Ontario Health Team Logic Model Development Exercise Guide

Compiled by
K. McKellar

HSPN

HSPN Health System Performance Network

Health System Performance Network

The Health System Performance Network (HSPN) is a collaborative network of investigators, visiting scholars, post-doctoral fellows, graduate students and research staff working with health system leaders, and policy-makers to improve the management and performance of our health system. Building on Ontario's established record of performance measurement created by the 1998 ground-breaking Hospital Report Research Collaborative, the HSPN was established in 2009 and has built a track record in performance measurement, research, evaluation and improvement in Ontario with expertise in multiple domains of health system performance including perspectives of patients, providers, population health, and cost. The HSPN leverages its research and evaluation experience to assesses policy directions and organizational strategies to guide efforts to improve health outcomes and patient experiences of care while containing costs.

Funding

HSPN receives financial support from the Ontario Ministry of Health through the Health System Research Fund.

Suggested citation

McKellar K. Ontario Health Team Logic Model Development Exercise. Toronto: Health System Performance Network. 2020.

HSPN Health System Performance Network

Table of Contents

HSPN Health System Performance Network

Introduction to Logic Models

A logic model is a systematic and visual approach to presenting the relationships among the resources you have to operate your program, the activities you plan and the changes or results you hope to achieve. It provides a representation of program components, and although there are several different styles, they usually outline the inputs/resources, activities, reach/target population, outputs and outcomes.

Logic models can serve multiple purposes and are an important tool in both program planning and evaluation. In program planning, logic models can support census building by bringing stakeholders together around the fundamental assumption of the program. They support a shared understanding of program goals and approaches, relating activities to projected outcomes, and resources to activities. Logic models can help management maintain accountability. As an evaluation tool, logic models support program monitoring, ensuring the program stays on track, does what it says it will do, and achieves the intended goals. Logic models guide evaluation questions and measures, or indicators used to identify program success. Logic models are not designed to be static and should be responsive to program modification.

A note on terminology: logic models are often referred to by other terms (e.g. logical framework/log frame, program logic, theory of change). We consider a theory of change (also referred to as program theory, or driver diagram) to be a distinct tool from the logic model. The critical difference is that theories of change make explicit the mechanisms of how a program works—or the pathways that bring about change (i.e. what is happening under the surface that enables program activities to lead to outcomes). While there are many types and forms of logic models, we will be using the term *logic model* to refer to the first template below which lists the components of the logic model and the term *pathway model* to refer to the second template below which assigns dependencies amongst the components.

Instructions[1]

Step 1: Start with *Impact*: What is the goal of the program? What issue are you trying to address?

- *Impact* is the fundamental change occurring in organizations, communities or systems as a result of program activities.
- Example: Reduce readmission frequency and duration for patients with COPD and multiple comorbidities.

Step 2: Move to *Outcomes*: Get more specific about what you are trying to achieve. What changes do you expect from the program? Consider shorter- and longer-term outcomes. Specify the timeframe for each outcome.

- *Outcomes* are the **specific** changes in program participants' behaviour, knowledge, skills, status and level of functioning. *Outcomes* should be **SMART** Specific, Measurable, Action-oriented, Realistic, and Timed
- Example: Improved medication management, Decreased severity and duration of COPD exacerbation

[1] Adapted from: WK Kellogg Foundation (2004)

Step 3: Next, describe *Activities*: What activities need to happen to achieve the desired outcomes? What processes need to be in place?

- *Activities* are the processes, tools, events, technology, and actions that are an intentional part of the program implementation. These interventions are used to bring about the intended program changes or results
- Note that the target population and participants are often included separately in and logic model. Here we would like you to include this information as part of the activities and outcomes where appropriate.
- Example: Identify patients at risk (Accessing X service or with three or more comorbidities); develop individualized action plans (for X patients)

Step 4: Then describe *Resources*: What resources are needed to enable the activities?

- *Resources* are often referred to as *Inputs* in a logic model
- They include the human, financial, organizational, and community resources
- Example: Nurse practitioner, Electronic medical records

Step 5: Move to *Outputs*: Once completed or underway, the activities will produce evidence of service delivery. Specify the timeline of the Output (what is the measurement period)

- *Outputs* are the direct products of program activities and may include types, levels and targets of services to be delivered by the program.
- Example: attendance of X staff at education program; X# patients enrolled per Y time in the program, electronic medication reconciliation (X patients per Y time)

- Note regarding outputs versus outcomes: Outputs tend to be more immediate and more process-oriented; they help to answer the question of if the program is being implemented as intended (i.e. they help to monitor the program implementation). However, outputs such numbers of participants reached or the numbers of training sessions are not results themselves. Outcomes can be considered as the results or effects of the program. Outcome measures will help us to see that the program is making a difference.

Step 6: Review each area. Do they align with each other? Is there a logical pathway from *Resources* to *Activities* to *Outputs*, then *Outcomes* and *Impact*? Use the pathway logic model template (below) to explore the relationship between different program components. This is a type of logic model that uses boxes and arrows to be explicit about the linkages between program components. It is distinct from a “patient pathway” or “clinical pathway”. Note that boxes can be added/removed, and arrows can be altered to reflect your program. (.ppt available)

Next Steps - Measurement:

Once a logic model has been developed, it is time to get explicit about measurement, data sources and the process needed to monitor and take action.

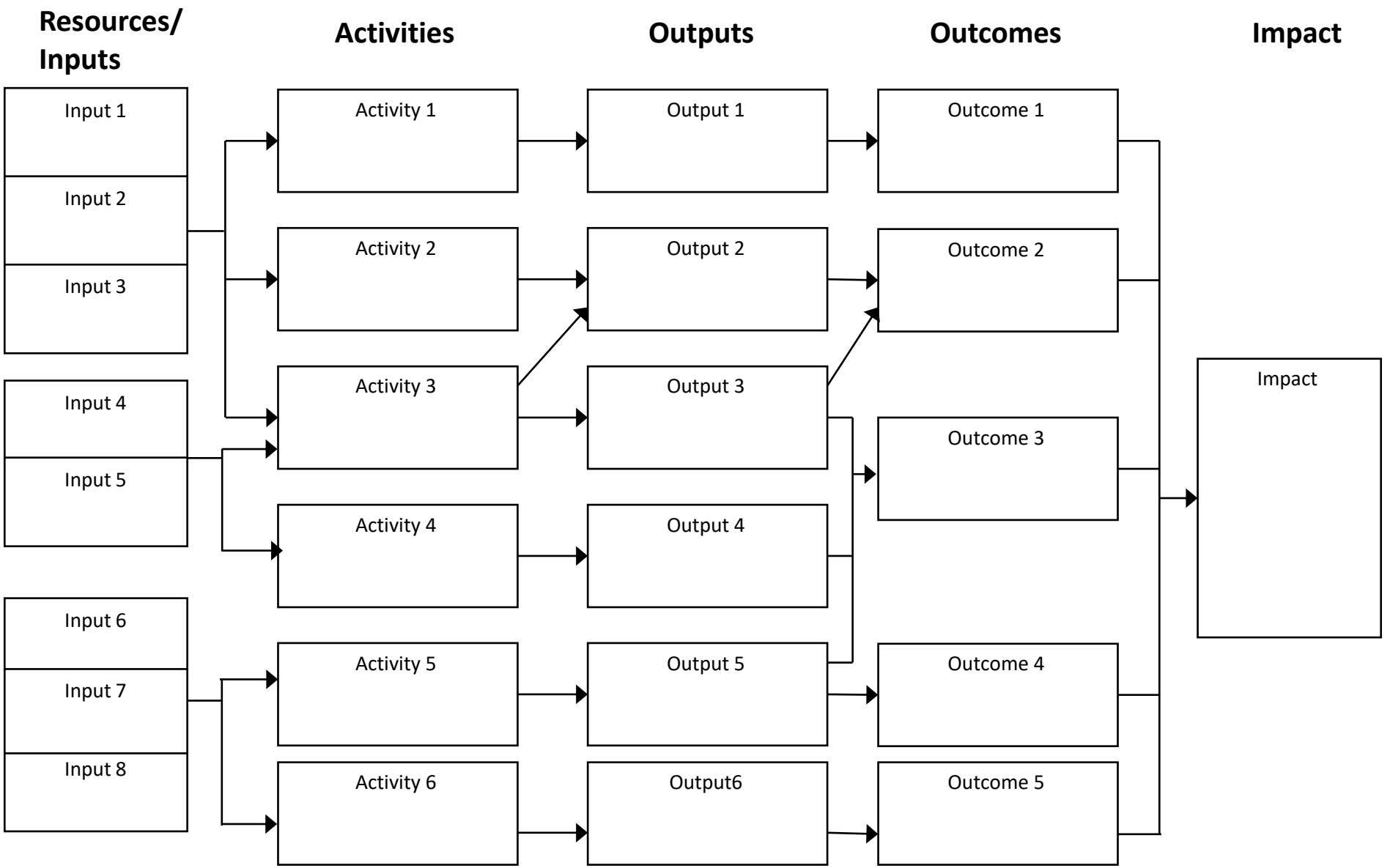
HSPN Health System Performance Network

Sample Logic Model Development Template

Resources/Inputs	Activities/Strategies	Outputs	Outcomes (Short & Long-Term)	Impact
What resources will enable the set of activities?	In order to address the issue, we will conduct the following activities. These activities are required to achieve our desired outcome.	Once completed or underway, the activities will produce the following evidence of service delivery. These outputs should help monitor progress towards outcomes. Specify the timeline of each Output.	We expect that if complete or ongoing, the activities will lead to the following changes. Specify timing of achievement and consider short- (6-18 months) and long-term outcomes (19-36 months)	What is the goal of the program? What issue are you trying to address? We expect that if complete or ongoing, these activities will lead to the following changes.
•	•	•	•	•

HSPN Health System Performance Network

Sample Pathway Logic Model



Considerations for Developing a Pathway Model

It takes practice to develop and use logic models and pathway models as effective program tools. Don't hesitate to experiment with the model design to determine what works best for your program.

Ensuring Sound Program Logic

Reflect on the following questions:

- What resources are available to your program to support the specific activities you have planned to do? Do certain activities require only specific resources?
- For each of the specific activities that you have planned to do, what outputs (service delivery or implementation targets) do you hope to attain through the operation of your program?
- For each of the specific planned activities, what short-term and then long-term outcomes do you expect to achieve as indicators of the progress made by your program toward its desired results?
- How are the outcomes you've identified connected to having an impact?

Make additional modifications to the model, adjusting the activities and expected outcomes to ensure there is a logical link.

Consideration when Formatting the Pathway Model

The is an accompanying PowerPoint file with a similar template. This file is easier to manipulate and display appropriate relationships. The PowerPoint version includes a column for both short and long-term outcomes.

Formatting tips

- There is room for creativity and modifications to this template.
- Not all *Activities*, *Outcomes*, *et cetera* are as central to the program. Considered visually highlighting those that are a key (e.g. with a stronger border or colour)
- Same goes with the connection between program components, consider using a bolder arrow to emphasize, or a dotted arrow with connections are unclear
- If there are several outcomes you would like to include, consider adding a column with the additional distinction between shorter- and longer-term outcomes (included in PowerPoint file)

HSPN Health System Performance Network

Logic Model Checklist

#	Criteria	Yes	No	Comment
1	The appropriate audiences or target populations are taken into consideration when specifying credible outputs, outcomes, and impacts.			
2	Target participants and/or partners are described and quantified as outputs (e.g. 750 patients from intake).			
3	Events, products, or services listed are described as outputs in terms of treatment or dose (e.g. 30 providers will participate in at least three sessions of the program).			
4	Outcomes reflect reasonable, progressive steps that participants or programs achieve toward longer-term results.			
5	Outcomes address awareness, attitudes, perceptions, knowledge, skills, and/ or behaviour of participants.			
6	Outcomes are within the scope of the program's control or sphere of reasonable influence.			
7	The outcomes are specific, measurable, action-oriented, realistic, and timed (SMART)			
8	The outcomes are written as change statements (e.g. things increase, decrease, or stay the same).			
9	The outcomes are achievable within the funding and reporting periods specified.			
10	The impact, as specified, is feasible.			

Adapted from WK Kellogg Foundation. (2004). *WK Kellogg Foundation logic model development guide*. WK Kellogg Foundation.

HSPN Health System Performance Network

Pathway Model Checklist

A good pathway model should be comprehensive and internally consistent. However, no level of detail is right in all circumstances.

#	Criteria	Yes	No	Comment
Items				
1	Consistency between the pathway and logic model (i.e. activities and outcomes from the logic model are present in the pathway model)			
Connections				
2	Sequencing of connections to and from outputs (i.e. they are appropriately connected to activities and other outcomes, but not directly to impacts)			
3	Sequencing of connections to and from outcomes (i.e. they are appropriately connected to outputs, other outcomes or impacts but not to activities)			
4	Sequencing of connections to and from impacts (i.e. they are appropriately connected to long-term outcomes, but not directly to short-term outcomes or activities)			
5	Completeness of connections (i.e. connections that should be made, are made)			
6	Plausibility of connections (i.e. the connections make sense and are logical)			
Pathways (refers to explanatory ‘‘through lines’’ that connect specific activities and outcomes)				
7	The logic of pathways (i.e. they communicate the ‘‘story’’ or ‘‘theory’’ that joins activities to long term outcomes)			
8	Completeness of pathways (i.e. they do not dead-end at outputs, outcomes, but rather follow through to impacts)			
Overall				
9	Quality of pathway diagram as a communication tool (i.e. diagram efficiently communicates overall program logic)			
10	Readability of model (e.g. number of connections is not excessive)			

Adapted from (Urban, Burgermaster, Archibald, & Byrne, 2015)
Note: Many pathway models will include medium-term outcomes in addition to short-and long-term outcomes. See Urban et al. (2015) for additional criteria related to connection to and from medium-term outcomes.

References and Additional Resources (with embedded links)

Dhillon, L., & Vaca, S. (2018). Refining theories of change. *Journal of MultiDisciplinary Evaluation, 14*(30).

Ontario Agency for Health Protection and Promotion (Public Health Ontario), A. S., Mensah G. . (2016). *Focus On: Logic model–A planning and evaluation tool*. Retrieved from Toronto, ON: Queen's Printer for Ontario.

Urban, J. B., Burgermaster, M., Archibald, T., & Byrne, A. (2015). Relationships between quantitative measures of evaluation plan and program model quality and a qualitative measure of participant perceptions of an evaluation capacity building approach. Journal of Mixed Methods Research, 9(2), 154-177.

WK Kellogg Foundation. (2004). *WK Kellogg Foundation logic model development guide*: WK Kellogg Foundation.