Issue Brief

Felicia Hurwitz and Andrew Burwick

Using Logic Models to Guide the Planning and Evaluation of Complex Initiatives

This brief highlights how logic models can be an effective tool for guiding the planning and evaluation of complex initiatives, especially those that aim to promote equity for children and families and ultimately improve child well-being.

- Building **logic models** can support agencies in their quest to make change through complex initiatives, including those focused on **equity** and child **well-being**.
- Logic models are a **visual representation** of the underlying logic behind an initiative and serve as a demonstration of **connections** between **resources and assets invested**, and their ultimate **results**.
- Logic models must clearly specify each component and show the **pathways between planned activities and their intended outcomes** in a way that is easy for the intended audiences to understand.
- To effectively use logic models, programs **must identify measures to track progress** (in other words, change over time).
- To help measure outcomes with a focus on equity, agencies developing logic models should look for data that they can **disaggregate at the necessary levels** (for example, by race and ethnicity).
- When existing measures are not available, agencies can **create a plan to obtain the data needed**. This process can occur through conversations with stakeholders to **gain access to data** that might not be readily available or by **collecting new data**.

Health equity means that everyone has a fair and just opportunity to be as healthy as possible. Meeting this goal requires removing obstacles to health, such as poverty and discrimination, and their consequences (Braveman et al. 2017). Promoting health equity is a top priority for organizations across the United States, including the Robert Wood Johnson Foundation (RWJF).

RWJF funded the Harnessing Opportunities for Positive Equitable Early Childhood Development (HOPE) initiative as a way to make progress toward health equity for young children and their families. The HOPE initiative aims to influence systems and services at the community and state levels to promote equitable access to services and improved equity in outcomes for young children and their families. The Foundation funded three grantees to leverage their expertise in different areas and work together in at least one state to address obstacles to health equity. In November 2017, Mathematica joined the HOPE team to provide technical assistance to three HOPE grantees to help them align their project goals and identify a common set of outcome measures.

It can be challenging to define clear objectives for and measure the results of complex initiatives such as HOPE that aim to achieve change at the community and state levels. Initiative leaders and

funders can face critical questions such as: ***What does it mean to promote equitable opportunities for heath, development, and well-being at the community and state levels? How can groups define the processes for achieving these goals and assess whether they are working?*** Addressing these questions requires attention to a wide range of community conditions and outcomes for children and families and collaboration across multiple agencies at the community and state levels. Stakeholders must also consider the array of community conditions that can affect outcomes for children and families.

Mathematica's work with RWJF grantees suggests that logic models can be a useful tool for defining the key elements and intended outcomes of initiatives, including complex initiatives that promote equity. In the first part of this brief, we summarize key considerations for creating logic models for complex initiatives.

We then discuss a central challenge that can arise in developing logic models for initiatives focused on equity: identifying measures that are useful for tracking progress. To frame the discussion, the brief uses one dimension of equity, access to resources and services, as an example. This guidance can benefit community organizations, funders, and other stakeholders as they work to define and assess strategies for promoting equity in child well-being.

Logic models as a tool for initiatives that aim to promote equity

Logic models, and the process of developing them, facilitate thinking, planning, and communicating about an initiative's objectives and actual accomplishments (W.K. Kellogg Foundation 2004). Logic models visually represent the underlying logic behind an initiative. They demonstrate the connections between resources and assets invested (inputs), and activities, outputs, and expected results. These results include short-, intermediate-, and long-term outcomes. Given the complex nature of many initiatives, programs develop logic models to ensure that project staff, evaluators, and other stakeholders agree on planned activities and

expected outcomes before launching an evaluation (Montague and Porteous 2013). In addition, the process of developing a logic model can serve as a participatory learning opportunity, supporting efforts to accomplish the following:

- Structure early conversations among stakeholders about desired outcomes and activities

- Develop a common language among stakeholders

- Clarify knowledge about what works and why

- Develop improved design, planning, and management skills (Knowlton and Phillips 2013).

To have the benefits described previously, a logic model must clearly specify each component. It also must show the logical pathways between what the planned activities will include at the various levels planned, such as the state, community, and family levels, and their intended outcomes. All of this must occur in a way that is easy for stakeholders and other audiences to understand. Logic models typically include the following components:

- **Inputs** are the human, financial, organizational, and community resources and assets available to direct toward doing the work and achieving goals.

- **Activities** are the processes, strategies, and services that an initiative uses intentionally to bring about changes or results. For initiatives that focus on equity, activities might seek to engage a particular group, such as a low-income or minority group.

- **Outputs** are the direct products of program or initiative activities, which indicate whether activities were performed as planned (for example, duration and intensity of services, and tools created). In this way, outputs serve as an important link between the activities and the outcomes.

- **Outcomes** are the benefits or changes in behaviors, knowledge, skills, levels of functioning, and fundamental changes in organizations or systems as a result of program or initiative activities. For initiatives that focus on equity, intended outcomes might focus on improvements especially for groups that have historically faced disparities in health, education, well-being, and other areas.

Developing logic models should be an iterative process. The process can feature several rounds of discussions among stakeholders and several revisions of the model to reach consensus on key components.

Because complex initiatives can operate on several levels, it can be challenging to create a logic model that conveys the plans for the initiative in a succinct and focused way. There are several important factors to consider when creating a logic model for a complex initiative:

- **Clearly describing specific inputs, activities, outputs, and outcomes.** Logic models are most effective when components are categorized appropriately and described in a way that key stakeholders can understand.

- **Including logical pathways from activities to outcomes.** It is critical to have a logical flow between activities and outcomes such that stakeholders can understand how an activity will lead to a targeted outcome.

- **Breaking down steps for complex components.** Logic models for complex initiatives can encompass multiple activities that focus on different issues. The model's components should be organized in a way that helps stakeholders understand how the elements of the model connect to produce intended outcomes.

- **Clearly specifying elements within the logic model to make sure they are easy to interpret.** Descriptions of activities should be explicit to stakeholders. For example, an activity might be to *organize a meeting* to meet a particular goal.

- **Including the most important outcomes targeted by the particular initiative.** The long-term outcomes should be measures that achieve the given initiative's ultimate goal, such as improved child and family health and well-being and reduced inequity. Intermediate outcomes should indicate progress toward long-term outcomes.

- **Including a clear time frame for outcomes (short-term, intermediate, and long-term).** There should be clear information on when stakeholders expect to achieve outcomes. All involved should agree on a definition for each outcome's time frame (short-term, intermediate, and long-term.)

Figure 1 on page 4 provides an example of the types of information that a logic model for a complex initiative could include, and a pathway from activities or strategies to outcomes.

Tracking progress over time

Identifying or defining relevant outcomes and measures for tracking progress is critical to developing a logic model and achieving intended goals. This step can also be especially challenging in the context of a complex initiative.

Certain types of measures are important for tracking changes related to equity. One example is measures that address *access to services*.[1] Access includes many dimensions. For initiatives that focus on equity, access to services could encompass such dimensions as service availability, appropriateness, and affordability. In addition, measures of access can provide information about a range of services, depending on the focus of the initiative. For example, in an initiative that focuses on improving health equity for families with young children, relevant services might include high quality early care and education (ECE), maternal health care, pediatric care, and other services. Changes in the numbers of children and families receiving services and reductions in disparities across different groups of families can show progress toward equity in access over a designated time period.

After defining a relevant outcome measure, it is important to identify the *types of data* available to track that measure. The availability of relevant data can vary across states and communities. There might be less granular data available from smaller communities within states, For example, it might be harder to find information about specific types of services, such as pediatric visits, in a smaller community because the survey data might not represent the relatively small number of health care providers. In addition, the data might not represent communities that have the fewest resources, as they might lack the resources to collect and maintain information about the children and families who live in their communities.

Figure 1. Examples of logic model components for complex initiatives to promote equity

Example inputs	Example activities	Example outputs	Example short-term outcomes (within 1 or 2 years)	Example intermediate outcomes (within 3 to 5 years)	Example long-term outcomes (within 5 to 10 years)
• Organizations and entities partnering in the initiative • Staff to implement the initiative • Community networks of families and service providers • Financial resources to support initiative activities • Data systems	**Activities to align priorities among community and state policymakers and other stakeholders** • Organize meetings of state- and community-level policymakers • Organize meetings of other stakeholders, such as parents and service providers • Create resources and tools to support ongoing communication **Activities to assess community needs and disparities** • Access and review data sources • Conduct analyses of available data • Identify gaps in data (for example, lack of data for some communities) • Complete community needs assessments with input from parents and other stakeholders **Activities to develop new policies and action plans** • Work with stakeholders to develop draft policy proposals and community plans • Review proposals and plans with community- and state-level stakeholders • Create and implement strategy to communicate and support adoption of proposals and plans	**Alignment and communication among policymakers and stakeholders** • Regular communication among policymakers and stakeholder groups • Statements of support for initiative goals from policymakers and stakeholders • Input from community and state policymakers and stakeholders on developing policy and action plans **Findings from data analyses and needs assessments** • Summaries of findings from data analyses that identify service gaps and disparities • Summaries of findings regarding gaps in data and potential steps to address gaps • Reports of community-level needs assessments **Policies and action plans that reflect community priorities and identified needs** • Draft policy proposals and plans created to increase service access for underserved groups and communities • Proposals and plans communicated to state- and community-level policymakers and other decision makers • Ongoing strategic communication with decision makers and others to support adoption of proposals and plans	• Increased awareness among policymakers of the need to prioritize equity and address disparities in service access that affect specific population groups and communities • Increased understanding of existing disparities in service access or use • Increased understanding of community members' experiences and priorities regarding service access • Steps taken to expand data collection in communities that are unrepresented in existing data sources • Communities adopt action plans to address disparities and promote equity • Policymakers and other decision makers consider and adopt proposals to address disparities in access to services within targeted communities • Proposals and plans influence discussions regarding funding allocations for services	• New policies adopted to address disparities in service access across communities • Services for children and families expanded within specific communities (for example, increased availability of providers offering prenatal care to low-income families; increased number of licensed ECE providers accepting child care subsidies) • Increased availability of data to monitor access and use of services in communities facing disparities • States and communities allocate funding to support sustainable expansion of services in communities facing disparities	• Reductions in disparities in service access among children and families in targeted communities • Greater equity in health for children • Greater equity in educational attainment for children • Improved family well-being

Continuing with the example of *access to services* for families with young children, Table 1 provides examples of data sources available at both the national and state levels that an initiative could use to track changes in this outcome. Some national data sets include information for each state, whereas state-level data sets include data for one particular state. The list of data sources in Table 1 on page 5 is not exhaustive; rather, it illustrates the types of data that stakeholders could consider as they work to develop their own logic models for initiatives that promote equity. Also included are key considerations for selecting existing measures.

State-level data are one source of information on outcome measures. New Jersey and New York offer examples of data sources available at the state and local levels. Potential data sources from these states include the New Jersey State Health Assessment Data, the Pregnancy Risk Assessment Monitoring System in both states, and the New York State Maternal and Child Health Dashboard.

National-level survey and administrative data can also provide information relevant to equity outcomes. The National Survey of Children's Health and the Head Start Program Information Report are examples of a national survey and an administrative data source, respectively, that could include data on outcomes of interest.

Table 1. Examples of outcomes, measures, and data sources related to equitable access to services

Outcomes	Measure	Possible types of data	Examples of data sources	Description of data sources	Considerations for using data sources
Increase access for young children and families to preventive medical care	Proportion of children with access to wellness checks or dental care	Data from state and federal reporting systems and household surveys	National Survey of Children's Health (NSCH)	The NSCH provides information about children's physical and mental health in the United States at both the national and state levels. Data are disaggregated by geographic location and race and ethnicity. More information is available at http://childhealthdata.org/learn/NSCH.	Data disaggregated by geography and race and ethnicity might be used to identify groups that currently have low levels of access to care such as medical homes or dental visits and high use of hospital emergency services and to measure changes in these outcomes over time.
			New Jersey State Health Assessment Data (NJSHAD)	The NJSHAD provides health information about children and adults in New Jersey at the state and local levels. Data are disaggregated by geographic location and race and ethnicity. More information is available at: https://nj.gov/health/chs/njshad/index.shtml.	
			The New York State Maternal and Child Health (MCH) Dashboard	The New York State MCH Dashboard is an example of state-level data that provides health information about women, infants and children within the state of New York. Data are disaggregated by geographic location and race/ethnicity. More information can be found at: https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/mch_dashboard/mch_dashboard&p=abt.	
	Proportion of pregnant women completing pre- and post-natal visits	Data from state and federal reporting systems	Pregnancy Risk Assessment Monitoring System (PRAMS)	PRAMS is an example of state-level data available about maternal health behaviors and access to health care before, during, and after birth. The data are disaggregated by geographic location and race and ethnicity. Many state and local agencies have used PRAMS to explore disparities in health outcomes. For examples of these analyses, see: www.cdc.gov/prams/state-success-stories/data-to-action-success.html.	Data from PRAMS or might be used to analyze low-income mothers' use of health services during pregnancy and identify changes over time.

Table 1. Examples of outcomes, measures, and data sources related to equitable access to services *(continued)*

Outcomes	Measure	Possible types of data	Examples of data sources	Description of data sources	Considerations for using data sources
Increase access for young children and families to early childhood education (ECE)	Number of ECE programs operating in specific communities	Federal or state administrative data	Head Start Program Information Report (PIR)	Head Start PIR is an example of national-level data available about services provided by Early Head Start (EHS) and Head Start (HS). Data are available for all EHS and HS programs throughout the United States and data can be reported at the local, state, and federal levels. Data are disaggregated by geographic location. More information is available at: https://eclkc.ohs.acf.hhs.gov/data-ongoing-monitoring/article/program-information-report-pir.	Indicators from these data sources or additional analysis of state and local data might identify communities with a low supply of affordable care or where parents are less likely to access subsized care and to track changes in access to care and subsidies over time.
			KIDS COUNT Data Center	KIDS COUNT Data Center provides data on numerous indicators related to child and family well-being, including early childhood enrollment in preschool. The data are disaggregated by geographic location and race and ethnicity. More information is available at: https://datacenter.kidscount.org/.	
			Child Care Development Fund data	The Child Care Development Fund data are an example of national- and state-level administrative data that provide information about child care subsidies provided to families. The data are disaggregated by geographic location. More information is available at: https://www.acf.hhs.gov/occ/resource/ccdf-statistics.	
		Data visualizations	Center for American Progress analysis of child care deserts	The Center for American Progress analysis of child care supply uses data from state child care licensing agencies to identify geographic areas without child care providers or with a low number of providers relative to the number of young children. Data are disaggregated by geographic location and race and ethnicity. More information is available at: https://www.americanprogress.org/issues/early-childhood/reports/2018/12/06/461643/americas-child-care-deserts-2018/.	

Whether using national- or state-level data, stakeholders must pay attention to special considerations while selecting measures. For example, it might be important to understand how to use a data source to measure changes in community-level outcomes (and inequities across communities) over time. Stakeholders should also consider how to combine existing data sources to provide useful information. For example, if access to ECE services is an outcome of interest, an initiative might use multiple data sources to address the availability of high quality programs for children in a geographic area; the availability of different types of care (for example, home- or center-based care); and the distance that families from various communities might have to travel to access ECE.

The need for disaggregated measures

Identifying possible measures is just the first step. It is critical to determine the level of data available within each measure and to understand if and how you can disaggregate the data. For example, can you organize the data into subgroups of interest, such as race and ethnicity, geography, socioeconomic status, disability status for adults and children, legal status, and primary language? Disaggregated data are critical for understanding the nature of disparities among different groups of people and for measuring changes in outcomes for disadvantaged groups (Annie E. Casey Foundation 2016). For example, disaggregated data can help determine which subgroups of the population face disparities in access to medical care or ECE. In addition, disaggregated data can help identify the types of families who are least likely to access formal child care or locations where child care is least available (Harding and Paulsell 2018).

One challenge in defining measures related to equity is that key data elements might not be widely available. For example, data might not be disaggregated by key factors, such as race and ethnicity, income, or geographic region. Data could be available for only a subset of a state population, such as a particular community, or the data might be missing particular variables of interest related to child health and well-being, such as access to quality health care for children.

When existing data do not align well with an initiative's intended outcomes, an initiative's leaders can consider creating an alternative plan to obtain the data needed. For example, a state agency might have data that are not publicly available but that an initiative can use with the agency's approval. Or, it might be possible to collect new data. However, stakeholders must weigh the potential value of collecting data tailored to the needs of the initiative against the costs, effort, and burden on respondents that data collection involves. Ultimately, exploration and advance planning could be required to ensure that data are available to track progress toward an initiative's intended outcomes. In general, measuring intended short-term and intermediate outcomes may be easier than measuring longer-term outcomes, which are often more broadly defined. However, progress on short-term and intermediate outcomes can be a signal that longer-term outcomes are more likely to be achieved.

Considerations for using logic models

Although logic models can be a useful tool for planning a complex initiative, they do have limitations. For example, logic models are set up linearly, which helps clarify the expected links between inputs, activities, outputs, and outcomes. Yet, complex initiatives do not always proceed in a linear way. It can be challenging to achieve progress toward expected outcomes, and improvements may occur in fits and starts.

Some flexibility in the specification of logic models may be necessary as an initiative develops, especially to reflect the participation and input of various stakeholders. The involvement of a range of stakeholders in the design and implementation of a complex initiative may be important to its success. A logic model's components might reflect this involvement, for example, by incorporating *activities* that involve collaborative planning through meetings with community members. An *output* of these activities might be revisions to the logic model itself in response to input gathered from community members.

Conclusion

Logic models are an important tool for documenting an initiative's objectives, aligning stakeholders' understanding of an initiative, and specifying how to measure progress toward an initiative's goals. Logic models can also assist in communicating with stakeholders and potential funders about an initiative's goals, activities, intended outcomes, and pathways to achieve them. Because community- and state-level initiatives to promote equity can be especially complex, leaders might find it helpful to develop succinct logic models and identify relevant measures of outcomes early in the process. These steps can support the implementation of the initiative, measurement of progress over time, and, ultimately, achievement of the goals of reducing inequities and improving child well-being.

Support for this brief was provided by the Robert Wood Johnson Foundation. The views expressed here do not necessarily reflect the views of the Foundation.

Endnote

[1] Saurman's (2016) definition of access includes key ideas such as awareness, affordability, accessibility, availability, accommodation, and acceptability.

References

Annie E. Casey Foundation. "By the Numbers: A Race for Results Case Study: Using Disaggregated Data to Inform Policies, Practices and Decision-Making." Baltimore, MD: The Annie E. Casey Foundation, 2016. Available at http://staging.aecf.org/resources/a-race-for-results-case-study-2/. Accessed May 2019.

Braveman, P., E. Arkin, T. Orleans, D. Proctor, and A. Plough. "What is Health Equity?" Princeton, NJ: Robert Wood Johnson Foundation, May 1, 2017. Available at https://www.rwjf.org/en/library/research/2017/05/what-is-health-equity-.html. Accessed May 2019.

Harding, J.F., and D. Paulsell. "Improving Access to Early Care and Education: An Equity-Focused Policy Research Agenda." Princeton, NJ: Mathematica Policy Research, 2018.

Montague, S., and N.L. Porteous. "The Case for Including Reach as a Key Element of Program Theory." Evaluation and Program Planning, vol. 36, no. 1, 2013, pp. 177–183.

Knowlton, L.W., and C.C. Phillips. "Introducing Logic Models." In The Logic Model Guidebook: Better Strategies for Great Results. Thousand Oaks, CA: Sage, 2013.

Saurman, E. "Improving Access: Modifying Penchansky and Thomas's Theory of Access." Journal of Health Services Research & Policy, vol. 21, no. 1, 2016, pp. 36–39.

W.K. Kellogg Foundation. "Using Logic Models to Bring Together Planning, Evaluation, and Action: Logic Model Development Guide." Battle Creek, MI: W.K. Kellogg Foundation, January 2004. Available at https://www.bttop.org/sites/default/files/public/W.K.%20Kellogg%20LogicModel.pdf. Accessed May 2019.