The Canadian Journal of Program Evaluation Vol. 17 No. 3 Pages 113–141
ISSN 0834-1516

Research and Practice Note

INTRODUCING PROGRAM TEAMS TO LOGIC MODELS: FACILITATING THE LEARNING PROCESS

Nancy L. Porteous
Health Canada
Ottawa, Ontario

Barbara J. Sheldrick
City of Ottawa
Ottawa, Ontario

Paula J. Stewart
Health Canada
Ottawa, Ontario

Abstract: Logic models are an important planning and evaluation tool in health and human services programs in the public and nonprofit sectors. This Research and Practice Note provides the key content, step-by-step facilitation tips, and case study exercises for a half-day logic model workshop for managers, staff, and volunteers. Included are definitions, explanations, and examples of the logic model and its elements, and an articulation of the benefits of the logic model for various planning and evaluation purposes for different audiences. The aim of the Research and Practice Note is to provide a starting point for evaluators developing their own workshops to teach program teams about logic models. This approach has been evaluated with hundreds of participants in dozens of workshops.

Résumé: Les modèles logiques sont d'importants outils de planification et d'évaluation pour les programmes de santé et de services sociaux dans les secteurs public et sans but lucratif. La présente Note sur la recherche et les méthodes présente l'essentiel du contenu, des conseils pour l'animation et des exercices d'études de cas pour un atelier d'une demi-journée sur les modèles logiques, offert à l'intention des gestionnaires, des employés et des bénévoles. On y trouve également des définitions, des explications et des exemples liés aux modèles logiques et aux éléments

Corresponding author: Nancy Porteous, A.L. 918-C3, Jeanne Mance Building, Tunney's Pasture, Ottawa, Ontario, K1A 0K9; <Nancy_Porteous@hc-sc.gc.ca>

qui les composent, de même qu'une description des avantages que présentent ces modèles pour divers projets de planification et d'évaluation et pour différents groupes. La Note sur la recherche et les méthodes vise à servir de point de départ aux évaluateurs qui mettent au point leurs propres ateliers pour faire connaître les modèles logiques à des équipes de programme. Cette méthode a été évaluée auprès de plusieurs centaines de participants dans le cadre de dizaines d'ateliers différents.

The program logic model has been an important planning and evaluation tool since the late 1980s and early 1990s (e.g., see Bickman, 1987; Rush & Ogborne, 1991; Wholey, 1987). Often, the process of developing a logic model is as valuable to program teams as the program logic model itself. This tool can be used in any type and size of program. For example, logic models have been used to describe programs in agriculture (Framst, 1995), education (Coffman, 1999), health (Dwyer, 1996; Dwyer & Makin, 1997; Hunter College, 1996; McEwan & Bigelow, 1997; Moyer, Verhousek, & Wilson, 1997; Ogborne, 1996; Ogborne & Rush, 1994; Rowan, 2000; Wong-Reiger & David, 1995), international development (W.K. Kellogg Foundation, 2000), physical rehabilitation (Letts & Dunal, 1995), social work (Alter & Egan, 1997; Alter & Murty, 1997), and social services (United Way of America, 1996; Unrau, 1993).

This Research and Practice Note offers an approach to facilitating an introductory workshop on program logic models for managers, staff, and volunteers working in health and human services programs. The purpose is to provide a starting point for evaluators developing their own workshops to teach program teams about logic models. It may be particularly useful to new evaluators asked to teach logic models for the first time, saving time in assembling background material and designing a workshop. This Note offers an approach that works. It has been evaluated over the past five years in dozens of workshops of 15 to 115 participants, in total hundreds of participants working in the public, nonprofit, and voluntary sectors. No doubt you will augment this information with your own ideas and experience and tailor the workshop to your particular audience.

Based on adult education theorists such as Piskurich (1993), the approach was designed for the adult learner by:

- Using a step-by-step process.
- Keeping it simple.

- Avoiding jargon and suggesting alternatives for the lexicon and format used.
- Providing tools such as worksheets and practice opportunities in the form of case studies with individual and group exercises.
- Using memory aids.
- Making it fun.

Eight sections of this Research and Practice Note represent the step-by-step process for introducing the logic model, as follows:

1. Define the logic model.
2. Describe the benefits of developing and using a logic model.
3. Provide an example of a completed logic model.
4. Explain the elements of the logic model.
5. Demonstrate how to put the elements together.
6. Explain how to assess the logic model.
7. Summarize and share tips.
8. Show the link to organizational planning and program evaluation.

Most sections are divided into two parts: facilitation tips and key content. Appendix 1 contains an agenda and case study exercises for a half-day workshop.

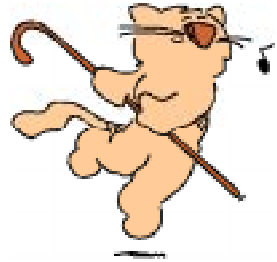
STEP 1: DEFINE THE LOGIC MODEL

Facilitation Tips

When teaching program staff and volunteers about logic models, be sure to apply adult learning principles. Validate their knowledge of their own programs, clients, and stakeholders. They are the experts in this area. Your role as facilitator is to offer them a new tool for more effectively describing their programs.

Begin your introduction to logic models by briefly defining what a logic model is. Explain key terms and be clear on what a logic model is and is not. Consider using memory aids to help participants recall important aspects of the logic modeling process. Try this singing feline to help participants remember the elements of the logic model (CAT SOLO):

C omponents
A ctivities
T arget Groups
S hort-term
O utcomes
L ong-term
O utcomes



Have fun with this mnemonic. When a break is needed, stage a "name that tune" contest using *The Logical Song* by Supertramp, a Cat Stevens' song, or a number from the musical *Cats*. Relate the CAT SOLO model back to Alice in Wonderland's Cheshire Cat. Have a contest for the best joke or riddle and award a cat-related prize. Use comic strips and cartoons. Keep in mind, however, the challenges of translating the memory aid and associated activities into different cultural and linguistic contexts.

> … thought Alice and she went on, "Would you tell me, please, which way I ought to go from here?"
>
> "That depends a good deal on where you want to get to," said the Cat.
>
> "I don't much care where —" said Alice.
>
> Then it doesn't matter where you go," said the Cat.
>
> "— so long as I get somewhere," Alice added as an explanation.
>
> "Oh, you're sure to do that," said the Cat, "if you only walk long enough."
>
> (Carroll, 1865, p. 51)

Key Content

Even though programs 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*. A logic model is the blueprint of a program. A logic model is not evaluation: it is simply a way to describe a program pictorially or schematically.

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 at whom the program's activities are directed.

WHY? **Outcomes** are the changes the program hopes to achieve. These are differentiated between **short-term** and **long-term** outcomes.

A "program" can be very big, very small, or anywhere in between. This includes projects, interventions, special initiatives, pilots, campaigns, services, and so on. A program is any series of activities, supported by a group of resources, intended to achieve specific outcomes among particular target groups.

STEP 2: DESCRIBE THE BENEFITS OF DEVELOPING AND USING A PROGRAM LOGIC MODEL

Facilitation Tips

It is important to be clear up front about how this tool called the program logic model can benefit the individuals you are teaching. Be sure to discuss the benefits of the logic modeling process in addition to the benefits of the completed logic model itself. There are a few different approaches to discussing the benefits.

- Ask participants what they think the benefits might be.
- Invite someone who has developed and used a logic model to give a "testimonial." Ideally, this guest is well-respected, uses an approach and terminology similar to what you use in your teaching, and works in a program area similar to the one in which the people you are teaching work.
- Provide an overview of the benefits as well as the various uses for different types of program stakeholders (see Tables 1 and 2). Give a practical example or tell a story for each of these benefits from your own experience.

If you are teaching funders about logic models, discourage the notion of making logic models mandatory in funding applications or reports. Mandating the use of any particular tool with an accompanying specified language and format is in the end counter-productive. There are different preferences for visual representation, terminology, level of detail, and so on. Different individuals and stakeholder groups may see the program in different ways. The chal-

lenge of the adult educator is to demonstrate the usefulness of this type of tool so that program teams will choose to use it and adapt it to meet their needs.

Table 1
Benefits of Developing and Using a Program Logic Model

Process: Developing a Logic Model	Product: Having a Completed Logic Model
• Bridges the gap between strategic and operational planning	• Summarizes the key elements of a program (hopefully on a single piece of paper)
• Provides the opportunity for program stakeholders to discuss the program and agree upon its description	• Shows the theory behind program activities and makes explicit the assumptions underlying the program
• May lead to consideration of alternative or innovative ways of developing a program	• Makes it easy to share a program description with others
• Uncovers different understandings or perceptions of the program	• Shows the cause-and-effect relationships between the activities and the outcomes — that is, which activities are expected to lead to which outcomes
• Clarifies the difference between the activities and the intended outcomes of the program	• Assists in negotiating who is accountable for which outcomes over what period of time (e.g., most program staff would be accountable for short-term changes among program participants and not long-term consequences in the community)
• Helps identify critical questions for evaluation	• Helps develop program performance measures for ongoing monitoring

Table 2
Uses of a Program Logic Model

Purpose	Audience
• Planning	• Program managers, staff, partners and other stakeholders, planners
• Communication	• Policy makers, senior managers, colleagues in other organizations, program partners, media, program participants
• Orientation and training	• New program staff or volunteers
• Monitoring and evaluation	• Evaluation specialists and program stakeholders
• Alternative service delivery	• Contractors/service providers and those monitoring the delivery of service
• Grant applications	• Funders

Key Content

It is difficult to estimate how long it will take to develop a logic model for any given program. Among other things, it depends on the size and complexity of the program, the degree of consensus on the conceptualization of the program, and the amount of experience stakeholders have in working with logic models. It could be anywhere from a couple of hours to a couple of days. The key is to demonstrate the value in this initial investment of time.

STEP 3: PROVIDE AN EXAMPLE — "SHOW THE WHOLE"

Facilitation Tips

Before launching into details about the various elements of the logic model, provide an example of a completed logic model. Pick a program that will resonate with the individuals you are teaching. The program description and logic model presented in Figures 1 and 2 illustrate the basic elements of a parenting program.

Figure 1
Description of a Parenting Program

The You and Your Toddler Parenting Series is offered throughout the Kennogaugh Falls Region 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 health promoter. 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.

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

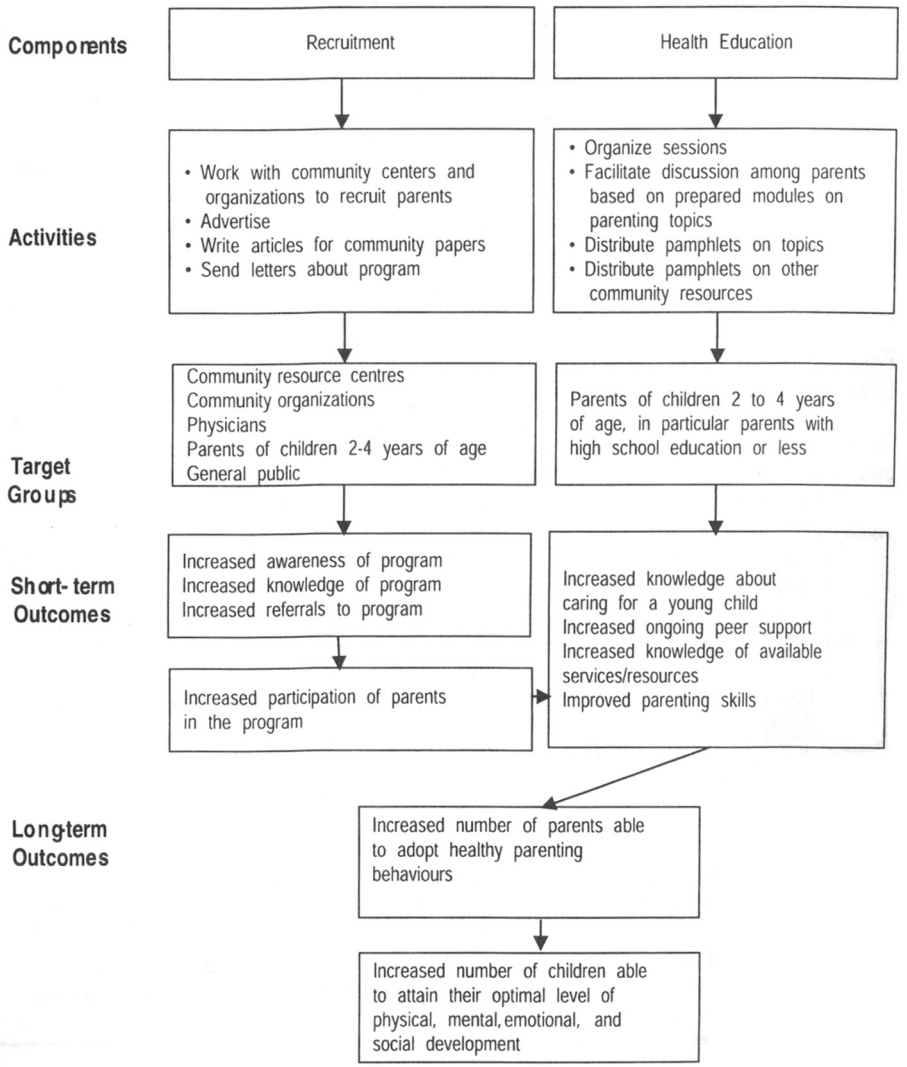
The series aims to:

- increase parents' knowledge about and skills in caring for their young child;
- 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 in order to increase the number of children able to attain their optimal level of physical, mental, emotional, and social development.

Acknowledge that participants may be familiar with different approaches to logic models that use different terms or visual depictions such as Logical Framework Analysis in the international development community (e.g., see Canadian International Development Agency, 1997, or Cummings, 1997). Encourage people to focus on the concept of describing the logic behind programs and to choose

Figure 2
Parenting Program Logic Model



what works best for them from the various approaches. Remind participants, however, of the advantages of having a common approach and language within an organization or across organizations that regularly share program information.

STEP 4: EXPLAIN EACH ELEMENT — "BREAK IT DOWN INTO PARTS"

Facilitation Tips

After showing a completed logic model, the next step is to break the model down into parts. Lump the elements together into distinct chunks: **c**omponents, **a**ctivities, **t**arget groups (CAT) and **s**hort-term **o**utcomes, **l**ong-term **o**utcomes (SOLO). With this approach, program teams can brainstorm as a group or work individually to rough out the key elements of a program without worrying right away about the precise nature and sequence of linkages among the various elements of the program.

Reinforce the "start where it's easiest" motto by explaining either CAT or SOLO first, depending on your audience and the developmental stage of the program they are working in. For the purpose of the example in this Research and Practice Note, we will assume you are teaching individuals involved at the front-line of a program that has been up and running for some time. We will take a top-down or CAT SOLO approach, rather than a bottom-up or SOLO CAT approach. Step 4a covers CAT; Step 4b explains SOLO.

Key Content

After discussing the best place to start in developing logic models, describe the three sub-steps of CAT SOLO in more detail: explain each of the elements; relate the elements back to the example; and provide an opportunity to apply this new knowledge.

There is no right or wrong place to start developing a logic model. Where to start often depends on one's involvement in and perspective on the program. Those involved at the front-line of program delivery often find it easiest to start with activities and target groups; managers generally prefer to begin by mapping out the desired outcomes of the program. On the other hand, decisions about where to start may hinge on the developmental stage of a program. Starting with outcomes may be more appropriate for new programs, whereas

beginning with activities might be easier for existing programs. For new programs, activities may be added to the logic model as scans of the literature are completed.

Step 4a. Explain the CAT Elements

Table 3 provides a description and some examples of each element of the logic model.

Table 3
The CAT Elements of the Logic Model

	Elements of the Logic Model	Examples
Concentrate on themes or sets of activities. Sometimes these are the broad strategies employed, business lines, or service areas.	**Components** are closely related groups of activities in your program. The number of components depends on the size of your program and how you conceptualize 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 component.	• advocacy • community development • counseling • crisis intervention • fundraising • outreach • public education • training
Don't include 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 — the main functions or tasks. 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.	• conduct • develop • distribute • educate, teach, train • give, offer, provide • identify • refer • set up • support
Be as specific as possible by combining several characteristics.	**Target groups** are the individuals, groups, organizations, or communities at whom the program's services are directed. These are your clients, customers, consumers, priority populations, or the intended "reach" of your program. Target groups can be specified in terms of sociodemographic characteristics (such as age, income, occupation, education, sex, languages, ethnicity) or by health or social situations, problems, or behaviours.	• aboriginal women • low-income families living in rural areas • new immigrants/refugees • seniors living alone • people who are homeless or at risk of becoming homeless • Somali youth aged 14–17

Relate the CAT elements back to the example. It is helpful to refer back to the example introduced earlier. The worksheet in Table 4 was completed for the parenting program described in Figures 1 and2. You can set the scene in this way:

> The program team that completed the CAT worksheet in Table 3 first listed all of the things they do in their program — they brainstormed and jotted ideas down in the worksheet as they came to mind. Then, for each activity, the team asked themselves to whom each of those activities is delivered. Finally, they looked at all of the activities listed and asked themselves if there was any way to group the activities into categories or clusters of activity.

Apply what was just learned. Case studies are an excellent way to give learners an opportunity to test their understanding of new concepts. Some sample case studies and exercises are provided at the end of the Research and Practice Note.

Table 4
CAT Worksheet

Components What are the main sets of activities?	**A**ctivities What things are done? What services are delivered?	**T**arget Groups For whom are activities designed?
Health education	• organize 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 organizations
	• talk about the program	• community organizations
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

Step 4b. Explain the SOLO Elements

Outcomes are the changes it is hoped the program will achieve with each target group. They are the reasons *why* a program is delivered. Outcomes focus on what the program makes happen rather than what it does. They are the intended *results* of the program, not the *process* of achieving them. Outcomes are sometimes referred to as impacts, results, benefits, effects, or consequences. Outcomes are usually differentiated between short-term and long-term outcomes**.** This distinction helps illustrate the sequential nature of change. Certain events must occur before others. For example, individuals must first be aware of a situation or behaviour before they can change it.

Short-term outcomes are the direct results of the program on its participants. They show why the program activities will lead to the long-term outcomes. Short-term outcomes may be increased awareness or concern, increased knowledge, a change in attitudes or values, or improved skills. Program managers should be held accountable for the achievement of short-term outcomes.

Long-term outcomes reflect the social and economic consequences of a program in the broader community. They tend to be the ultimate goals of the program. Long-term outcomes sometimes take a long time to occur but they occasionally occur soon after a program is implemented, as in the case of an immunization program reducing rates of communicable disease. There will probably be only a few long-term outcomes for any given program. Long-term outcomes may be expressed as a change in practice or behaviour, or a change in condition or status such as decreased morbidity or mortality, or improved quality of life.

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. Long-term outcomes are often more difficult and costly to evaluate, but if the program is based on a sound theory then we often assume that if short-term outcomes are achieved, long-term outcomes are likely to follow.

The distinction between short-term and long-term outcomes is about sequence and not necessarily about time. Short-term does not equate to one month while long-term means five years. It depends on the program and what it sets out to achieve. The outcomes of an immu-

nization program manifest themselves on a completely different timetable than the outcomes of a social marketing campaign aimed at increasing the number of youth who wear helmets while riding a bicycle or inline skating. Focus on the "*if … then*" sequence. If this outcome occurs then this outcome should occur next which should lead to this outcome, and so on. If A then B then C then D … or if step 1 then step 2 then step 3.... Think of it as an outcomes hierarchy or an outcomes path.

The distinction between short-term and long-term outcomes is often about locus of control. Short-term outcomes are the direct benefits of the activities delivered to program participants. Program teams should be held accountable for the achievement of short-term outcomes. Long-term outcomes, on the other hand, are often influenced by factors beyond the program's control. For some purposes, it may be advisable to note the influence of these external factors in the logic model.

For both short-term and long-term outcomes, be sure to include the direction of change (that is, increase, decrease, or maintain), and exactly what the program is trying to change. The number of outcomes depends on the size and complexity of the program as well as the purpose and audience for the logic model. There may be different ways to express outcomes. Some examples are provided below.

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

Relate the SOLO elements back to the example. Relate the SOLO elements in Table 5 back to the parenting program example in Figures 1and 2 by setting the scene along the following lines:

> The program team began their discussion by asking: What change are we hoping to achieve as a result of our activities? What is the direction of this change? Is this change a direct benefit to participants in our program (i.e., short-term outcome)? Which components from the CAT Worksheet contribute to this outcome?

Apply what was just learned. Use the case study and the exercises at the end of the Research and Practice Note.

Table 5
SOLO Worksheet

What is the direction of change (↑ or ↓)?	What is the program intending to change?	Is it short-term (S) or long-term (L)?	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

STEP 5: SHOW HOW TO PUT THE ELEMENTS TOGETHER

Facilitation Tips

Once there is agreement on the basic elements in the CAT and SOLO worksheets, program teams can begin sketching the logic model. "Post-it" notes and flip chart paper or a white board can help program teams make the leap from worksheets to a complete picture of the program. This technique allows program teams to easily see and discuss different versions of a logic model. Each element of the logic model is copied onto a "Post-it" note, and these are assembled by the team on a whiteboard or flip chart. This method allows for moving the elements around until the team finds the right arrangement.

Discuss different approaches for involving stakeholders in the development of the logic model. The approach depends on the relationship amongst stakeholders. Emphasize that workshop participants know their stakeholders and should use their best judgment.

- Option 1: Involve all stakeholders from square one (gets buy-in but takes longer).
- Option 2: Develop a "straw dog" and discuss changes needed (may save time but may also reduce buy-in).

Some logic models are presented as tables or matrixes. With tables, however, it is difficult to see the assumed cause-and-effect linkages between activities and outcomes. Therefore, it is highly recommended to encourage program teams to draw the blueprint of their program. There is visual power in a picture.

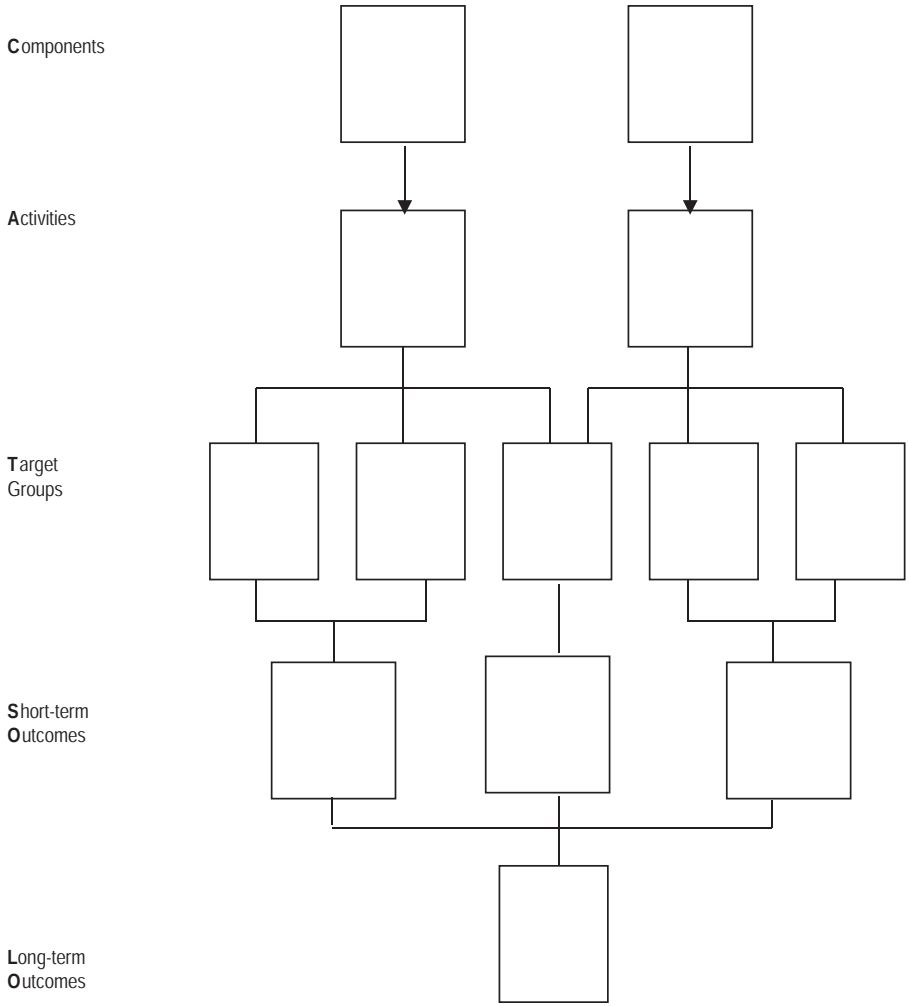
Key Content

Here is a suggestion for explaining how to put the logic model's elements together to create a picture of the program.

> At the top of a blank piece of paper, write the name of your program. Side-by-side, write each of the components identified in the first column of the CAT Worksheet. Draw a box around each one of them. Then, 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. Below each of these boxes of activities, write each target group listed in the third column of the CAT Worksheet. Next, write all of the short-term outcomes from the SOLO Worksheet below the target groups. Put a box around each outcome. Then write the long-term outcomes from the SOLO Worksheet below the short-term outcomes. Put a box around each outcome. Finally, label each element in your logic model by putting the words "components," "activities," "target groups," "short-term outcomes," and "long-term outcomes" along the left margin of your page. Line up the labels with the boxes that represent each of the elements.
>
> The next step is to draw lines to show the cause-and-effect relationships between the elements in your logic model. If you think of the logic model as a blueprint of a program, the lines that depict the causal relationships are the wiring of the program. The lines demonstrate the logic or theory of your program. The theory of your program is a series of *if … then* statements. *If* we do these things with these people *then* these outcomes are expected to result. Remember that this causal chain of events should be grounded in theory.
>
> First, draw a line from each component to the corresponding box of activities. Then draw a line linking the activi-

ties to the target groups at which they are directed. Next, draw a line linking each target group to the short-term outcomes the program should achieve. Finally, draw a line between each short-term outcome and the long-term outcomes to which they will contribute as in Figure3.

Figure 3
xyz Program Logic Model



The above explanation presents a linear, vertical CAT SOLO approach. Other options include a vertical SOLO CAT model, starting with the ultimate outcomes at the top of the page, or a horizontal approach moving from the left to right side of the page. All of these options are more or less linear depictions with boxes and lines. In some cultural contexts, this may not be appropriate. Adapt the basics of the logic model as required.

Different software packages can be used to draw the final logic model. Flow-charting, diagramming, or process mapping software such as Microsoft's Visio is easiest but may not be used extensively by program teams. Presentation applications such as Microsoft Office's PowerPoint may be more widely available. Some people use word processing or spreadsheet packages, but these can be cumbersome.

More Facilitation Tips

Provide reassurance that developing a logic model is an iterative process. There may be several drafts before all stakeholders "can live with" the final version. Remind workshop participants to focus on the benefits of the process and not to worry about producing the perfect logic model right away. It may also take several attempts to make the logic model look as simple as possible. Changing the order of the components or target groups may help reduce the "spaghetti effect" — criss-crossed lines greatly reduce the visual impact of the model and make it difficult to discern the logic of the program.

Also, provide reassurance that there may be different versions of a program's logic model. In fact, the flexibility of the logic model is one of its real virtues. Deciding which version is best depends on the situation. Some considerations are listed below.

- *Purpose and audience*: There may be slightly different versions of the logic model for different purposes or audiences — a fairly high-level logic model with an emphasis on outcomes for funders or one with more detail on activities when program staff are using the logic model to build their operational plans.
- *Scope*: Logic models are often drawn at a very micro project level. They can also be drawn at a very high level, say for an entire service system (see Figure 4 for an example) or for the broad program of the whole organization. Making the connection between these different versions of the logic

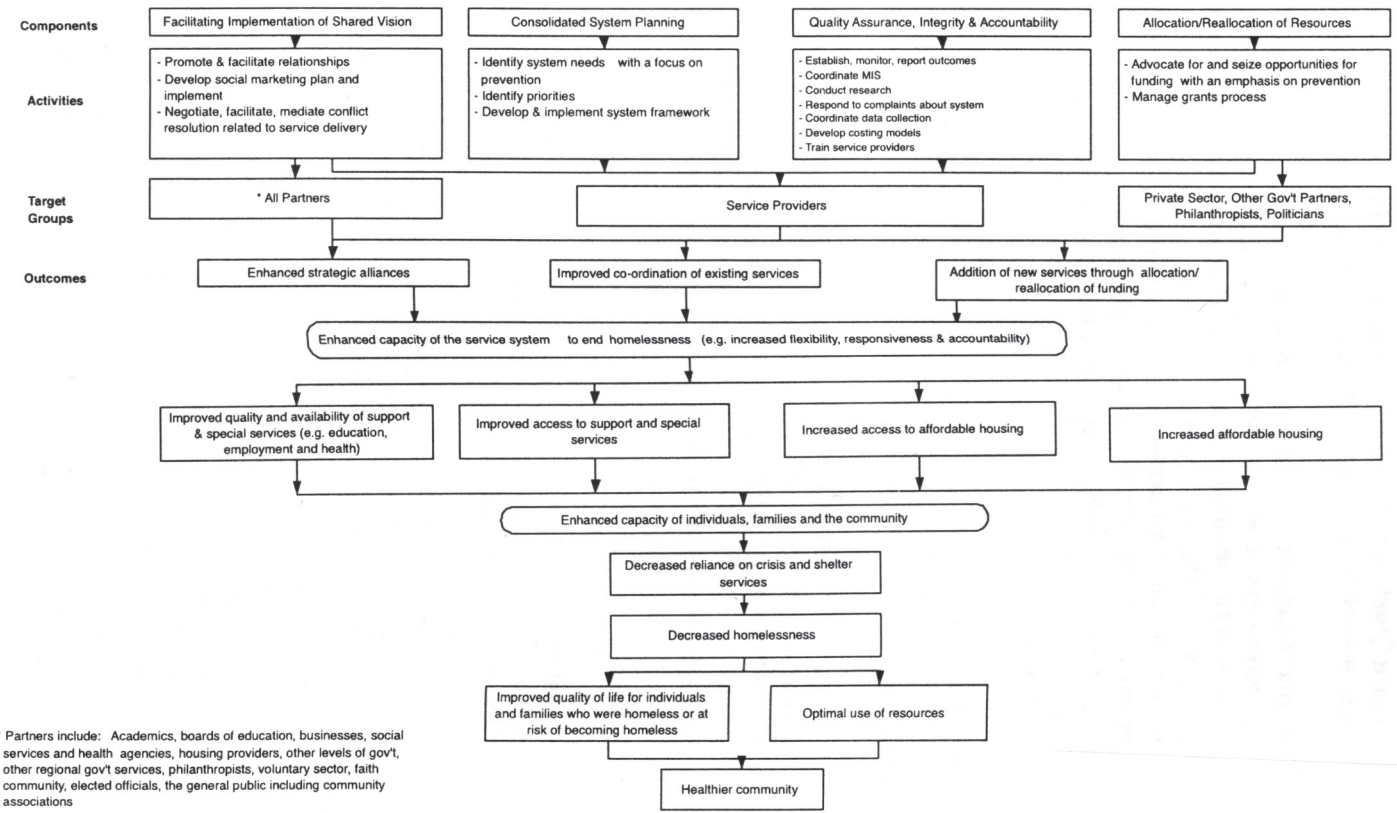
model can have a valuable team building effect. Program staff and volunteers desire to see how they fit into the bigger picture and how their work contributes to achieving the goals of the service system or organization as a whole.

- *Developmental stage*: There may be different versions of the logic model depending on the developmental stage of a program. A logic model can portray a program as planned, as implemented, or as it should be. These depictions might otherwise be known as the "we'll, real, and ideal" versions of the program.
- *Level of detail*: In some instances, it is important or necessary to include inputs, outputs, and/or throughputs in the logic model. The sequence is: Inputs → CAT → Outputs → Throughputs → SOLO.
- Inputs are the resources that support the activities. Inputs may include human resources (staff and volunteers), physical resources (space), and material resources (computers).
- Outputs are the products or goods produced by the activities for the target groups. These are tangible, countable things. Outputs of a communication campaign, for instance, could be pamphlets, posters, or public service announcements.
- Throughputs are what lead from the activities and/or outputs to the short-term outcomes. An example of a throughput is satisfied program participants. An activity or output is unlikely to lead to the desired short-term outcome if the participant is not satisfied with the activity or output. Satisfaction is not the desired end but rather the means *through* which the outcomes are achieved.

Reinforce the notion that there is no absolutely right or wrong way of depicting a program in a logic model. It is important, however, to have consensus among key stakeholders. Therefore, if a divergence of opinion about labeling the various elements of a program is stalling the logic modeling process, suggest a compromise approach.

- If the distinction between short-term and long-term outcomes is causing confusion or too much debate, drop short-term and long-term and focus on the sequence in which the outcomes are expected to unfold. Suggest numbering the outcomes, or introduce the idea of intermediate outcomes.
- If the group cannot get consensus about target groups, suggest including all but distinguishing between primary and secondary target groups.

Figure 4
Logic Model for Management of the Service System to End Homelessness



* Partners include: Academics, boards of education, businesses, social services and health agencies, housing providers, other levels of gov't, other regional gov't services, philanthropists, voluntary sector, faith community, elected officials, the general public including community associations

Relate "putting it together" back to the example. Show the completed logic model for the parenting program for visual reinforcement.

Apply what was just learned. Once again, use the case study and the exercises at the end of the Research and Practice Note. Encourage debate in the small group exercises. There is tremendous value in this process — dialogue, discussion, and the occasional debate will uncover different conceptualizations or understanding of the program. Also, remind participants to keep it simple: encourage them to first focus on a fairly basic linear depiction of the program. As they become more comfortable with the model, you can encourage more sophisticated systems thinking.

STEP 6: EXPLAIN HOW TO ASSESS THE LOGIC MODEL

Facilitation Tips

There is no absolutely right or wrong depiction of a program, although some are clearly more theoretically sound than others. Challenge managers and program staff to question the logic behind their programs and to substantiate a program's underlying cause-and-effect relationships with evidence from the literature.

Key Content

Questions to help assess program logic models are listed below, in no particular order (adapted from Poole, Nelson, Carnahan, Chepenik, & Tubiak, 2000).

- Is it reasonable to expect that the program's activities will actually lead to the program's outcomes? In other words, are the causal linkages plausible and substantiated by the literature, the program teams' experience, or the experience of others delivering similar programs? If you deliver these activities to these target groups then is it reasonable to expect that these outcomes will result?
- Are all stakeholders in agreement about the logic model?
- Are all activities, target groups, and outcomes included?
- Are the outcomes really outcomes, not outputs or activities?
- Do all of the outcomes state an intended change?
- Does the program team feel comfortable accepting accountability for the short-term outcomes?

- Do all of the components lead to one or more of the outcomes through the activities and target groups (that is, there are no "danglers")?
- Are there sufficient resources to undertake the activities?
- Is the logic model visually simple? (Has "box-itis" been avoided? Has the "spaghetti effect" been avoided? Does it fit on one page?)
- Are all elements clearly stated?
- Are the outcomes measurable?
- Do the activities and outcomes address a demonstrated need among the target group?
- Do the program outcomes align with the organization's vision, mission, principles, and strategic performance goals?

If the answer to any of these questions is no, stakeholders should take time to rethink the program and its logic model.

STEP 7: SUMMARIZE AND SHARE HINTS

Facilitation Tips

To wrap up, it is important to recap the main messages of the workshop and offer some tried and true tips. Key points and tips are listed below. A short quiz is also included for those workshop participants who may want to test their understanding of the material.

Key Content

Main Messages

- The logic model is a useful tool for describing programs.
- A logic model can be used during the planning phase of a program. "You've got to be careful if you don't know where you're going, 'cause you might not get there" (Berra, 1998, p.102).
- A clear program description is a crucial part of any evaluation.
- 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 developing a logic model.

Hints

- Don't worry! The first time is always the hardest — it will get easier!
- To get started, be sure to look at any available documentation and files — promotional materials such as pamphlets or flyers, budgets, work plans, strategic and operational plans, manuals, training materials, organizational charts, statements of goals and objectives, previous evaluation reports, committee reports, and so on.
- For an existing program, concentrate on how the program is currently being implemented (not how it was planned, or how it was implemented last year, or how it should ideally be).
- Strive for simplicity and do not be over-inclusive in your logic model. Do not include implementation details or performance measures. Try to fit the whole logic model on one page. Remember — you will 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.
- Discuss the development of the logic model with staff and volunteers involved at all levels in the program.
- Once the logic model is completed, use it! Use the logic model as the basis for building your program's operational plans and team work plans. Discuss the logic model at team meetings. Post the logic model on your office wall or your program website. When challenges arise, identify the part of the logic model where you think the issues lie. Revise the logic model as the program changes.

Quiz

- Describe the five basic elements of a program logic model.
- List the advantages of creating a logic model.
- Explain when you might use a bottom-up approach to constructing a logic model.
- Identify which of the words below express activities and which express outcomes:
  - Provide
  - Improved
  - Facilitate
  - Counsel
  - Decreased
  - Teach
  - Reduced

STEP 8: SHOW THE LINK TO ORGANIZATIONAL PLANNING AND EVALUATION

Facilitation Tips

The program logic model is an extremely useful tool for illustrating how planning and evaluation go hand in hand. Stress to workshop participants the importance of having a clear description of a program before planning for performance measurement or evaluation. Sometimes a detailed description already exists. Often, however, even programs that have been around for a long time have very little documentation about activities and expected outcomes. If that is the case, it is never too late. This is the first step in the evaluation process — draft a program logic model.

Key Content

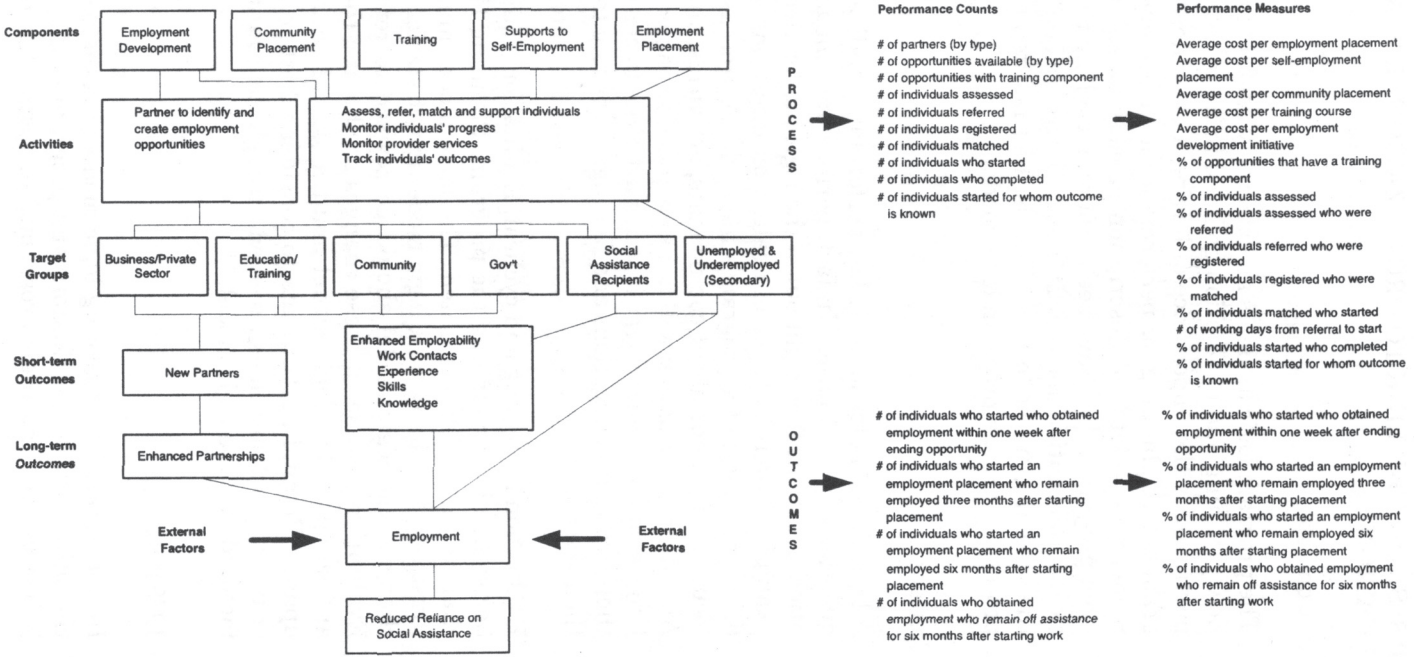
A logic model helps identify key performance indicators and critical questions for evaluation. In fact, performance measures and evaluation questions flow right out of the logic model. See Figure 5 for an example. Different types of evaluation questions will be posed at different stages of a program's life cycle. A process evaluation will focus on questions about components, activities, and target groups. An outcome evaluation will focus on questions about short-term and long-term outcomes. Suggest that participants consider organizing their evaluation questions and findings according to the elements of the logic model.

Evaluation is ongoing and cyclical. Evaluation findings may lead to decisions about changing the program. Planning lays out how the changes can be implemented. The logic model must be revised to illustrate the changes. A logic model is not static. As the program changes, the logic model should be revised to reflect the change. Evaluation assesses if these changes are having the desired effect, and so on … The logic model mantra should be: create, validate, update. Remind participants to consider whether any unintended or unexpected outcomes revealed through the evaluation should be factored into the logic model.

CONCLUSION

In our experience, teaching logic models has helped to build relationships between evaluators and program staff, enable teams to better understand their programs, demystify the evaluation proc-

Figure 5
Employment Assistance Performance Monitoring Framework



ess, and create a willingness to learn more about evaluation. The feedback we received from participants underscored the importance of "keeping it simple." The challenge, of course, is to find the right balance: simple enough to encourage use but sophisticated enough to accurately depict the program and its environment.

It is the authors' hope that this Research and Practice Note provides you with useful content and facilitation tips for introducing logic models to program managers, staff, and volunteers. The rest is up to you as "Good teaching is one-fourth preparation and three-fourths theater" (Godwin, 1974).

ACKNOWLEDGEMENTS

Many of our lessons learned about teaching logic models were gained from the development of a self-directed learning resource and accompanying workshop called *The Program Evaluation Tool Kit: A Blueprint for Public Health Management* (Porteous, Sheldrick, & Stewart, 1997, 1999). The Tool Kit project was co-funded by the Population Health Service, Public Health Branch, Ontario Ministry of Health, and the Public Health Research, Education and Development (PHRED) program (formerly the Teaching Health Unit program) at the City of Ottawa (formerly the Region of Ottawa-Carleton). More information on the Tool Kit is available online at <http://ottawa.ca/city_services/grants/toolkit/index_en.shtml> (English) or <http://ottawa.ca/city_services/grants/toolkit/index_fr.shtml> (French). Excerpts on the logic model are available at <http://www.uottawa.ca/academic/med/epid/toolkit.htm>. Thank you to: the provincial advisory group who helped guide the development of the Tool Kit; the hundreds of workshop participants who helped us improve our techniques by asking questions and sharing their own anecdotes and examples; our colleagues in Health and Social Services at the Region of Ottawa-Carleton; and Paul Sales, who assisted in drafting the Tool Kit. A special thank you to Helen Durand Charron, Kim Ennis, and the Housing Branch of People Services at the City of Ottawa for work on the Logic Model for Management of the Service System to End Homelessness. Thank you to Helen Durand Charron and the Community Relations and Employment Development Directorate of Social Services in the former Region of Ottawa-Carleton for work on the Employment Assistance Performance Monitoring Framework.

REFERENCES

Alter, C., & Egan, M. (1997, Winter). Logic modeling: A tool for teaching critical thinking in social work practice. *Journal of Social Work Education, 33*(1), 85–102.

Alter, C., & Murty, S. (1997). Logic modeling: A tool for teaching practice evaluation. *Journal of Social Work Education, 33*, 103–117.

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

Bickman, L. (Ed.). (1987). The functions of program theory. In *Using Program Theory in Evaluation: New Direction for Program Evaluation* (pp. 5–18). San Francisco: Jossey-Bass.

Canadian International Development Agency. (1997, November). The logical framework: Making it results-oriented. *Performance Review and the Bilateral Branches*. Retrieved from <http://www.acdi-cida.gc.ca/cida_ind.nsf/49d9f10330ed2bb48525677e00735812/c36ebd571b6>

Carroll, L. (1865/1971). Alice's adventures in Wonderland. In D.J. Gray (Ed.), *Alice in Wonderland*. New York: W.W. Norton.

Coffman, J. (1999). *Learning from logic models: An example of a family/school partnership program*. Cambridge, MA: Harvard Family Research Project. Retrieved in December 1999 from <http://www.gse.harvard.edu/hfrp/pubs/pubsbytitle.html#rrb>

Cummings, F.H. (1997). Logic models, logical frameworks and results-based management: Contrasts and comparisons. *Canadian Journal of Development Studies, 18*(Special Issue), 587–596.

Dwyer, J. (1996). Applying program logic model in program planning and evaluation. *Public Health and Epidemiology Report Ontario, 7*(2), 38–46.

Dwyer, J., & Makin, S. (1997). Using a program logic model that focuses on performance measurement to develop a program. *Canadian Journal of Public Health, 88*, 421–425.

Framst, G. (1995). Application of program logic model to agricultural technology transfer programs. *Canadian Journal of Program Evaluation, 10*(2), 123–132.

Godwin, G. (1974). *The odd woman*. New York: Knopf.

Hunter College, Centre on Aids, Drugs & Community Health. (1996, March). *New York City AIDS Fund Evaluation Partnership Training Module I: The logic model: A tool for program planning and evaluation*. New York: Author.

Letts, L., & Dunal, L. (1995). Tackling evaluation: Applying a programme logic model to community rehabilitation for adults with brain injury. *Canadian Journal of Occupational Therapy, 6*, 268–277.

McEwan, K.L., & Bigelow, D.A. (1997). Using a logic model to focus health services on population health goals. *Canadian Journal of Program Evaluation, 12*(1), 167–174.

Moyer, A., Verhovsek, H., & Wilson, V. (1997). Facilitating the shift to population-based public health programs: Innovation through the use of framework and logic model tools. *Canadian Journal of Public Health, 88*(2), 95–98.

Ogborne, A.C. (1996). *Developing program models for human service agencies: A step-by-step guide*. London, ON: Social Evaluation and Research Department, Addiction Research Foundation.

Ogborne, A.C., & Rush, B. (1994). Program logic models: Tools for program planning and evaluation. In J. Lloyd-Jones & F. Simyar (Eds.), *Strategy planning, program evaluation and public accountability for health service professionals* (pp. 61–72). Ottawa: Canadian Hospital Association.

Piskurich, G.M. (1993). *Self-directed learning: A practical guide to design, development, and implementation*. San Francisco: Jossey-Bass.

Poole, D.L., Nelson, J., Carnahan, S., Chepenik, N.G., Tubiak, C. (2000). Evaluating performance measurement systems in nonprofit agencies: The Program Accountability Quality Scale (PAQS). *American Journal of Evaluation, 21*(1), 15–26.

Porteous, N.L., Sheldrick, B.J., & Stewart, P.J. (1999). Enhancing managers' evaluation capacity: A case study from Ontario public health. *Canadian Journal of Program Evaluation, 14*(Special Issue), 137–154.

Porteous, N.P., Sheldrick, B.J., Stewart, P.J. (1997). *Program Evaluation Tool Kit: A Blueprint for Public Health Management*. Ottawa, ON:

Ottawa-Carleton Health Department. Partially available online: <http://www.uottawa.ca/academic/med/epid/toolkit.htm>

Rowan, M.S. (2000). Logic models in primary care reform: Navigating the evaluation. *Canadian Journal of Program Evaluation, 15*(2), 81–92.

Rush, B., & Ogborne, A.C. (1991). Program logic models: expanding their role and structure for program planning and evaluation. *Canadian Journal of Program Evaluation, 6*(2), 93–105.

United Way of America. (1996). *Measuring program outcomes: A practical approach*. Alexandria, VA: Author.

Unrau, Y. (1993). A program logic model approach to conceptualizing social services programs. *Canadian Journal of Program Evaluation, 8*(1), 117–134.

Wholey, J. (1987). Evaluability assessment: Developing program theory. *New Directions for Program Evaluation, 33*, 77–92.

W.K. Kellogg Foundation. (2000). *Using logic models to bring together planning, evaluation and action: Logic model development guide.* Battle Creek, MI: Author.

Wong-Reiger, D., & David, L. (1995). Using program logic models to plan and evaluate education and prevention programs. In A. Love (Ed.), *Evaluation methods sourcebook II* (pp. 120–135). Ottawa: Canadian Evaluation Society.

Appendix 1
Outline for a Three-Hour Workshop

Plenary	Welcome and Introductions, Purpose, Agenda
Plenary	Steps 1 to 4a
Exercise #1 (Individual)	CAT Worksheet
Plenary	Step 4b
Exercise #2 (Individual)	SOLO Worksheet
BREAK	
Plenary	Step 5
Exercise #3 (Small groups)	Putting It Together
Exercise #4 (Small groups)	Debrief
Plenary	Steps 6 to 8
Plenary	Wrap-up

CASE STUDY EXERCISES

Exercise #1 — 10 minutes

- On your own, read case study and underline or circle the components, activities, and target groups.
- Fill in CAT Worksheet.
    - List the main *components* of the program.
    - List all of the *activities.*
    - Indicate the *target groups* for each activity.

Exercise #2 — 10 minutes

- On your own, read case study again and underline or circle what the program is intending to change.
- Complete SOLO Worksheet.
    - List all of the changes the program hopes to achieve with each target group (plus the direction of change).
    - Identify which outcomes are short-term and which are long-term.
    - Identify which of your program components contribute to each outcome.

Exercise # 3 — 20 to 30 minutes

- Get into small groups.
- As a group, use flip chart paper, “Post-it” notes, and markers to draw the logic model for the program in the case study (refer to your CAT and SOLO worksheets).

Exercise/Debrief # 4 — 15 minutes

- Compare your group’s logic model to those posted around the room.
- Compare your logic model to the sample provided.
- What was challenging or neat about drawing the logic model together?