Building Blocks for a Useful Program Monitoring and Evaluation System

Anthony Salandy, Ph.D., MSc.
Director, Research, Monitoring and Evaluation Programs
Adolescent Health Center
Mount Sinai Icahn School of Medicine
Mount Sinai Health System

2018 Unite for Sight
Global Health and Innovation Conference
Yale University
Objectives of this talk

1. Participants will demonstrate an understanding of the components of a functional M&E system
2. Participants will demonstrate how to create a Theory of Change (ToC)
3. Participants will demonstrate how to create a logic model
4. Participants will demonstrate how to create an indicator chart
I need to have a functional M&E system¹

Every project should have a Theory of Change (ToC)

ToC → Logic model → Indicator Chart

Recommended website: http://www.theoryofchange.org
I need a Theory of Change (ToC) for my project

- The ToC shows outcomes/preconditions, it also outlines the *causal linkages in an intervention* between the shorter–term, intermediate, and longer–term outcomes.

- The identified changes are mapped –as the “outcomes pathway” – showing each outcome in logical relationship to all the others, as well as chronological flow.
Steps to creating a ToC

1. Identify a long term goal.
2. Conduct “backward mapping” to identify the preconditions (outcome, output, activities, inputs) necessary to achieve that goal.
3. Identify the interventions and strategies that the organization/project will perform to create the preconditions (changes across sectors and/or within sectors).
4. Think about indicators for each precondition that will be used to assess the performance of the intervention (could be done in the logic model development phase).
5. Write a narrative that can be used to summarize the various moving parts in the ToC.
Examples of Theory of Change models
Early Childhood Education (ECE) Group’s Draft Theory of Change

**Ultimate Social Impact:** San Francisco’s 4- & 5-year olds are physically, emotionally, socially, culturally & academically prepared to become successful, healthy & happy adults

**Penultimate Outcome:** Infants, toddlers & preschoolers exhibit age-appropriate development

**Long-term Outcome:** Parents use ECE skills & actively engage in their children’s ECE

**Long-term Outcome:** Parents enroll all their 0-5 children in quality ECE

**Long-term Outcome:** High-quality ECE is available for all SF 0-5 children

**Intermediate Outcome:** Parents are more confident in their parenting & less stressed

**Intermediate Outcome:** Parents are less fearful about enrolling children in ECE programs

**Intermediate Outcome:** SF’s ECE programs are fully funded & supported by public policy

**Intermediate Outcome:** Parents enjoy more social support & are less isolated

**Intermediate Outcome:** Parents understand what quality, safe ECE is & why it matters

**Intermediate Outcome:** Increased funding for ECE in SF

**Intermediate Outcome:** Parents understand child development concepts & behaviors

**Early Outcome:** Parents are knowledgeable about SF’s CDCs & other community ECE resources

**Early Outcome:** Policymakers understand ECE’s Social Return on Investment & its other benefits

Parents Pathway 1

**Target for Change:** Parents

Parents Pathway 2

**Target for Change:** Policymakers

*Prepared by Eleanor A. Smith & Associates*
E d u c a t i o n

E n g a g e  c o m m u n i t i e s  a n d  v o l u n t e e r s

C r e a t e  s t r o n g  p o l i c y  a n d  p a r t n e r s h i p s

I n v o l v e  m e n t o r s  a n d  t u t o r s

D e v e l o p  s o c i a l,  e m o t i o n a l,  a n d  i n t e l l e c t u a l  s k i l l s

E n g a g e  p a r e n t s

D e v e l o p  s o c i a l  d r i v e n  p l a n s  a n d  e v a l u a t i o n s

B u i l d  l a s t i n g  s o l u t i o n s

A d d r e s s  e a r l y  d r o p  o u t  s i g n s

D e v e l o p  l a n g u a g e  a n d  l i t e r a c y

S u p p o r t  c h i l d r e n  w h e r e v e r  t h e y  a r e

R e s u l t s :
- S t a r t  s c h o o l  r e a d y
- R e a d  o n  t r a c k  a t  g r a d e  4
- M i d d l e  s c h o o l  s u c c e s s
- G r a d u a t e  h i g h  s c h o o l
- W o r k  o r  s c h o o l  b y  2 1

C o n t i n u e d  s u p p o r t ,  f o c u s  a n d  e n g a g e m e n t
Examples of ToCs

We help develop a sense of social responsibility and awareness of global issues, as well as build capacity among youth.

Youth Development

We provide engaged youth with the access to global opportunities, building their skills and creating a sense of belonging to a community of other actively engaged youth.

Youth Action & Participation

We impact shared values through our involvement in global social movements, ultimately influencing attitudes and behaviors towards creating a more sustainable world.

Societal Values

We strengthen global social movements by collaborating with other organizations to ensure youth participate and become key stakeholders in these efforts.
From my ToC model, I should now be able to develop a Logic Model.
A logic model or logic framework is an attempt to depict program components so that activities are matched to outcomes.

The approach when shown as a matrix is called a *log frame* and when shown as a flow chart it is sometimes called a *logic model*. 

I need a logic model for my project
# Logic framework

## Program: Health Information Outreach Program

<table>
<thead>
<tr>
<th>INPUTS</th>
<th>ACTIVITIES</th>
<th>OUTPUTS</th>
<th>OUTCOMES</th>
<th>Why this project: short-term results</th>
<th>Why this project: intermediate results</th>
<th>Why this project: long-term results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What we invest</strong></td>
<td><strong>What we do</strong></td>
<td><strong>Who we reach</strong></td>
<td><strong>What are the direct products of program activities</strong></td>
<td>Learning</td>
<td>Action</td>
<td>Conditions</td>
</tr>
<tr>
<td>Staff</td>
<td>Conduct workshops and meetings</td>
<td>Participants</td>
<td># of clients trained</td>
<td>Awareness</td>
<td>Behavior</td>
<td>Health</td>
</tr>
<tr>
<td>Volunteers</td>
<td>Train</td>
<td>Clients</td>
<td># of service hours provided</td>
<td>Knowledge</td>
<td>Practice</td>
<td>Social</td>
</tr>
<tr>
<td>Time</td>
<td>Deliver services</td>
<td>Agencies and community-based organizations (CBOs)</td>
<td># of workshops conducted in a month</td>
<td>Attitudes</td>
<td>Decision-making</td>
<td>Economic</td>
</tr>
<tr>
<td>Money</td>
<td>Develop products, curricula, resources</td>
<td>Decision-makers</td>
<td># of completed media projects in a quarter</td>
<td>Skills</td>
<td>Policies</td>
<td>Civic</td>
</tr>
<tr>
<td>Research findings</td>
<td>Facilitate access to information</td>
<td>Customers</td>
<td></td>
<td>Opinions</td>
<td>Social Action</td>
<td>Environmental</td>
</tr>
<tr>
<td>Materials</td>
<td>Work with media</td>
<td>Clinical professionals</td>
<td></td>
<td>Aspirations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td>Members of CBOs</td>
<td></td>
<td>Motivations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Assumptions
- Beliefs about the environment and community
- Should be confirmed before beginning the program

## External Factors
- Positive and negative influences
- Culture, economics, politics, demographics
- Should be confirmed before beginning the program
Logic model

Inputs
- Staffing
- Partnerships
- Youth
- Mentors
- Funding

Activities
- Policy assessment
- Education campaign
- Youth advocacy

Outputs
- Policy recommendation
- Number reached
- Number events

Short-term
- Creation of tobacco free policies
- Increased support for tobacco free policies and enforcement
- Compliance with tobacco free policies

Intermediate
- Reduced exposure to second-hand smoke
- Reduced tobacco consumption
- Reduced tobacco-related disease and deaths

Long-term
Difference between the ToC and logic model (LM)

1. The ToC gives the ‘big picture’ and summarizes work at a strategic level, while an LM illustrates a program (implementation) level understanding of the change process.

2. The ToC can give focus to the complex social, economic, political and institutional processes that underlie societal change. Whereas, the LM depicts only components directly connected to the program.
The development of a ToC usually begins from the 'top' – THE GOAL and then working backwards to map the outcome pathways.

An LM on the other hand is usually designed after a ToC is developed.

In other words, the LM usually does not start with the GOAL, but starts at the 'bottom', depicting the inputs, activities, outputs etc., that lead to the goal.

The question that would be asked in developing a LM is ‘If we plan to do X, then this will give Y result’
<table>
<thead>
<tr>
<th>INPUTS</th>
<th>ACTIVITIES</th>
<th>OUTPUTS</th>
<th>OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>What we invest</td>
<td>What we do/Who we reach</td>
<td>Products of program activities</td>
<td>Why this project: short-term results</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assumptions</th>
<th>External Factors</th>
</tr>
</thead>
</table>
External factors

External factors include the cultural milieu, the climate, economic structure, housing patterns, demographic patterns, political environment, background and experiences of program participants, media influence, changing policies and priorities.

These external factors may have a major influence on the achievement of outcomes. We can't ignore them!
Assumptions

- Conditions that are necessary for success, and you believe are true.

- Your program needs these conditions in order to succeed, but you believe these conditions already exist – they are not something you need to bring about with your program activities.

- Human resource capacity and commitment to the program
**Bicycle Helmet Public Information Campaign**

**Situation**
- Funding for an informational campaign to encourage bicyclists to use helmets has been received.

**Inputs**
- Three full-time staff members
- Volunteers with traumatic brain injuries
- Space and equipment (donated by a local nonprofit agency)

**Target Systems**
- Individuals and organizations aligned with riding bicycles for recreation and/or transportation
- Journalists and publications covering disability, athletic, and mainstream issues
- Bicycle helmet and bicycle manufacturers conducting marketing/public relations campaigns
- Community-based charities interested in bicycle helmet give-away programs
- Community and state chapters, and the national association on brain injury

**Activities**
- Gather current information on deaths due to bicycling accidents
- Gather information about rate of traumatic brain injuries from bicycle accidents currently documented
- Gather data about injury prevention from use of helmets when bicycling
- Develop press kits for media
- Develop and support use of Public Service Announcements for television and radio
- Attract key individual journalists to the issue of traumatic brain injuries from bicycle accidents
- Promote attention and award recognition to media attention on helmet use campaign

**Outputs**
- Special Report Comparing Costs of Helmet Safety and Traumatic Brain Injury produced and shared with all local, state, and national TBI-related agencies
- Fact sheets produced on available data concerning incidence rates of traumatic brain injury and helmet safety programs distributed by local, state, and federal elected officials
- Establish national recognition program for effective helmet safety programs and solicit volunteer “celebrity” to work in association with this recognition effort
- PSA announcements about people benefited by helmet safety programs and people (including family members) experiencing injuries that they consider preventable through the wearing of a helmet while bicycling
- Contact Governors Committees for People with Disabilities concerning past “journalist awards” and also coverage (related through press kits) of helmet safety effects on TBI (including consumer stories)

**Outcomes - Impact**

**Short-Term**
- Bicycle riders will become more aware of benefits of wearing helmet while cycling
- Disability and mainstream journalists will be more aware of bicycle helmet use

**Intermediate**
- Bicycle riders will use helmets more frequently

**Long-Term**
- Frequency of deaths due to bicycling accidents will decrease
- Rate of traumatic brain injuries from bicycling accidents will decline

**Data**
- Focus groups measuring change in awareness
- Individual interviews with volunteer group of bicyclists
- Focus groups with disability and mainstream journalists
- Individual interviews with journalists to assess specific changes in awareness and understanding

**Data Sources**
- National data sources

**Dissemination Planning and Actions/Intensive Utilization Activities**
RESOURCES

ACTIVITIES

CARNIVAL

OUR community

YARD SALE

SURROUNDING community

CAR WASH

BAKE SALE

RESULT

SHORT-TERM OUTCOME

GOAL

PLAYGROUND EQUIPMENT for CITY PARK

$1,500.00

SAFE PLACE for KIDS to PLAY

Kids for a safer MARSING (Club Name)

By: Courtenay

By: Bailey

By: Peters
Logic model for promoting smoking cessation among young people and adults

Inputs
- State Health Departments and Partners

Activities
- Counter-marketing
- Community mobilization
- Policy and regulatory action

Outputs
- Population is exposed to information about cessation
- Calls to quit line
- Providers counsel smokers using AHCPR guidelines
- Establishment of cessation programs in community, schools, and workplace
- Medicaid, HMOs, and private insurance companies reimburse cessation services

Outcomes
- Increased knowledge, awareness, and skills
- Increased quit attempts
- Increased use of cessation services

Intermediate
- Increased cessation among adults and youth

Long-term
- Reduced tobacco-related morbidity and mortality
- Decreased tobacco-related health disparities

Targeted to disparate populations
Limitations of the Logic Model

- Only represents reality
- Focuses on expected outcomes
- Challenge of causal attribution
- May not address critical questions
From your logic model, you should be able to develop an indicator chart.

ToC → Logic Model → Indicator Chart
What should I ask myself prior to developing indicators?

Step 1: Ask the Performance Question

“What questions would I need to answer in order to know the extent to which my program is achieving the objective (project purpose or result) and to explain the success or failure of the project?”

GO BACK TO YOUR LOGIC MODEL!!!
What should I ask myself prior to developing indicators?

Step 2: Define the change intended and the necessary information
Change can be reflected as:

- The presence of something (that may have not been there before) – belief, attitude, etc.
- The type of access to a service or product (improved, enhanced or better)
- The level of use (increased, longer)
- The extent of an activity or coverage (numbers, extent)
- The quality of an innovation or intervention (improved, enhanced, better)
- The effort required to achieve change (less labor, simpler process)
What should I ask myself prior to developing indicators?

Step 3: Define appropriate indicators

**Input indicators:** These describe what goes into the project, such as training curricula, finances, the number of contraceptives on hand, activities, etc.

**Output Indicators:** These describe project activities such as the number of community workers trained, the number of workshops, the production of materials etc.

**Outcome indicators:** These indicators measure actual change in the target group or a situation, such as improved livelihoods, enhanced service quality etc.
Quantitative versus Qualitative

**Quantitative**: This is often stated in the form of numbers. They are most often related to the total of activity implemented or outputs produced within a specified period of time.

**Qualitative**: This reflects a change in quality, in the form of changes in attitude, quality etc. It may be reflected in perceptions, or numbers (% change etc).

**Proxy**: These “indirect” indicators are used when it is difficult to directly measure a result, or change. For example, how much $ a household makes versus their buying power (e.g. school tuition).
I need an indicator chart for my project

- Indicators are used to measure the outcomes of interventions and to monitor the performance/outputs of programs or projects in relation to pre-determined targets.
- Indicators can tell us things such as:
  - To what extent our project or program outcomes have been met.
  - Is the amount of activities needed to realize change being attained?
  - Is there program fidelity?
  - Can we explain (mediation/moderation) change overtime?
INDICATOR CHART TEMPLATE (BLANK)

<table>
<thead>
<tr>
<th>Level of indicator</th>
<th>Objective</th>
<th>Indicator</th>
<th>Target</th>
<th>Narrative</th>
<th>Measurement</th>
<th>Data source</th>
<th>Who/when</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome or Output</td>
<td>Objective of the indicator</td>
<td>Indicator written with SMART language</td>
<td>Can be % or a statistical significant value, or a frequency or rate</td>
<td>Explain the rational for the indicator and target and why is it attainable (include baseline data if feasible)</td>
<td>How the data will be analyzed in order to ascertain whether the target was achieved? What analytic test will be conducted? Keep it simple!</td>
<td>How will the data be captured and the tools to be used</td>
<td>Who will be responsible for collecting the data and what is the schedule for collecting and reporting the data? Who will verify the data?</td>
</tr>
</tbody>
</table>

S – specific; M – Measurable; A – Attainable; R – Relevant, T – Time – oriented
SMART INDICATORS

- **Specific**: should be clear to people with basic knowledge of the issue, program or initiative and clearly articulated, well defined and focused.

- **Measurable**: should be able to determine the degree to which there is completion or attainment. Using the same (ideally quantifiable) methodology and information, findings should be able to be replicated.

- **Achievable**: should be realistic, practical, and attainable within operational constraints dependent upon availability or resources, knowledge and timeframe.

- **Relevant**: should be tied to the aims and goals of the program/project and help to the bring about the desired outcomes.

- **Timebound**: should have clear deadlines expressed.
<table>
<thead>
<tr>
<th>Outcome</th>
<th>Indicator</th>
<th>Target</th>
<th>Means of Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased infant breastfeeding</td>
<td>Number &amp; percentage of mothers who are exclusively breastfeeding up to six months of age.</td>
<td>Increase by 20% from baseline over a 1 year period</td>
<td>Clinic statistics (collected at first 4 immunisations)</td>
</tr>
<tr>
<td>Improved work attendance by District Officials</td>
<td>Number of work days attended per year by District Officials</td>
<td>Increase by 40% from baseline by December 2014</td>
<td>DoE Work Attendance Register</td>
</tr>
<tr>
<td>Less grade repetition</td>
<td>Pass rate</td>
<td>Grade failures must decline by 8% per year from the rate in 2012 (until the end of 2016)</td>
<td>End of year exam</td>
</tr>
<tr>
<td>Students access financial support for tertiary education</td>
<td>Number and percentage of students that have bursaries and student loans</td>
<td>At least 80% must have loans by the end of 2015</td>
<td>Telephone Survey</td>
</tr>
<tr>
<td>Entrepreneurs take action to establish businesses</td>
<td>Submission rate of business plans to SEDA</td>
<td>All (100%) of participating entrepreneurs must submit plans within one month after course completion.</td>
<td>Submission receipts issued by SEDA</td>
</tr>
<tr>
<td>Teachers are cultivating the development of higher-level thinking skills in learners</td>
<td>Teachers include open-ended questioning in lessons</td>
<td>Open-ended questioning included at least once in all (100%) of observed lessons.</td>
<td>Observation</td>
</tr>
</tbody>
</table>
Contact information

The Mount Sinai Adolescent Health Center
ICAHN School of Medicine
Mount Sinai Health System
www.teenhealthcare.org
(office) 212.731.7560
(mobile) 646.267.1397

Anthony Salandy, Ph.D., MSc.
anthony.salandy@mssm.edu