

Post CHNA – Planning Interventions to Impact Population Health

Logic Models

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In a separate PRC white paper, I wrote about root cause analysis (RCA) as being a first step in program planning. Whether you utilize this approach or have an existing program in place, once your organization has decided on a path(s) for intervention, the next step is actual program development. Many different program planning tools exist, but one of the more common and popular is the logic model. Logic models provide a global perspective of the program and allow program planners to identify the level of change you expect to occur in population health.¹ Logic models can fill in gaps on implementation strategy documents and ensure that you use funding to

its greatest potential. Producing a logic model also creates an opportunity to inform stakeholders about the program processes, gather input and ultimately foster collaboration.

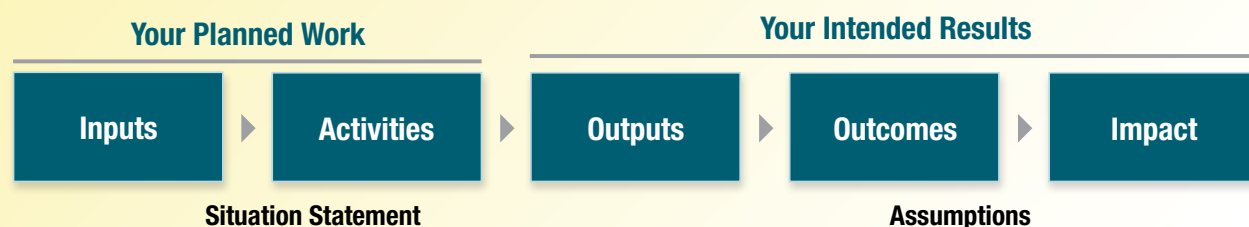
Most logic models include a situation statement, inputs, outputs (what and who), outcomes [short (learning) and medium (action-behavior change)] and finally, the impact the program seeks to have in the community. Some also take into consideration assumptions and external factors.² Note that not all logic models will look alike, and it's important that program planners adapt the model to best fit their needs. Furthermore, in order to eliminate confusion, be sure the terminology is understood by all program planners involved before you begin.³

Phase 1: Logic Model Development

In general, logic models should be created with a small group of people (around five) and involve several boxes and arrows that link together to demonstrate how the ideas connect to one another. Logic models do not need to have complete sentences, as they are just a roadmap for the program. And realize that, like successful organizations, these take time and energy to build. Many programs undergo multiple iterations before a final logic model is developed.⁴ **Figure A** is a visualization of a basic logic model adapted from the W.K. Kellogg Foundation.⁵

A Basic Logic Model W. K. Kellogg Foundation, 2004

Figure A



Situation Statement

The first step in logic model development is to identify the health issue being addressed by the program and create a fitting situation statement. In our sample logic model, we'll create a roadmap to reduce childhood obesity.

In this example, the situation statement might read:

According to our 2013 PRC CHNA, 32% of children ages 5-17 are overweight or obese. Overweight and obese children are much more likely to become overweight adults and have an increased chance of chronic health conditions. Chronic health conditions negatively add to healthcare costs.

Assumptions

At this stage, you have most likely identified some root causes of the problem, or have found an evidence-based program that's already been proven to succeed in another community. (For a list of sources for evidence-based programs, view our "Ideas for Action" document at www.PRCOnline.com/CHNA.) Continuing to research and gain insight – from current literature, other community agencies and stakeholders – is beneficial to acquiring a complete understanding of not only the health issue at hand, but also the external community and social factors that may influence the program.⁶ On the logic model itself, you may want to include relevant findings within the "Assumptions" box. It is important not to overlook the examination of program assumptions because this process can help "identify flaws in the program design or implementation,"⁷ and serve to check that planners have the necessary steps in place to ensure program success.

“Outcomes are an important part of our education and outreach programs. We are being held accountable for outcomes, not just for doing ‘good work’... Logic models help us focus on outcomes and build programs to achieve outcomes.”⁹

For example, assumptions for a program trying to decrease childhood obesity might include:

- *Nutrition education impacts obesity levels*
- *Residents want information about healthy eating*
- *YMCA staff will help with recruitment and advertising*

Impact

As with root cause analysis, when first developing the logic model it is sometimes easiest to begin at the end (i.e., with the long-term impact) and work backward. Impacts are the social, economic, political and/or environmental changes that you expect the program to have.⁸

Long-term impacts for the sample program might include:

- *Decrease risk factors for chronic disease, specifically:*
 - *Decrease in prevalence of diabetes*
 - *Decrease in prevalence of hypertension*
 - *Decrease in prevalence of high blood cholesterol*
- *Lower per capita spending on healthcare*

Outcomes

To identify the program's anticipated outcomes, consider what behavior or decision-making changes you expect the targeted community/audience to make after participation. Some logic models break these down into short-, medium- and long-term outcomes.

Here, you also might think of outcomes as the accountability steps that many hospitals are building into their Implementation Strategies following a Community Health Needs Assessment (CHNA). Additionally, consider which PRC Community Health Survey indicators might help you track the changes in the “Outcomes” area.

For our model, outcomes might include:

- *Parents and children increase knowledge about nutrition*
- *Parents regularly use knowledge and improve cooking skills to create healthy meals*
- *Parents seek out further information on nutrition from YMCA*
- *Increase daily fruit and vegetable consumption by 5% in 3 years*
- *Decrease sugary-drink consumption by 5% in 3 years*
- *Decrease obesity by 5% in 3 years*

Inputs

Now that you've identified the long-term impact and outcomes, you can go back to the beginning of the logic model and fill in the gaps. The first box on the logic model is “Inputs.” In other words, what resources need to go into the program to make it successful? What will you need to get the program off the ground and continue to run smoothly?

Some inputs for our childhood obesity program model might include:

- *Nutritionists*
- *Ingredients*
- *Volunteers*
- *YMCA staff*
- *Cooking materials*
- *Funding*
- *Physical space*

It's important recognize the difference between outputs and outcomes. "Outputs relate to 'what we do.' Outcomes refer to 'what difference is there.'"¹¹

Activities

"Activities" are what the program will actually do and who the activity will reach. These need to be specific, not only so that your evaluation process can determine that they occurred, but also to help you gain funding and buy-in from stakeholders.

For our example, activities might include:

- Secure location for nutrition classes
- Create flyer promoting events
- Design cooking/nutrition education curriculum with hands-on demonstrations
- Create a pre-/post-test to measure knowledge changes
- Train volunteers to teach classes
- Provide eight nutrition/cooking classes each month at local YMCA
- Create an evaluation plan

Outputs

Program planners next need to identify the "Outputs," or the targets, for the program. These might also be referred to as "units of service," "products" or "deliverables."¹⁰ Outputs are the results you anticipate occurring during and immediately following program implementation. In addition, it's critical to have SMART outputs (Specific, Measurable, Attainable, Relevant and Time-Bound) so you already have measurement indicators identified for evaluation purposes.¹²

For the childhood obesity program model, outputs might include:

- Target: 100 flyers passed out to current YMCA and community members
- Target: 20 families attend 5+ nutrition classes for six consecutive months
- Target: Pre- and post-test score change of +10%

Phase 2: Reviewing/Finalizing the Logic Model

At this point, you have nearly completed your logic model; but before you consider it final, it's important to go back and double-check the "logic." You can do this by using "if-then" statements; for example, the sample logic model may read (**Figure B**):^{13,14}

"IF we have nutritionists, cooking materials and a physical space, **THEN** we can design nutrition education curriculum.

➡ **IF** we have a nutrition education curriculum, **THEN** we can share it with 20 families.

➡ **IF** we have families attend, **THEN** we can increase knowledge about nutrition.

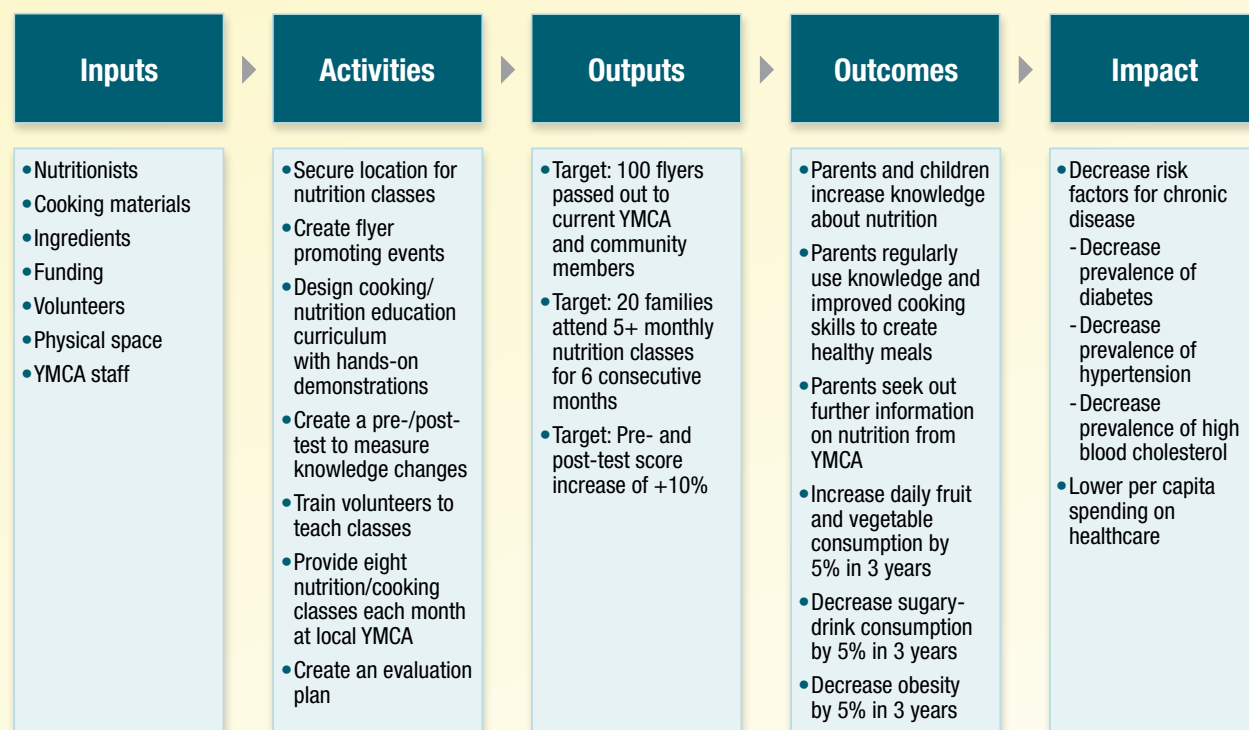
➡ **IF** we increase knowledge about nutrition, **THEN** we can decrease risk factors for chronic disease."

If the logic flows and the objectives are clearly defined, and if stakeholders are comfortable that the logic model addresses the necessary steps/activities/resources to achieve the desired outcomes,¹⁵ your model is complete. The model does not need to be static and can evolve and grow alongside the program. It's also important to note that it might be worthwhile to share the model with potential partners to obtain buy-in and promote collaboration.

In the end, logic models can help track, monitor and identify limitations, and determine progress in health programs – whether it is for a program you design from scratch, one that you model off an evidence-based practice or one that already exists in the community – or to fulfill a requirement for programs submitted as part of a grant request.

Obesity Reduction Program Logic Model

Figure B



Situation Statement:

According to our 2013 PRC CHNA, 32% of children ages 5-17 are overweight or obese. Overweight and obese children are much more likely to become overweight adults and have an increased chance of chronic health conditions. Chronic health conditions negatively add to healthcare costs.

Assumptions:

- Nutrition education impacts obesity levels
- Residents want information about healthy eating
- YMCA staff will help with recruitment and advertising

Phase 3: Establishing Indicators for Evaluation

Logic models can also serve as the foundation for your evaluation tools. Remember that your PRC Community Health Survey can help fill in evaluation data gaps, and can be used as the mechanism to track/obtain/record some of the more difficult-to-obtain data indicators.

Figure C is a visualization of a starting point for establishing your evaluation plans.¹⁶ •

Evaluation of Indicators W. K. Kellogg Foundation, 2004

Figure C

Focus Area	Indicators	How to Evaluate
Influential Factors (Assumptions)	Measures of influential factors – may require general population surveys and/or comparison with national data sets.	Compare the nature and extent of influences before (baseline) and after the program.
Resources	Logs or reports of financial/staffing status.	Compare actual resources acquired against anticipated.
Activities	• Descriptions of planned activities. • Logs or reports of actual activities. • Descriptions of participants.	Compare actual activities provided, types of participants reached against what was proposed.
Outputs	• Logs or reports of actual activities. • Actual products delivered.	Compare the quality and quantity of actual delivery against expected.
Outcomes & Impacts	Participant attitudes, knowledge, skills, intentions and/or behaviors thought to result from your activities.	Compare the measures before and after the program.

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