step 1

Focus the Evaluation

At the end of this module, you will be able to:

- ▲ Identify the purpose of your evaluation (Step 1a).
- ▲ Create a logic model to illustrate the linkages between program elements (Step 1b).
- ▲ Consult the individuals and groups who have a stake in the evaluation of your program (Step 1c).
- ▲ Determine the questions the evaluation will seek to answer (Step 1d).

The first step in evaluating any program is deciding the focus of the evaluation. This step lays the foundation for the remaining steps in the evaluation process. Step 1 of the *Tool Kit* will help you determine:

- why you are evaluating this particular program at this particular point in time;
- how the program is supposed to work, with whom, and why;
- who will be using the evaluation findings; and
- precisely what data about the program you need from the evaluation.

STEP 1a

Identifying the Purpose of the Evaluation

No program is ever evaluated just for the sake of being evaluated. There is always a specific reason, something that drives you to evaluate a particular program — or part of a program — at a particular point in time. It is important to identify the broad purpose of your evaluation up front before tackling the specific details of how you are going to do the evaluation. Otherwise, there is a danger of getting bogged down in the process of developing data collection tools, gathering data, analysing data, trying to interpret the data, thereby losing sight of the bigger picture.

There are many reasons to evaluate a program — to identify strengths and weaknesses, to share experiences, to measure progress, to improve implementation, to see what has been achieved so far, or to make decisions about which programs or aspects of a program should be continued or discontinued. In the *Purpose Statement* box, briefly explain in your own words why *you* are evaluating your program right now. There is a blank *Purpose Statement* in Appendix B.

EXAMPLE

Purpose Statement

To decide if the program should continue to be offered.

STEP 1 b

Creating a Logic Model

For most evaluations, it is important to have a clear description of the program to be evaluated. It will help you identify the critical questions for your evaluation. Sometimes a detailed description already exists. Often, however, programs — even those that have been around for a long time — have very little documentation about activities and expected outcomes. If that's your case, you are not alone. The *Tool Kit* will show you a tool for describing your program. It is called a program logic model.

This section will start off by giving you a bit of background on what a logic model is. Then you will be shown what a logic model looks like using the example of a health education program for parents. After that, you will be guided through the creation of a logic model for your own program.

What is a Logic Model?

Even though public health programs in Ontario are diverse, all share common elements. A logic model is a diagram of these common elements, showing what the program is supposed to do, with whom and why.

WHAT?

- **Components** are groups of closely-related activities in a program.
- **Activities** are the things the program does to work toward its desired outcomes.

WHO?

- **Target groups** are the individuals, groups or communities for whom the program's activities are designed.

WHY?

- **Outcomes** are the changes the program hopes to achieve. There are both **short-term** and **long-term** outcomes.

Try this to help you remember...

Components
Activities
Target Groups
Short-term
Outcomes
Long-term
Outcomes

There are many advantages to creating a logic model for your program. For evaluation purposes, a logic model can:

- summarise the key elements of your program (hopefully on a single piece of paper);
- explain the rationale behind program activities;
- show the cause-and-effect relationships between the activities and the outcomes — that is, which activities are expected to lead to which outcomes;
- help identify the critical questions for your evaluation; and
- provide the opportunity for stakeholders in the evaluation to discuss the program and agree upon its description.

Logic models are also a useful means of communicating the elements of your program to policy makers, staff, external funding agencies, the media and colleagues at other health units.

What Does a Logic Model Look Like? An Example

The logic model presented on the next page illustrates the basic elements of a parenting program. The You and Your Toddler Parenting Series has been offered throughout the Kennogaugh Falls Region for the past five years. It is designed for parents of children two to four years of age, especially those parents with a high school education or less. The series consists of six two-hour sessions facilitated by a public health nurse (PHN). Discussions include topics such as:

- taking care of a sick child;
- preparing healthy, balanced meals;
- communicating effectively;
- setting limits;
- talking about sexuality with toddlers;
- balancing work and family life; and
- building self-esteem in toddlers.

To recruit parents to the program, the PHNs:

- work with community resource centres and other organisations such as churches and libraries;
- advertise in grocery stores, shopping centers, pharmacies, etc.;
- write articles for community newspapers; and
- send letters to physicians to let them know about the program.

This recruitment activity is intended to increase awareness, knowledge and referrals to the program in order to increase participation in it.

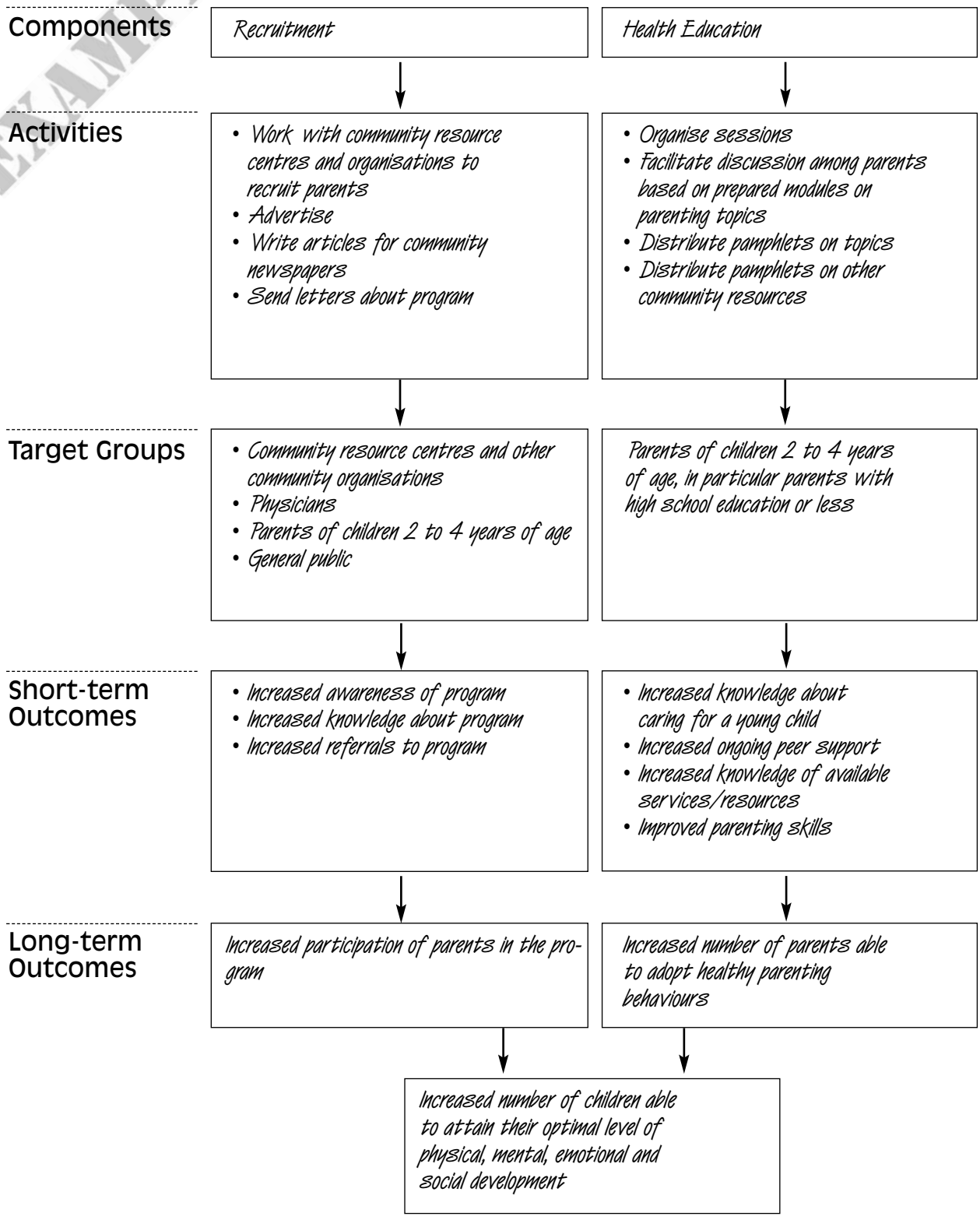
The sessions are offered at a variety of times and places throughout the week in churches and community centres throughout the region, in order to be available to as many parents as possible. Sessions are offered in English and French.

The series aims to:

- increase parents' knowledge about and skills in caring for their young children;
- inform parents about community resources; and
- help parents build an informal support network with other parents in the group.

Ultimately, it is hoped that this program will increase the number of parents able to adopt healthy parenting behaviours, thereby increasing the number of children able to attain their optimal level of physical, mental, emotional and social development.

Parenting Program Logic Model



Where to Start?

There is no single way to create a logic model. Where you start often depends on the developmental stage of the program.

An Existing Program

If your logic model is being developed to describe an existing program, start with the activities and progress downward — that is, a *top-down approach*. Ask yourself, "What is it that we do and why do we think that it will create the change we're hoping for?" This module will walk you through a top-down approach.

A New Program

If you are developing a logic model while planning a program, you may find it easier to start at the *bottom* of the model, beginning with the desired outcomes and *working your way up*. Ask yourself, "What is it that we want to change and how are we going to do it?"

Keep in mind that there is no "right" way to create a logic model — you may find that the easiest place to start is in the *middle*. You may even switch back and forth between approaches. Some people work across a page instead of up and down, starting with program components on the left and long-term outcomes on the far right. It really doesn't matter — the main point is to begin where it's easiest for you.

Who Should be Involved?

It is a good idea to get others to help you create a logic model. Consider working with program staff at all levels. They can help you review your model for accuracy and give you input and advice. Everyone should agree on the way the program is depicted in the logic model before proceeding with the evaluation.

How is a Logic Model Created?

First, fill in a *CAT Worksheet* for your program. There is a blank *Worksheet* in Appendix B. CAT is short for **C**omponents, **A**ctivities and **T**arget groups, the first three elements of a logic model. These elements are explained on the next page. There are also examples of words you might use to express these elements of your program. Once again, the *Worksheet* has been completed to evaluate the Parenting Program.

	Elements of the Logic Model	Examples
Components *Concentrate on themes or sets of activities.*	Components are closely-related groups of activities in your program. The number of components depends on the size of your program and how you conceptualise or administer it. For a large program, there could be several components in the logic model. Smaller programs, on the other hand, may consist of just one.	• advocacy • case management • clinical services • coalition building • community development • community mobilisation • contact management • emergency response • health communication • health education • monitoring • outbreak management • policy development • recruitment • screening • skill development • social marketing • surveillance • training
Activities *Don't include the administrative aspects of your program, such as payroll or performance appraisals.* *Use an action verb.*	Activities are the things the staff in your program do, or the services your program delivers. Activities are the means by which the desired outcomes will be achieved. To help think about activities, pull together all of the documentation that you have for the program. It may be a short paragraph describing the program's various activities, staff workplans or program operational plans.	• advertise • analyse • arrange • assess • assist • collect • conduct • consult • coordinate • counsel • create • deliver • develop • diagnose • display • distribute • draft • establish • facilitate • give • identify • immunise • inspect • interpret • lead • liaise • maintain • market • meet • monitor • notify • offer • operate • organise • prepare • prescribe • present • promote • provide • refer • represent • review • seek • set up • share • teach • train • write
Target Groups *Be as specific as possible by combining several characteristics.*	Target groups are the individuals, groups, organisations or communities for whom the program's services are designed. These are your program's priority populations, or its intended reach. Target groups can be specified in terms of sociodemographic characteristics (for example, age, income, occupation, education, sex, languages, ethnicity), health problems and behaviours, or anything else important in the context of the program.	• adults • anglophones • francophones • infants • men • parents of children aged 2 to 4 years • people living below the poverty line • people living in rural areas • politicians • seniors • smokers • women • youth

CAT Worksheet		
Components What are the main sets of activities?	**Activities** What things are done? What services are delivered?	**Target Groups** For whom are activities designed?
Health education	• *organise series* • *facilitate sessions*	• *parents of children 2 to 4 years, especially parents with high school education or less*
Recruitment	• *advertise in stores, libraries, churches, community resource centres and other public places*	• *general public* • *parents of children 2 to 4 years, especially parents with high school education or less*
	• *write articles for community newspapers*	• *general public* • *parents of children 2 to 4 years*
	• *send letters*	• *physicians* • *community resource centres* • *other community organisations*
Health education	• *distribute pamphlets on topics* • *distribute pamphlets on other community resources*	• *parents of children 2 to 4 years, especially parents with high school education or less*

Next, fill in the *SOLO Worksheet* for your program. There is a blank one in Appendix B. SOLO is short for **S**hort-term **O**utcomes and **L**ong-term **O**utcomes. Once again, the *Worksheet* has been completed for the Parenting Program.

Outcomes

Outcomes are the changes the program hopes to achieve with each target group. They are the reasons why you are doing your program. Outcomes are the intended results of the program, not the process of achieving them. There are both **short-term** and **long-term outcomes**. This distinction helps illustrate the sequential nature of change.

Short-term outcomes

Short-term outcomes are the direct results of the program on its participants. They show why the program activities will lead to long-term outcomes. In health promotion programs, short-term outcomes may be increased awareness or concern, increased knowledge, increased adoption of healthier attitudes, or improved skills. As a manager, you are accountable for the achievement of short-term outcomes.

Long-term outcomes

Long-term outcomes reflect the consequences of your program in the broader community. They tend to be the ultimate goals of the program, as listed in the Ontario Ministry of Health's Mandatory Health Programs and Services Guidelines. Long-term outcomes sometimes take a long time to occur, but occasionally they are observed soon after a program is implemented — an example is an immunization program that reduces the rate of communicable disease. There will probably be only a few long-term outcomes for any given program. Long-term outcomes for public health programs can be improved behaviour, decreased morbidity or mortality, or improved health, for example.

Although it is essential to include the long-term outcomes of a program in the logic model, managers are rarely held accountable for their achievement because there are so many other forces that influence a program's target group. You can, however, assume that if short-term outcomes are achieved, then it is likely that long-term outcomes will follow. It is crucial that these assumptions are based on solid evidence.

For both short-term and long-term outcomes, be sure to include the direction of change (that is, increase or decrease), and what the program is trying to change. Although all public health programs aim to increase or decrease something, there may be different ways of expressing outcomes. Some examples are provided below.

- alleviated
- augmented
- decreased
- diminished
- eliminated
- enlarged
- expanded
- extended
- improved
- increased
- lessened
- lowered
- prevented
- shortened
- reduced
- raised

SOLO Worksheet			
What is the *direction* of change (↑ or ↓)?	**What is the program intending to change?**	**Is it short-term or long-term?**	**Which components contribute to this outcome?**
increased	*awareness of the program*	*S*	*recruitment*
increased	*knowledge about the program*	*S*	*recruitment*
increased	*referrals to the program*	*S*	*recruitment*
increased	*knowledge about caring for a young child*	*S*	*health education*
increased	*participation in the program*	*L*	*recruitment*
increased	*number of parents able to adopt healthy parenting behaviours*	*L*	*health education*
increased	*ongoing peer support*	*S*	*health education*
increased	*knowledge of resources*	*S*	*health education*
improved	*parenting skills*	*S*	*health education*
increased	*number of children able to attain their optimal level of physical, mental, emotional and social development*	*L*	*health education*

Once both the *CAT* and *SOLO Worksheets* are complete, you are ready to start putting all of the program elements together into a logic model.

At the top of a blank piece of paper, write the name of your program.

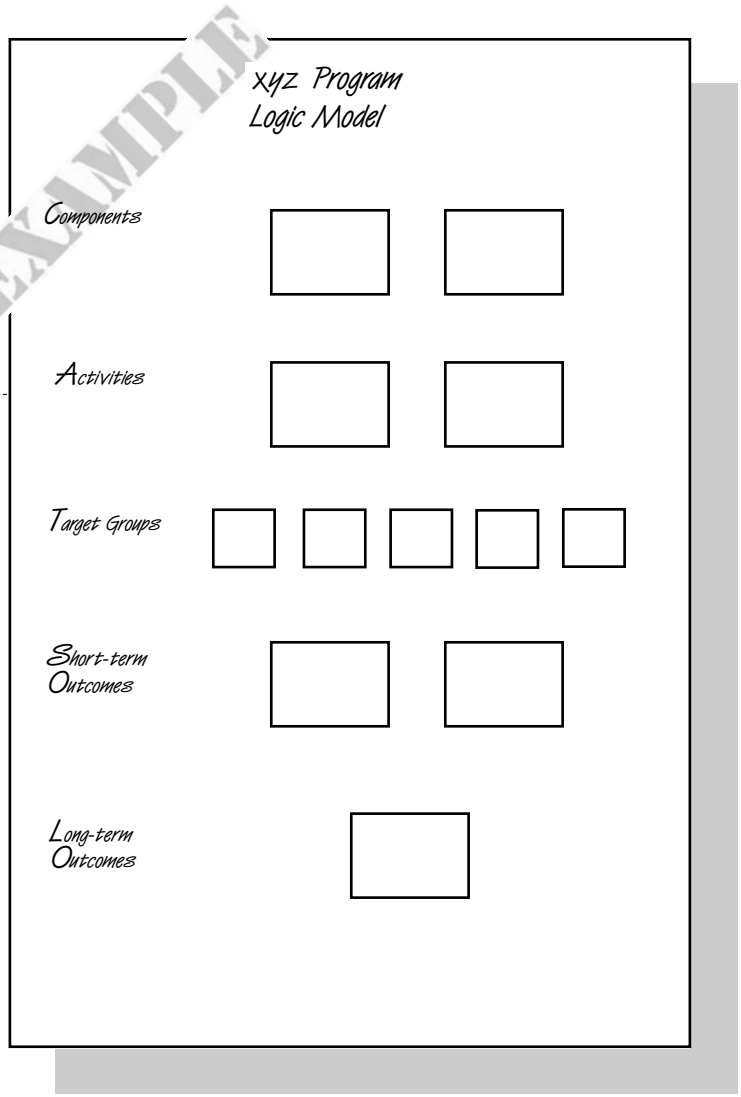
Write each of the components identified in the first column of the *CAT Worksheet* side-by-side. Draw a box around each one of them. Label these boxes "components."

Below each box of components, draw another box. In each box, write the activities listed in the second column of the *CAT Worksheet* that correspond to the component above it. Label these boxes "activities."

Below each of these, write each target group listed in the third column of the *CAT Worksheet*. Even if the target group is listed more than once on the *Worksheet*, write it only once on your logic model. Label these boxes "target groups."

Underneath these, write all of the short-term outcomes from the *SOLO Worksheet* that are from the specific component. Put a box around each outcome. Label these boxes "short-term outcomes."

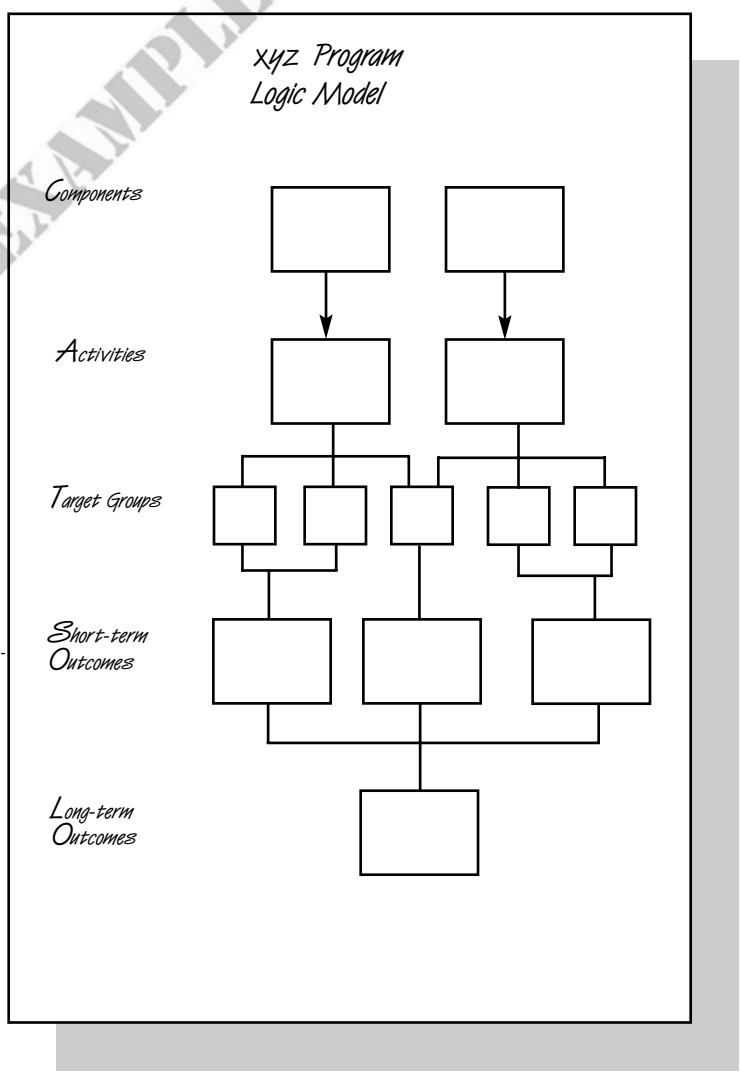
Next write the long-term outcomes from the *SOLO Worksheet* below the short-term outcomes to which they relate. Put a box around each outcome. Label these boxes "long-term outcomes."



This is just an example. You may not have the same number of boxes in your logic model.

Lines and/or arrows in a logic model demonstrate the cause-and-effect relationship between activities and outcomes. This represents the sequence or chain of events in your program, or in other words, the logic or theory behind it. The next step is to draw lines to show these causal relationships between the elements in your logic model.

First, draw a line from each component to the corresponding box(es) of activities. Then draw a line linking the activities to the target groups for which the activities are designed. Next, draw a line linking each target group to the short-term outcomes the target group should achieve. Finally, draw a line between each short-term outcome and the long-term outcomes to which they will contribute.



Now check that each of the components will lead to one or more outcomes through the activities and target groups. Also, make sure you identify and remove anything that is mentioned more than once. Before moving on to the next step, review the elements to see if you have left out any aspects of your program. If you have, add them in the right spot.

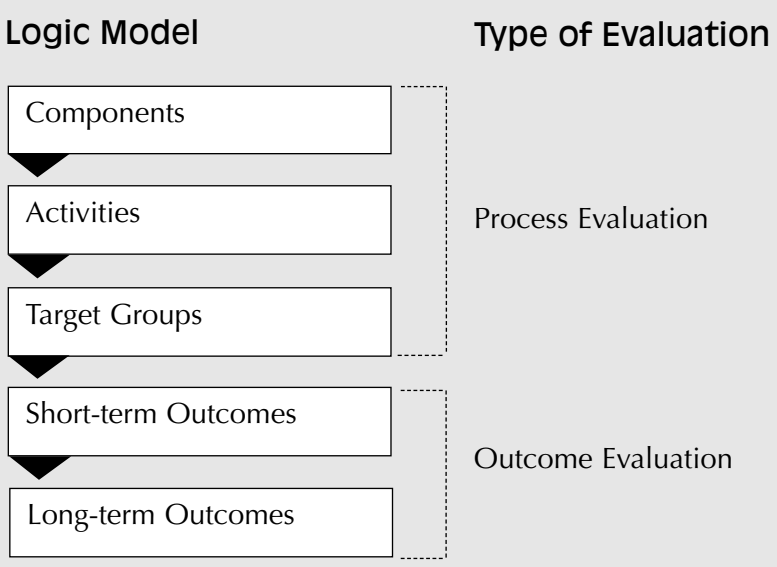
Remember, a logic model is supposed to demonstrate the logic behind your program. The final step in developing a logic model is to check this logic. Ask yourself: "Is it reasonable to expect that the program's activities will actually lead to both the program's short-term and long-term outcomes?" **If your answer is not a definite YES, do not proceed with the evaluation of your program at this point in time. You need to enter a planning phase to rethink the program.** Consult your health unit evaluation specialist or epidemiologist.

Logic Model Tips

- Practice makes perfect! The first time is always the hardest... it will get easier!
- Concentrate on how the program is currently being implemented (not how it was planned, or how it was implemented last year).
- Discuss the logic model with staff involved at all levels in the program.
- To get started, be sure to look at any available documentation and files — budgets, workplans, strategic and operational plans, manuals, training materials, organizational charts, statements of goals and objectives, previous evaluation reports, committee reports, etc.
- If you're finding this too difficult, it may be because your program is complex. Ask a colleague in another program or call in an outside facilitator to help you get started.
- Strive for simplicity and don't be over-inclusive in your logic model. Don't include all of the implementation details. Try to fit the whole logic model on one page. Remember — you'll want to use the logic model to describe the program to others. Append to the logic model any additional details about the program that you think might be useful.

Theory-on-the-Side: Relating the Logic Model to Types of Evaluation

An evaluation that focuses on a program's components, activities and target groups is often called **process evaluation**. Evaluation focusing on short-term and/or long-term outcomes is often called **outcome evaluation**.



Consulting with Stakeholders

Now that you have completed the logic model for your program, the next step is to consult stakeholders. These are the individuals or groups who have an interest in the program's evaluation. Some stakeholders are internal to your organisation; some may be external.

Ask yourself: "Who will be using the information from the evaluation?" Check them off in the *Stakeholder Checklist*. There is a blank *Checklist* in Appendix B. Add any others who are missing to the *Checklist*. Try not to serve too many individuals or groups at once. For your evaluation to be credible and useful, it must be focused on serving the information needs of a few key users.

In the evaluation of the Parenting Program, introduced as an example in Step 1b, the stakeholders who were interested in the results of the evaluation were the Medical Officer of Health, the program manager, the program staff and the community resource centres where several series were held.

Stakeholder Checklist

Internal

- ☑ program manager
- ☑ program staff
- ❑ planners
- ☑ Medical Officer of Health
- ❑ other senior managers in the health unit
- ❑ other

External

- ☑ partners in planning or delivering the program
- ❑ Board of Health
- ❑ Ministry of Health
- ❑ other funding agencies
- ❑ accreditation body
- ❑ program participants
- ❑ community members or groups
- ❑ program volunteers
- ❑ organisations offering similar programs
- ❑ other

STEP 1 d

Determining the Evaluation Questions

The next step is to determine the questions your evaluation will seek to answer. These questions are called evaluation questions. Evaluation questions are very specific, but not as detailed as those you might ask an individual on a survey or in an interview. Some examples are provided below.

	Different Types of Questions Asked During the Evaluation Process	*Examples*
Broad ↓ Specific	Purpose of evaluation (Step 1a)	• How can this program be improved? • Is this program worth continuing?
	Evaluation question (Step 1d)	• How do the program activities vary from site to site? • Have the program's short-term outcomes been achieved?
	Question on a questionnaire (Step 3)	• Were the sessions you attended offered at a convenient time? • On a scale from 1 to 5, where 1 is not at all useful and 5 is extremely useful, how would you rate the usefulness of the information you received?

Considering Possible Questions

The *Evaluation Questions Checklist* contains some of the questions an evaluation might address. Each box corresponds to elements in your logic model — activities, target groups, and outcomes (both short-term and long-term). Look at your logic model to help focus on possible evaluation questions.

For each question, indicate whether it is a high- or low-priority evaluation question for you as program manager, and then for internal and external stakeholders. Start with the box on activities, move to target groups, and finish off with outcomes (i.e., move top to bottom). Put an "H" for high or an "L" for low in the column corresponding to the stakeholder group. If the question listed is not a priority right now, just leave it blank. A high-priority question is one that absolutely must be answered as soon as possible to support immediate decision-making needs. A low-priority question is something that would be "nice to know," but no one actually needs to know, the answer right now.

These lists contain some of the most frequently asked questions about public health programs, but you may have additional information needs. List in the appropriate box any other questions that you or other stakeholders need answers to.

Choosing Priority Questions

Circle the questions that are a high priority for you as manager and at least one other stakeholder group (either internal or external). The circled questions will be the ones your evaluation will strive to answer. Put the other evaluation questions aside for now.

Take another look at the circled questions. Are you sure that these are *high-priority* questions? Be selective. There won't be enough time or money to answer every question. As a guideline, the evaluation of an average-sized program should have about five to eight evaluation questions.

Checking that Questions are Good Evaluation Questions

Asking a question seems like a straight-forward and simple process. It is a form of communication that we learn almost from the day we learn to speak. Nonetheless, understanding how a question is structured will help you ensure that you ask good evaluation questions.

A question is a sentence which demands an action: it seeks a response. A statement, on the other hand, does not demand any action. To ensure you ask a question, open with "what," "why," "how often," "when," "where," or "who."

Every question consists of a stem and a topic. The stem is the part of the question that demands a response; it is the action part of the sentence. The topic is what the question is about. Simple questions consist of one stem and one topic. If any of the items that you added to the lists are circled, make sure they are phrased as questions, not statements — each one should have a stem and a topic.

Evaluation Questions Checklist

Who needs to know?

H = High Priority L = Low Priority

	Manager of Program	Other Stakeholders	
		Internal	External
Activities			
Were activities implemented as planned? (how often, when, where, duration)	H	H	H
How did the activities vary from one site to another?	L		
Were required resources in place and sufficient?			
Did staff think they were well prepared to implement the activities?	H	H	L
Did staff think they were able to implement the activities as planned? If not, what factors limited their implementation?			
Did staff and community partners think the partnership was positive?			
Did community partners think the activities were implemented as planned?			
What activities worked well? What activities did not work so well?			
What was the cost of delivering the activities?			
Target Groups			
How many people were reached?			
Did the program reach the intended target group?	H	H	H
To what extent did activities reach people outside the target group?	L		L
What proportion of people in need were reached?			H
Were potential participants (non-participants) aware of the program?	L		
Were participants satisfied with the program?	H		H
Does the program have a good reputation?			
How did participants find out about the program?	H		H
How many people participated in the program?	H	H	H
Outcomes			
Have the short-term outcomes been achieved? (List the short-term outcomes of the program from the logic model.)			
Knowledge about parenting	H	H	H
Parenting skills (including communication)	H	H	H
Have the long-term outcomes been achieved? (List the long-term outcomes of the program from the logic model.)			

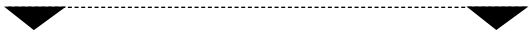
Think about which activities contribute the most towards the program's outcomes. Are there any activities you are particularly concerned about?

Think about who the program is designed for. What do you need to know about who you are reaching and who you are not?

Think about which outcomes are most crucial. Which outcomes are the most difficult to achieve?

Consider, for example, the following evaluation question:

Who attends the parenting sessions?



"Who" is the stem and "parenting sessions" is the topic

Checking the Feasibility of the Evaluation Questions

Apply the **SMART** principle to each of your priority evaluation questions (the ones that are circled) to make sure they are feasible.

SMART

Specific — Is the question specific? Is it clear? Is there a stem and a topic for each question?

Measurable — Will you be able to answer the question?

Actionable — Will the answers to the evaluation questions provide you with the information you need to make decisions about your program?

Relevant — Are there any questions that you can identify as simply "nice to know" as opposed to "need to know." For each question, you should be able to name who needs the information, and clearly define why they need it and/or what they will be able to do with it.

Timely — Is it important to ask this question now?

If you answer "no" to any of the above questions, try to make revisions so your questions pass the SMART test. If you are having trouble, consult an evaluation specialist. If the revised question still fails the SMART check, eliminate that question and move on to Step 2 with your other evaluation questions.

Key Points

- A clear program description is an important part of any evaluation.
- The logic model is a useful tool for describing programs.
- There are five basic elements in any program: components; activities; target groups; short-term outcomes; and long-term outcomes.
- Consulting with stakeholders is an important aspect of focusing an evaluation.
- The evaluation questions depend on decision-making needs and flow directly out of the program logic model.
- There are many commonly asked evaluation questions but there may also be some unique to your particular program.
- The evaluation cannot be all things to all people. It is crucial to limit the evaluation questions to high-priority issues only.

Quiz Yourself

- ▲ Describe the five basic elements of a program.
- ▲ List the advantages of creating a logic model to describe your program.
- ▲ Explain when you might use a bottom-up approach to constructing a logic model.
- ▲ Identify those words below that express activities and those that express outcomes:
  - Provide
  - Improved
  - Facilitate
  - Counsel
  - Decreased
  - Teach
  - Reduced
- ▲ List two types of internal stakeholders and two types of external stakeholders.

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July 1997

step 2

Select Methods

At the end of this module, you will be able to:

- Establish the expectations of your program for each evaluation question that you identified in Step 1 by identifying ***what*** you need to know (Step 2a).
- Create a data collection plan by identifying ***where*** you will get information, from ***whom*** and ***when*** the data should be collected, and from ***how many*** people (Step 2b).
- Determine the **logistics** and **feasibility** of your evaluation methods (Step 2c).

In Step 1, you learned how to establish the purpose of your evaluation, describe your program using a logic model, consult with stakeholders and determine the evaluation questions that you need to ask in order to evaluate your program.

Step 2 will help you determine the best way to answer your evaluation questions by zeroing in on the specific data you need and the methods you should use to gather them. Throughout this module, you will use the *Methods Worksheet*. A completed *Methods Worksheet* from our example evaluation of the Parenting Program is displayed on the next page.

Open

Methods Worksheet

Methods Worksheet

Evaluation Questions	2a Expectations of the Program (based on *Expectations Worksheet*)	2b Data Collection Plan							2c Logistics (based on *Logistics Worksheet*)
	"I expect to have..."	**Does Data Exist?**	**Type of Tool**	**Who Could Provide the Data? (Source)**	**Who Can Gather the Data? (Collector)**	**Design**	**How Many?**	**Timeframe**	**Is This Feasible?**
1. How many people participated in the program?	1a At least 10 or more people attend each session in both east and west. 1b Minimum of 250 registrants in 25 series.	☑ Yes ❑ No	Attendance sheets Registration form	Program staff Participants	Program staff	Ongoing	All — 250 - 300	Sept. 1996 - May 1997	☑ Yes ❑ No
2. How did participants find out about the program?	2a At least 50% referred from community resource centres.	☑ Yes ❑ No	Registration form	Participants	Program staff	Ongoing	All — 250 - 300	Sept. 1996 - May 1997	☑ Yes ❑ No
3. Did the program reach the intended target group?	3a At least 50% of participants' education is high school or less. 3b At least 95% have children 2 to 4 years old.	☑ Yes ❑ No	Registration form	Participants	Program staff	Ongoing	All — 250 - 300	Sept. 1996 - May 1997	☑ Yes ❑ No
4. Were participants satisfied with the series?	4a At least 70% of all participants rate the series as excellent or good. 4b At least 70% of parents with high school education or less rate the series as excellent or good. 4c Some suggestions were made for improvements in length, location, topics, and other areas. 4d At least 70% of all participants say they would recommend the series to a friend.	❑ Yes ☑ No	Self-completed questionnaire	Participants	Program staff	Specific time — complete questionnaire after series and by phone one month later	All	Sept. 1996 - May 1997	☑ Yes ❑ No
5. Did participants think that their parenting skills improved?	5a At least 70% of participants think their parenting skills have improved immediately after the series and one month later.	❑ Yes ☑ No	Self-completed questionnaire	Participants	Program staff	Specific time — complete questionnaire after series and by phone one month later	Stratified random sample of 10 series (100 parents)	January 1997 - May 1997	☑ Yes ❑ No
6. Did participants think that their knowledge about parenting increased?	6a At least 70% of participants think their knowledge about parenting increased immediately after the series and one month later.	☑ Yes ❑ No	Self-completed questionnaire	Participants	Program staff	Specific time — complete questionnaire after series and by phone one month later	Stratified random sample of 10 series (100 parents)	January 1997 - May 1997	☑ Yes ❑ No
7. Did parents' communication skills improve?	7a At least 70% of parents improved their communication skills.	❑ Yes ☑ No	Observation	Participants	Trained observer	Two observations: at beginning and after completion	Stratified random sample of 6 series (60 parents)	January 1997 - May 1997	❑ Yes ☑ No
8. Did staff think they were well prepared to implement the activities?	8a All staff think they were well prepared to implement activities.	❑ Yes ☑ No	Focus group	Program staff	Program manager	Assess at mid-point and after all series completed	All staff (8) in one group	January and June 1997	☑ Yes ❑ No
9. What suggestions did staff have to improve the delivery of the program?	9a Suggestions from staff relate to topics, location, participant and other areas.	❑ Yes ☑ No	Focus group	Program staff	Program manager	Assess at mid-point and after all series completed	All staff (8) in one group	January and June 1997	☑ Yes ❑ No
10. Did staff implement activities as planned?	10a At least 75% of topics are discussed. 10b At least 30 min. of discussion on each topic covered. 10c At least 75% of all planned activities take place. 10d All resources that should be are distributed.	❑ Yes ☑ No	Activity logs	Program staff	Program staff	Ongoing	All 25 series	Sept. 1996 - May 1997	☑ Yes ❑ No

STEP 2a

Establishing Expectations

In Step 1, you determined the specific questions your evaluation must answer in order to help you make a decision about your program. In this, the first stage of Step 2, you will establish your expectations for each question — what you want the program to achieve.

Expectations = "I expect to have . . . "

Think back to when your program began. You had some idea of what you wanted to see happen in terms of activities and outcomes, and a sense of what would constitute success. Perhaps you wanted your participants to come away feeling that it was a good experience, and that they had received something in the way of skills or knowledge that would be significant in improving their health.

To identify your expectations, you need to consider the following questions for each evaluation question.

- What would satisfy you that your program has been operating successfully and achieving what you intended? For example, in the Parenting Program evaluation, you wanted to make sure that you were reaching parents with a high school education or less.
- What is the minimum that you would accept before considering making changes to the program? In the example, you expected that at least 50% of participants in the Parenting Program had high school education or less.

These two questions reflect the two parts of an expectation — the "what" and the "how many." The "what" is the easiest part to identify. The "how many" is harder to establish, because you have to decide the level of the "what" that must be achieved in order to consider the program a success.

The *Expectations Worksheet* on the next page is designed to make the task of identifying your expectations easier by focusing on these two points. A blank copy is in Appendix B. When this *Worksheet* is completed, you will transfer the expectations to the first column of the *Methods Worksheet*. If you find it easier, you can work directly with the *Methods Worksheet*.

Determining Possible Expectations

In the first column of the *Expectations Worksheet*, list the evaluation questions that you identified in Step 1. Then do a bit of **brainstorming** and in the "What?" column, write down your expectations for each question as they come to mind. As the chart suggests, it usually helps to begin with the phrase "I expect to have. . .".

Deciding what to enter in the "How Many?" column is more of a challenge. You must arrive at your own answer, using a combination of your subjective viewpoint and some objective considerations. Keep in mind that "how many" can be a number or a percentage (quantitative data), or can be expressed in words such as "most," "many" or "the majority" (qualitative data). Among these considerations are the following:

Expectations Worksheet

Evaluation Question (Copy from *Evaluation Questions Checklist*)	**"I expect to have . . . .**	
	How Many?	**What?**
1. How many people participated in the program?	1a At least 10 or more 1b Minimum of 250	1a People attend each session in both east and west. 1b Registrants in 25 series.
2. How did participants find out about the program?	2a At least 50%	2a Participants referred from community resource centres.
3. Did the program reach the intended target group?	3a At least 50% 3b At least 95%	3a Participants' education is high school or less. 3b Participants have children 2 to 4 years old.
4. Were participants satisfied with the series?	4a At least 70% 4b At least 70% 4c Some 4d At least 70%	4a Participants rate the series as excellent or good. 4b Parents with high school education or less rate the series as excellent or good. 4c Suggestions for improvements in length, location, topics or other areas. 4d Participants say they would recommend the series to a friend.
5. Did participants think that their parenting skills improved?	5a At least 70%	5a Participants think their parenting skills improved immediately after the series and one month later.
6. Did participants think that their knowledge about parenting increased?	6a At least 70%	6a Participants think their knowledge about parenting increased immediately after the series and one month later.
7. Did parents' communication skills improve?	7a At least 70%	7a Parents improved their communication skills.
8. Did staff think they were well prepared to implement the activities?	8a All	8a Staff think they were well prepared to implement activities.
9. What suggestions did staff have to improve the delivery of the program?	9a Some	9a Suggestions from staff relate to topics, location, participants and other areas?
10. Did staff implement activities as planned?	10a At least 75% 10b At least 30 min. 10c At least 75% 10d All	10a Topics discussed. 10b Discussion on each topic covered. 10c Planned activities take place. 10d Resources that should be are in fact distributed.

Output versus input — What would be a reasonable output based on the input? For example, in the Parenting Program, if a group session lasts for two hours with 1 nurse leader, a reasonable output might be having 10 or more participants. If there are 2 nurse leaders, however, the reasonable output might increase to 20 participants.

Age of the program — How old is the program? If the program is new and in its first year of operation, your expectations may be lower than at its half-way point or completion. For example, in the Parenting Program, if your question involves the number of participants, your expectation at the start of the program might have been 5 per session. However, now that the program has been running for five years, you hope to have at least 10 per session to justify the input (see above). If a program has been in operation for several years, the acceptable result may be to see numbers maintained, increased or decreased, depending on the population trends and the characteristics of your target group.

Previous experience or similar programs — How have similar programs fared? What were their results? You may need to check with colleagues at other health units or review the literature about similar programs for information to help you define your expectations.

Present level of outcomes — What is a reasonable change for the program to achieve? For example, if participants know little about the subject, their knowledge as a result of the program may be expected to increase at a far greater rate than if their knowledge is already high.

Realistic expectations — Set expectations which you believe are achievable. Push yourself to get the most out of the program, but don't set yourself up for failure. One hundred percent is rarely a realistic expectation.

You may find that you cannot identify expectations for some of your evaluation questions. This is most likely because the evaluation question is not clear and/or specific. Review the section in Step 1 on Checking the Feasibility of the Evaluation Questions and see if you can improve the questions.

Selecting Expectations and Checking Feasibility

Your second step is to **select** the expectations that you will use. Review each of your expectations on the *Expectations Worksheet* and apply the SMART principle that was introduced in Step 1.

SMART

Specific — Is the expectation specific? Is it clear?
Measurable — Will you be able to collect data to measure up against your expectation?
Actionable — Would you be able to take action, if necessary, in response to your result?
Relevant — Is it necessary to reach this expectation in order to evaluate your program?
Timely — Is this expectation realistic right now?

If an expectation does not meet these standards, then ask if it can be re-phrased. Consider revising it or consulting an expert in evaluation. If the revised expectation still fails the SMART test, then be prepared to eliminate it and move on with the others.

Once you have selected the expectations that you will use, copy both the evaluations questions and the expectations onto the *Methods Worksheet*.

STEP 2 b

Developing a Data Collection Plan

Now you must develop your plan for collecting your data. You will be able to do this using your *Methods Worksheet* with the help of the *Data Collection Guide* which follows. There is a blank *Methods Worksheet* in Appendix B.

To create your data collection plan, reflect on the following seven considerations for each evaluation question. The *Methods Worksheet* will walk you through each consideration.

1. Is all the data you need already available?
2. What type of data collection tool would provide the data?
3. Who could provide the data, if asked?
4. Who can gather this data?
5. What is the best design?
6. From how many people or things should data be collected?
7. What is the required timeframe for data collection?

When you have answered all of these questions, you will have outlined your method for collecting the data in a data collection plan.

The order in which you answer these seven questions can vary, depending on the evaluation question. This particular order was chosen for the *Tool Kit* as it is easy to use for most evaluation questions. Use the order that seems most natural for you; evaluators will usually start with the design question when assessing outcomes, whereas managers may prefer to start with the type of tool.

The *Tool Kit* will provide you with some information to help develop your data collection plan. If you would like more information, an excellent text is Lawrence Green and Frances Lewis' book called *Measurement and Evaluation in Health Education and Health Promotion,* published by Mayfield Publishing Company in 1986.

Selecting the Type of Tool

Begin to develop your data collection plan by considering **whether the data you require already exist**. If they do, then in the "Type of Tool" column in the *Methods Worksheet* write in the type of data collection tool that was used.

If the data are not readily available, then refer to the *Data Collection Guide*. Review the description of the tools in the first column to check for any that might be used to collect the data you need. Don't worry at this point about whether the tool or data in fact exist. Just think about where they could or should be. Then indicate in the "Type of Tool" column of the *Methods Worksheet* the tool that could be used for each expectation. For example, in the Parenting Program, if you want to know how many people participated in the program you would ask: "Where could I find data about how many people participated in our program?" Attendance sheets would probably hold the answer, so you enter this in the "Type of Tool" column.

Usually, you will be interested only in data which have come directly from your program. However, if your question is about short- or long-term outcomes, then the needed data may already exist elsewhere. If you find an evaluation report that featured a program and setting similar to yours, and the methodology was sound, you can use its results to help answer your outcome evaluation question. It is important to do a thorough literature search and check with others managing similar programs prior to collecting new data about your particular program.

There could be more than one tool suitable for an expectation. The decision about which tools and methods are preferred is based on a number of factors. The description of the data collection tools can help you decide which one is right for you. Note that each description indicates whether the data provided by the tool consists of numbers ("N") or words ("W"). Both methods are useful. If your expectation has numbers or percentages in it, make sure that the tool will actually give numbers or percentages.

When selecting your tool, consider the quality of the data that it will produce. You want the tool to give you data which are as close to the truth as possible (validity). You also want the tool to give consistent answers if you ask the same person the same questions at different times (reliability). Check the disadvantages column in the *Data Collection Guide* for problems with getting valid and reliable data, and choose the most appropriate tool for your expectation.

Step 3 will go into assessing reliability and validity in more detail. You also need to consider the resources required for each tool. Refer to the *Logistics Guide* for each tool in Appendix D to identify the requirements and compare them to your available resources.

When selecting the tool, it is important to consider the characteristics of the people from whom you are collecting data (e.g., age, language, culture, disabilities) and the setting in which the evaluation is being conducted. For example, in the Parenting Program, face-to-face interviews that require parents to wait after a session

Data Collection Guide

Description	Advantages	Disadvantages
Activity Logs (N,W) Staff record of day-to-day activities in program, e.g., topics covered, materials distributed, session format (lecture, discussion group, drop-in, etc.)	• low cost • can be developed or modified to meet evaluation needs • easy for staff to complete	• reporting detail and consistency of completing log data may vary among staff • analysis can be unwieldy (e.g., analysing written information in diaries) • changes in definition and kinds/types of data may make it difficult to compare data from different time periods • some data may be confidential and may require special consent
Administrative Records (N) Data (possibly computerized) associated with the program's operations *Financial* — Cost of materials, rentals, staffing, etc. *Facility/Equipment Utilisation* — Location and use *Personnel* - Assigned staff: numbers, time *Computerised Activity Reporting System* — Activities and staff time	• low cost • easiest data to understand • usually exists	• may be incomplete, inaccurate or inappropriately organised • not usually comparable to other organisations or programs • limited to data currently being collected
Charts (N,W) Charts and records on individual participants	• low cost • easily available	• some data may be confidential and may require consent • data may not be recorded consistently from chart to chart • analysis can be unwieldy (e.g., analysing written information in charts) • need to ensure people abstract data from chart in the same way
Registration Forms (N,W) Record of detailed participant personal data and other information (e.g., where heard about/referral to program) **Attendance Sheets** (N) Sign-in sheets or staff-recorded	• low cost • easily available • can develop or modify to meet evaluation needs	• some data may be confidential and may require consent • changes in definition of terms and kinds/types of data may make it difficult to compare data from different time periods
Population Database (N) Existing sources of data on the population, e.g., Census or vital statistics (computerised on HELPS — Health Planning System — for public health)	• useful for calculating a population rate • description of catchment area population • often inexpensive source of data	• often several years behind current year • limited to existing data • may need computer expertise

N = Data provided consists of numbers **W = Data provided consists of words**

Data Collection Guide (continued)

Description	Advantages	Disadvantages
Face-to-face Interviews (N,W) Responses to an interviewer's predetermined questions (in person)	• allows for a full range of attitudes to be expressed • can probe for more detail	• respondents may not have time to reflect properly on each question • time- and resource-intensive • requires skilled interviewers
Self-completed Questionnaires (N,W) Questionnaire completed by the respondent (can be handed out to the respondent or sent by mail)	• takes less time and is less costly than face-to-face interviews and telephone surveys • avoids interviewer bias • data can be collected relatively quickly if done in person (not for mail surveys) • allows a large number of respondents to be surveyed • respondents may feel more comfortable answering sensitive questions	• questions must be well-structured and may limit participant responses • richness of detail is limited to added comments • instructions or questions cannot be clarified • response rates usually relatively low if a mail survey, but varies depending on topic and participants • literacy level may restrict ability to use • may need to translate
Telephone Survey (N,W) Responses to predetermined questions asked over the telephone	• requires less time and expense than face-to-face interviews • nonverbal interviewer bias reduced • instructions and questions can be clarified • eliminates personal risk to the interviewer	• respondents may not have time to reflect properly on each question • easy for respondents to break interview before completion • can be seen as invasive, but less so than a face-to-face interview • respondents may not truthfully answer sensitive questions • cannot reach if no telephone (this may or may not be a problem depending on the target group)
Observations (N,W) Skills or behaviour observed directly	• allows observation of nonverbal behaviour and skills • occurs in natural environment	• little control over other factors that may affect the data • information difficult to quantify (turn into numbers) • expensive, therefore limited to small sample sizes
Focus Groups (W) A group interview with predetermined questions	• allows investigation of wide ranging set of perceptions about a topic • can collect in-depth information and opinions about particular issues • all participants have opportunity to contribute • structured coverage of topics • can be inexpensive if existing groups used	• a limited number of structured questions can be utilised • some lines of questioning can stall with particular groups • some participants may dominate • personality conflicts among group members can arise • only represents the participants involved and may not be generalisable • can be expensive if it involves a large number of groups
Case Study (W) A story-like narrative describing an activity or participant	• rich in detail • useful to understand the context of a program	• takes time to complete • variation in how people record details of program • not generalisable

N = Data provided consists of numbers **W = Data provided consists of words**

will get less participation than a self-administered questionnaire completed during a session. The response rate is critical — you want your data collection group to represent all the people in the program, not just a particular subset.

You might consider more than one source of data to get different perspectives on the same question. In the Parenting Program evaluation, to find out whether the parents communication skills increased, you could use observations of the parents, ask their children for their opinion, and ask the opinion of the nurse giving the series. This approach is called "triangulation of evidence." It is both more complicated and more powerful.

If you would like to use data which has been collected for reasons other than for your program, then you must carefully assess whether this is permitted under the Municipal Freedom of Information and Protection of Privacy Act (MFIPPA). In general, an individual must be notified if data is to be used for a purpose other than for what it was originally intended. It is always important to respect the confidentiality of any data collected about individuals.

Determining the Source of the Data

The next step is to identify ***who can provide the data*** (i.e. the source). Ask yourself, "Who or what has the data right now, or might be able to provide it if they were asked?" This might include members of the actual target group (participants), the staff who run the program, other staff, people in your administration, other internal stakeholders or external stakeholders. There may be more than one group that can provide the data. Would it be easier to get the data from one group over another? Write your answer in the column "Who could Provide the Data?" of the *Methods Worksheet*.

Determining the Data Collector

Consider ***who can gather the data*** (i.e. the collector). Ask yourself, "Who has the capacity, including expertise and time, to collect the data?" For example, "Who can administer a questionnaire, conduct a focus group, or collect the attendance sheets?" Again, this might include the program manager, the staff involved in delivering the program, other staff volunteers, or you may even require an external evaluator. If there is more than one group, who can get the data easier and faster? Write your answer in the "Who Can Gather the Data" column of the *Methods Worksheet*.

Design, Number, Timeframe

The next step is to develop the evaluation design, determine the number of people or things to provide data and establish the timeframe for data collection. These considerations are somewhat different for process and outcome evaluation. The first section deals with process evaluation; the second addresses outcome evaluation.

Process Evaluation

Design

The design of your process evaluation depends on whether:

- *all* the people or things provide data on an *ongoing* basis;
- a *sample* of people or things provide data on an *ongoing* basis; or
- *all* or a *sample* of the people or things provide data at *specific times*.

The following considerations will help you make your decision.

a) **Ongoing with All** — The design for process evaluation is usually ongoing, because you can often collect data in the course of the program's operations. For example, if your program has ongoing registration and runs several 6-week sessions over the course of the year, your data collection via registration forms is considered ongoing. Once the form is designed and the process of registering is established, the data will be collected automatically all year long.

b) **Ongoing with Sample** — Often, however, it is impossible to include everyone who can provide data because of expense or timing. Sometimes it is not even necessary to include everyone in order to get an accurate picture. In either case, you may try to get data from a small group, or sample, of those who have it. Selecting the sample and determining the number required is complicated, so if you decide to use a sample you should consult with your health unit epidemiologist or evaluation specialist. This step requires special expertise, but not a lot of time. Bring your *Worksheets* with you to help the epidemiologist or evaluation specialist. Appendix D includes a brief description of both sampling methods and how to determine sample size.

c) **Specific Times with All or Sample** — Some tools require that the data be collected only at one specific time. If you use focus groups, for example, your evaluation design usually involves one data-gathering session with each group involved.

As you make your decision on the design for each evaluation question, indicate it in the "Design" column on the *Methods Worksheet*.

Number of People/Things

The number of people/things from whom or which you collect data goes hand-in-hand with the evaluation design. If the design is ongoing, then put the number of the expected participants or things in the "How Many?" column in the *Methods Worksheet.*

If the design utilises a sample, the key is to know just how many need to be included in order to be sure that you are getting an accurate picture. As outlined above, you should consult with your health unit's epidemiologist or program evaluation specialist to determine the exact number.

If the design involves specific times, then enter the number of people expected to be participating at that point in time.

Timeframe

The timeframe defines the point at which the data will be collected in your program. If the data collection is to be ongoing, and you are including all the participants involved, then the timeframe is the same as the timeframe of your program (September to May, for example). If you are using a sample, consult the epidemiologist or program evaluation specialist for the timeframe.

If, on the other hand, the data is to be collected at a specific point in time, then the timing will be based on the evaluation questions and expectations. You need to consider when the best time would be to collect the data. For example, if you plan to conduct a focus group with the staff delivering the Parenting Program, then consider doing this half-way through (perhaps end of January) and again at the end of the program (May).

Outcome Evaluation

There are many methodological issues to consider when studying questions about outcomes. Therefore, it is wise to consult with an epidemiologist or program evaluation specialist as you design this part of the evaluation.

Design

One of the challenges in measuring outcomes is knowing whether the changes you've observed are a direct result of your program. Occasionally you can use an "after only" design if you're sure that the outcome is related solely to your program (or if you are asking participants their opinion about the impact of the program, as in the Parenting Program example). Generally, though, there are a *number* of possible influences. In order to determine the impact of *your program* on the changes observed, you must be able to set up some form of a comparison. The two simplest designs to accomplish this are the "before-and-after" design, or the "comparison group" design.

Before-and-after (Pre-test and post-test) — With this design, you test the participants before they are exposed to the program, and re-test after they have participated. The difference measured may be attributed to your program, however, other influences may have had an effect.

Comparison Group — With this design, you establish two separate groups to be tested. The first is the comparison group and is not exposed to the program; the second consists of a group of participants. Comparing the results of the comparison group with the participating group will tell you the extent to which the changes observed are the direct result of your program.

Number and Timeframe

There are many factors to consider if you use one of these designs. If you use a before-and-after or comparison group design, consult your epidemiologist or a program evaluation specialist for both the necessary number of people and the timeframe.

If you do decide to use an "after only" design, you must decide how many people to include. If it is everyone, enter the number from the expectation into the "How many?" column and the duration of the program in the "Timeframe" column. If you use a sample, consult the epidemiologist or program evaluation specialist.

Once you've decided the design, number and timeframe required for your evaluation questions, you have completed your Data Collection Plan. You are now ready to move on to Step 2c and consider the logistics of collecting the data.

STEP 2c

Developing the Logistics Plan and Assessing its Feasibility

For each data collection tool you plan to use, it is important to consider the various tasks involved in developing the tool, then gathering and analysing the data. The *Logistics Guides* in Appendix D identify these, who could take responsibility for them, suggested timelines and details about required equipment and supplies.

Once the necessary tasks are identified, it is crucial to assess their feasibility given your current resources. The *Logistics Worksheet* prompts you to think about the resource requirements for each task. There is a blank *Logistics Worksheet* in Appendix B. An example *Logistics Worksheet* has been completed for a self-completed questionnaire for the Parenting Program evaluation.

Start by finding the *Logistics Guide* in Appendix D for your type of data collection tool. Copy the various tasks from the *Guide* into a blank *Logistics Worksheet* from Appendix B.

Open

Logistics Worksheet for
Self-Completed Questionnaire

Logistics Worksheet for Self-Completed Questionnaire

Tasks	Resources Required											Feasible?
	Human Resources							Other Expenses			Time		
	In-House			*External*				Equipment, Supplies & Administration	How Much Will It Cost?	Are the Funds Available?	Date Required	Can It Be Done In Time?	
	Who Could Do It? Name(s)	How Long Would It Take?	Do They Have Time?	Who Could Do It?	How Long Will It Take?	How Much Will It Cost?	Are the Funds Available?						
• Check for existing measures or tools, then develop a new tool or modify an existing one	*Laura Simpson*	*20 hrs.*	*Yes*					• *Tool Worksheet*	*NA*		*August 3, 1996*	*Yes*	*Yes*
• Assess quality of tool	*Laura Simpson*	*6 hrs.*	*Yes*					• *No additional supplies*	*NA*	*Yes*	*August 10, 1996*	*Yes*	*Yes*
• Prepare instructions for people handing out the tool	*Laura Simpson*	*4 hrs.*	*Yes*					• *No additional supplies*	*NA*		*August 17, 1996*	*Yes*	*Yes*
• Train people handing out the tool and provide instructions	*Laura Simpson and 8 Parenting Program PHNs*	*1 day*	*Yes*					• *Printing of the tool* • *Refreshments and lunch for 9 people*	*$190*	*Yes*	*August 19, 1996*	*Yes*	*Yes*
• Pre-test tool and revise if necessary	*Laura Simpson and 1 Parenting Program PHN*	*1/2 hr. per series; 1 series*	*Yes*					• *Completed data collection tool* • *Printing of the tool*	*$250*	*Yes*	*August 24, 1996*	*Yes*	*Yes*
• Reproduce tool	*April Colorado*	*1 day*	*Yes*					• *300 tools x 2 pp x $.05 x 2 times* • *300 consent forms x 1 pp x $.05 x 1 time*	*$60* *$15*		*August 27, 1996*	*Yes*	*Yes*
• Distribute tool	*Parenting Program PHNs*	*10 min. per series*	*Yes*					• *No additional supplies*	*NA*		*August 31, 1996*	*Yes*	*Yes*
• Gather completed tools	*Parenting Program PHNs*	*"*	*"*					• *No additional supplies*	*NA*		*Ongoing — at the end of the last session for each series*	*Yes*	*Yes*
• Analyse data				*Fred Frzinsky*	*Data entry: 2.5 hrs.* *Data analysis: 2 days*	*$20/hr. x 17hrs. = $340* *$300/day x 2 days = $600* *Total: $940*	*Yes*	• *Quantitative Data Analysis Worksheet and/or Quantitative Data Organization Worksheet plus Qualitative Data Analysis Worksheet* • *Data Interpretation Worksheet* • *Copy of the tool*	*NA*		*May 19, 1997*	*Yes*	*Yes*
• Interpret the data • Make decisions • Write and disseminate the report	*Laura Simpson and Barb Labey*	*10 days*	*Yes*					• *Data Interpretation Worksheet* • *Action Plan Worksheet* • *Report Worksheet*	*NA*		*June 18, 1997*	*Yes*	*Yes*

Next, you must **consider the *resources*** required for each task. These include human resources (both internal and external), equipment, supplies and administrative resources and — last but not least — time.

The following questions will help you determine whether your plan is feasible, given the resources you have.

- Do you have the expertise and time in-house to do all parts of the plan?
- Will you require someone outside of your organisation to do any of the work? If so, what will it cost and do you have the money to pay for it?
- What are the other costs involved? For example, if new tools are required, what will it cost to develop them?

To help illustrate, assume that you plan to use a self-completed questionnaire. Starting with the first task in column 1, "develop data collection tool," you must **consider the human resources** that you have available to develop the questionnaire. First, consider in-house resources. Ask yourself, "Do we have the expertise in our organisation to create this tool?" and enter any names that come to mind. Next, consider the time that these people will need to develop the questionnaire, and finally, whether they have the time to do it. If the answer is "no" to any of these three questions, then you will need to consider external resources.

If you plan to use external resources, the first two questions are the same, but the cost of hiring someone outside of your health unit to prepare the questionnaire must now be factored in. This involves two considerations: "How much will it cost?" and, "Are there funds available to pay for it?"

Once you have determined who will do the task, then you must **consider other expenses** that are involved in developing the tool. In the case of developing the self-completed questionnaire, only the *Tool Worksheet* is required. Not all tasks will be as inexpensive, however. As you move down the list of tasks in the first column, you will find it necessary to account for other, and sometimes more significant, expenses such as printing and mailing.

In the next section of the *Logistics Worksheet*, **consider the timing**. In the first or "Date Required" column, note the actual dates by which this task needs to be done, and in the second column decide whether the deadline is achievable.

Now look across the entire line and **decide whether it is feasible** to complete that task. If, for example, no one in your unit has the time available to develop the self-completed questionnaire, but you can afford to pay someone to develop it, and it can be ready by the deadline, then you can say "Yes, it is feasible to develop the questionnaire." If, however, you find that you have the expertise and time in-house to develop the questionnaire, but it cannot be done by the date needed, then your decision would have to be "No, it is not feasible at this time."

Complete the *Logistics Worksheet* for the tool, working across the page for each task. Don't worry — it will quickly get easier. Then check to ensure that all tasks are "Yes" in the feasible column. If the answer is "No," you will have to reconsider whether you should use it. Review the problem task and decide whether anything can be done to change the "No" to a "Yes." If not, then you will know that using this tool is not feasible.

Complete a *Logistics Worksheet* for each data collection tool you are considering using and decide which tools are feasible for your evaluation.

Key Points

- ▲ An expectation for your program consists of two parts — the "what" and the "how many."
- ▲ When determining your expectations, you should consider the following:
  - Output versus input;
  - Age of the program;
  - Previous experience or similar programs;
  - Present level of outcomes; and
  - Realistic expectations.
- ▲ Creating a data collection plan is an important step in ensuring that the tools you select will provide the right data to answer your evaluation questions.
- ▲ The evaluation design, the number of people or things data are collected from and the timeframe for the evaluation are closely linked elements in your data collection plan.
- ▲ The two simplest designs to measure outcomes are: before-and-after (pre-test and post-test) and comparison group.
- ▲ Developing a logistics plan will tell you whether it is feasible to use the tools you've selected.

Quiz Yourself

- In determining the expectations for your program, "how many" is expressed in a number or a percentage for quantitative data. How is it expressed for qualitative data?
- What are the seven things you need to consider for each evaluation question when creating your data collection plan?
- There could be more than one tool suitable for the same expectation. If so, how would you decide which one to use?
- When is it possible to use an "after-only" design?
- There are several cases when you should consult an epidemiologist or evaluation specialist. Can you name two?

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step 3

Develop Tools

At the end of this module, you will be able to:

- Find data collection measures or tools that meet your needs (Step 3a).
- Develop new data collection tools or modify existing ones (Step 3b).
- Assess the quality of your data collection tools (Step 3c).

In Step 2, you established expectations for your program. After checking their feasibility, you developed your data collection plan. Then you completed a logistics plan by considering the tasks required to collect the data you need. To assess the feasibility of your data collection plan, you examined its resource implications. As part of the data collection plan you identified the type of tools that could collect the data you require. Step 3 focuses on the development of data collection tools.

Data collection tools are made up of measures. Before developing new tools, it is important to check to see if there are existing measures that meet your needs. Occasionally, you may even find an entire tool that you can use. Finding existing measures and tools is challenging and time-consuming, but saves time and improves the quality of your data in the long run. Step 3a offers some suggestions for finding existing measures or tools.

If there are no existing measures or tools, you will have to create a new tool. Chances are even if you do find existing ones, you will have to make some modifications. Step 3b explains the steps in developing a new data collection tool or modifying an existing one. All data collection tools involve asking questions and recording answers. The steps in tool development are: draft the questions; determine the type of response; select the response categories; and put the questions and answers together in a clear and easy-to-understand format.

Whether you create your own tool or use an existing one, it is important to assess its quality. Your evaluation is intended to produce data to assist you to make decisions about your program. You must feel confident that your decision is based on consistent measures. Step 3c discusses two ways to test data quality: the content and clarity test; and the stability reliability test.

STEP 3a

Finding Existing Measures and Tools

Developing tools that collect high-quality data can be time-consuming. It is always a good idea to see if there are existing measures or tools that you can use. You may be able to save time and improve the quality of your data by using all or part of a tool that has already been used successfully.

How do you find existing measures and tools?

- Ask colleagues working in similar program areas.
- Check conference papers or proceedings, health unit or discipline-specific newsletters or PHERO, the *Public Health & Epidemiology Report Ontario*.
- Search the Internet (newsgroups, the World Wide Web or e-mail discussion lists).
- Systematically review the published literature.
- Check inventories of existing measures. One example is Ian McDowell and Clare Newell's *Measuring Health: A Guide to Rating Scales and Questionnaires* published by Oxford University Press in 1987.
- Ask university faculty or staff at system-linked research units and health information partnerships, etc.

Finding existing measures and tools can be difficult. If you have trouble, seek assistance from a librarian/information specialist or an evaluation specialist.

It is rare to find an entire tool that perfectly suits your needs. Most likely you will have to borrow a few measures from one or more tools. If you are not using an existing tool it its entirety, it is important to determine whether the individual measures you intend to borrow can be used on their own.

Sometimes individual measures can stand alone; other times, measures are not meaningful when they stand alone. Rather, they work within a group to measure a particular concept. This is often the case for rating scales or indices, which measure complex concepts like self-esteem, anxiety or quality of life. These groups of measures must remain intact. Think about an IQ test, for example. Many individual measures make up the IQ test, which when taken together measure intelligence. The individual measures, however, are not necessarily meaningful on their own. Do not assume that if you use a single measure from an existing scale that you will be measuring the same concept.

If you do find measures or tools that are relevant to your evaluation:

- refer to your *Expectations Worksheet* and review whether the measures or tools will be able to collect all of the data you need — if not, continue your search or work through Step 3b and develop your own measures from scratch; and
- review the validity and reliability tests with your evaluation specialist or epidemiologist — if the measure or tool is not of sufficiently high quality, continue your search or go to Step 3b (there is no point in replicating a poor data collection tool).

If you do find a good measure or tool, assess how well it addresses your unique evaluation questions and how well it will work in your particular situation, by completing the content and clarity test as discussed in Step 3c (also consider assessing stability reliability).

Developing Data Collection Measures and Tools

This section will help you figure out the questions and answers your tool should contain. The *Tool Worksheet* will guide you through this process. The *Tool Worksheet* can be used to develop all types of tools, including self-completed questionnaires, telephone surveys, focus groups, face-to-face interviews, activity logs, registration forms and attendance sheets. One of the completed *Tool Worksheets* from the evaluation of the Parenting Program is provided as an example.

Tool Worksheet

Type of Tool: *Self-completed questionnaire*

Expectations of the Program (copy from *Methods Worksheet*)	**Individual Question on Tool**	**Type of Response** (open or closed)	**Pre-Set Response Categories** (for closed-ended questions only)
At least 70% of all participants rate the series as good or excellent	*Overall, how would you rate the series?*	*Closed*	*Excellent* *Good* *Fair* *Poor*
At least 70% of participants with high school education or less rate the series as good or excellent	*What is the highest level of education you have completed?*	*Closed*	*Elementary school* *Some high school* *Completed high school* *Some college or university* *Completed college or university*
Some suggestions for improvements in length, location, topics or other areas	*What should be done to improve the series next time?*	*Open*	
At least 70% of all participants say they would recommend the series to a friend	*Would you recommend the series to a friend?*	*Closed*	*Yes* *No*
At least 70% of participants think that their parenting skills improved	*What impact has the series had on your ability to deal with your toddler?*	*Closed*	*Very positive* *Somewhat positive* *Somewhat negative* *Very negative* *No impact at all*
At least 70% of participants think that their knowledge about parenting increased	*What impact has the series had on your knowledge about parenting?*	*Closed*	*Very positive* *Somewhat positive* *Somewhat negative* *Very negative* *No impact at all*

Drafting the Questions

To get started, make one copy of the *Tool Worksheet* for each tool listed in the *Methods Worksheet*. Write the tool type at the top of the *Tool Worksheet* — for example, interview, self-completed questionnaire, registration form, etc. Then, in the first column, copy the expectations that were listed in the *Methods Worksheet* for that tool.

For each expectation, write one or more questions you want to ask the people who have the data you need. Some expectations will only require one question on a tool. For example, "In what year were you born?" is the individual question for the expectation "20% of participants are less than age 25." Others will require several questions to tap all of the dimensions of an issue. To explore participants' satisfaction, for example, it may be necessary to ask, "How satisfied were you with each of the following aspects of the sessions: start and finish time of the session; location; topics; time allowed for questions?"

Make sure that all questions on your tool relate back to the overall purpose of the evaluation and the specific evaluation questions and expectations. Remember, there must be a clear rationale for every single question.

Questions on the data collection tool must be easy to understand and clear. Keep in mind the following suggestions:

- Use simple and familiar words. Consider the vocabulary you are using and the literacy levels of the people from whom you are collecting data. A good rule of thumb is a Grade 6 reading level. Use good grammar.
- Keep questions short and to the point.
- Use standard wording for common questions such as demographics or health attitudes, behaviour or status. Check Statistics Canada Census questions or the National Population Health Survey for examples.
- Assess the need for translation into other languages.

Also see "Tips for Asking Questions" for practical suggestions on avoiding some common problems.

Tips for Asking Questions

Problem	Example	Solution	Example
Loaded questions	Do you support laws for bicycle helmets to save human lives?	Tone it down	Do you feel that bicycle helmet legislation is required to reduce injuries from bicycle crashes and/or collisions?
Compound question	How satisfied were you with the time and location of the sessions?	Break it down	How satisfied were you with the time of the sessions? How satisfied were you with the location of the sessions?
Double negatives	Do you agree or disagree with the following statement: Lack of measles immunisations is not a problem in Ontario.	Remove a negative	Do you agree or disagree with the following statement: Measles immunisation is a problem in Ontario.
Double-barrelled questions	Do you breastfeed to save money?	Ask it in stages	Do you breastfeed? If yes, why?
Leading questions	Most doctors believe that lack of exercise leads to heart disease. Do you agree?	Get rid of the bias	Do you agree or disagree with the following statement: Lack of exercise leads to heart disease.
Jargon or technical terms	Determinants of health	Say what you mean in everyday language	Factors which affect our health
Foreign phrases or slang	Raison d'être	Explain exactly what you mean	Purpose
Acronyms & abbreviations	PHN	Spell it out (at least the first time)	Public Health Nurse

Determining the Type of Response and the Response Categories

The next step on the *Tool Worksheet* is to select the type of response for each question. Read through this section and then complete the third and fourth columns of the *Tool Worksheet* for each individual question on the tool.

There are two ways to record answers to questions:

- with pre-set categories (closed-ended questions); or
- in people's own words (open-ended questions).

Closed-ended Questions

The response categories for closed-ended questions are pre-determined. Respondents select one or more existing categories. With closed-ended questions, it is possible to count the number of respondents who select each category and report statistics. This standardisation makes comparisons easier than with open-ended questions.

There are two main types of pre-set response categories — lists and scales.

With lists, two or more possible responses are listed and respondents are asked to pick the one that matches their answer. For some questions, respondents may be instructed to pick more than one answer. The following example illustrates this type of list.

Where did you hear about the Parenting Series? (pick all that apply)

- ❑ newspaper
- ❑ from a friend or family member
- ❑ radio
- ❑ television
- ❑ community resource centre
- ❑ doctor or nurse
- ❑ community organisation or group (e.g. library, church, etc.)

Sometimes lists are only *partially* closed-ended. This type of question usually includes an "other" category and prompts respondents to provide additional data. An "other" category can be used when you are not sure that you have covered every possible answer. Think carefully about the data you need — analysing partially closed-ended questions can be difficult. The following question is an example of a partially closed-ended question.

Which of the following have you learned as a result of the Parenting Series?

- ❑ how to take care of my child when she/he is sick
- ❑ new ideas for healthy, balanced meals
- ❑ tips for communicating effectively with my child
- ❑ how to set limits
- ❑ when to talk about sexuality with my child
- ❑ how to build my toddler's self-esteem
- ❑ other (please specify)

Unlike lists, which are in no particular order, the response categories for scales are ordered. Scales provide data about the *strength* of someone's opinion or the *level* of their satisfaction. The first and last items in a scale should be opposites as in the following example, in which "excellent" is the opposite of "poor."

Overall, how would you rate the series?

- ❑ excellent
- ❑ good
- ❑ fair
- ❑ poor

Tips for the Pre-set Response Categories of Closed-ended Questions

Common Problems	Example	Solution	Example
The respondent's answer fits into more than one response category	Last week, how many times did you read the newspaper? ❑ 1-2 ❑ 2-3 ❑ MORE THAN 3	Make sure response categories do not overlap	Last week, how many times did you read the newspaper? ❑ 1 ❑ 2 ❑ 3 OR MORE
Not everyone interprets response categories in the same way	How often do you read our health unit newsletter? ❑ REGULARLY ❑ OCCASIONALLY ❑ NEVER	Build in a reference to time	How many issues of our health unit newsletter did you read last year? ❑ 3-4 issues ❑ 1-2 issues ❑ NONE

Open-ended Questions

Open-ended questions do not have any pre-set response categories. Some data collection tools, such as focus groups, consist entirely of open-ended questions. Other types of tools, such as self-completed questionnaires, may contain a mixture of open-ended and closed-ended questions. Open-ended questions allow people to express themselves in their own words. This type of question is only appropriate when people are willing and able to express themselves in this way.

Unfortunately, open-ended questions are often difficult to summarise and interpret. You generally don't count the number of times people say things. Instead, you look for broad themes.

The following question is an example of an open-ended question:

What did you learn as a result of the Parenting Series?

Putting the Tool Together

Once you have drafted the questions and determined the type of response, you are ready to put the tool together. Five completed tools from the evaluation of the Parenting Program are included in Appendix C — an attendance sheet, a self-completed questionnaire, a registration form, an activity log and a focus group guide. Refer to these examples as you put your data collection tools together. Remember — these are just examples and your data collection tools may look different, depending on your evaluation questions, who has the data you need and who is going to collect it.

How you put a tool together depends on its type. To put an attendance sheet together, for example, set up a table of rows and columns, as in the example from the Parenting Program — one column for the name of the participant and a column for each event for which you plan to record attendance. Put a title on the sheet, indicate some key program details (date and place, for example) and label each column.

Most other types of tools are not set up as a table with rows and columns. They consist of a series of questions and answers. These should begin with some kind of an introduction and instructions for completion. The introduction should include the purpose of the tool, the topics that the tool will cover, how to complete the tool, how long it will take and who will use the results.

Indicate clearly any questions that are not to be asked of everyone. These are called skips; for example, *If you don't currently smoke, skip to question 3*. Next, look at the questions on the *Tool Worksheet* and group those that deal with the same general topic areas. Each group of similar questions will be a separate section on the tool. Avoid having too many questions on the same topic, so people don't get irritated or bored. Put sections in a logical order; avoid jumping back and forth from one topic to the next. Introduce each section with a sentence or phrase to let people know you're moving on to a new topic area. This transition doesn't have to be long. It can be something as simple as, "Now I'd like to ask you about ...." or, "This next section deals with....." Tools such as self-completed questionnaires, mail surveys or focus groups should flow like a conversation.

Decide which section should go first. Capture people's attention with interesting, relevant and easy-to-answer questions that apply to everyone. Put a question that is potentially threatening, too personal, long or complex toward the end (e.g., age, income, sexual practices, alcohol consumption or drug use). To minimise the possible sensitivity of these questions, consider the following suggestions.

- Emphasise confidentiality.
- Make the response categories as broad as possible.
- Use non-judgmental wording.
- Explain why you are asking these questions.
- Consider alternative ways of asking these questions (e.g., ask what year they were born instead of how old they are).

- Use a preamble which softens the question and makes all possible responses socially acceptable (e.g., There are many things that influence a family's decision to breastfeed, and not all families can or do. Did you breastfeed your baby?).

Special Considerations for Self-Completed Tools

First impressions influence whether or not someone will complete a tool such as a self-completed questionnaire, registration form or mail survey. Consider the following tips for an attractive, professional, uncluttered look.

- Use a font that is easy to read.
- Use response categories that are easy to understand and easy to complete.
- Number each question clearly.
- Leave a blank space for open-ended responses (don't provide lines).
- Do not split questions between pages.
- Put questions in a different typeface, font or style so they stand out from the instructions or response categories.

A brief explanation should accompany tools that people fill out on their own. The explanation should be one page maximum. Make it look professional, but keep it friendly. It should address the following points.

- Who wants to know and why.
- What the tool is about.
- How long the tool will take to complete and what to do when they're done.
- How the data will be used.

STEP 3c

Assessing the Quality of the Data Collection Tool

Once you have put your data collection tool together from scratch, or modified an existing one, it is critical to assess its quality. There are several ways to do this. This section discusses two: the content and clarity test, and stability reliability test. At a minimum, you should do the content and clarity test. If your resources permit, it would also be a good idea to examine the stability reliability.

The Content and Clarity Test

As the name implies, this test examines two important aspects of quality: content (is the tool measuring exactly what you want it to measure?) and clarity (is the tool easy to understand?). In all evaluations, you want to have confidence in the quality of your data. Therefore, the content and clarity test should always be done for new tools and existing tools that have been modified.

The content and clarity test is a review of the tool by two different groups of people. The first group is made up of "experts" who are knowledgeable about the general topic area of the tool. Usually about three to five "experts" is ample. The nature of people's expertise varies from evaluation to evaluation. For the evaluation of the Parenting Program, the nurse leaders might be the "experts" in reviewing a self-administered questionnaire for program participants; because they are very familiar with the program's activities, target groups and intended outcomes.

The second group is composed of people who are similar to those who will eventually provide you with real data. The number of people required varies tremendously; it depends on the type of tool and its complexity. You must decide what will make you confident that the tool is clear and that it is measuring what it is supposed to. It is generally safe to have about 10 people review it. You may need to have more if your tool has a lot of skips. On the other hand, if the tool is very simple and your respondents are very homogeneous, five is probably sufficient. Make sure that at least two people go through each line of questioning.

Ask each person in the two groups the following questions.

- Does the tool measure what it is supposed to?
- Are there any unnecessary measures included in the tool?
- Are the questions easy to understand and clear?
- Will people be able to answer the questions?
- Will people be able to follow the instructions?
- What is the quality of translation (if applicable)?
- Are there colloquial expressions that may not be understood?
- Is the font size and style easy to read?
- Are the response categories exhaustive?
- Will people have trouble remembering information needed to answer questions?
- Does the tool read smoothly and flow logically?
- Are the skip patterns easy to follow?
- Will the tool hold people's interest?
- Are there any typographical errors or spelling mistakes?
- Are there any questions that may be culturally inappropriate?

Correct any problems that are uncovered in the content and clarity test. If the reviewers indicate that the tool doesn't include all of the measures that it should or some measures that it shouldn't, revisit the *Tool Worksheet*.

Stability Reliability Test

If you have developed new measures, it is a good idea to test their stability reliability. Stability reliability refers to the consistency of a measure. Examining stability reliability involves asking a sample of people to complete a data collection tool at one point in time, and then again later on. If a measure is reliable, then the data should be consistent between the two time periods (provided there haven't been any changes in whatever is being measured). It is important to check the reliability of all of the measures in your data collection tool. Some may be reliable, others may not be. Check with your evaluation specialist or epidemiologist for the numbers required and the proper analysis techniques for interpreting the results of the stability reliability test.

Key Points

- Using existing measures and tools can improve the quality of your data.
- There are a variety of data collection tools — all involve asking questions and recording answers.
- There are two types of questions: closed-ended, which have pre-set response categories, and open-ended, which allow people to express their answers in their own words.
- Assessing quality is an important part of the tool development process.

Quiz Yourself

- How can you find out if a data collection tool that might meet your needs already exists?
- List one advantage and one disadvantage of using open-ended questions.
- Name the two types of response categories for closed-ended questions. What is the difference between them?
- What types of questions should be asked at the end of a tool?
- Describe one way to assess the quality of a data collection tool.

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step 4

Gather and Analyse Data

At the end of this module, you will be able to:

- Execute the logistics plan for your data collection, including pre-testing your method and assessing data collectors (Step 4a).
- Methodically review your qualitative data to determine the main findings (Step 4b).
- Use a systematic process to organise your quantitative data (Step 4c).
- Analyse your quantitative data by hand or prepare your data for analysis by computer (Step 4d).

Step 3 explained how to develop your data collection tools and offered some techniques for writing good questions and answers. Once your tool is developed, it is time to gather data. The first part of this module focuses on some of the logistical details involved in gathering data. This includes selecting data collectors, preparing instructions for data collection and training data collectors. It also discusses the importance of pre-testing your methods and assessing data collectors. The second part of the module focuses on how to analyse data once it is collected. There are two sections in this part of the module: one walks through the analysis of qualitative data and one explains the analysis of quantitative data. For data collection tools that contain only qualitative *or* quantitative data, refer to the relevant section. For tools that contain both quantitative *and* qualitative data, be sure to read all of Step 4.

STEP 4a

Gathering Data

The *Logistics Guides* and your *Logistics Worksheets* from Step 2 highlight the tasks, roles, timelines, equipment and supplies required for gathering data. You may have noticed that there are a few tasks that are important in planning the logistics for several different types of data collection tools — selecting data collectors, preparing instructions for data collection, training data collectors and pre-testing your methods and tools. Each of these important tasks is discussed in this section to help you execute your logistics plan successfully. How to keep track of your data collection activities is also discussed.

Selecting Data Collectors

The generic term data collector refers to those who are going to get the data you need; for example, a moderator for a series of focus groups or an interviewer for a telephone survey. In selecting data collectors, you need to know how many the project requires, what abilities, knowledge and skills data collectors must have and how you will recruit them for the project. This section will cover all three of these aspects.

Deciding on the Number of Data Collectors

In Step 2b, you decided on the type of person who was going to collect the data. Next you need to decide exactly how many data collectors you will need. The exact number of data collectors required depends on the type and length of your data collection tool, the number of people from whom you need to collect data and their schedules, how difficult it is to reach the people from whom you'll be collecting data, and the overall timelines of your evaluation. Keep in mind that as a general rule, it is best to involve as few data collectors as possible, for consistency's sake.

The following scenario for a telephone interview illustrates how to use these factors to determine the number of data collectors required. You have run through the interview with a colleague. You know that the interview takes about 10 minutes to complete. Then you factor in a guestimate of how long it may take to reach people by phone. You figure one interviewer can do roughly three 10-minute interviews an hour. This includes the time the interviewer is actually interviewing someone; plus the time it takes to successfully contact them. You need to interview parents who are working outside of the home; therefore, you know that the best time to reach most people is probably between 5pm and 9pm in the evenings and from about 10am to 5pm during weekends. That means you can collect data for four hours five days a week, and seven hours a day on weekends. That's 34 hours of available interviewing time a week. You need to complete 200 interviews, so based on three interviews an hour it will take about 66 hours. One person working full-time could complete the interviews in a little over two weeks. You realize that may be a bit draining and intense for one person, plus you really need to get the data gathered and analysed as quickly as possible. You decide to have two people work as interviewers instead. They can complete about 100 interviews in a little over a week. That fits well with your overall evaluation schedule.

Determining the Knowledge, Traits, and Abilities of Data Collectors

Collecting data, regardless of the type of tool, requires certain abilities, knowledge and traits, especially for focus groups and telephone or face-to-face interviews. Some characteristics of a person who would be a good focus group moderator or a good interviewer are provided on the following page.

Characteristics of Focus Group Moderators and Interviewers

Knowledge

- Understand the purpose of the evaluation and the specific evaluation questions that the focus groups or interviews seek to answer.
- Be familiar with the data collection technique and their role in it (previous experience is preferable).

Traits

- Excellent memory
- Flexible
- Friendly
- Good sense of timing
- Good listener

Abilities

- Speak clearly
- Start and maintain conversations/discussions with strangers
- Read and write in "data collection" language
- Engage and encourage people to share their opinions, attitudes, ideas, etc.
- Refrain from expressing own opinions, attitudes, ideas, etc.
- Maintain confidentiality
- Deal with difficult people
- Provide consistency

Recruiting Data Collectors

There may be people within your own organisation who have the required knowledge, traits and abilities for your data collection needs. If not, you will have to hire someone from outside. You can hire a research firm that has data collectors on staff, or you can hire your own data collectors. If you decide to recruit your own data collectors, advertise in newspapers and at universities or colleges, and make sure to ask others in your health unit for the names and résumés of data collectors they have hired in the past. Be sure to have a job description prepared before you start recruiting for the position.

Preparing Instructions for Data Collection

You need a protocol to help maximise consistency in data collection. The protocol is a set of brief written instructions. The aim is to have as standard an approach as possible among all data collectors. Depending on the type of tool and the data collector, the protocol might include:

- a description of the program that is being evaluated and from whom data will be collected;
- the purpose of the evaluation and of this particular data collection tool;
- information on how to introduce and explain the tool to respondents;
- instructions on how to record answers;
- an outline of what they are supposed to do, when, why, where, with whom, and how;

- to whom to refer respondents if the subject matter is upsetting; and
- how to answer questions that respondents are likely to ask.

Even for something as seemingly simple as activity logs that program staff complete, make sure detailed instructions are included. People can understand things differently.

As an example, see the brief set of instructions for the staff handing out the self-completed questionnaires to participants in the Parenting Program.

Instructions for Administering Questionnaires After Parenting Series

AT THE END OF THE LAST SESSION

- HAND OUT the questionnaire.
- INSTRUCT participants of each the following points.
  - *The purpose of the questionnaire is to learn about participants' experience. It will help the Health Unit plan its programs better.*
  - *Do not sign your name. We won't know which questionnaire came from which participant so please **be completely honest**. Your answers will in no way affect your participation in the Parenting Series. Although completion of the questionnaire is voluntary, we would greatly appreciate your co-operation. If there are questions which you would prefer not to answer, just leave them blank.*
  - *For the first set of questions, put a check mark in the box next to the answer that best describes what you think. The very last question asks for your suggestions for improvements. Write your answer on the sheet. If you run out of room, use the other side of the paper.*
- ASK if there are any questions about the purpose or the process.
- ALLOW about 5 minutes.
- WAIT until everyone is done.
- COLLECT the questionnaires from everyone in a big envelope so that no one, including yourself, can see people's responses. Keep the questionnaires from each series separate. Mark on the envelope the date and location of the series.
- THANK people for their co-operation.

Training Data Collectors

Training sessions for data collectors generally cover all of the information contained in the protocol. It is important that everybody meets together. Start by giving a brief overview of the project. Explain the roles and responsibilities of data collectors and then walk data collectors through their tasks step-by-step. It is important to review the techniques associated with your particular data collection tool. For example, if you are doing telephone intervews, review the basics of telephone interviewing with your data collectors. After the training session, make sure you feel comfortable with the knowledge and skills of the data collectors. If not, organise additional training or replace the data collectors.

If you are conducting a survey or interviews, do a "walk through" or trial run. Give data collectors a chance to ask the Project Leader questions. Consider role playing specific scenarios — for example, how to deal with refusals to participate or what to do if a respondent becomes upset or angered by the topic of the interview. Have

interviewers do mock interviews with each other. You might want to audio or videotape these mock interviews so that interviewers can critique their own interviewing style. Be sure to provide feedback to interviewers during this training session.

Pre-testing the Method

Despite the most careful and detailed planning, there are things that inevitably get overlooked which can jeopardise the quality of your data. It is imperative that your data collectors try out the tool and methods on a small subgroup before you launch into the real thing. This crucial step in the data collection process is called a pre-test. A pre-test is the continuation of the assessment of the quality of your data collection tool from Step 3c. While the assessment in Step 3 focuses on the tool itself, a pre-test assesses the feasibility of the data collection tool *and* methods.

A pre-test is a dry run of your data collection methods. It is also called a pilot test. A pre-test simulates the real thing, in advance and on a smaller scale, to detect and correct errors so there aren't any detrimental or expensive surprises later on.

It is important to conduct your pre-test using the same format and data collectors, with the same type of respondents in the same setting as you will with the real thing. For example, if you are pre-testing a self-administered survey of youth in high schools, you must make sure that:

a) the survey for the pre-test is self-administered — don't have an interviewer *ask* the questions instead;
b) the respondents are youth — select the youth in the same way as you plan to select them in the real thing; and
c) the setting is high schools — don't go to a mall or community centre instead.

Besides assessing the quality of your tool addressed in Step 3c, a pre-test looks at the following issues.

- How much time does it take?
- Are there any problems in selecting the sample?
- How many people participate?
- How disruptive is administration of the tool?
- Do data collectors understand and execute their tasks well?

The number of respondents with whom you pre-test varies tremendously; it depends on the type of tool, the methods and their complexity. You must decide what will make you feel confident that there will be no unanticipated problems in the real thing; plus, you may have to do another pre-test if there are significant changes after the first one. A general rule of thumb for self-completed questionnaires is 10 respondents, but you may need more if your questionnaire has a lot of skips. Make sure that at least two people go through each question on your tool. You may only have to pre-test with 5 people if the questionnaire is very simple and your respondents are very homogeneous. Interview at least 10 people for a telephone survey. If you are doing face-to-face interviews, do 3 or 4 as a pre-test. Often with focus groups, the first focus group is considered the pre-test.

With self-completed questionnaires, you usually don't include the responses from the pre-test in the real test. For interviews or focus groups, if there are no changes (or they are only minimal), you can include the responses from the pre-test.

Assessing Data Collectors

In addition to pre-testing the method, it is important to assess your data collectors to determine how consistently data are being collected. *Intra-rater reliability* is assessed by having each data collector take measures for the same case at different times (e.g., for a telephone survey, the same interviewer calls back the same respondents and asks the same questions). This reveals how consistently each individual data collector is asking questions and recording responses. When a number of data collectors are involved in administering a tool (e.g, telephone survey or chart review), it is also important to determine how well the data collected by different collectors correspond. This involves asking different data collectors to complete the same tool for the same case (e.g., telephone survey respondent or chart). This is called *inter-rater reliability* and refers to how consistently different data collectors ask questions and record responses. Consult with your epidemiologist or evaluator for more details on inter-rater and intra-rater reliability.

Keeping Track of Data Collection

It is always important to keep track of your data collection activities. With mail surveys, for instance, there should be a log of how many surveys are mailed out, how many surveys are returned each day and when reminders or follow-ups are made.

For telephone or face-to-face interviews, it sometimes takes several attempts to reach a potential interviewee. Decide in advance when attempts should be made and how many there should be in total. Attempts to contact interviewees should be made at different times of the day over the course of a few days or weeks. There is no hard and fast rule for the number of attempts. It depends on a variety of factors. Consult your evaluator or epidemiologist. It is important to keep track of attempts and to record when an interview is finally completed. A log sheet is a useful way to record the date, time and result of each attempt. It also helps provide a sense of the response rate, that is, the level of response or the degree to which people are agreeing to be interviewed. A sample interview record is provided. Feel free to use it as is or make modifications to suit the purpose and details of your project.

If your response rate is low, consider re-contacting those who refused. You may consider inviting them to participate one last time. You should also ask them their reasons for refusing, as this will help pinpoint problems with your method that need to be addressed.

There is no real standard when it comes to response rates. The acceptable level of response depends on the evaluation questions, the type of tool, the source of the data, the type of design, the timeframe and the resources available. Discuss this issue with your evaluator or epidemiologist. If you anticipate that there will be a problem with low response rates, consider offering incentives for participation.

Once your logistics plan is executed and your data is collected, the next step is to analyse it. If your tools contain open-ended questions, work your way through Step 4b. If your tools do not involve any open-ended questions, skip to Step 4c.

Interview Record

Telephone Number:		Name or identification number:		
Contact Attempt	Date	Time	Result Code (see below)	Name of Interviewer
1				
2				
3				
4				
5				

Notes:

Result Code

Telephone interviews:
C Completed interview
R Refusal
N No answer
B Line busy
A Answering machine
S Number not in service
W Wrong number

Setting up appointments by telephone for face-to-face interviews:
N No answer
B Line busy
A Answering machine
S Number not in service
W Wrong number

Once appointment is set:
C Completed interview
R Refusal
NS No show
CL Cancellation
RS Rescheduled

STEP 4 b

Analysing Qualitative Data

This section explains how to analyse qualitative data by hand. Qualitative data is data collected from focus groups, interviews, observation and chart reviews, plus the data collected from open-ended questions on questionnaires and surveys. An open-ended question from the self-completed questionnaire from the evaluation of the Parenting Program will serve as an example. If your tools do not involve any qualitative data (i.e., open-ended questions), skip to Step 4c.

There are computer programs for analysing qualitative data (e.g., QSR NUD.IST and the Ethnograph). The approach suggested in this section simulates the type of analysis computer programs are capable of. Factors to consider when exploring the use of computer programs include:

- the availability of both hardware and software;
- your comfort with computers;
- your familiarity with qualitative data analysis software packages;
- the amount of data to be analysed;
- the form of the data (i.e., tape-recorded, hand-written, or already in an electronic format such as a word processing document); and
- the time available for the analysis.

If you are interested in exploring computer-assisted qualitative data analysis, check out Eben Weitzman and Matthew Miles' book *A Software Sourcebook: Computer Programs for Qualitative Data Analysis* published by Sage in 1995. A good general resource on qualitative analysis is Matthew Miles and Michael Huberman's *An Expanded Sourcebook: Qualitative Data Analysis* published by Sage in 1994.

Here's what you'll need if you're going to analyse your data by hand.

- Several highlighters — a different colour for each of your evaluation questions. (If you don't work well with colour codes, don't worry about the highlighters. You can use symbols or code words.)
- One photocopy of the *Qualitative Data Analysis Worksheet* for each evaluation question.
- Your completed *Methods Worksheet*.
- All of your data including notes, transcripts and/or tapes from all interviews or focus groups and all of the individual tools for self-completed questionnaires, registration forms, observations or chart reviews.

Here's how to prepare.

- Reserve at least two blocks of time, ideally about a half day each, for this process.
- Find a quiet place where you can "spread out" your materials and focus on your analysis without any interruptions or distractions.
- Take a deep breath. It is easy to feel overwhelmed by the amount of data collected.

- Write the evaluation question in the space provided at the top of each *Qualitative Data Analysis Worksheet*. Pick a colour, symbol or code word for each evaluation question and record that on the *Worksheet* below the evaluation question.
- In the "Points" column, write down each expectation that pertains to this particular evaluation question. Leave a space between each expectation because you will be keeping track of all of the points raised in the data that pertain to each expectation.

Here's how to do it.

a) Read all completed tools or notes and transcripts in one sitting. Use your highlighter, symbol or code word to mark the parts that deal with each evaluation question.
b) Listen to the tapes (if applicable).
c) Go back and carefully read through all of the data that pertains to the first evaluation question (the relevant pieces of data should already be indicated by the same colour, symbol or code word). In the "Points" column on the *Worksheet*, write down each opinion, idea or feeling that pertains to the expectations for that evaluation question. If a point has already been mentioned, don't rewrite it (even though it may have been expressed in a different way or using different words). Instead, keep a tally of the number of times this opinion, idea or feeling is mentioned. Quotes sometimes help illustrate or substantiate points. In the column provided on the *Worksheet*, write any quotes that express a point particularly well.
d) Look at the tallies for each expectation. Take the points that are mentioned by the majority of respondents and write them in the "Findings" column. Organise them by expectations. Don't report precisely how many respondents agreed with each point. Instead, use phrases like:
   - most people felt that...
   - there was a strong feeling that...
   - the majority view was...

   Most times you won't report opinions that are expressed by only a minority of respondents. Occasionally, however, the minority view is important. Use your judgment, but always make it clear that only one or a few respondents expressed that opinion. If it is meaningful and won't jeopardise any guarantees of anonymity, note any distinguishing characteristics of this minority that are relevant.
e) Repeat the above two steps (c and d) for each evaluation question.

Now you have the findings from your qualitative data. If you only collected qualitative data, you can skip to the end of this module. Step 5 will continue on from here. If you have also collected quantitative data (i.e., closed-ended questions), continue on with Steps 4c and d.

Qualitative Data Analysis Worksheet

Evaluation Question: *Were participants satisfied with the series? (Question number 4 from Methods Worksheet)*

Colour, code or symbol: *Yellow*

Points (ideas, opinions, feelings, etc.)	Quotes which illustrate points	Findings
Expectation 4c Some suggestions for improvements:		
Length and timing of sessions avoid having sessions run over supper time | would prefer sessions to start earlier || could go longer than 2 hours |||		*Topics of discussion* There was a strong feeling that parents should be involved more in the choice of topics. Many participants thought there should be more time for discussion.
Location bathrooms were filthy | it was always hard to find parking || too far from bus routes |		
Topics of discussion parents decide on topics 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 cover a couple of topics per session | not enough time spent on each topic 𝍸 𝍸 𝍸 𝍸 𝍸	I think the process of deciding on the topics as a group would be very valuable. Sometimes we'd just get into a really interesting discussion and boom it was time to leave or move onto something else. I think there should be more time for discussion.	
Other cancel the session when it falls on Halloween night || encourage more fathers to attend ||| provide list of participant names and numbers |		

Unexpected findings:

Preparing for the Analysis of Quantitative Data

This section explains how to prepare to analyse quantitative data, that is, data collected from the closed-ended questions on activity logs, administrative records, registration forms, interviews, surveys and records of observations. Preparing for analysis involves determining the mode of analysis (i.e., by hand or computer), organising the data, and screening for missing data and other problems.

Determining the Mode of Analysis

Sometimes quantitative data can be analysed by hand, other times it is necessary to use a computer. The first step is to decide if the analysis will be done by hand or by computer. This depends on what your evaluation questions are seeking to answer, plus the amount and type of data that has been collected.

The analysis of outcome evaluation data requires statistical tests which are best done on a computer, using special programs for statistical analysis such as Epi Info or the Statistical Package for the Social Sciences (SPSS, for short). You should also consider computer-assisted analysis if you are collecting a lot of process data, say for instance, you are asking 50 or more people to answer 10 or more questions on a survey. Analysis by hand with this amount of data is tedious and prone to error.

If you are not familiar with using a computer for data entry or analysis, look into getting help from:

- the evaluation specialist, epidemiologist or planner at your health unit or another staff person who has training in research methods;
- an evaluation consultant;
- university faculty; or
- a graduate student.

Always consult with the people who are going to assist with data entry and analysis BEFORE you collect any data.

If you are going to have someone else analyse the data, read the first part of Step 4d which will help you fill out the first four columns of the *Quantitative Data Analysis Worksheet*. Give your raw data and the *Quantitative Data Analysis Worksheet* to the analyst and ask them to fill in the last three columns of the *Worksheet*. If you are going to analyse the data yourself, continue reading the rest of Step 4c.

Organising the Data

For most tools, if you are going to do the analysis by hand, you first need to fill out the *Quantitative Data Organisation Worksheet*. Then you can complete the *Quantitative Data Analysis Worksheet*.

If you are analysing attendance sheets, you do not necessarily need to complete the *Data Organisation* or *Data Analysis Worksheets*. Tally up the attendance for each event. These are your findings. Proceed to Step 5 and record your findings in the *Interpretation of Findings Worksheet*.

The *Quantitative Data Organisation Worksheet* allows you to summarize the answers to the questions on your data collection tool. It is a table with several rows and columns. The rows represent each completed tool and the columns represent each question on the tool. It looks like something you would see in a computer spreadsheet program such as Excel, Quatro or Lotus. It also resembles the way statistical software packages organise your data for computer-assisted analysis.

Here's how to get ready to fill out the *Quantitative Data Organisation Worksheet*.

- Check that you have all of your raw data (i.e., all your completed data collection tools that people have filled out).
- Make one copy of the *Quantitative Data Organisation Worksheet* for each data collection tool that contains quantitative data.
- Write the type of tool at the top of each *Worksheet* (e.g., self-completed questionnaire).
- In the columns under the header "Questions on the Tool," indicate how many questions are on your tool by writing a number in each column. For example, if you have a self-completed questionnaire with a total of five questions, write the numbers 1 through 5 in the first 5 columns under "Questions on the Tool."
- Make one copy of the *Worksheet* for every 15 completed tools. For example, if you got 75 questionnaires back, you will need to make 5 copies of this *Worksheet*.

Here's how to complete the *Quantitative Data Organisation Worksheet*.

- Start with any one of your completed tools (e.g., pick the questionnaire at the top of your pile of questionnaires that people have filled out and given back to you).
- Mark the number 1 in the top right-hand corner of the completed tool.
- Write the number 1 in the first column under the header "Respondent."
- In the next column, record the *response* to question 1 under the column header "1." If there is no response, just leave it blank. Then record the response for question 2 under the column header "2" and so on for each question. If you don't want to write out the whole response long-hand, you can assign a number to represent each response category (e.g., 1 = Yes and 2 = No). This is called coding.
- Once all of the responses on that tool have been recorded, set it aside and pick up another completed tool.
- Mark the number 2 in the top right-hand corner.
- Write the number 2 in the first column (under the header "Respondent") of the next blank row. Then record the response to question 1 under the column header "1." Then record the response for question 2 under the column header "2" and so on for each question.
- Set this completed tool aside and pick up another completed tool.
- Repeat this process until the data from all completed tools has been recorded. To double-check this, make sure that the number of completed tools matches the number of respondents on your *Worksheet*.

Screening the Data

Whether you are doing the analysis by hand or with a computer, screening for problems in the data is an important step in preparing for data analysis. This involves identifying missing data and other problems.

Missing Data

One of biggest challenges in gathering and analysing data is missing data. Missing data means that one or more respondents did not answer one or more questions on your data collection tool.

Missing data occurs for any number of reasons. Respondents might either intentionally or unintentionally skip questions, they may not have completely understood the question, or perhaps they simply refused to answer. It is possible they didn't know the response or couldn't recall the information required to answer the question. Missing data is also sometimes a result of boredom, fatigue or irritation.

The reasons for missing data underscore the importance of thoroughly assessing the quality of data collection tools and pre-testing methods. Instructions, skip patterns, questions and answers must be clear. The format must be easy to read. The tool has to capture and hold people's interest but it can't be too long.

When organising your quantitative data, missing data will be apparent. There will be blank spaces on your *Quantitative Data Organisation Worksheet*. It is important to decide whether or not missing data should be included in your analysis. In most situations, you will likely exclude the cases with the missing data in the denominator for the calculation of your final percentage or number. All of the decisions you make about how to handle missing data should be clearly documented. If more than 10 per cent of respondents do not answer any given question, there is a serious problem. The quality of your data may be jeopardised. Consider excluding the entire question from your analysis.

Other Problems with the Data

In addition to missing data, there are a host of other potential problems with the data. Sometimes respondents who are supposed to skip past a certain block of questions answer them instead. Other times, more than one response category is selected when the instructions specify to pick only one. Occasionally, there are hand-written notes scribbled next to a question that provide additional information or explain a response. It is necessary to screen each completed tool for these types of issues while organising the data. Try to make sense of any logical inconsistencies and make adjustments to the data as necessary. If you cannot make sense of them, deal with the data as if they were missing.

Quantitative Data Organisation Worksheet

Type of Tool: *Self-completed questionnaire*

	Questions on the Tool									
Respondent	1	2	3	4	5					
1	good	yes, a lot	yes, a little	yes	completed high school					
2	excellent	yes, a lot	no	yes	some college or university					
3	good	yes, a little	yes, a lot	yes	completed high school					
4	fair	no	yes, a lot	yes	completed high school					
5	good	yes, a lot	yes, a lot	yes	completed high school					
6	good	yes, a lot	yes, a little	yes	completed high school					
7	excellent	yes, a lot	yes, a little	yes	completed high school					
8	poor	yes, a little	yes, a lot	yes	elementary school					
9	excellent	yes, a little	yes, a lot	no	completed high school					
10	excellent	yes, a lot	yes, a lot	yes	some college or university					
11	good	yes, a lot	yes, a little	yes	completed high school					
12	excellent	yes, a lot	no	no	some college or university					
13	good	yes, a little	yes, a little	yes	completed high school					
14	good	yes, a lot	yes, a lot	yes	completed college or university					
15	good	yes, a lot	yes, a lot	no	some high school					

STEP 4 d

Analysing Quantitative Data

The first part of this process involves filling out the *Quantitative Analysis Data Worksheet*. This *Worksheet* will eventually contain the findings from this data collection tool.

Start by making one copy of the *Quantitative Data Analysis Worksheet* for each type of tool that has closed-ended questions, for example, if you have a self-completed questionnaire and a telephone interview, make two copies. On each *Worksheet*, indicate the type of tool in the space provided (e.g., self-completed questionnaire).

For each type of tool, copy the expectations from the *Methods Worksheet* into the first three columns of the *Quantitative Data Analysis Worksheet* by doing the following steps.

- Put the number part of the expectation in the first column. Expectations are often stated as percentages (e.g., at least 70%). Sometimes they are just stated as straight numbers (e.g., minimum of 250).
- Put the group or thing the expectation applies to in the second column (e.g., all participants or parents with high school education or less).
- Put the response category from that particular question on the tool in the third column called "Response Category" (e.g., excellent or good).

Finally, put the question number from the tool in the fourth column called "Question Number" (e.g., 1, 2, 3).

If you are having someone else analyse the data, give them your raw data and the *Quantitative Data Analysis Worksheet*. Ask them to fill in last three columns of the *Worksheet* and then skip to Step 5. If you are analysing your data by hand, here's how to complete the analysis.

- Find the column on the *Quantitative Data Organisation Worksheet* that corresponds to the "Question Number" on the *Quantitative Data Analysis Worksheet.*
- Count from top to bottom the number of times the response category occurs (for example, count the number of "goods" or "excellents"). Be sure the respondent matches the description in column 3 from your expectations (e.g., parents with high school education or less versus all parents). Write this number in the "Count" column.
- If your expectation is a straight count, copy the number in the "Count" column to the "Final Percentage or Number" column and move on to the next expectation.
- If your expectation is stated as a percentage, you need to know how many people this count is based on. Count the total number of responses in this column. Write this number in the "Total" column.
- Then divide the "Count" by the "Total" and multiply it by 100 to find the percentage. Write this number in the "Final Percentage of Number" column. Indicate that it is a percentage (%).

Quantitative Data Analysis Worksheet

Type of Tool: *Self-completed questionnaire*

Expectations				Findings			
% or number (copy from *Methods Worksheet*)	**Of whom / what** (copy from *Methods Worksheet*)	**Response Category on Tool** (copy from *Tool Worksheet*, if applicable)	**Question Number on Tool** (if applicable)	**Count**	**Number Missing**	**Total**	**Final Percentage or Number**
4a - 70%	*all participants*	*good or excellent*	*1 (rating)*	*77*	*4*	*96*	*80%*
4b - 70%	*parents with high school education or less*	*good or excellent*	*1 (rating)* *5 (education)*	*34*	*3*	*40*	*85%*
4d - 70%	*all participants*	*yes*	*4 (recommend to a friend)*	*83*	*2*	*98*	*85%*
5a - 70%	*all participants*	*very or somewhat positive*	*2 (knowledge)*	*77*	*7*	*93*	*83%*
6a - 70%	*all participants*	*very or somewhat positive*	*3 (skills)*	*69*	*8*	*92*	*75%*

Unexpected findings:

Let's walk through the example from the evaluation of the Parenting Program as described in the *Quantitative Organisation Worksheet*. As indicated in the *Methods Worksheet*, a self-completed questionnaire was administered to a stratified random sample of 100 participants at the end of the series. It addressed expectations 4, 5, and 6. Data from 100 questionnaires were summarised on the *Quantitative Data Organisation Worksheet*. The first expectation (4a) stated that at least 70% of all participants should rate the series as good or excellent. This happened to be the first question on the questionnaire. That first question was answered by 96 of the 100 participants who completed the questionnaire; data were missing for 4 cases. Of those who answered the question, 77 rated the series as good or excellent while 19 said the series was fair or poor. Therefore, the final percentage is 80% (77/96 x 00).

For the next expectation (4b), at least 70% of parents with high school education or less should rate the series as good or excellent. This expectation is similar to the first one mentioned above, but instead of pertaining to all participants, it relates specifically to parents with a high school education or less. There were 43 questionnaires completed by parents with a high school education or less. The first question on the questionnaire was answered by 40 of the 43 parents; data were missing for 3 cases. Of those who answered, 34 rated the series as good or excellent, while 6 said the series was fair or poor. Therefore, the final percentage is 85% (34/40 x 100).

There is a large body of literature on the analysis of quantiative data. If you are interested in learning more, ask your health unit's epidemiologist or evaluator for suggested readings.

Key Points

- In thinking about selecting data collectors, you must decide on the number of data collectors, what knowledge, traits and abilities they should possess, and how to recruit them.
- A brief set of instructions for data collectors should be prepared to help maximise consistency in data collection.
- It is vital that data collectors are thoroughly trained in all aspects of data collection.
- Keeping track of data collection activities is another important consideration.
- It is important to pre-test the method and tools and assess data collectors.
- The analysis of both qualitative and quantitative data involves a systematic, step-by-step process.
- Sometimes data can be analysed by hand, other times it is necessary to use a computer.
- Screening for problems (such as missing data) is an important step in preparing for the analysis of quantitative data.

Quiz Yourself

- List three things data collectors should be told during their training.
- What is the minimum number of respondents that should be included in the pre-test of a self-completed questionnaire?
- Who could you consider getting help from for data analysis?
- What is the purpose of the *Quantitative Data Organisation Worksheet?*

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step 5

Make Decisions

At the end of this module, you will be able to:

- Interpret the findings and draw conclusions (Step 5a).
- Decide what to do with the program and design a plan for implementing your recommendations (Step 5b).
- Prepare a report and plan its effective distribution (Step 5c).

In Step 4, you analysed the data you had collected and summarised the findings. In Step 5 you will take the next step and interpret these findings so you can make decisions about your program and design an action plan to implement them. This is the most creative part of the process. You will combine your systematic gathering and analysis of data with your wisdom and experience to make good decisions about your program. You will also learn how to prepare a report on the evaluation. This is essential to share the methods and results with others.

STEP 5a

Interpreting the Findings and Drawing Conclusions

This section shows you how to draw conclusions about your program based on the interpretation of your findings from Step 4. How does interpreting the findings differ from analysing the data, as you did in Step 4? In Step 4, your goal was to simply report the facts as they were recorded. You reviewed the data on each evaluation question in isolation and reported what you found. In Step 5a, the goal is to go further and view the findings as a whole, to help you understand the reason(s) for the findings. You will put your own interpretation or slant on things; your own unique balance between objectivity and creativity.

Step 4 =
"Just the facts, please."

but

Step 5a =
"Ah! Very interesting, my dear Watson."

Thinking is the most crucial element in interpreting your findings. Taking time to think over the key findings will give you the opportunity to absorb them, live with them and find the implications that may not be apparent at first glance. Even distancing yourself from them by putting them away for a few days, then reviewing them again, is a good idea.

The *Interpretation of Findings Worksheet* will lead you through the thinking process. A completed *Worksheet* for the evaluation of the Parenting Program is on the next page. Use the information from previous *Worksheets* to fill in the first 3 columns of this *Worksheet*. Copy the purpose of the evaluation from the *Purpose Statement* in Step 1a and the evaluation questions from *Evaluation Questions Checklist* in Step 1d. Refer to the *Methods Worksheet* from Step 2 and enter the expectations in the second column. In the "Findings" column, write the findings as recorded in the *Qualitative Data Analysis* and/or *Quantitative Data Analysis Worksheets* in Step 4.

Look at the expectations that you established for your program. Compare them to your findings to determine whether or not they were met. Indicate in the "Expectations Met" column whether the expectation was met; choose yes, no, or no but acceptable. It is important to consider whether the expectations were in fact realistic.

Next, think about the expectations that were not met. Consider all the *possible* explanations why. In the "Why" column, write down the most *plausible* explanations. It is important to provide the most plausible explanation for all expectations that were not met because these are aspects of the program that should be reconsidered. You might also want to highlight your success by providing some explanation for expectations that were met or exceeded.

When thinking about the possible and the most plausible explanations, consider patterns of evidence, discrepancies, internal and external factors, plus any unexpected findings.

Patterns of Evidence

Patterns are similarities in the findings from different sources. They help to confirm a finding or explain why the program did not achieve the intended result. In the Parenting Program example, the sessions in the west were not as well attended and had a lower proportion of the target group compared to those in the east. Combining this with the finding that more people in the east found out about the program through the community resource centre than in the west suggests the critical role played by the community resource centre in recruitment.

Discrepancies

Discrepancies are findings that contradict each other or are inconsistent with findings from previous evaluations. Exploring these differences can help shed light on what is happening within the program, and indicate possible changes. For example, if staff delivering the program think it is going well but the participants do not, then it suggests staff are not in tune with the participants. The program could be improved by changing it so participants and staff have an opportunity to interact more effectively.

Interpretation of Findings Worksheet

Purpose of Evaluation: *Should we continue to offer the parenting series on health topics for families with less formal education?*
(Copy from *Purpose Statement*)

Evaluation Questions (Copy from *Evaluation Questions Checklist*)	**Expectations of the Program** (Copy from *Expectations Worksheet*)	**Findings** (Copy from *Data Analysis Worksheet*)	**Expectations Met?**	**Why?** "Most plausible explanation is..."	**Conclusion(s)** "In summary..."
1. How many people participated in the program?	1a At least 10 or more people attend each session in both east and west. 1b Minimum of 250 registrants in 25 series.	1a All of the sessions in the east end had at least 10 people. In the west, only half the series had 10 people. 1b 310 participants in 25 series.	No Yes	The sessions in the east end are offered in conjunction with community resource centres. The support of an existing organization is critical to validate the program and for advertising.	The Parenting Program is worthwhile, but there are some problems. 1. Recruitment to series in west is low and not getting the right mix of people. 2. Parents want more involvement in selecting topics and more time to discuss among themselves. 3. Some staff need support to develop facilitation skills.
2. How did participants find out about the program?	2a At least 50% were referred from community resource centres.	2a 60% of east end participants were referred by community resource centres compared to only 10% of other participants.	No	Broad advertising drew a variety of people. More selective advertising in east was more effective in recruiting target group.	
3. Did the program reach the intended target group?	3a At least 50% of participants' education is high school or less. 3b At least 95% have children 2 to 4 years old.	3a 50% of participants in the east had high school education or less; 20% in other areas. 3b 100% of parents had children 2 to 4 years old.	No Yes		
4. Were participants satisfied with the series?	4a At least 70% of all participants rate the series as excellent or good. 4b At least 70% of parents with high school education or less rate the series as excellent or good. 4c Some suggestions for improvements in length, location, topics and other areas. 4d At least 70% of all participants say they would recommend the series to a friend.	4a 80% of participants rated the series as excellent or good. 4b 85% of parents with high school education or less rated the sessions as good or excellent. 4c Suggestions for change included involving parents more in the choice of topics and more time for discussion. 4d 85% of participants said they would recommend it to a friend.	Yes Yes Yes Yes	Topics were relevant and facilitators were effective. Staff were well-trained and built on their experience for successive sessions. Needs of parents vary and people feel more involved if they can select specific topics.	
5. Did participants think that their parenting skills improved?	5a At least 70% of participants think their parenting skills improved immediately after series and one month later.	5a 75% of parents thought that their parenting skills improved immediately after and one month later.	Yes		
6. Did participants think that their knowledge about parenting increased?	6a At least 70% of participants think their knowledge about parenting increased immediately after series and one month later.	6a 83% of participants thought that their knowledge about parenting increased immediately after and one month later.	Yes		
7. Did parents' communication skills improve?	7a At least 70% of parents improved their communication skills.	Method was not feasible (refer to Step 2d), therefore there are no findings.	-		
8. Did staff think they were well prepared to implement the activities?	8a All staff think they were well prepared to implement activities.	8a 7 of 8 staff thought they were well prepared.	No	Staff member had had little experience facilitating groups.	
9. What suggestions did staff have to improve the delivery of the program?	9a Suggestions from staff relate to topic, location, participants and other areas.	9a Suggestions: New staff — pair with experienced one Parents want more choice More time for discussion	Yes	See above	
10. Did staff implement activities as planned?	10a At least 75% of topics are discussed. 10b At least 30 min. of discussion on each topic covered. 10c At least 75% of all planned activities take place. 10d All resources that should be are in fact distributed.	10a 80% of topics were discussed. 10b 100% of topics covered had at least 30 min. discussion. 10c 90% of planned activities took place. 10d All resources were distributed.	Yes	Program was well designed.	

Unexpected findings:

Open

Interpretation of Findings Worksheet

Internal Factors

Internal factors to the health unit can have either a positive or negative impact on the likelihood of your program meeting its expectation. Some questions to ask are:

- Was there a change in the allocation of staff or resources to the program?
- Was there a change in the priorities of the health unit?
- Was there a change in staff during the program?

External Factors

External factors can also have a positive or negative impact on your program. Some questions to ask are:

- Have community needs changed?
- Does the problem for which the program was developed still exist?
- Did new problems arise?
- Did any gaps in service surface which must compete for existing resources?
- Is another agency in the community now providing a similar program?
- Has new research become available on program effectiveness or efficiency?

Unexpected Findings

Sometimes through data collection efforts, you uncover something you didn't even think to ask about in the first place. Ask yourself, "Did I learn anything beyond the evaluation questions?" Review any "unexpected findings" that you identified in Step 4.

It would be best to discuss the findings with others involved in the program, especially staff, and ask them the same questions. See if their responses are similar to yours. Ask if they have other questions once they have reviewed the findings. Including others in the thinking process not only works on the "two heads are better than one" principle, but ensures that other stakeholders are given the opportunity to give input into the interpretation of the findings.

Now that you have considered the possible explanations of your findings and have honed in on the most *plausible* explanations, you are in a position to draw some conclusions about your program. Your conclusions are a summary of what you have learned about the existing program, both positive and negative. This is the "bottom line." In the Parenting Program example, the conclusion is that the program is worthwhile but there are some problems. Ask yourself the following questions:

- Overall, is the program worthwhile?
- What is working well?
- What problems have been identified?

Once you answer these questions, you can summarise them in the "Conclusions" column on the *Interpretation of Findings Worksheet*.

Making Decisions and Preparing an Action Plan

Now that you have interpreted your data and drawn some conclusions, you are ready to make decisions about your program. This section will help you think about what changes need to be made, if any, and how the changes should be implemented. Both are crucial in determining whether anything comes of your evaluation. The *Decisions and Action Plan Worksheet* will guide you through this section. Follow along the example *Worksheet* for the Parenting Program.

This is another good time to do some thinking with others involved in the program and the evaluation. Involve the senior managers, who will likely be responsible for ensuring that any changes to the program are implemented. They will be an excellent source of knowledge about what is reasonable and what is politically saleable. Including them will give proposals a better chance of being accepted and ultimately succeeding. It is also important to involve staff, who will be affected by these decisions. The involvement of people outside the health unit will depend on the program and the ramifications of the decisions about the program. There needs to be a balance between what is practical, in terms of time and resources, and the benefits of stakeholder participation.

The Decision-making Process

The first column of the *Decisions and Action Plan Worksheet* is "Decisions about Program." Making decisions involves:

- identifying question(s);
- collecting, analysing and interpreting data;
- developing and analysing options; and
- selecting the preferred options.

Therefore, to complete this column of the *Worksheet* you need to go through each of the above steps. They are discussed in more detail below.

Identify Questions

Your decisions are based on the purpose of the evaluation and your conclusions. In the Parenting Program example, the purpose was to decide whether or not to con tinue to offer the program. The conclusion was that the program was worthwhile, but there are some problems with recruitment, parental involvement and staff facilitation skills.

Based on this conclusion, a number of questions arise.

- Should we continue to offer the program?
  - If yes:
    - How can recruitment be improved?
    - How can parental involvement be increased?
    - How can staff facilitation skills be improved?

Decisions and Action Plan Worksheet

Decisions about Program	Priority / Timeframe	Tasks	Responsibility	Resources Required	Assessing Change (Evaluation Questions)
1) Continue to offer program but only offer series with other community organisations	High — next 2 months	• Meet with CRC's in other parts of region and discuss joint presentation of sessions • Arrange to do two sessions with interested partners	Program manager	15 hours	Should we continue to offer parenting sessions on health topics for low-income families? • How many people participated in the program? • How did people find out about the program? • Was the target group reached? • Were participants satisfied with the sessions?
2) Modify first session and offer choice of modules.	High — next month	• Change facilitator's manual to include options for discussion at first session.	Program manager	1 hour staff time	
3) Expand discussion time	High — next month	• Change facilitator's manual to decrease organised time to allow more time for discussion.	Staff delivering program	20 hours	
4)					
5)					

Collect, Analyse and Interpret Data

To answer these questions, think about the findings from the evaluation, considering once again any internal and external factors.

- Are they still factors?
- Will they continue to have an effect on your program?
- Are there new internal or external factors that you should consider?

Develop and Analyse Options

There is rarely only one answer to a problem. Consider a range of alternative options and present the pros and cons of each before choosing a course of action. Among the options to consider are:

- make small, inexpensive adjustments (list what they are);
- make large modifications, which may or may not have resource implications (list modifications);
- stop the program and do not replace it;
- stop the program and begin planning to develop a new one; or
- delay a decision about the program until it can be considered in the context of other programs through the strategic and operational planning cycle.

Select Preferred Options

There are several factors that influence the selection of the most appropriate option.

- Are additional resources needed to get the program to an acceptable level? Are they available?
- Is staff training needed? Is it available?
- Is resource development needed? Can it be done?
- Is a new approach needed? Does the program have the skills and resources to do this?

Select your preferred options according to importance and feasibility. Once you have decided which decisions are necessary, summarise them in the "Decisions about Program" column of the *Decisions and Action Plan Worksheet*.

The Priority of Decisions and Timeframe for Action

Indicate in the second column of the *Worksheet* the priority of the decision and the timeframe for implementing any changes required.

This is based on:

- the urgency of the need to correct the problem to improve the program;
- the magnitude of the change proposed; and
- the significance of the decisions on staff and resources.

The Action Plan

It is important that your decisions be supported by an action plan for their implementation. The remaining columns on the *Decisions and Action Plan Worksheet* help plan the process for implementing your decisions. In columns 3, 4 and 5 of the *Worksheet*, identify the tasks that need to be done to implement your decisions, who will be responsible for and/or carry out each task, and an estimate of the required resources.

Ongoing evaluation should be a major part of the revised program. In the "Assessing Change" column, establish a feedback process to monitor the implementation of the decisions and track how they affect the program. Some of the evaluation questions that you established in doing this evaluation would provide an excellent foundation. This step returns you to the beginning of the evaluation process (i.e., Step 1 — Focus the Evaluation) and closes the loop in the program evaluation cycle.

STEP 5 C

Reporting on your Evaluation

You have completed the evaluation of your program in a step-by-step fashion. Armed with your data, your analysis, your interpretation of the findings, your conclusions and most importantly your decisions and accompanying action plan for their implementation, you are ready to present your evaluation to the world!

A report of your evaluation is a critical but often ignored last step, because people are anxious to get on with the changes to the program. The report is a record of the evaluation that can be used by others: this includes other health units, the next evaluator of the program, and existing program stakeholders.

You may or may not need to prepare a *formal* written report depending on the purpose of your evaluation and the people who will use it. If you conducted the evaluation for internal needs, then the *Worksheets* that you completed during the course of the evaluation may be sufficient. **At a minimum, you must prepare a report that includes the program logic model, the *Worksheets* in Steps 2 and 5, and a copy of each data collection tool with its accompanying *Logistics Worksheet*. These should be kept in a central file and shared with program staff and the person to whom the manager reports.**

In many cases, you may be required to draft a formal report. The next section of this module suggests how to put one together and distribute it effectively.

Audience for the Report

If you do write a formal report of your evaluation, you must consider your target audience. You will need to relate the findings to their specific knowledge, experience and concerns, and use language familiar to them. Indeed, even before the evaluation started, it would have been useful to discuss and agree upon the distribution strategy with all stakeholders. While the evaluation was underway, interim updates would have helped to maintain stakeholders' interest and enthusiasm, and would have established an avenue for feedback on evaluation activities.

To accommodate your various audiences, you may need to create more than one version of a written report. Also consider other ways of presenting the material. In this way, you can highlight the issues of interest to different readers, or present them in another way audiences may find more useful. For the media, you may use an informal style and provide a general summary of the evaluation; for a conference presentation, the style needs to be more formal, and the report should include specialised and technical analysis and discussion.

You may decide to share all or part of the results with participants in the program. This could be a brief summary report of 1 to 3 pages. There are no specific rules as to whether you should do this. Consider cost, feasibility and the interest of the participants.

There are a number of other things to remember when preparing the various reports.

- *Be timely*. Produce the report within a reasonable time after the data collection.
- *Be specific*. Limit the content to what is really needed.
- *Be simple*. Keep the report free of jargon. Use simple examples. Use pictorial methods (graphs, tables, etc.) to describe and explain data. "A picture is worth a thousand words."

Dissemination

Before distributing your results, consider the audience you are trying to reach, respecting the wishes of both program funders and program personnel. For example:

- conduct verbal presentations for senior managers, program staff and/or program participants;
- use other avenues such as in-house newsletters to highlight key portions — or all of the report — for a wider audience; or
- assist related external agencies and organisations to distribute the report.

Consider providing an opportunity for feedback, questions or discussion.

Structure of a Formal Report

Executive Summary (if the report is longer than about 10 pages)

Include a brief description of the purpose of the evaluation, evaluation questions, methods, key findings, conclusions and decisions about the program. This should be about 1 to 3 pages long.

Introduction

In this section, introduce the background and purpose of your evaluation. Be very brief. Leave the details to the rest of the report.

Program Description

Write a brief description of your program. Include your program logic model from Step 1b.

Evaluation Questions

List the evaluation questions that were selected in Step 1d.

Methods

Briefly outline the methods you used for gathering the data (Step 2). You might include copies of the blank data collection tools in the report's appendix. If it was necessary to develop new tools for gathering your data or you modified existing tools, provide an outline of the steps taken (Step 3).

Findings

In this section, briefly describe what you found when the data was analysed (Step 4). The findings should be grouped under each evaluation question. Use tables and graphs to present the data clearly. The written text should not repeat everything in the tables but rather highlight key points.

Discussion and Conclusions

Select the key findings and briefly describe why they occurred (from Step 5a). The conclusions that you reached should be listed here.

Program Decisions

Summarise your decisions about the program and include an outline of your action plan for implementation.

Acknowledgments

In this section, acknowledge anyone who has provided data or helped you complete the evaluation. This could include a colleague whom you consulted, or someone who helped with the preparation and administration of the evaluation.

Appendix

Include data collection tools, consent forms, letters of support, etc. that you wish to document in the formal report.

Key Points

- Thinking is the most crucial element in interpreting the findings of your evaluation.
- Asking questions such as, "What are the patterns, what are the discrepancies?" and, "What internal and external factors exist?" will help you interpret your findings.
- Your interpretation of the data will help you draw conclusions about the program. These conclusions will shape your decisions.
- Your decisions should include what changes will be made and an action plan for their implementation. Both are crucial.
- It is vital that the evaluation of your program is well documented. The *Tool Kit Worksheets* completed during the course of the evaluation can serve this function.
- It may also be important that you create a written or verbal report. It should summarise the steps you took in the evaluation and take into account the audience for which it is intended.

Quiz Yourself

- How does interpreting the findings differ from analysing the data?
- What factors should be considered in both the interpretation of the findings and in making decisions about the program?
- When would it not be necessary to write a formal report on the evaluation? What must you do instead?
- At several different steps throughout the *Tool Kit*, the involvement of stakeholders is recommended. Why is this important?

References:

Baskerville B., Stewart P. *Program Evaluation Workshop Materials.* Ottawa-Carleton Health Department, 1991.

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