ELSEVIER

Evaluation and Program Planning 28 (2005) 167–172

EVALUATION and PROGRAM PLANNING

www.elsevier.com/locate/evalprogplan

The use of logic models by community-based initiatives

Sue A. Kaplan*, Katherine E. Garrett

Center for Health and Public Service Research, New York University, 295 Lafayette Street, 2nd floor, New York, NY 10012 9604, USA

Received 1 February 2004; received in revised form 1 June 2004; accepted 1 September 2004

Abstract

Many grant programs now require community-based initiatives to develop logic models as part of the application process or to facilitate program monitoring and evaluation. This paper examines three such programs to understand the benefits and challenges of using logic models to help build consensus and foster collaboration within a community coalition, strengthen program design, and facilitate internal and external communication. The paper concludes with recommendations for how to make the logic model development process more useful for community-based initiatives.

1. Introduction

For several decades, "logic models" have been used as tools for program planning, management, and evaluation (Bickman, 1987; Chen, 1990; Chen & Rossie, 1983; Wholey, 1987). A logic model is a graphic display or 'map' of the relationship between a program's resources, activities, and intended results, which also identifies the program's underlying theory and assumptions (McLaughlin & Jordan, 1999; Renger & Titcomb, 2002). In recent years, many funders have begun to require that community-based initiatives develop logic models as part of their grant applications and for on going monitoring and reporting.[1] At the same time, program evaluators are increasingly using logic models to identify and measure expected results (see, for example, Hebert & Anderson, 1998; Kagan, 1998; Milligan, Coulton, York, & Register 1998; Torvatn, 1999).

In light of the ubiquity of logic models in program development and evaluation, it seems important and timely to understand how they are used, and what benefits and challenges they present, at a community level. Although logic models are often used in program evaluation, ideally, the logic model approach offers practitioners a planning and management tool—to help clarify goals, achieve consensus, identify gaps in logic or in knowledge, and track progress (Millar, Simeone, & Carnevale, 2001). To what extent, and under what circumstances, do community-based initiatives find logic models to be a helpful tool in program design and implementation?

Over the past 3 years, the Center for Health and Public Service Research (CHPSR) of the Robert F. Wagner Graduate School of Public Service at New York University has worked extensively with community coalitions providing technical assistance on logic model development and using logic models as a tool for program monitoring and evaluation. In this paper, we discuss the lessons we have learned about the usefulness of logic models to community coalitions participating in three initiatives: the US Department of Health and Human Services (DHHS) Community Access Program, which provides support to coalitions seeking to bridge service gaps for the un- and under-insured; the New York City Department of Health and Mental Hygiene's (DOHMH) Childhood Asthma Initiative, an effort to promote community partnerships in high-risk neighborhoods and to strengthen the capacity of the community institutions with which asthmatic children come into contact; and Bronx Health REACH, a comprehensive community effort funded by the Centers for Disease

* Corresponding author. Tel.: +1 212 998 7554; fax: +1 212 995 4166.
E-mail address: sue.kaplan@nyu.edu (S.A. Kaplan).

[1] The US Department of Health and Human Services has required logic models from all Community Access Program grantees and applicants and for the Centers for Disease Control REACH program. The W.K. Kellogg Foundation has used logic models in many of their initiatives, and has developed a resource book on logic model development for practitioners and program developers. W.K. Kellogg Foundation (2001). Logic model development guide: using logic models to bring together planning, evaluation, & action. Battle Creek, MI: W. K. Kellogg Foundation.

0149-7189/$ - see front matter © 2005 Elsevier Ltd. All rights reserved.
doi:10.1016/j.evalprogplan.2004.09.002

Control and Prevention (CDC) to eliminate racial and ethnic disparities in health outcomes, focusing on diabetes and related heart disease.

All three programs used logic models to shape their program monitoring and evaluation, and to help the grantees design, implement, and manage their programs. All three relied heavily on the W.K. Kellogg Foundation approach to logic model development (W.K. Kellogg Foundation, 2001). The process by which each program developed and used logic models is summarized briefly below.

Community Access Program. The Community Access Program (CAP), an open-ended, multi-site program, developed its comprehensive logic model from the ground up by asking the first two groups of funded sites (23 in federal fiscal year 2000, followed by 53 in 2001) to develop site-specific logic models. CHPSR worked with the grantees, providing a brief training in the logic model tool at their first meeting. Later, a dedicated CHPSR reviewer also provided individualized feedback to the year-two grantees (45 of the 53 communities as of the time of that review) about the comprehensiveness and quality of their logic models, for example, identifying missing links in the causal chain and key unexamined assumptions. Based upon the site logic models and other program documentation, as well as conversations with federal program staff, CHPSR (together with colleagues at the Rutgers Center for State Health Policy) developed a logic model for the entire CAP initiative. The resulting program-wide logic model formed the basis of the monitoring tool that was developed by the research team and used by DHHS. We later interviewed the year-two CAP sites about their experiences creating their logic models to assess the utility of the process for future grantees.[2] In subsequent years of the program, DHHS has continued to use logic models to monitor site progress, and has required CAP applicants to submit logic models as part of their grant applications.

New York City DOHMH Childhood Asthma Initiative. The City Department of Health and Mental Hygiene required its three evaluation communities to develop site-specific logic models. To assist them in this process, and to help shape the program evaluation, CHPSR first met separately with the leadership teams in those sites to provide an introduction to the concept of logic models and a definition of terms. We then led the participants in a structured discussion, beginning with an articulation of the intended long-term impact of the intervention, and then identifying the resources, activities, outputs, and outcomes that were necessary to achieve these results. Based upon this discussion, the research team then created a draft model, which we shared with each site at a second meeting. In this second round, the participants refined the model to ensure that it reflected their program, and began to identify the strengths and weaknesses of the underlying program theory and assumptions. Over the same time period, CHPSR worked through a similar process with the City Department of Health and Mental Hygiene. The resulting logic models were used to shape the program evaluation, to understand the extent to which there was consensus about the model within each community, and to ascertain the degree to which the community models were similar to or diverged from the DOHMH program-wide model.

Bronx Health REACH. From the beginning of the REACH program, the CDC emphasized the use of logic models as a tool for planning and as a way to identify and measure interim outcomes. With the encouragement of the CDC program staff, each of the Bronx Health REACH coalition's working groups, with the assistance of CHPSR, developed logic models for its programmatic component: the Nutrition and Fitness Program, the Faith-Based Outreach Initiative, the Community Health Advocacy Initiative, the Public Education Campaign, and the Legal and Regulatory Initiative. The steering committee of the coalition simultaneously created a logic model for the entire initiative. Together, these logic models were used to plan activities, set goals, and develop monitoring tools. The coalition leadership and staff also used the logic models to develop an annual work plan for the coalition, to shape the contracts with the community partners, and to report on program changes and progress to the CDC.

2. Findings

2.1. Building consensus and fostering collaboration

Many logic model proponents believe that the process of developing a logic model forces participants to articulate and clarify the project's goals and assign responsibility for tasks and outcomes, thereby helping to foster collaboration and build consensus (Goodman, 1998; McLaughlin & Jordan, 1999; Millar et al., 2001; Patton, 1986; Weiss, 1995). In our experience, these benefits tend to accrue to coalitions that are already fairly strong and collaborative. As part of our process evaluations for the NYC Childhood Asthma Initiative and Bronx Health REACH, we assessed the strengths of the participating coalitions by examining the members' sense of shared vision, their degree of participation in decision-making, and the partnership's lifespan and growth (see, e.g., Lasker & Weiss, 2003). The strong coalitions with which we worked tended to view the logic model development process as an opportunity to build consensus. For example, in the NYC Childhood Asthma

[2] In this 45-minute telephone interview, we asked the project directors detailed questions about the process by which their coalition's logic model was developed (e.g., who was involved, how was participation determined, how many and what kinds of meetings were devoted to this task, what was hard about the process and what worked well); their perception of the usefulness of the logic model development process for program planning, management and evaluation (e.g., was any aspect of the project changed as a result of the process, is the logic model currently being used in any way, has the coalition referred back to it since it was completed); and their suggestions for improvement and future use by other CAP grantees.

Initiative, the strongest coalition included representatives from many of the community partners in their logic model development process. The lead agency subsequently presented the program logic model at a community meeting to elicit feedback and create consensus, and later independently used a collaborative logic model development process to design their program plan for the following year. Similarly, Bronx Health REACH's strong coalition encouraged a high degree of participation among their members in the logic model development process, and used the process to develop mutually agreed upon annual goals for the partners' subcontracts. By contrast, in the weakest coalition participating in the Childhood Asthma Initiative only members of the lead agency attended the two logic model development sessions, and we found it difficult to get them engaged in the process beyond listing their program activities.

Using logic model development to foster collaboration can be challenging for organizations that are stretched thin in terms of their resources, or spread wide in terms of the location of their members. In the CAP initiative, one of the explicit goals for the logic model development process was to strengthen the collaboration among the different public and private sector organizations participating in each site's project. Yet most of the sites we interviewed did not place high priority on involving coalition members in the initial development of the draft. Generally, staff developed a draft model and then shared it with a wider circle of coalition members. Several sites explained that their coalition members were geographically dispersed and difficult to convene. Many partners were already stretched thin in implementing the project, and the staff was reluctant to burden them with this additional task. However, those sites that engaged a collaborative logic model development process (six of the 45) uniformly characterized it as positive. Several noted that the collaboration created a shared understanding of how and why the Community Access Program was expected to work—and what outcomes it was expected to achieve—given its resources and planned activities. Those that engaged in such a collaborative effort tended to submit more complete models, perhaps because of a wider range of input and scrutiny, and perhaps because they gave the process greater priority.

Collaboration in developing logic models can also be challenging for coalitions that comprise a diverse group of organizations and individuals, even if the coalition is strong and geographically compact. For example, the logic model development process in Bronx Health REACH was very collaborative in nature, including an extraordinarily diverse group of coalition members, ranging from highly educated professionals to grass roots participants with much lower levels of formal education. There was also a range among the participants in terms of their role in the initiative, from program planners and evaluators to program implementers and managers. Under these circumstances, the level of interest in, and patience for, logic model development varied. Through trial and error, the coalition discovered several strategies to ensure that the process was both useful and collaborative. First, logic model development worked best in small, interactive group settings. At full coalition meetings, it was impossible to keep everyone engaged, and difficult to pitch the discussion at a level that was comfortable and productive for all attendees. Second, the symbols and the language often used in logic models were unfamiliar and daunting to many. For example, many logic models make a distinction between outputs ("the direct products of program activities and may include types, levels and targets of services to be delivered by the program") and outcomes ("the specific changes in program participants' behavior, knowledge, skills, status and level of functioning") (W.K. Kellogg Foundation, 2001, p. 2). This distinction was not intuitive for many, regardless of educational level, and was difficult for most of the participants to grasp. (This distinction also proved to be elusive and troublesome for the majority of CAP communities.) Ultimately, in working with the Bronx coalition, we abandoned this terminology, as well as any complex graphics, and decided simply to link activities to a range of results, which, in turn led to other results.

2.2. Strengthening program design by assessing underlying assumptions

Assumptions play an essential role in the logic model: to design a project that has a good chance of success, project planners need to articulate what they expect to be true, so they and their colleagues can highlight any gaps in the logic of the program and assess whether this assumption will, in fact, turn out to be valid (Renger & Titcomb, 2002; Weiss, 1995). Those community initiatives that identified the underlying assumptions for at least part of their programs found this to be the most valuable part of the logic model development exercise. In several cases, it was through the articulation of the underlying assumptions that the sites were able to identify gaps in their program, sharpen their thinking, or build a credible case in support of the program concept.

Several of the communities with which we worked changed staffing plans after examining their program assumptions. For example, the Bronx Health REACH coalition redirected resources in order to hire a part-time coordinator for their Faith-Based Outreach Initiative after identifying and then questioning their assumption about the capacity of small, local churches to carry out the program. Similarly, one of the CAP communities, after examining their assumptions about the relationship between quality management and clinical care coordination, decided to change their staffing plans, creating two senior level positions instead of the one originally planned.

Others used their examination of program assumptions to identify flaws in the program design or implementation. For example, one CAP coalition realized that they had "assumed that knowledge was in place [for one of their partners] that

was not there" and recognized that these "partners were not yet ready to share information." By reviewing their program assumptions, the Bronx Health REACH coalition recognized the disjuncture between their long-term goal of community-wide change and mobilization, and small size of their programs. This process led the coalition to refocus its efforts on replication of their programs in other institutions and expansion of their partnerships to support community-organizing efforts. The coalition also realized that their logic model assumed that coalition partners and other participating institutions would change their policies and practices related to diabetes prevention and detection. By articulating this program assumption, the coalition leadership recognized that such changes would be unlikely to occur absent specific supporting resources, activities and goals.

Although the communities that articulated underlying program assumptions universally found this to be the most useful part of the logic development process, in our experience, very few sites complete this task. Only six of the 45 CAP logic models that we reviewed submitted fully realized sets of assumptions. For example, often the most unreliable assumptions are those that state that people will, without coaching, change their work or care-seeking habits because of the existence of a new type of technology. Over 70% of the year 2001 CAP sites (33/45) planned some sort of patient information system or computer-based referral system as part of their CAP project. Of these, less than half (15) included in their logic models any explicit assumptions that providers or patients will use the new system. This raised concerns that the sites had not planned fully for the implementation of new technology or anticipated common obstacles.

Given how useful this process can be, why is it that so few communities identify a full set of program assumptions?

Often when funders require the development of a program logic model, the emphasis is on laying out the activities and expected outcomes. Although articulating the underlying rationale for a program is critical to its success, it is frequently a second-generation or post hoc activity—one that is never quite completed. In addition, the discussion of program assumptions seems to be the place where there is the biggest disconnect between planners/evaluators and program managers/implementers. Often managers are willing and able to layout activities and expected outputs, but the time-consuming process of articulating and assessing the strength of assumptions through a literature review or discussion with experts can feel like a distraction (Renger & Titcomb, 2002). As one program manager said, "(we) are so busy implementing, implementing, implementing." In the few instances where sites looked to the literature or best practices to test the strength of their program assumptions, the exercise did not prove useful. In the case of Bronx Health REACH, few resources seemed relevant to the program's ambitious goals. Only once the coalition faced the nitty-gritty aspects of program implementation did the need to explore best practices become evident. In the case of the NYC Childhood Asthma Initiative, a review of the literature on community health worker models was undertaken well after the program had been designed and the contractual arrangements set.

Several communities expressed concern about the potential risks of critically examining program assumptions. Individuals and organizations may resent being asked to question long-held beliefs, or to provide evidence to support their work. Moreover, the questioning of program assumptions may lead to the need to reallocate resources and responsibilities that have already been allotted. Such a process potentially raises issues not only within the community coalition, but also with funders. One site that modified their approach after examining their assumptions noted that "it is dangerous to do one of these [logic models] after the grant has been funded. By doing this, you may spot gaps in your original application and then you worry about telling the program office that you can't do what you said you would."

In some instances, community partnerships can feel that it is not their role to examine or question the program assumptions. For example, in the NYC Childhood Asthma Initiative, the City Department of Health and Mental Hygiene, through its contracting process with the communities, was quite prescriptive about program activities. As a result, all of the sites were clear about their activities and about the long-term results that were expected from the program. But they were less clear about how the former would lead to the latter. In all three communities with which we worked, the coalitions seemed to take the causal connections as a given. Perhaps because they did not design the intervention, they did not examine the theory by which their activities were to lead to desired outcomes. Since the activities and the outputs were prescribed, the sites did not see the utility of engaging in a discussion of the assumptions that underlay the intervention. Although some of the communities recognized that questions about program assumptions were relevant to an understanding and assessment of the City-wide Asthma Initiative, they saw their own role as limited to program implementation, rather than design and reflection.

2.3. Facilitating communication

Many of the community coalitions that developed logic models identified an unexpected side benefit: by having a logic model that succinctly laid out program activities and expected results, the coalition was able to communicate more effectively with both internal and external constituencies (see McLaughlin & Jordan, 1999). For example, one CAP site commented that by articulating the assumptions of their program, they were able to identify what they "needed from each of the partners." Having a logic model in hand then gave them "credibility in asking for it." Another coalition used the logic model as a clear summary of

the project that "allows everyone to see their role." Several used their logic models to develop and communicate work plans. One CAP community reported that they also used their logic model for staff orientations.

Across all three initiatives, community coalitions used their logic models to explain their programs to funders and prospective supporters. For example, one of the CAP grantees found their logic model to be a useful tool in their application for state and federal waivers. They noted that the logic model was particularly helpful with funders and government agencies that are outcome-oriented, since it makes clear that "you expect to achieve interim outcomes and milestones." This same community used their logic model to identify separate programmatic components that might be of interest to specific foundations. Another community noted that by showing their assumptions, they were able to make clear to their constituencies and to government officials that they did not have to reduce quality in order to reduce costs.

Because the CAP initiative was so large and open-ended, the logic models provided a way to develop a typology of program approaches that categorized the many diverse interventions into overarching and succinct descriptions with articulated outcomes. This allowed the DHHS to explain the program to external audiences, including Congress, and to link communities that were undertaking similar efforts.

In several instances, the development of logic models also served to clarify expectations and identify differences between the funder's priorities or perceptions of the program and those of the community. For example, in the NYC Childhood Asthma Initiative, although the community logic models showed a clear understanding of what was expected of them, in a few instances, the logic models served to highlight differences in emphasis. For example, the City Department of Health and Mental Hygiene sought to "change…standard operating procedures of community institutions." In the site logic models, however, the changes in community institutions focused more on enhancing staff knowledge and providing services, and less on changing policies or procedures. Similarly, in the Bronx Health REACH initiative, the logic model for the Faith-Based Outreach Initiative served to clarify to the CDC that the primary purpose of the program was not individual behavior change among church members (for example, weight loss), but community mobilization around racial and ethnic disparities in health, and access to healthy food and health services.

3. Lessons learned

Part of the difficulty of logic model development may also be its greatest strength: that it forces planners and managers to think of their projects in a conceptually different way. In its essence, use of the logic model guides program participants in applying the scientific method—the articulation of a clear hypothesis or objective to be tested—to their project development, implementation, and monitoring.

Training in this new way of thinking takes time. In our experience in working with the communities across these three programs, the development of a strong logic model is not a quick and easy process. We have seen a wide variation in completeness, coherence, sophistication of thought, and reflection in the logic models that we have reviewed. For example, in the CAP initiative, where only a few hours of centralized technical assistance was provided with minimal follow-up, about 40% of the sites (18/45) submitted logic models that reflected an understanding of what a logic model should be and a thoughtful effort to display their plans for their project in this new way. The communities with which we worked as part of the NYC Childhood Asthma Initiative and Bronx Health REACH also struggled, particularly with the task of developing a full set of underlying program assumptions. As with the use of any complex tool, the effective use of logic models by community coalitions requires training, time and resources. Hands-on technical assistance can allow the value of the logic model to become more apparent to grantees, and result in stronger projects that are more likely to achieve their goals. Ideally, those providing technical assistance should remain involved with the project and available to revisit and help revise the models that are developed.

To overcome the resistance of those who may feel that the logic model exercise is a distraction from the true work of program implementation, or who are intimidated by its jargon, those providing support and technical assistance need to be flexible enough to allow the community to adapt the tool to meet its needs. In addition, the language and the models themselves must be kept simple enough to convey the program's underlying rationale, not "shrouded" by "overlaying all the elements of evaluation" (Renger & Titcomb, 2002, p. 495). Renger and Titcomb suggest, for example, that a program's underlying rationale can be most simply discerned by repeatedly asking the question "why," thereby allowing program planners and evaluators to identify the causal factors that are being targeted.

Because developing and questioning the underlying assumptions of the program model can be threatening to participants, it is important that the process be done in a sensitive and collaborative way, so that it strengthens the program without dampening enthusiasm or diminishing gut-level commitment. Community coalitions also need to understand the potential for using logic models directly to further program implementation, through, for example, work plan development and communication with potential supporters.

Funders need to be aware that program structures can inadvertently militate against grantees' taking the logic model development process seriously and being willing to assess and question underlying assumptions. In addition to providing adequate time and resources to support the process,

funders should emphasize the importance of articulating assumptions, integrate the use of logic models into periodic program reviews, and allow their adaptation to local needs. Most importantly, since an in-depth examination of assumptions may well lead to program modifications, funders need to be open to such changes and have a system in place for reviewing modifications in program design.

Acknowledgements

We wish to thank two anonymous reviewers and our colleagues, John Billings and Carolyn Berry, for their thoughtful comments, as well the Community Access Program coalitions, the NYC Childhood Asthma Initiative partnerships, and the Bronx Health REACH coalition, with which we have been privileged to work.

References

Bickman, L. (1987). *The functions of program theory Using program theory in evaluation. New directions for program evaluation*, Vol. 33. San Francisco: Jossey-Bass.

Chen, H. (1990). *Theory driven evaluations: A comprehensive perspective*. Newbury Park, CA: Sage.

Chen, H., & Rossie, P. (1983). Evaluating with sense—the theory driven approach. *Evaluation Review*, *7*, 283–302.

Goodman, R. M. (1998). Principles and tools for evaluating community-based prevention and health promotion programs. *Journal of Public Health Management Practice*, *4*(2), 37–47.

Hebert, S., & Anderson, A. (1998). Applying the theory of change approach to two national, multisite comprehensive community initiatives. In K. Fulbright-Anderson, A. C. Kubisch, & J. P. Connell, *New approaches to evaluating community initiatives* (Vol. 2) (pp. 123–148). Washington, DC: The Aspen Institute, 123–148.

Kagan, S. (1998). Using a theory of change approach in a national evaluation of family support programs: practitioner reflections. In K. Fulbright-Anderson, A. C. Kubisch, & J. P. Connell, *New approaches to evaluating community initiatives* (Vol. 2) (pp. 113–121). Washington, DC: The Aspen Institute, 113–121.

W.K. Kellogg Foundation (2001). *Logic model development guide: Using logic models to bring together planning, evaluation, & action*. Battle Creek, MI: W.K. Kellogg Foundation.

Lasker, R. D., & Weiss, E. S. (2003). Broadening participation in community problem solving: a multidisciplinary model to support collaborative practice and research. *Journal of Urban Health*, *80*, 14–60.

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.

Millar, A., Simeone, R. S., & Carnevale, J. T. (2001). Logic models: A systems tool for performance management. *Evaluation and Program Planning*, *24*, 73–81.

Milligan, S., Coulton, C., York, P., & Register, R. (1998). Implementing a theory of change evaluation in the Cleveland community-building initiative: A case study. In K. Fulbright-Anderson, A. C. Kubisch, & J. P. Connell, *New approaches to evaluating community initiatives* (Vol. 2) (pp. 45–85). Washington, DC: The Aspen Institute, 45–85.

Patton, M. Q. (1986). *Utilization-focused evaluation* (2nd ed.). Beverly Hills, CA: Sage Publications.

Renger, R., & Titcomb, A. (2002). A three-step approach to teaching logic models. *American Journal of Evaluation*, *23*(4), 493–503.

Torvatn, H. (1999). Using program theory models in evaluation of industrial modernization programs: three case studies. *Evaluation and Program Planning*, *22*, 73–82.

Weiss, C. H. (1995). Nothing as practical as good theory: Exploring theory-based evaluation for comprehensive community initiatives for children and families. In J. P. Connell, A. C. Kubisch, L. B. Schorr, & C. H. Weiss (Eds.), *New approaches to evaluating community initiatives: Concepts, methods, and context* (pp. 65–92). Washington, DC: The Aspen Institute, 65–92.

Wholey, J. S. (1987). Evaluability assessment: Developing program theory. In L. Bickman, *Using program theory in evaluation. New directions for program evaluation* (vol. 33). San Francisco: Jossey-Bass.