McMaster University

Family Medicine

David Braley Primary Care Research Collaborative

Logic Models Part 1

Watch a recording of the session here

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February 23rd, 2021

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Michael G. DeGroote SCHOOL OF MEDICINE

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Logic Models – Part 1

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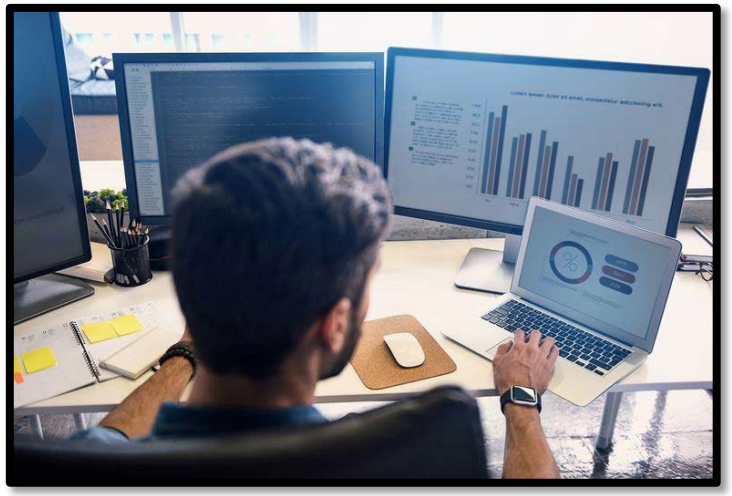
Learning Objectives

By the end of these two sessions, you will be able to:

- Session 1:
  - Describe what a logic model is, and how it can be useful to your daily community program operations
  - Understand setting the goal of a community health program
  - Identify the input/output components of a logic model and how your data fits into it
- Session 2:
  - Identify short, medium, and long term outcomes for a logic model and how your data fits into it
  - Use a logic model for evaluation planning for your community health program

Introduction



Data can be useful

- BUT what **more** can you do with your data?
- Data has less meaning when viewed alone
- When part of a larger plan, the **meaning increases** – understanding of data within its context
- The analytical structure around the reason for collecting this data is called **a logic model**
- Used often in Public Health and Health Systems for program evaluation

What is a ‘Program’?

- A set of activities that are carried out to meet specific objectives or goals, targeted to a defined group of participants
- Activities comprised in a program:

Recruiting eligible participants

Providing assistance

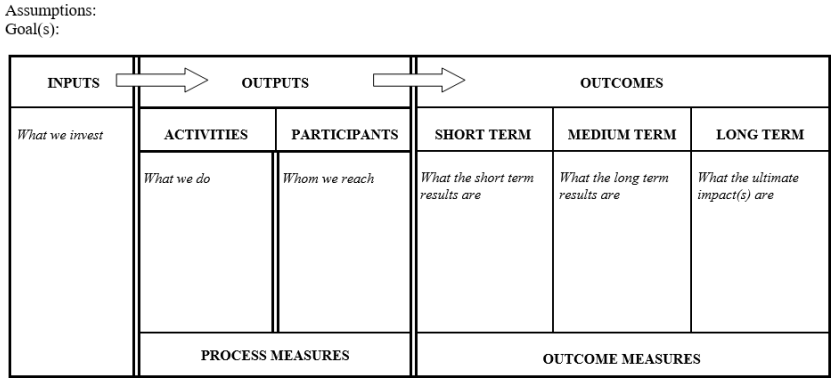
Tracking progress/status of participants

Can you see **a project you have worked with** fitting into this?

A Description of a Chronic Heart Failure Community Program

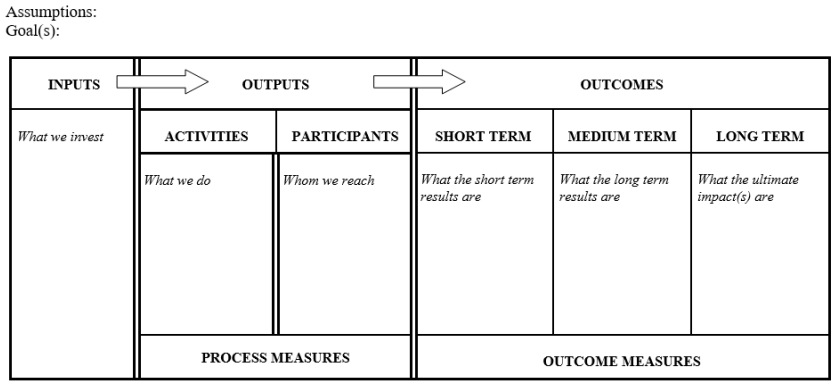
- Patients with severe CHF are discharged from hospital
- Within 7 days they are called by a Family Doctor (FD) and team
- The FD/team teaches them how to monitor their CHF - this may involve a visit with the patient
- The patient will then contact the FD/team at specified regular intervals to discuss their weight measurements, and breathing
- FD/team will discuss symptoms with the Cardiologist in the hospital
- Medication will be adjusted as needed by the Cardiologist, but the FD/team will facilitate the changes and continue to encourage the patient to monitor their symptoms
- The patient is discharged after 4 weeks, or sooner if stable

What is a Logic Model?



- Provides a program overview that helps everyone understand how the program works and its objectives (expected outcomes) and the assumptions that underlie its delivery
- A diagram that describes a program and shows the relationships between program components
- All logic models contain the same core concepts:
  - **Goal** - what is the main aim of the program
  - **Inputs** - what goes into the program
  - **Outputs** - what comes out of the program (activities, participants)
  - **Outcomes** - the effect of the program (short, medium, long term)
- Some also include assumptions, evaluation measures, etc.

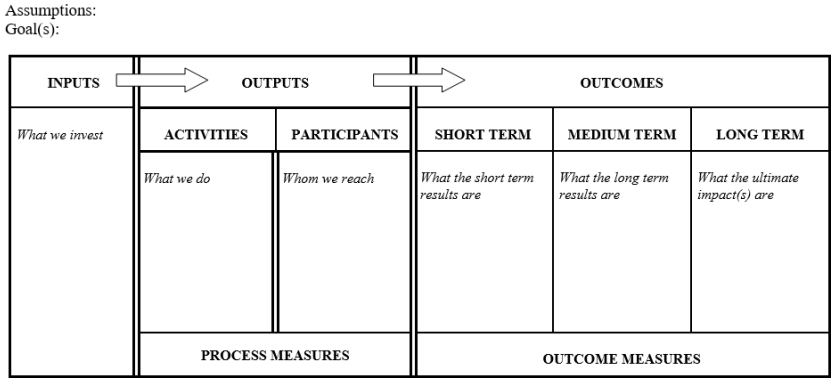
Why Do We Need Logic Models?



- **Clear communication**
  - Visual diagram
  - Common understanding of the program among those involved in its development, those delivering it and others who have a stake in its success

- **Planning and implementation**
  - Useful for reviewing existing programs
  - Ensures program's goals remain clear throughout the planning and implementation
  - Ensures program's mission is achieved

Why Do We Need Logic Models?



Evaluation*

- Ensures that the **data needed to evaluate success is collected from the outset**
- Readily identifies the processes and outcomes to be measured to determine whether the program:
  - Has been implemented successfully
  - Is producing the outcomes expected
- Helps develop a mutually shared definition of “success” for program

Why Do We Need Logic Models?

Assumptions:
Goal(s):

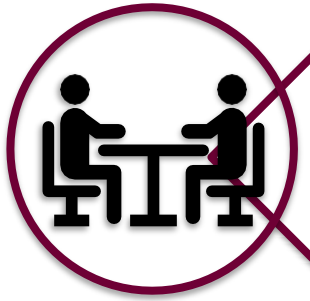
INPUTS	OUTPUTS		OUTCOMES		
What we invest	ACTIVITIES	PARTICIPANTS	SHORT TERM	MEDIUM TERM	LONG TERM
	What we do	*Whom we reach*	*What the short term results are*	*What the long term results are*	*What the ultimate impact(s) are*
	PROCESS MEASURES		OUTCOME MEASURES		

Revisiting your model

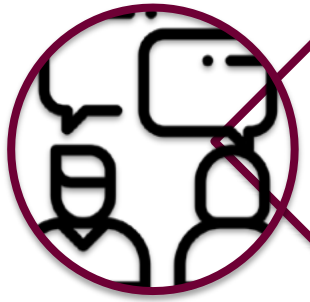
- Programs tend to evolve over time
- The assumptions underlying how the program is currently delivered may be vaguely understood or incorrect when model was original developed
  - By clarifying these basic assumptions, their validity can be examined
- It even allows us to know that our program has been so successful that it is no longer needed

How to develop a logic model

No hard and fast rules: Start with the **goal** or start with the **intended outcomes** and work backwards



Meet with program creators to brainstorm and map out preliminary logic model

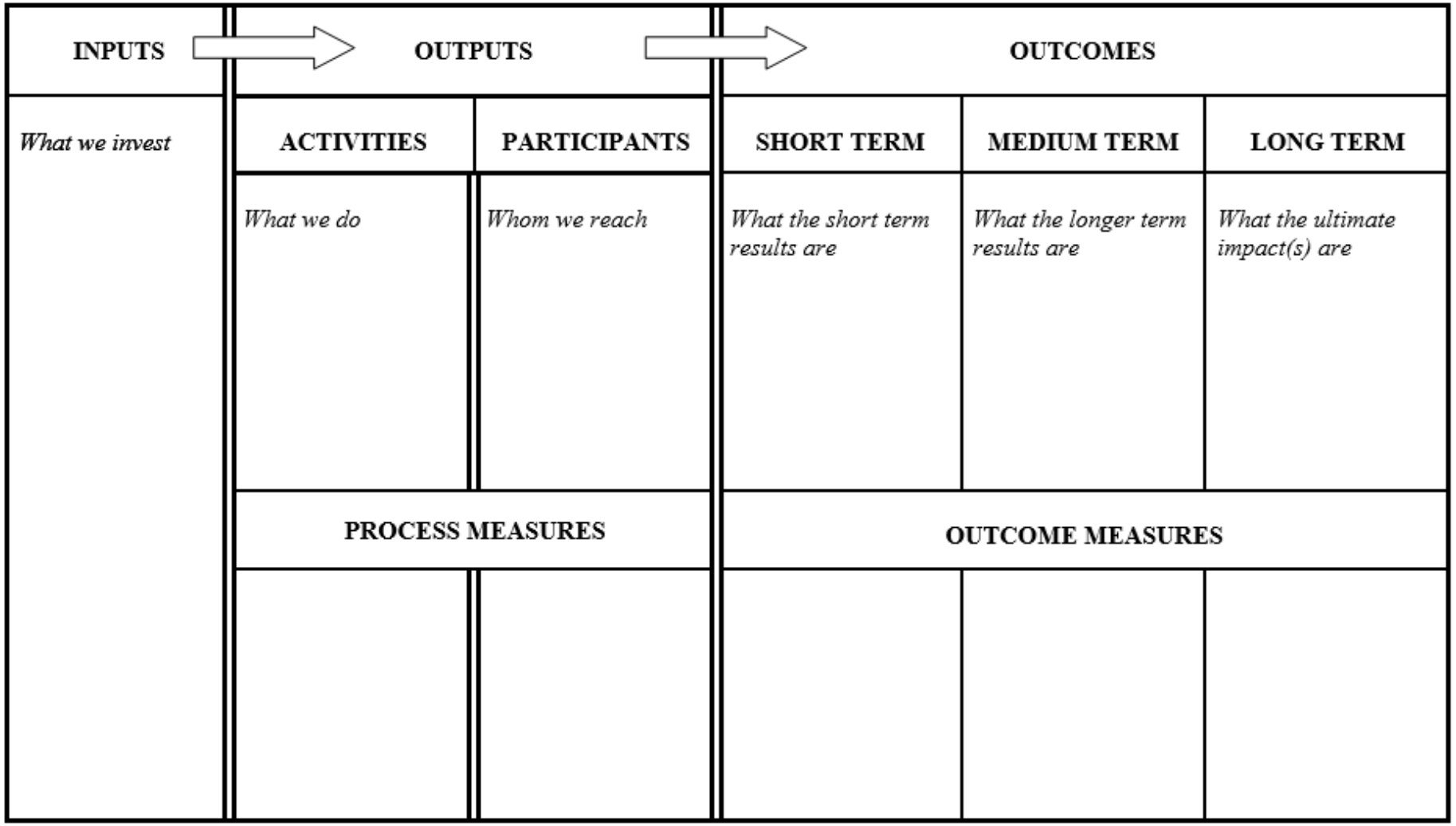


Talk to others involved in the program to get input and refine the model

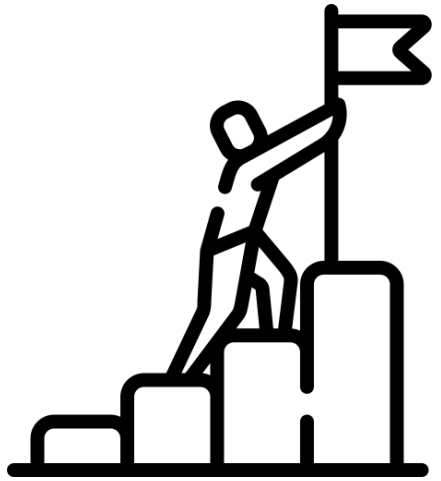
Logic model is complete when everyone agrees it describes the program and its intended effects

Overview of Logic Model Components

Assumptions:
Goal(s):



Goal



- What is the overall purpose of the program?
  - Why are you doing it?
  - What are you trying to achieve?
- It may seem clear at first glance; but, sometimes asking questions about what the program's goals are and how they are achieved can reveal ambiguities
- Sets the foundation for the whole logic model

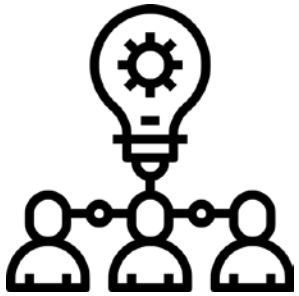
Assumptions

1. There is a **gap/need** that exists
   - Health system data showing many hospital readmissions from recently discharged CHF patients
   - Another program isn't already trying to address this issue (or, is there opportunity for synergy with that program?)

2. The required **partners** are willing to collaborate

3. The required **resources** will be available

Goal and Assumptions



ZOOM BREAKOUT EXERCISE: Using the CHF Program example, what you do you think the goal and assumptions of the program could be - discuss in groups for 5 mins (& report back)

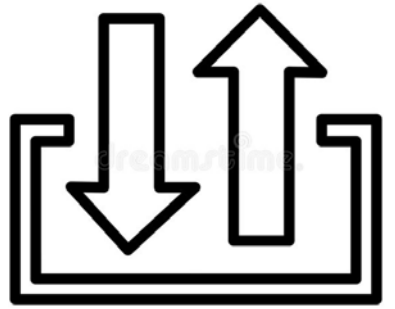
Example Goals:

- to reduce readmissions due to CHF complications (Hospital perspective)
- to reduce end-stage CHF resulting in LTC transfers (LHIN perspective)
- to provide better care for patients with CHF in the community and avoid hospital readmission (Primary Care perspective)
- to have reduced symptoms of CHF through better care (Patients' perspective)

Example Assumptions:

- Gap: Many hospital readmissions of discharged CHF patients and no other program
- Partner(s): Hospital discharge planner and Cardiologist
- Resources: Healthcare provider capacity
  - FD will have enough team capacity to take this on
  - Cardiologist available and able to make med. adjustments without long delays

Inputs and Outputs



- **Inputs:**
  - What is invested into the program in order for it to run?

    Resources

- **Outputs:**
  - **Activities**: What are you going to do to make the program run?
  - **Participants**: Who will be the focus or target?

Process Measures

- Measure the process of implementing the program
- Can highlight areas that are struggling (e.g. recruitment)
- Gives an indication of the resource investment completed (amount of time spent for the program)

Inputs, Outputs, and Process Measures

ZOOM BREAKOUT EXERCISE: Using the CHF Program example, what you do you think the inputs, outputs, and process measures of the program could be - discuss in groups for 10 mins

INPUTS	OUTPUTS	
	ACTIVITIES	**PARTICIPANTS**
What we invest FD team staffing time/resource Cardiologist time Patient having equipment to measure weight Communication strategy between patient/FD/ cardiologist; Strategy to measure symptoms of CHF longitudinally	*What we do* Identifying who is eligible to get the program Making initial contact with patients post-discharge Scheduling communication Monitoring CHF severity in each patient to determine when action needs to be taken Contacting the Cardiologist	*Whom we reach* Patients: - with severe CHF - at home in the community - discharged from hospital in last 7 days
	PROCESS MEASURES	
	Number of patients contacted Number of FD/Patient communications Number of medication changes by the cardiologist	Number of patients identified as meeting the eligibility criteria for the program Number of patients who consent to participate

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Questions?

Thank you!

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