses Indicators

After developing his evaluation questions, Joe works with his taskforce to identify a set of indicators for each question. Here's his table of questions and indicators.

Evaluation	Question Indicators
1. How effective is the program in ensuring restaurants meet food safety regulations and guidelines?	• # of primary inspections (by year) • % of food service establishments with violations (by year) and type of violations • # of re-inspections • % in compliance upon re-inspection
2. To what extent is the community being reached with public education information and materials?	• # of requests for information • # of visitors to the Web site • # and type of venues used for direct distribution of materials
3. To what extent are the high school students that were trained well prepared for employment in the food service industry?	• Student test scores • # of students trained in the last two years currently employed in food service • Type and location of employment • % of specific competencies students display

Collect Information

The fourth component of the CDC Framework is gathering evidence. This component has several tasks.

Before you get started on collecting your data and information, you will want to do two important things: **clarify roles** and responsibilities for gathering and analyzing the data (who's going to do it) and **develop a timeline** for collecting the data (when you will complete this step).

If you do not have experience with data collection and analysis, you should identify someone who can assist you. Consult them when you are planning to collect information and later when you need to analyze the results. (The section "Analyze Data" will give you more information about analyzing the results.)

Next you need to **identify the sources of data** and information and the **collection methods** you will use. For example, if you want to know about the type and scope of complaints in your solid waste program, for sources of data you might check office phone logs or personal activity reports for the number of complaints received each month, the length of time to respond to complaints, the number of return visits required to achieve compliance, the number of invalid complaints, and the type of complaints by category (for example,

Program Evaluation
☑ Engage stakeholders
☑ Describe program
☑ Focus the design
☑ Gather evidence
☐ Justify conclusions
☐ Ensure use

garbage, hazardous waste, illegal dumping, and so on). Information on the extent of peoples' health concerns could be more difficult to get, but you might, for example, collect it through surveys or focus groups.

The information you collect will fall into one of two types: **quantitative** and **qualitative.** Both are useful and important, but in different ways. Quantitative information refers to things you can count or analyze with numbers, for example data from reports or survey rating scales. Qualitative information refers usually to people's comments and perceptions, for example, from focus groups or surveys. Qualitative information is descriptive and generally provides more detailed answers to questions.

Data Collection Methods

Some examples of data collection methods are:

Tip: You can find a list of the different data collection methods and the pros and cons of each, along with tips on tool design, in the Toolkit.

- **Documentation review:** Internal documents or records will have useful information. You might examine reports, forms, diaries, notes, brochures, log books, or meeting minutes.

- **Observation:** You may find it useful to observe the activities of staff or participants to see how that activity works for that person.

- **Surveys or questionnaires:** Either written or oral surveys might be useful. They allow you to ask a large number of people very specific questions. You can also ask broader, more qualitative questions.

- **Interviews:** Interviews can give you a more thorough understanding of information that is difficult to measure with numbers. You can choose from a number of interview styles.

- **Focus groups:** Sometimes it is useful to interview people in a group to hear their varying opinions and see how their ideas develop as they interact. You generally choose members of a focus group on the basis of a shared characteristic.

- **Nominal group methods:** Usually in the nominal group method, a small group of participants responds to a question and ranks their answers in order of importance.

- **Tests or assessments:** Assessments can help you determine the knowledge and needs of your target group, especially their need for skills or information.

Time constraints, difficulty, and cost are factors you need to consider when you select evaluation data sources and methods. **Avoid collecting unnecessary data.**
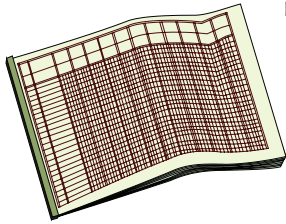
Design Tools

After you choose appropriate data collection methods, you may have to design some tools (also called instruments) to help collect and record the data. Examples of tools are observation checklists, questionnaires, and interview or

focus group guidelines. In other words, tools are usually paper forms. But you might also use the Internet, for example, to do a survey.

You use tools, or instruments, to collect and organize information from various sources; they are not themselves the sources of information. **Check to see if any information you will be collecting is confidential** or personal. If it is, be sure you have safeguards in place to protect privacy and confidentiality. If the evaluation includes collecting information about individuals, you may need to check with a state or local Institutional Review Board (IRB) to ensure that you correctly address issues around human subjects.

When you have your plan, your method, and your tools in place, you can go ahead and collect the information you need to answer your evaluation questions. **Be systematic in your data collection and recording.** You might use a spreadsheet, for example, to record and compile quantitative data. Record or transcribe qualitative data with as much detail as possible.

If collecting and recording data are not your areas of expertise, be sure to consult someone who has experience with research or collecting and analyzing data who can help you make this stage go well.

Tip: The Toolkit has more resources about Human Subjects and IRBs.

Joe Gathers Data

Now that Joe has an idea of the information that he needs for his evaluation, he has to figure out how to get it. He knows that he can find some information, especially about the indicators for his evaluation question on restaurants, in the program records and reports (for example, the number of inspections and percent with violations). He makes a list of the things he will look for on the reports and creates a spreadsheet so that he can compile the information in one place.

His internal and Web records should give him the data he needs to answer the evaluation question on educating the public. He creates another simple spreadsheet that will help him organize this data.

Information for the evaluation question on high school students, such as places students are employed or their level of preparedness in food safety, will be more difficult to get. Joe decides to create and conduct two surveys as a way to get answers about high school student training: first, a survey of students who completed the high school training program in the past two years, and second, a survey of restaurant managers who employed those students.

Because Joe feels uncertain about his experience working with data, he asks a colleague to look at the plan and make recommendations to help make sure the data collection and analysis will go smoothly. Because he plans to conduct surveys and collect personal information about students, Joe consults with some of his colleagues about possible privacy issues. They recommend that he check with the state Institutional Review Board to make sure he is following legal requirements.

Evaluation question on restaurants: How effective is the program in ensuring restaurants meet food safety regulations and guidelines?

Evaluation question on educating the public: To what extent is the community being reached with public education information and materials?

Evaluation question on high school students: To what extent are the high school students that were trained well prepared for employment in the food service industry?

Joe's Collection Plan

Joe begins immediately to organize his records and prepare the surveys for the students. To stay on schedule, he arranges with his staff to begin collecting the easy-to-find information, such as Web activity and requests for information.

Joe also organizes his data collection plan in a table so he can easily see how he's coming along. Here is his table.

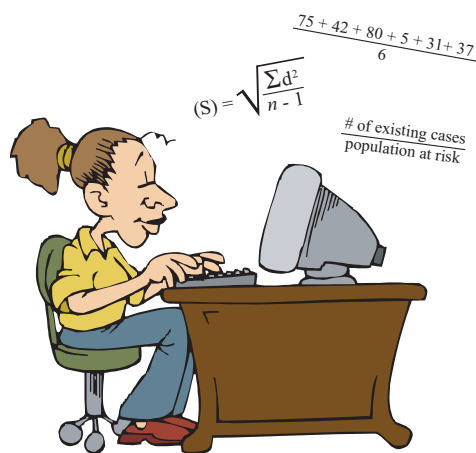| Evaluation	Question Indicators	Data Sources/ Methods	Person Responsible	Timeline
1. How effective is the program in ensuring restaurants meet food safety regulations and guidelines?	• # of primary inspections (by year) • % of food service establishments with violations (by year) and type of violations • # of re-inspections • % in compliance upon re-inspection	Inspection reports Activity log book	Joe Jones	Three weeks: (by XX date)
2. To what extent is the community being reached with public education information and materials?	• # of requests for information • # of visitors to the Web site • # and type of venues used for direct distribution of materials	Program reports Activity log book Web logs	Admin Assistant	Two weeks: (by xx date)
3. To what extent are the high school students that were trained well prepared for employment in the food service industry?	• Student test scores • # of students trained in the last two years currently employed in food service • Type and location of employment • % of specific competencies students display	Class records Survey results	Staffer in charge of training	Four weeks: (by xx date)

Make It Useful

Evaluating your program doesn't end with gathering data, of course. Now you have to figure out what the information and data are telling you. In other words, you have **to analyze and draw some conclusions about the data.** Then you have to **decide what recommendations to make** based on those conclusions. Finally, you aren't done until you **communicate those recommendations.**

Analyze Data

Having information about a program will allow you to draw conclusions and make recommendations, but first you must analyze and interpret the information in order to understand its significance. This matches the CDC Framework's fifth component, justifying conclusions.

The approach you use to analyze data depends upon the data you collect and the questions you asked.

You need a way to examine the data and information you gather about your program. If you have quantitative data, you might use computer spreadsheet programs or statistical analysis programs to examine your results and calculate such things as averages or frequencies.

Tip: The Toolkit lists resources that will explain more about how to analyze qualitative data.

$$\frac{75 + 42 + 80 + 5 + 31 + 37}{6}$$

$$(S) = \sqrt{\frac{\sum d^2}{n-1}}$$

$$\frac{\text{\# of existing cases}}{\text{population at risk}}$$

If you have qualitative data, such as written or transcribed responses, you can organize and categorize points in lists under key word headings, for example. Qualitative data analysis computer programs might also be helpful. You will want to search for themes and connections within the data.

Analyzing your data and understanding your information can get complicated. If data analysis is not your area of expertise, you should call on the experienced people you identified earlier to assist you at this point.

Draw Conclusions

After you have collected and analyzed your data and information, you need to describe what the results mean. What does the data tell you about your program? What are the answers to your original evaluation questions?

To draw conclusions from the data results, you may:

- Compare the results against targets set for the program (for example, in the objectives)
- Compare the results against standards established by the state or by colleagues.
- Make comparisons with other programs
- Describe trends in the program data over time (compare it against itself)

Choosing a standard for comparison is important because unless you compare your evaluation information to some standard or target, you will not know if your program is doing what it should be doing.

Drawing conclusions about your results is another step in which you may want to include stakeholders. Also, as mentioned before, if you are having

trouble interpreting the data and drawing conclusions, you may want to get help from colleagues who have experience in this area.

Make Recommendations

After you have analyzed the data and determined what the data says about your program, it's time to make recommendations about your program.

When you see whether your program has lived up to your expectations, you may want to:

- Recommend ways to improve the program.
- Describe program strengths or best practices.
- List challenges the program faces.
- Suggest alternative approaches to reaching the program objectives.
- Recommend ways to expand or reduce the program.
- Recommend that a part of the program be terminated.

Recommendations should be based on the facts that you've gathered through your evaluation, and they should be consistent with the purpose of your evaluation. Keep in mind your program's resource limitations (money, time, personnel, space, experience level).

In this step, as in the past steps, your stakeholders can be very helpful, and this is also a good time to check that you are providing the information they wanted to get out of the evaluation.

Joe's Results

Several weeks have gone by, and Joe has been hard at work collecting the data he needs for his program evaluation. His survey instruments collected both quantitative information and qualitative information. He had a good response rate to his two surveys and has compiled the results along with other data in spreadsheets. Now it's time to think about what the data are telling him.

Quantitative information: Information from closed-ended questions with specific response choices and numbers

Qualitative information: Information from open-ended questions that ask for descriptions

Data tables from Joe's spreadsheets

Student Final Exam Scores (n=96 students)

Time period	% Range	Average %
Fall Qtr. 2004	64–88	80
Winter Qtr. 2004	70–90	82
Spring Qtr. 2005	68–92	84
Fall Qtr. 2005	70–96	86
Winter Qtr. 2006	74–96	88
Spring Qtr. 2006	78–98	91

Restaurants with Critical Item Violations

Time period	% Restaurants with violations	# Critical violations
1st Qtr. 2005	75	125
2nd Qtr. 2005	75	112
3rd Qtr. 2005	68	100
4th Qtr. 2005	68	96
1st Qtr. 2006	70	88
2nd Qtr. 2006	65	77

Web Site Visits

Time period	#
1st Qtr. 2005	325
2nd Qtr. 2005	296
3rd Qtr. 2005	281
4th Qtr. 2005	240
1st Qtr. 2006	213
2nd Qtr. 2006	201

Program Effective for Teaching Safe Food Handling

Audience	Strongly Agree	Agree	Disagree	Strongly Disagree
Students (n=70)	43%	54%	3%	0%
Managers (n=36)	56%	42%	3%	0%

Joe's Conclusions

The results from Joe's evaluation show that his program is doing well.

The percent of **restaurants with violations** and the number of critical item violations has noticeably decreased. He is able to draw conclusions about this by examining the trend over time and by comparing these numbers to those set in his original program objectives.

Public outreach is an area Joe is concerned about. He notes a decrease in the number of times the Web site has been accessed over the past two years.

Since the **high school program**'s inception, student test scores have been increasing. He is able to draw this conclusion by examining the trend over time.

Joe is happy to see that former students and restaurant managers believe the program has been effective in teaching safe food handling, although open-ended responses indicated some areas in which both students and managers felt the students were less well prepared.

Joe concludes the program is having the intended effect in some of the outcome areas, but not all. He makes **three recommendations:**

1. The school-based education is a good approach to reach future food service employees and should be continued.

2. The program's high school curriculum could better address cleaning and maintenance of food preparation surfaces and food storage temperatures and duration.

3. The program needs to market its Web site better and ensure that its content meets the needs of restaurant managers.

Share Results

The evaluation process isn't complete until you've communicated your findings in ways that will ensure that they are used to improve the program. Ensuring that the results are used is the sixth component of the CDC Framework. You want your findings and recommendations to help people make informed decisions. Make sure that the right findings are shared with the right people in the

right way. **The same reporting format will not work for every person involved in your program.**

Decision-makers will want more information. They will want to review the evidence, perhaps in the form of a spreadsheet or formal report. Other stakeholder groups may need only an overview of the final recommendations. Methods of communication may include slide presentations, summary fact sheets, or formal reports.

The public, too, will probably be interested in some of the findings. If you provide forums or other public meetings for discussion, it will allow you to explain the findings that are important to the public.

Your stakeholder advisors should help you at this step. They will know what kind of formats and how much detail is important for the people they represent.

Finally, **follow up on the results of your communication** to make sure that your findings are translated into decisions and that the decisions are translated into actions.

Joe Shares Results

Now it's time for Joe to share the results of his evaluation. He has to decide *how* and *to whom*.

He is confident that his evaluation results are credible because he involved his taskforce. And he is also confident he has reliable and useful information to give the health department director who requested the evaluation.

Joe decides his first step will be to make **a presentation of his findings to his advisory group** and get their feedback on his recommendations. He plans to include **a discussion of the written report at his next staff meeting** and to prepare **a summary of the findings and recommendations for the other program managers** in the department, the health department director, and his local board of health.

Joe also decides to write separate **letters to the vocational training faculty at the local high schools and to the local restaurant association.** He wants to inform them of his findings, invite their questions, and let them know that he may be making a few programmatic improvements based on the results.

Joe has learned a lot about his program. The evaluation has given him a clear picture of what the program has accomplished and has enabled him to set some new directions and devise some new strategies for the next budget year.

Summary

This module has provided an overview of planning and conducting a program evaluation, based on the six components of the CDC Evaluation Framework:

- **Engage stakeholders** by involving people who are connected to the program in the evaluation process.

- **Describe the program** by organizing the background information about your program into a logic model.

- **Focus the design** by planning what components of the program you will evaluate.

- **Gather evidence** about the program through various data collection methods.

- **Justify conclusions** by comparing your evaluation results to program expectations.

- **Ensure use** by informing people about the evaluation results and following up to make sure that your findings are translated into action.

Remember that you should plan for program evaluation from the earliest stages of your programs. If you have not done that, it is not too late to plan your evaluation while your programs are active.

Also, remember that CDC's six components of a program evaluation are not entirely separate from one another. They may overlap or be repeated. You should keep in mind and prepare for future steps as you are working on earlier ones.

As mentioned at the beginning of the module, CDC has created a list of 30 standards for assessing the quality of your evaluation activities. Your evaluation will be more effective if you make sure it meets the standards CDC recommends for usefulness, feasibility, legality, ethics, and accuracy. See the CDC Web site for more information about the Standards for Effective Program Evaluation.

Throughout this module you have been directed to the Toolkit for templates and resources to help you develop your own evaluation plan. To get full benefit from this module, please apply the skills you have been learning by completing an evaluation plan for a program of your own. (You may already have begun working on that plan.) You can find the evaluation plan workbook in the Toolkit.

Competencies

This module addresses the following Core Competencies of Environmental Health:

- Information Gathering: The capacity to identify sources and compile relevant and appropriate information when needed, and the knowledge of where to go to obtain the information

- Data Analysis and Interpretation: The capacity to analyze data, recognize meaningful test results, interpret results, and present the results in an appropriate way to different types of audiences

- Evaluation: The capacity to evaluate the effectiveness or performance of procedures, interventions, and programs

In addition, the module addresses the following Essential Service of Environmental Health:

- Evaluate effectiveness, accessibility, and quality of personal and population-based environmental health service

Course Developers

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Project Team

Carl Osaki – Principal Investigator
Clinical Associate Professor
Department of Environmental and Occupational Health Sciences
School of Public Health and Community Medicine
University of Washington

Luann D'Ambrosio – Assistant Director
Northwest Center for Public Health Practice
University of Washington

Sandra Senter – Evaluation Consultant
Group Health Community Foundation

Hilary Heishman – Research Assistant
Northwest Center for Public Health Practice
University of Washington

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ronmental-health-center/
advisors

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