Abstract

Logic models for planning and evaluation are required by many funding agencies (e.g., CDC, Untied Way). There are a few logic model development guides and references to models can be found in many journal articles. However, there is comparatively little practical guidance available on how to tackle common problems in logic model development. Four common problems novice developers encounter are: (1) how detailed a model should be, (2) what columns or categories to include, (3) what should be considered an output and what should be an outcome, and (4) how to use a model for planning and evaluation. These problems can be addressed with a few simple guidelines. This poster includes tips to help managers and evaluators of programs, projects, and campaigns improve their logic modeling.

Tips for Developing Logic Models

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What Is a Logic Model?

A logic model is a representation of how your program, project, or campaign is supposed to work. Logic models show the assumptions – meaning the theory– by which we believe a program will have a desired impact. Logic models are sometimes described as roadmaps or flowcharts.

It might help to think of a logic model as:

- A tool to help someone quickly understand your program.
- A picture of how you believe your program will work.
- A diagram of the processes you believe will result in a desired change.
- Something that can be revised as your adapt your program to real world conditions.

There are few rules to developing logic models, but quite a few useful rules of thumb. Most frequent users of logic models will likely recommend that you think of your logic model as a flexible tool, rather than something that needs to be finalized and or something that should not be changed. Planners and evaluators who use logic models will also likely recommend that you consider theoretical constructs related to theories of human behavior (e.g., Social Cognitive Theory, Health Belief Model, EPPM) prior to planning activities and developing your model.

Definitions

A logic model is a road map or diagram that shows the logic or rationale underlying a given program. It summarizes the key elements of a program and tells you how a program is supposed to work. It is a depiction of the chain of events that links inputs and activities to desired outcomes.

A logic model describes the links between resources you have to operate the program, the activities you plan to do, and the changes or results expected. As such, it provides a framework for both planning both program activities and their evaluation. The use of a logic model facilitates outcome-oriented thinking, program integration and consensus (because you can better see and coordinate resources), and accountability.

Note: Logic models can be done at varying levels of specificity and detail. Generally speaking, logic models are used for depicting major, recurring items in the program rather than one-time items. The level of detail should be sufficient for the reader to grasp the major items that go into a program, what occurs to those inputs, the various outputs that result, and the outcomes that occur. Logic models should not be so detailed that extensive reference to or cross-comparisons between pages is necessary. A logic model is a working document that can be changed as your program develops.

Although not always part of a logic model, program goals, objectives, and target audiences or activity participants are sometimes included in logic models.

Inputs	Activities	Outputs	Short-term Outcomes	Intermediate Outcomes	Long-Term Outcomes
The human, financial, and material resources that the program uses to produce the results desired. Types of inputs include, but are not limited to, people, money, equipment, facilities, supplies, partnerships and collaborations, and agency priorities, regulations, and requirements.	The actual events or actions that take place as a part of the program. It might be ask yourself, "What are the big action steps required to get to my outcomes?" *Note*: Some logic models include processes or strategies rather than specific activities. While useful for showing what generally is occurring, it is more difficult to identify outputs or evaluation measures (e.g., it is easier to understand "classroom presentations" than "health promotion"). Use a level of detail that provides you with enough information to be useful for your own planning and evaluation efforts.	The direct products of program activities. Outputs consist of products and services provided. It might help to ask yourself, "Who will have participated?" and "What will be produced?" Generally speaking, outputs are more often measures of quantity than quality.	The immediate changes or improvements directly resulting from program actions. The first level of change that must occur in order to bring about intermediate outcomes. Short-term outcomes are typically changes or improvements in awareness and knowledge. Changes in attitudes or intentions may also be short-term outcomes.	Results that occur some time after the intervention has been initiated, such as changes in behavior or environmental conditions. Outcomes occurring as a product of short-term results. (i.e., short-term outcomes lead to intermediate outcomes). Unlike short-term outcomes, which occur under the direct influence of program activities, there may be other causal factors contributing to the achievement of intermediate outcomes.	The desired end-results of a program. Long-term outcomes are typically changes or improvements in the overall condition of a population or system that result from achievement of intermediate outcomes (e.g., reduced morbidity). Given their broader scope, long-term outcomes usually take more time to achieve.

1. How detailed should I make my logic model?

This is perhaps the most difficult question to be addressed. With any given project or program, there is an almost unlimited number of inputs and activities that can be listed.

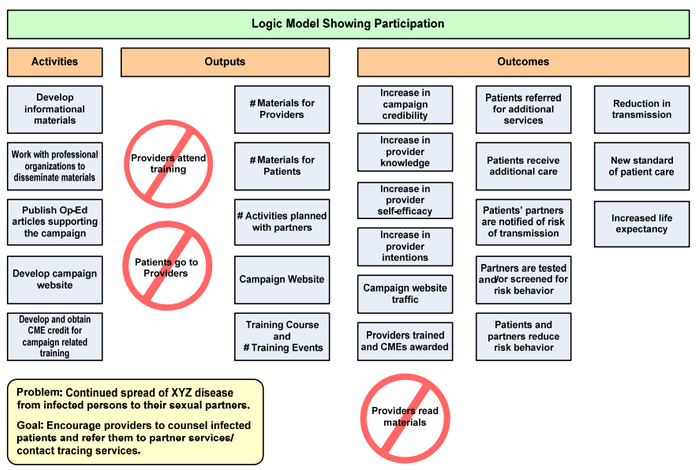
A. First consider the purpose of your logic model. Who will use it? What will they use it for? Do you need a different model for internal vs. external audiences? Your logic model should communicate all program, project, or campaign elements important to your stakeholders.

B. Keep it simple. In some cases you might only need 3 columns or boxes, in cases you might need more than 50. If possible, keep your logic model to one page in length. Logic models are typically constructed on letter size paper turned sideways (i.e., landscape). The key is to have enough detail to be as informative as possible while being simple enough that the program's logic can be understood.

- Unless it's important for your stakeholders, do not include elements that will not be evaluated.
- Only list participants or participation if it cannot be easily derived from the rest of the model.
- Group similar elements (e.g., materials) together

C. If you can't keep it simple (e.g., modeling a program with several projects) create several models.

Try not to let the details affect the ability of the model to easily convey an answer to the questions: "What is this program/project/campaign doing? and "Why do the planners think the program/project/campaign will affect the root cause of the problem?"

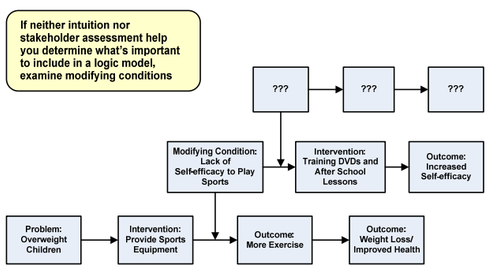


2. What columns or categories should I include?

It is important to include elements that are both useful for your planning and evaluation and elements that your stakeholders are looking for. For example, many directors or division managers expect to see long-term goals, funding, and staff listed in a logic model even though a program might not last a long time and an evaluator might not be able to make statements about program, project, or campaign funding.

The most common elements in a logic model are:	Other things often included in logic models are:
• inputs, • activities, • outputs, • short term outcomes, and • long term outcomes	• goals and objectives, • situation or need statements, • participation or who is being reached, • medium or mid-range outcomes, and • external factors affecting the program, project, or campaign

Although it might seem obvious, many people working on logic models forget the simple rule: include what's important. Decide what is important by first asking yourself what would occur if an activity or event did not happen. Next, consider what your stakeholders, meaning those who are interested in your activities, want to know and whether or not they will view the logic model. Finally, consider an exercise to examine key mediating and modifying conditions. This exercise, wherein you examine specific linkages between problems, activities, and outcomes can not only help you to better decide what columns or categories to include, but also help you to better plan and evaluate your efforts and decide what level of detail to include in a logic model.

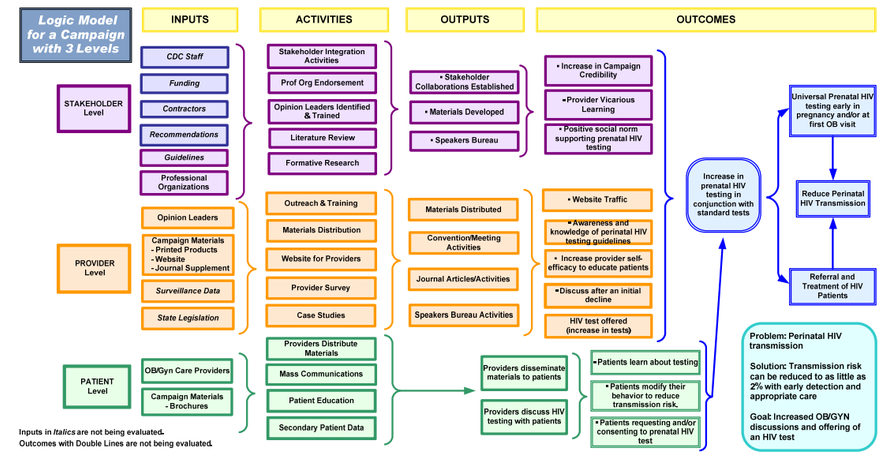


3. What should be considered an output and what should be an outcome?

One of the most frequent "errors" found in logic models is in the misplacement or categorization of an outcome as an output. Categorizing an output as a outcome makes it quite easy to say that a program, project, or campaign is successful. Categorizing an outcome as an output puts a manager at risk of failing to fully execute their program, project, or campaign. However, as logic models are meant to be useful tools, categorizing one as the other is not a problem as long as users of the logic model understand the nature of the elements listed.

- Outputs are things that you have control over: the number of materials printed, the number of training sessions held, or the amount of sports equipment delivered to schools.
- Outcomes are things that happen because of what you do: changes in awareness or knowledge, attendance at training workshops, an increase in children's exercise.

I have seen logic models that included both activities and participation as outputs, but I do not recommend this approach as participation is frequently something outside a manager's control. Keeping activities separate from outputs facilitates easier identification of process evaluation measures and better communication related to the differences between products and processes. Other models have columns for processes or strategies, but the information placed in these columns is often too general of a nature for readers to understand what activities are planned.



4. How do I use a logic model for planning and evaluation?

A well developed logic model shows all of the main components of a campaign on one sheet of paper. As such it should assist campaign managers and evaluation specialists with a wide array of activities, including the identification of:

- gaps in program or campaign planning
- logical relationships, and gaps in logic, between activities and outcomes
- critical points where implementation and evaluation may be held up
- behavioral or cognitive areas where theories of health behavior may be useful
- areas where theoretical constructs (e.g., self-efficacy) should be measured

The cliché "what gets measured gets done" is often true. As you look at your model, ask yourself what evaluation questions should be asked and how you could measure the elements listed.

A good logic model facilitates communication related to the campaign by enabling a shared understanding of activities, outputs, and outcomes. Use your logic model to explain what you propose to do and how you propose to evaluate your activities.

Remember that logic models help you understand what is going on (e.g., Are we doing what we said we would do? Are we doing it well?). They do not tell you if you are going the right or wrong thing (e.g., Should we be doing something else to address this problem?).

Public Engagement Website Program Logic Model

Program Goals

- Give the advocacy community and the public an opportunity to comment on topics related to the Department's programs,
- Give the Department an opportunity to better understand the views and opinions of the advocacy community and the general public,
- Increase the number and diversity of advocacy organizations providing input to Department,
- Improve the Departments plans and programs based on input received, and
- Enhance the collaboration between the Department and the communities it serves.

1 – Resources	2 – Activities	3 – Outputs	4 – Short- term Outcomes	5 – Long-term Outcomes
In order to accomplish our set of activities we will need the following:	In order to address our problem or asset we will conduct the following activities:	Evidence of service delivery:	We expect that if completed or ongoing these activities, along with other activities, will help contribute to the following outcomes in 1–3 years:	We expect that if completed these activities, along with other activities, will help contribute to the following changes in 4–5 years:
Program- staff • Public Engagement staff • Other Program staff ○ Web team ○ Office of Communications Program Contractors • Moderator • Synthesizer of Comments • Usability contractor • Evaluation contractor Advisory Board Input • Advisory Board as a whole • Public Engagement Program working group Funding Staff and contractors Promotional materials Research Survey of Advocacy Orgs	• Various Department staff are informed about the Public Engagement Website and solicited for their participation • Questions or documents suggested by Department (Topic Program) are chosen by Engagement Program staff (and Advisory Board) and posted on the website • Advocacy Orgs will ○ be identified and solicited for participation. ○ designate an official spokesperson ○ comment on topics posted by the Public Engagement Program staff ○ comment on summaries of comments • Website monitoring ○ for inappropriate comments ○ for website technical problems • Members of the public provide comments • Contractor will analyze and summarize comments • Program staff share comments with Topic Program staff, Advocacy Orgs, and the public • Topic Program office responds to summary of comments	# of topics posted on the Public Engagement Website # of promotional efforts # of Advocacy Orgs registered # of members of interested public who have registered # of designated spokespersons	⇨ • Advocacy Orgs/members of the interested public will actively participate in the Public Engagement Program's Website • Advocacy Orgs/members of the interested public will indicate that the Public Engagement Website is useful • Advocacy Orgs/members of the interested public will indicate that they believe the Department values their ideas/opinions • Advocacy Orgs/members of the interested public will indicate that they have a greater understanding of the issues/concerns of other advocacy organizations • Program staff will use Engagement Website as a mechanism to solicit consumer ideas and needs • Program staff will express satisfaction with the Public Engagement Website ○ usefulness ○ convenience • Members of the interested public will actively participate/post on the Public Engagement Website • Advocacy Orgs will be aware of the Advisory Board	• The Department will have desired communications access to the opinions of the advocacy community, as well as their constituents, regarding specific Program topics. • Advocacy community will have an avenue to voice their and their constituents' opinion on specific Department topics • Advocacy Orgs will have an established forum to learn of and understand other Advocacy Org opinions related to specific Department and Program topics • The interested public will have an avenue to voice their opinion on specific Program topics. • Advocacy Org members, their constituents and the interested public will be more satisfied with their ability to share information with the Department. • There will be increased interaction/open-dialogue among the network of Advocacy Orgs.

Logic Model Evaluation Overlay for the Public Engagement Program

Data Collection:

- Interviews with Department staff, Advisory Board members, Advocacy Org representatives, and other stakeholders
- Review of Public Engagement Program-related records
- Information from the usability assessment of the Public Engagement Website and benchmarking analysis

1 – Resources	2 – Activities	3 – Outputs	4 – Short- term Outcomes	5 – Long-term Outcomes
Process Resources • Are sufficent recources being provided? • Are resources allocated appropriately?	**Process Evaluation Issues** As a process evaluation measure, in general, the activities either ARE or ARE NOT done. Further questioning involves the extent to which activities are carried out. • Were Department staff informed about the Public Engagement Website? • Are Department staff (Topic Program staff) using the website to solicit ideas and feedback? • Are Advocacy Orgs participating? • Are members of the public participating? • Are topics summarized in a timely manner? • What factors affect the summarizing of comments? • How effective is the website monitoring? • How long does it take for website problems to be addressed? • What factors affect the website monitoring?	**Evaluation Issues** • How many Department and Advisory Board promotional efforts took place? ○ for Advocacy Orgs ○ for the interested public • How many Program staff were reached? • How many Advocacy Orgs were reached? • Were the right people reached during the promotional efforts? • How many Advocacy Orgs are registered? ○ characteristics of registered Advocacy Orgs • How many Advocacy Orgs have designated a spokesperson? ○ characteristics of Advocacy Orgs with spokespersons • Why have some Advocacy Orgs not registered? • Why have some Advocacy Orgs not designated a spokesperson? • How many staff are participating in the Public Engagement Program Website: ○ Department ○ Other • Do Program and Department staff perceive the Website topics to be: ○ Clear or unambiguous ○ Important	⇨ For EACH questions, there are at least 2 "sub-questions": (1) If yes, why? (2) If no, why not and what suggestions do they have for improving the Program? • Are non-Program staff satisfied with the Public Engagement Program Website? ○ topic posting process ○ timeliness of comments ○ content of comments ○ summarization of comments ○ response to comments process • Do Department staff intend to use the Public Engagement Website to solicit ideas and feedback? • Has awareness of the Public Engagement Program increased among Advocacy Orgs? • What processes affect whether or not Advocacy Orgs or the interested public hear about a Topic and post a comment? • Of those Advocacy Orgs with spokespersons, how many Orgs have posted comments? ○ Topics ○ Summaries • Have there been any changes in the types of Advocacy Orgs with spokespersons? • Have there been any changes in the types of Advocacy Orgs that post comments? • Do Advocacy Orgs view the topics as: ○ Clear or unambiguous ○ Important • Are Advocacy Orgs/members of the interested public satisfied with the Program? ○ comment posting process ○ timeliness of responses ○ content of responses	**Evaluation Issues** • Does the Department have desired communications access to the opinions of the advocacy community, as well as their constituents? ○ timeliness of comments ○ content of comments • Do Advocacy Orgs perceive that they have an avenue to have their opinions on specific topics heard by the Department? ○ satisfaction with summaries ○ satisfaction with Topic Program responses to comments ○ willingness to use Website ○ perceived result of comments provided (e.g., Department actions) • Has the Public Engagement Program become an established forum for Advocacy Orgs to learn of and understand the opinions of the Department and other Advocacy Orgs? ○ how often do Advocacy Orgs check Program? ○ satisfaction with Topic Program responses ○ satisfaction with process • Has the Public Engagement Program provided an avenue for the interested public to voice their opinions on specific Program topics? ○ how often do members of the interested public check the website? ○ satisfaction with Topic Program responses ○ satisfaction with process • Is there an increase in interaction/open-dialogue in the Advocacy Org network surrounding Department topics? ○ through the Program Website ○ outside of the Program Website

Additional Tips

There are a few additional tips that should help you to more easily create your logic model. Consider the following pieces of advice:

1. Do not nitpick on the wording in a logic model, save discussion of the use of one term or another for last.
2. Remember that logic models are tools that can be revised as necessary.
3. Logic models can be any shape, but it is easier to create a table with several columns than a flowchart. Many long hours have been spent on relatively unimportant factors like box size. Flowcharts make a more powerful statement, but unless you have someone else with the time to make your logic model pretty, stick to a table.
4. Get input from stakeholders, especially if they are implementing a portion of the program or are the target of a program intervention.
5. Brainstorm with stakeholders before constructing a draft model. Going strait to an empty model and filling out boxes is one of the more difficult ways to create a logic model.
6. Maintain control of and set limits on the development of your logic model.
7. Plan to be able to meet in person at least twice while developing your logic model.
8. Try to show and explain your logic model to a family member or co-worker unfamiliar with the program before presenting it to the world at large.

Conclusions

Logic models should be developed in order to facilitate communication, ensure adequate identification of barriers to change, and assist with better planning and evaluation. Well developed logic models facilitate understanding of the underlying theories of action (e.g., why a program should work) and facilitate an understanding of how theoretical constructs are being used by programs, projects, and campaigns. Logic models help planners to identify gaps, anticipate problems, and quickly communicate the core aspects of their efforts. Logic models help evaluators identify process evaluation measures and create plans to assess cognitive and behavioral outcomes that should be affected by various activities. There are no established rules for developing logic models, but there are several guidelines that will assist in their development.

For More Information on Logic Models:

The resources, in alphabetical order, below provide more in-depth information on how to create logic models for planning and evaluation. People accessing these resources will note the diversity of advice and recommendations offered. As the result of his experience developing and using logic models, the author differs in several places from some of the recommendations provided in the resources. He encourages you to explore what logic model techniques will work best for you.

Goodman, R.M. (2000). Bridging the gap in effective program implementation: From concept to application. Journal of Community Psychology, 28(3), 309–321.

McLaughlin, J.A., & Jordan, G.B. (1999). Logic models: a tool for telling your program's performance story. Evaluation and Program Planning 22, 65–72.

University of Wisconsin-Extension, lifelong learning program. Enhancing Program Performance with Logic Models course www.uwex.edu, search for logic models

U.S. Centers for Disease Control: Evaluation Working group www.cdc.gov/eval/resources.htm, select Logic Model Resources

W.K. Kellog Foundation Logic Model Development Guide Available in English and Spanish at www.wkkf.org, search for logic models

United Way of America
www.unitedway.org, search for logic models

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