Logic Models in Public Health Program Management

May 16, 2012

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Today's Objectives

After this session participants will be able to:

- Explain at least 3 benefits of a logic model
- Describe the elements of a logic model
- Create a draft logic model for an activity or program in your workplace
- Describe what makes the logic model most valuable

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Polling Question

I _____ logic models.

A. Love
B. Tolerate
C. Hate
D. I can't tell you--my boss is listening

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Polling Question

My agency _____ logic models.

A. Requires
B. Uses
C. Avoids
D. Loses

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Polling Question

My experience is _____ with logic models.

A. High
B. Medium
C. Low
D. None

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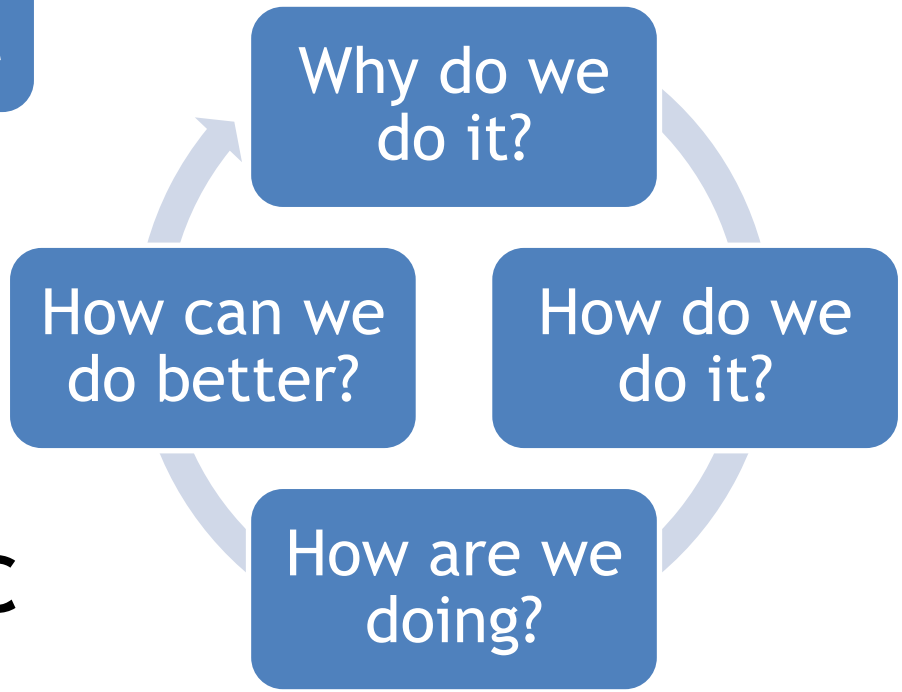
Context for Logic Models

- Quality improvement in public health is the use of a process, such as Plan-Do-Study-Act, which is focused on activities that are responsive to community needs and improving population health.

- Refers to a continuous and ongoing effort to achieve measureable improvements in the efficiency, effectiveness, performance, accountability, outcomes, and other indicators of quality service.

Many different frameworks in the literature, but all have same components to evaluate and improve a program



Context for Logic Models

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Benefits of Logic Models

1. Integrates planning, implementation, performance measurement and evaluation
2. Prevents mismatches between activities and effects
3. Builds program clarity from the process
4. Keeps staff, managers, and partners focused on outcomes
5. Helps planners prioritize most effective activities for directing resources
6. Uses evidence-based models and practice wisdom to design and refine a program
7. Reveals data needs and framework for analyzing data

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Limitations and Pitfalls of Logic Models

1. Logic models make the program theory clear not true
2. They take time to complete
3. Without data collection, their utility is limited
4. They strike fear in the hearts of many
5. Pursuit of perfection can impede utility
6. The notion that "evaluation is being done to me, rather than with me"

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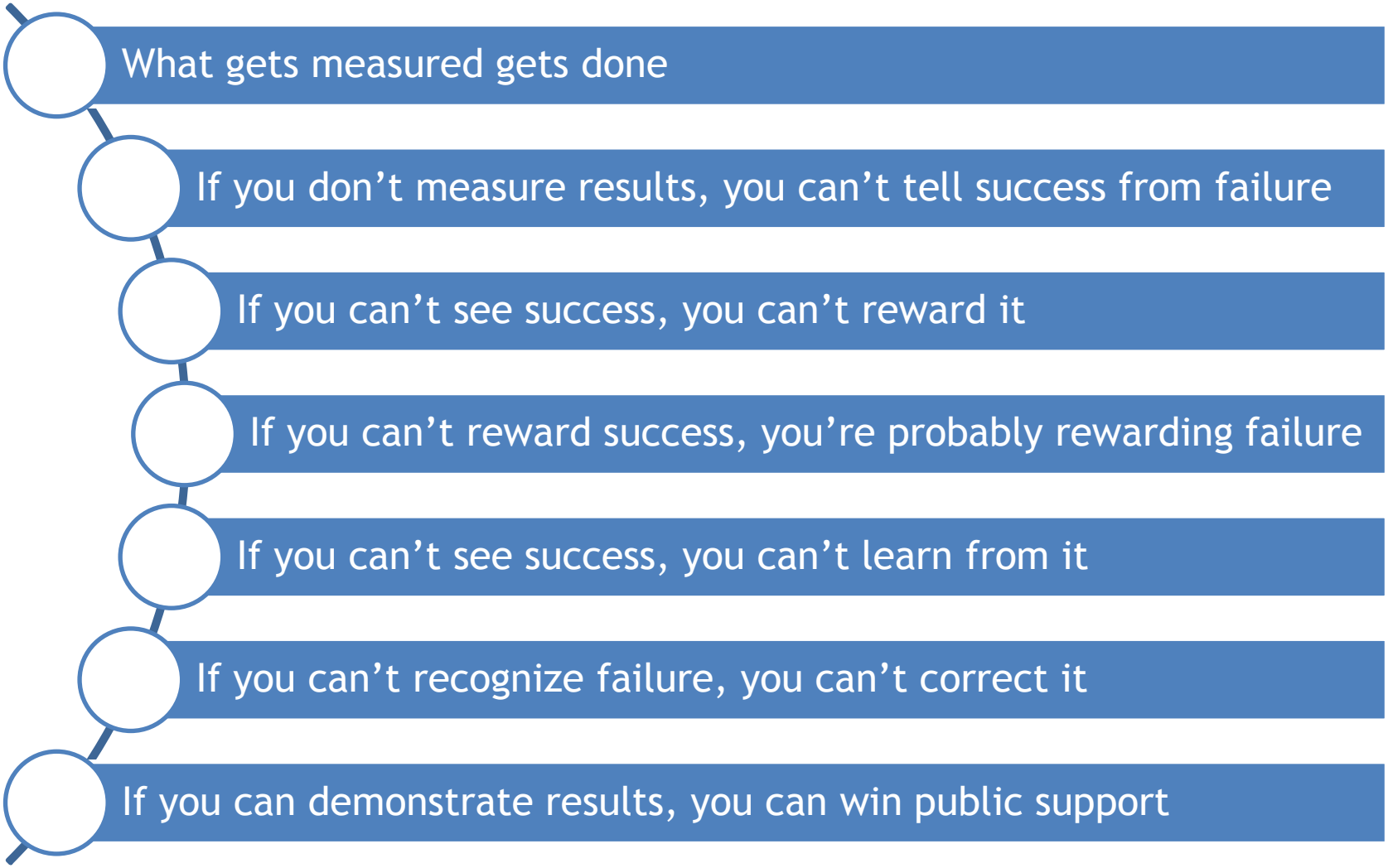
The Value of Logic Models



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"Why do I need a logic model?"

You don't **ever need** a logic model, but you **always need** a program description

Logic models are a program management tool

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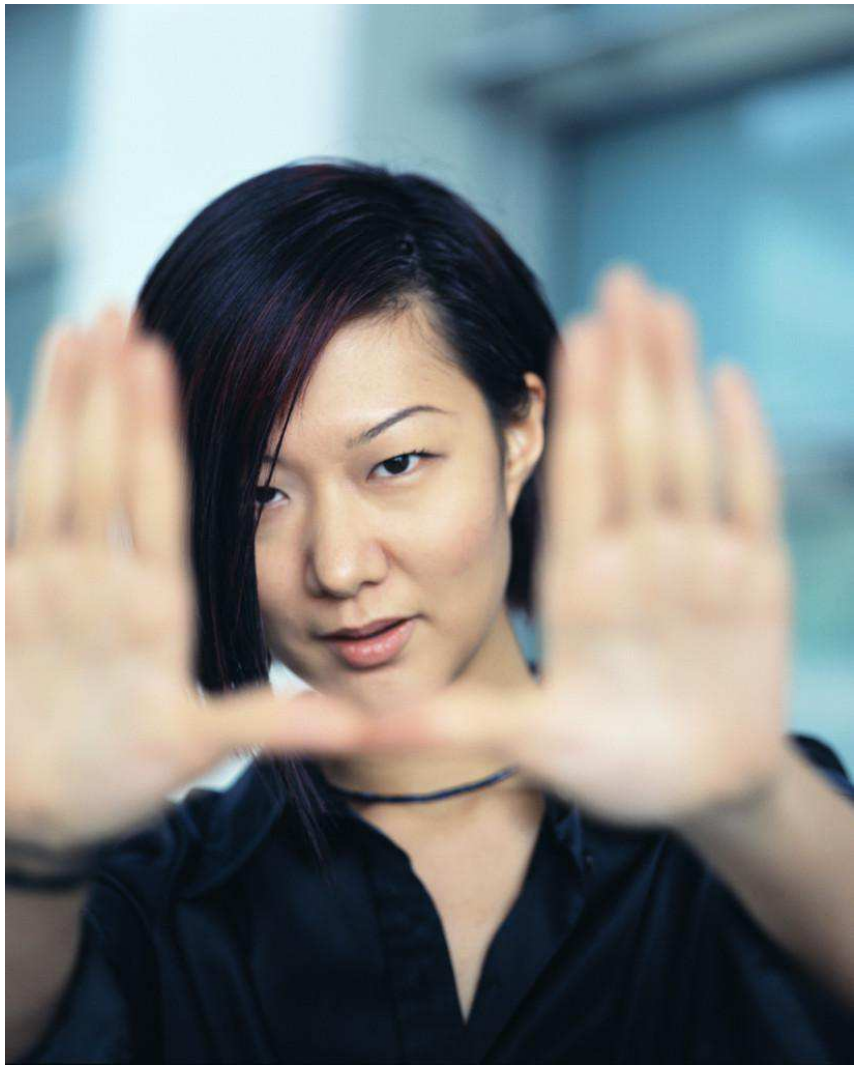
A Logic Model by Any Other Name



- Logic models
- Road map or pathways map
- Blueprint
- Program framework
- Program theory
- Theory or model of change
- Chain of causation

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Beware the tower of Babel!

The collision of public health jargon, planning jargon, different QI jargon, and our own LHJ or program jargon can lead to great confusion!

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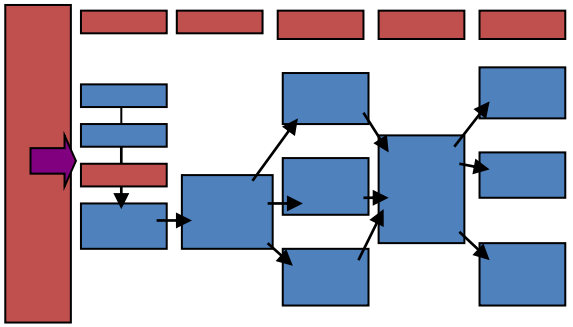
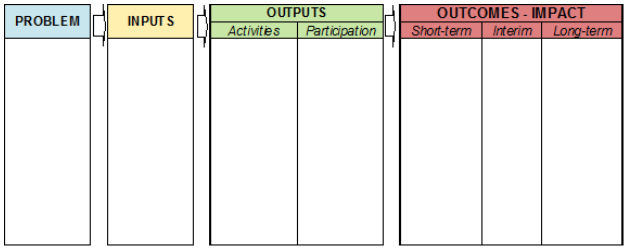
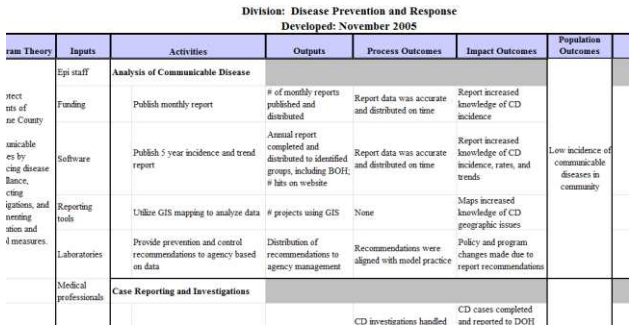
- Graphic display of boxes and arrows; vertical or horizontal
  - Relationships, linkages
- Any shape is possible
  - Circular, dynamic
  - Cultural adaptations; storyboards
- Level of detail
  - Simple
  - Complex
  - Dependent on need






Division: Disease Prevention and Response
Developed: November 2005

ram Theory	Inputs	Activities	Outputs	Process Outcomes	Impact Outcomes	Population Outcomes
ntect nts of ne County	Epi staff	**Analysis of Communicable Disease**				
	Funding	Publish monthly report	# of monthly reports published and distributed	Report data was accurate and distributed on time	Report increased knowledge of CD incidence	
nicable es by cing disease llance, cting igations, and nenting ation and d measures.	Software	Publish 5 year incidence and trend report	Annual report completed and distributed to identified groups, including BOH; # hits on website	Report data was accurate and distributed on time	Report increased knowledge of CD incidence, rates, and trends	Low incidence of communicable diseases in community
	Reporting tools	Utilize GIS mapping to analyze data	# projects using GIS	None	Maps increased knowledge of CD geographic issues	
	Laboratories	Provide prevention and control recommendations to agency based on data	Distribution of recommendations to agency management	Recommendations were aligned with model practice	Policy and program changes made due to report recommendations	
	Medical professionals	**Case Reporting and Investigations**				
				CD investigations handled	CD cases completed and reported to DOH	

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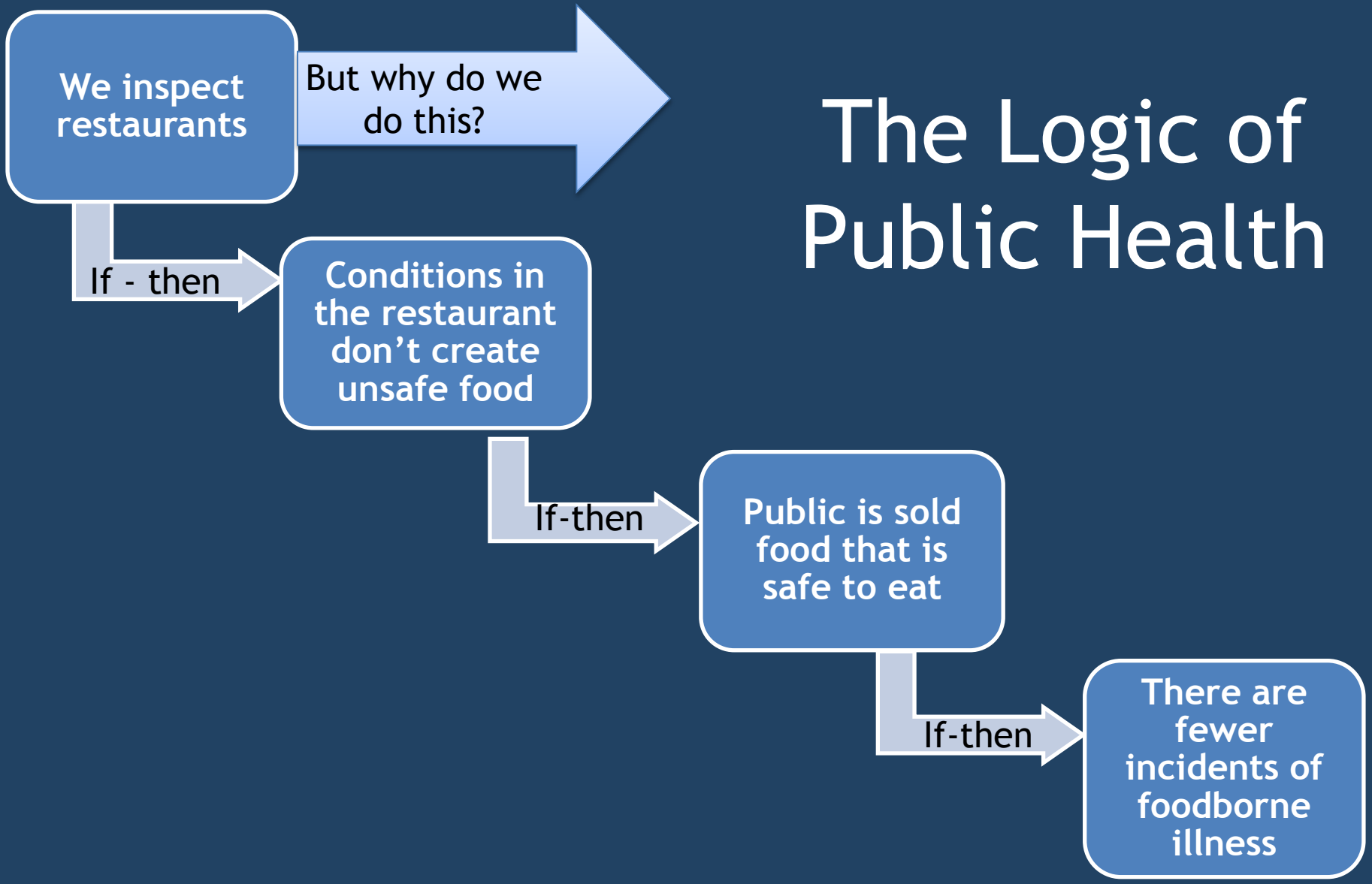
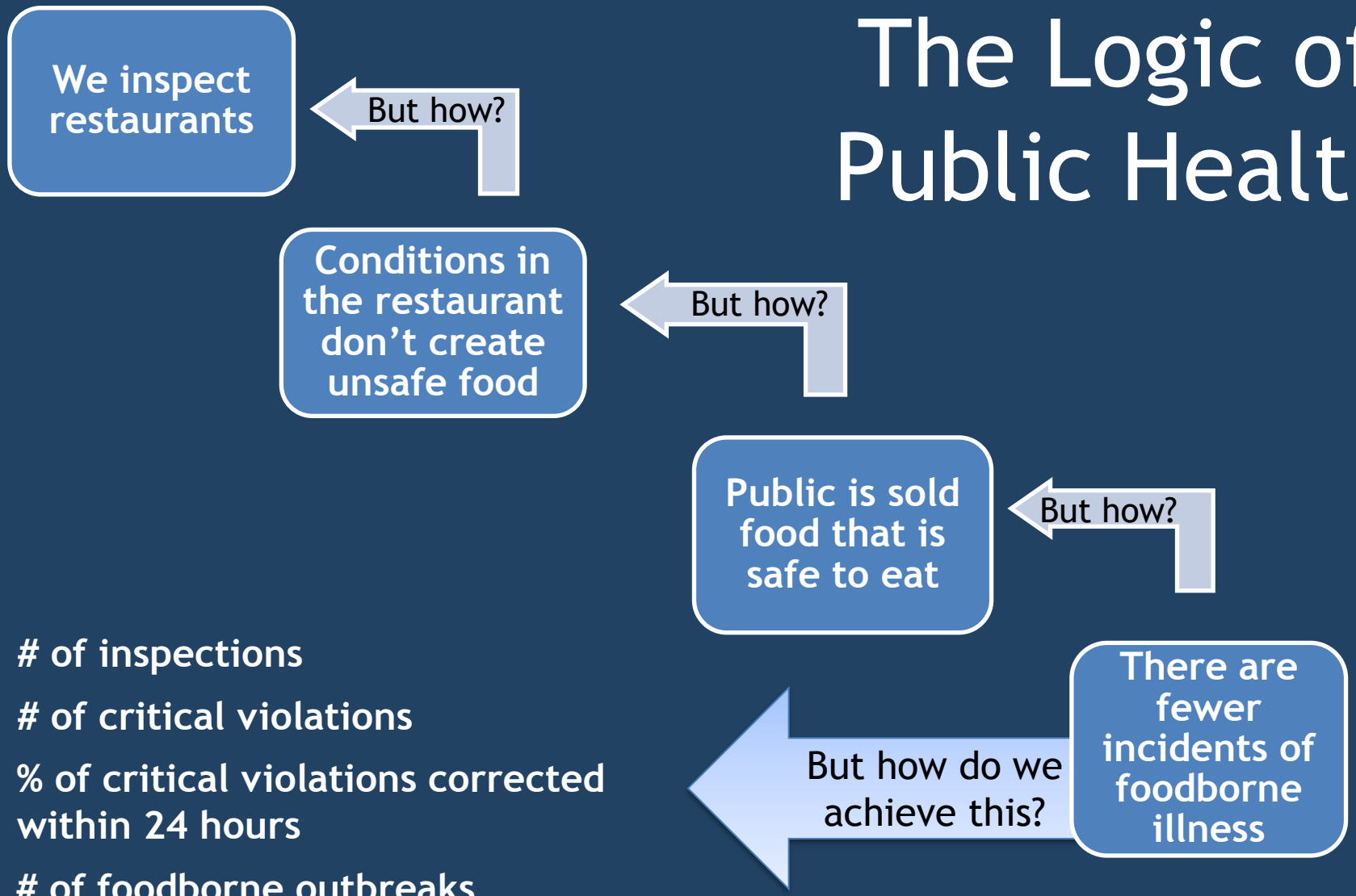
Creating a Logic Model

- How?
  - No single way, flexible
    - Forward logic driven by "But Why?" or "If-Then" thinking
      - Starting from the condition or problem end
    - Reverse logic driven by "But How?"
      - Starting from the vision end
- Who?
  - Depends
- When?
  - Varies

The Logic of Public Health

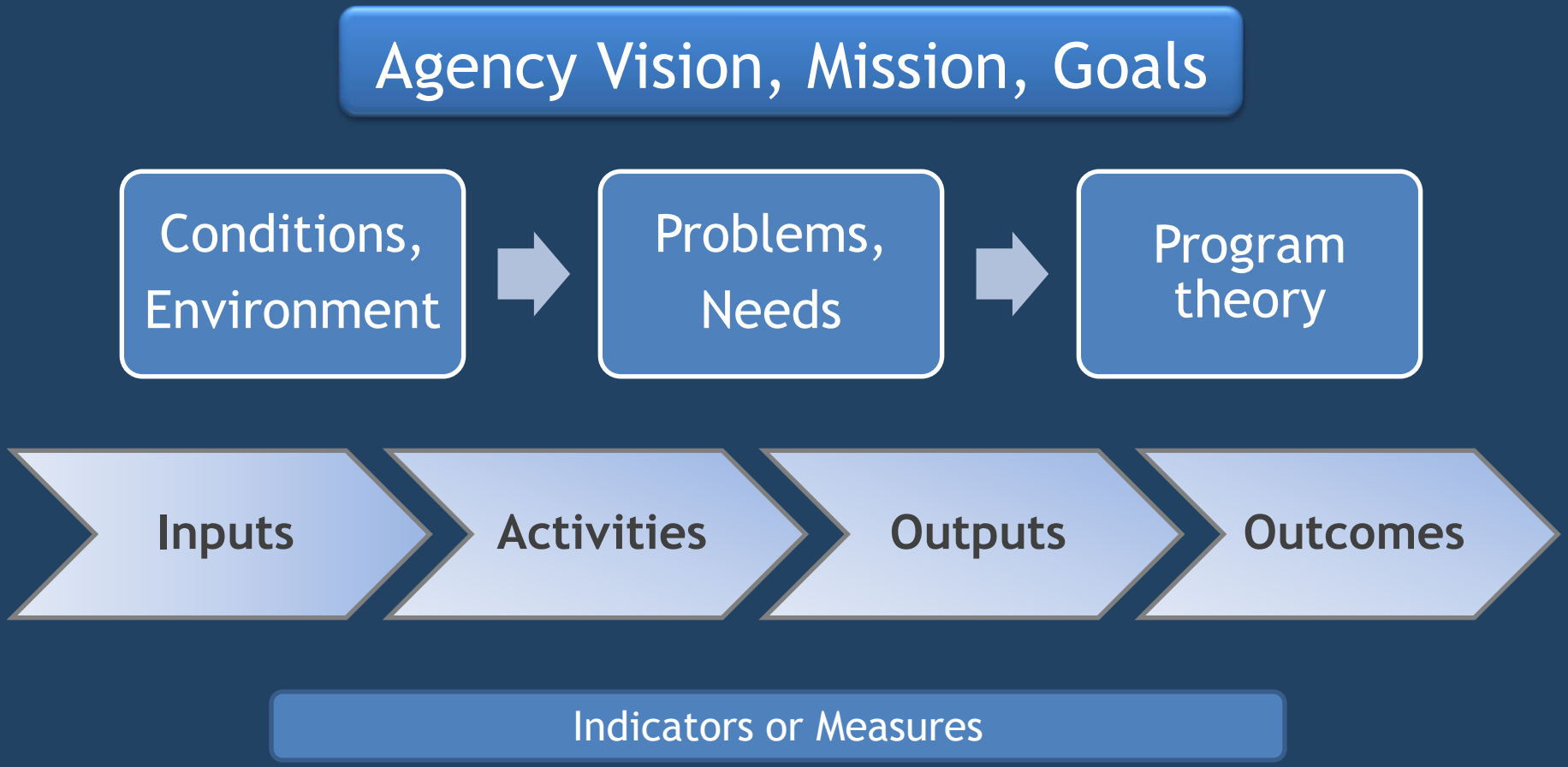


The Logic of Public Health



- # of inspections
- # of critical violations
- % of critical violations corrected within 24 hours
- # of foodborne outbreaks

Basic Logic Model Parts



Inputs

Account of ***resources invested*** in the program…

- Staff
- Volunteers
- Time
- Money
- Materials
- Equipment

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Activities

Describes what the program does…

- Provides counseling sessions
- Conducts workshops on heart disease
- Inspects housing units
- Distributes smoking cessation materials

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Outputs

Measures what the program does and who the program reaches…

# of workshops held
# of brochures
# of counseling sessions

# of parents served
# of schools visited
# of neighborhoods reached

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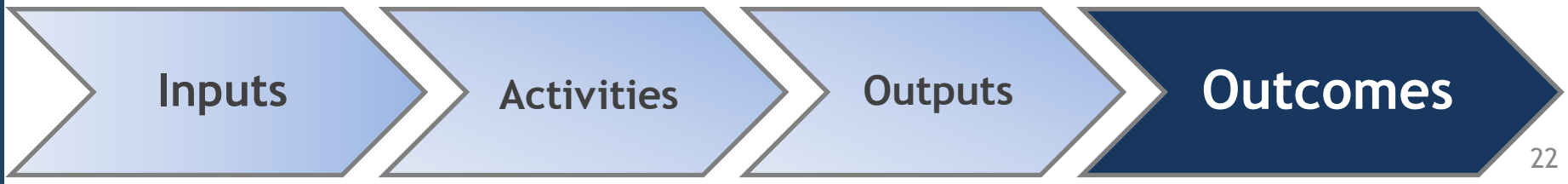
Outcomes

Shows the program's ***theory of change***

- Describes desired individual, family, or community change
- Can be measured

Short-term	Mid-term	Long-term
Change in ***learning***…	Change in ***action***…	Change in ***condition***…
» Knowledge	» Behavior	» Environment
» Attitude	» Policy	» Morbidity and Mortality
» Skills	» Practices	» Quality of Life



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Outcomes
Car Seat Safety Program Example

Short-term	Mid-term	Long-term
Change in ***learning…***	Change in ***action…***	Change in ***condition…***
» Increased knowledge about how to correctly install a car seat	» Increased % of correct car seat installation by parents seen at car seat checks	» Reduced injury hospitalizations and deaths of children in auto accidents
» Increased ability of parents to correctly install a car seat		

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Outcomes

Shows the program's ***theory of change***

- Improving services leads to change
- Increases robustness and reach of program

Process Outcomes	Impact Outcomes	Health Outcomes
Change in ***way it's done . . .***	Change in ***learning, action, condition . . .***	Change in ***population health . . .***
» Timeliness	» Knowledge, Attitudes, Skills	» Health behavior, determinants, and status
» Customer service	» Behavior	
» Effectiveness	» Policy, Practices	

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Outcomes

Process Outcomes	Impact Outcomes	Health Outcomes
Change in ***effectiveness***…	Change in ***learning*** and ***action***…	Change in ***condition***…
Increased participation of parents at car seat safety check	» Increased knowledge about how to correctly install a car seat	» Reduced injury hospitalizations and deaths of children in auto accidents
Increased satisfaction from materials provided to support correct installation	» Increased ability of parents to correctly install a car seat	
	» Increased % of correct car seat installation by parents seen at car seat checks	

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Causal Arrows

- Arrows can go from:
  - Activities to other activities
  - Activities to outcomes
  - Early effects/outcomes to later one

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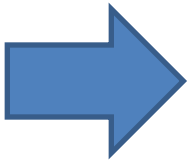
Strong and Weak Arrows

Strong Arrows



I believe A leads to B because of:

- Published studies
- Demonstration projects
- Best practices
- Theoretical backing

Weak Arrows

I believe A leads to B because:

- It seems really logical
- Actually, it's more like I *hope* A leads to B

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Outcome Measures

Outcomes should be:

- Realistic
- Achievable
- Directly related to program activities
- Written clearly
  - Who/what
  - Change desired
  - In what
  - By when

Example:

- Providers increased their knowledge by 30% on how to order vaccine through CHILD Profile by June 30.

Measures should be:

- Specific
- Could be more than 1 measure per outcome
- Require data collection
- Example:
  - % knowledge gained on pre and post test evaluation
  - % providers attending training sessions

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	Outcome	Outcome Measure
Short-term	Pregnant women increased knowledge regarding recommended vitamin and calcium intake	% of pregnant women who know recommended vitamin and calcium intake
Mid-term	Increased pregnant women taking recommended vitamins and calcium during 1st trimester by 20%, by May 31, 2013	% of pregnant women who take recommended vitamins and calcium
Long-term	Infants experienced fewer neural tube defects	% of infants with neural tube defects

Evolving Outcomes

- Reduced % pregnant women who smoke in program by December 2012
  - Measure: % pregnant women who smoke
    - 32 smoke/124 women or 26%

- Reduced % pregnant women who smoke in program by 20% (want 20% rate) by December 2013
- Reduced % pregnant women who smoke in program to 20% by December 2013
- Reduced % pregnant women who smoke in program by 6 percentage points by December 2013

Outcomes and Measures

Activities	Outputs
• Offer dance classes • Start sports groups	# of kids served # of dance classes # of sport groups

Change in Attitude	Change in Behavior	Change in Status
Short-term outcome	Mid-term outcome	Long-term outcome
Kids will learn fun physical activities	Kids will spend more time being physically active	Kids will be more physically fit
% of kids who like dance or sports	% of time kids spend on physical activities	Change in BMI and fitness test

Discussion on Outcomes…

- Your outcomes won't be perfect the first time
- You can develop good outcomes over time
- The only right set of outcomes are the set that make sense to you and your stakeholders
- Outcomes should be based on what you can realistically achieve through your program activities
- Outcomes should be useful to your program and not just to fulfill a requirement
- The sign of a good set of outcomes is that they are easily understood by all stakeholders

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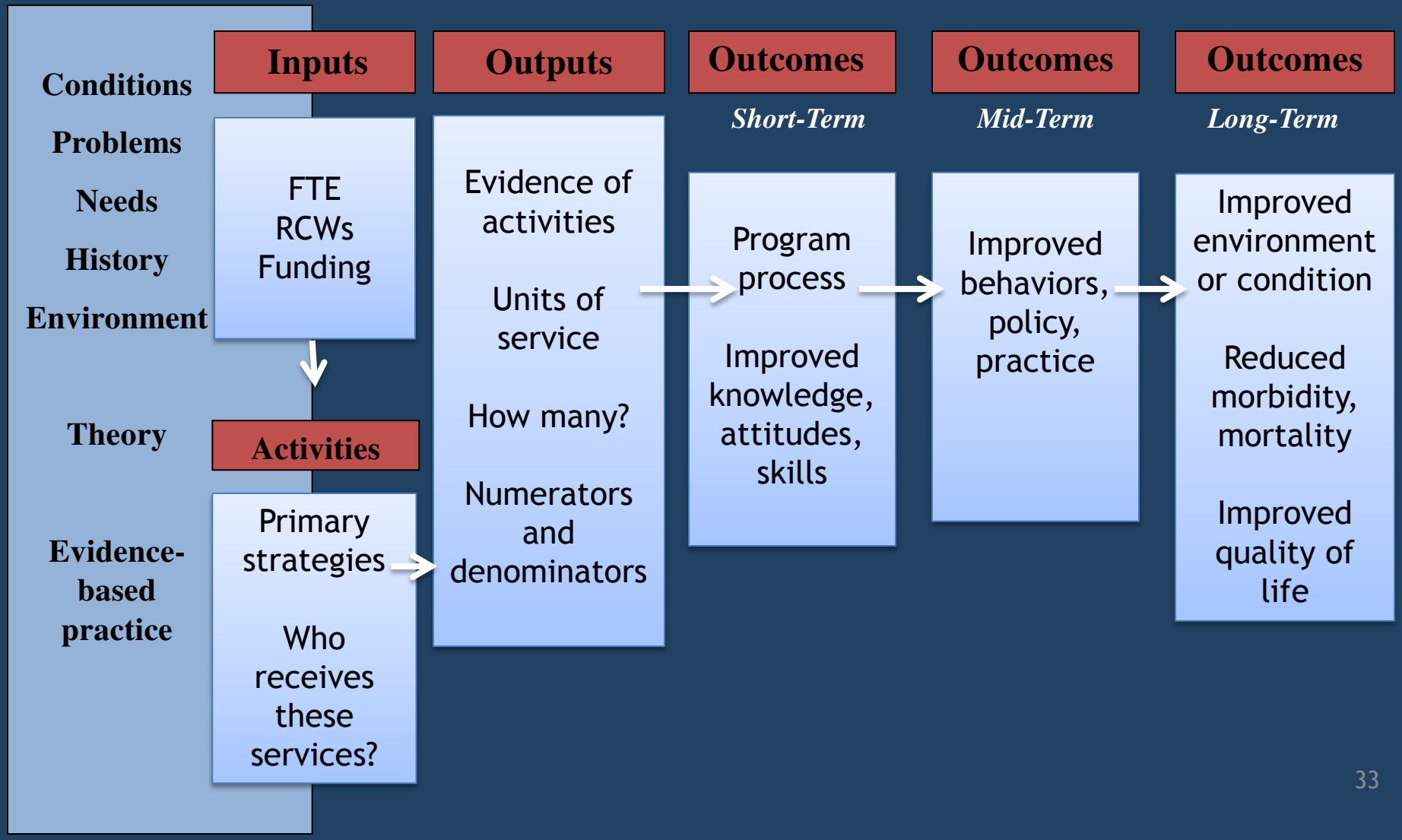
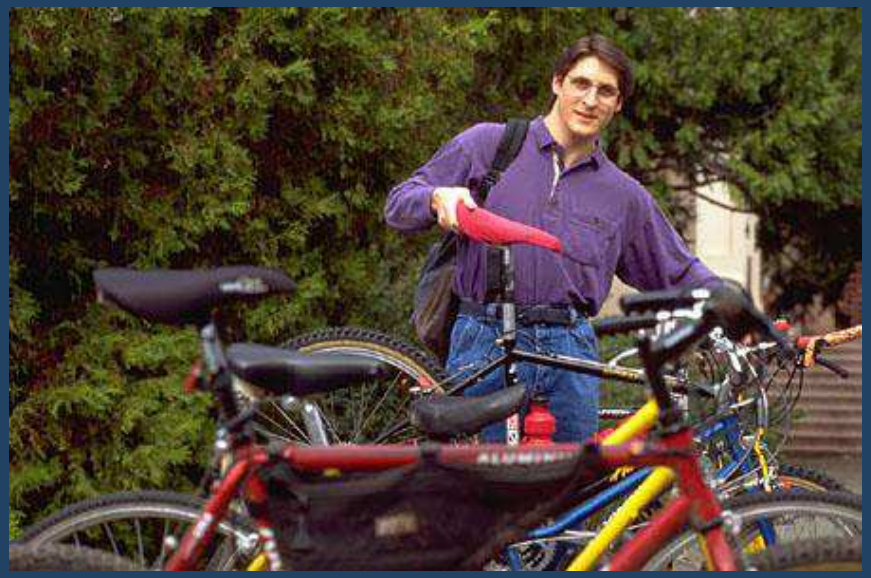
Skeleton Logic Model: Any Health Problem

Your agency vision, mission, and goals!





An Example and an Exercise

Unintentional Injury

Increase in head injuries

4% helmet use

Cost of helmets

Intersection problems

Community discussions

New commissioner

Research on head injuries

If families are provided helmets and educated on the issue, more children will wear helmet while biking.

Inputs

Resources

Grant
Community Partnerships
Staff
Discount helmet program

Activities

Coordinate Safe Kids coalition

Distribute low cost helmets through partners to low-income families

Outputs

helmets distributed

targeted schools with safety program

partners in coalition

signed up for helmet distribution

Outcomes

Short-Term

Increased partners in coalition

High satisfaction of members

Increased partners signed up to distribute helmets to target population

Indicator:

% partners signed up

Outcomes

Mid-Term

Increased % of helmets worn by children at selected sites

Increased # of schools with bicycle safety program

Indicator:

% helmet use observed at 6 sites

Outcomes

Long-Term

Reduced unintentional injuries and deaths from pedacycle incidents

Indicator:

Rate of hospitalization and mortality from pedacyle injuries

Evolving Outcomes

Increased partners signed up to distribute helmets to target population by end of year.

- Indicator: % partners signed up to distribute helmets
- New program = no partners
- Data at end of year: 4 of 15 partners or 27%

Next year's outcome measure:
Increased partners who signed up to distribute helmets by 50% (want 6 partners)

Or

Over 50% of partners signed up to distribute helmets (want 8 partners) by July 1st.

Exercise: My Program _____

Theory	Inputs	Activities	Outputs	Outcomes	Indicators
Write out the theory behind what you believe the activities will do for the problem you are trying to improve.	List the resources, constraints, influences on your program.	List the 8 main activities or strategies that you do in this program.	Describe the numbers you will need for each indicator.	Start with 1 of your top activities. List what results you want to have achieved from this activity. Who/what Change desired In what By when	List the measures for each outcome.
		Present tense: Train, convene, inspect, test, convene	Numbers of	Past tense: Increased, Reduced, Maintained	% Percentage

What do you (and others) want to know about this program?

Process Evaluation	Outcome Evaluation
How is the program implemented?	To what extent are desired changes occurring? For whom?
Is the program at capacity?	Is the program making a difference?
Are activities delivered as intended?	What seems to work? Not work?
Are participants being reached as intended?	What are unintended outcomes?
What are participant reactions?	Are we doing the right activities?

Maturity of Program

New Program	Established Program	Long-Term Program
Greater focus on process	Focus on process, short and mid-term outcomes	Focus on process, short, mid, and long term outcomes
Is the program operating as planned?	Is the program achieving its outcomes?	Is the program achieving its outcomes?
Did it reach the capacity level intended?	Are the short and mid-term outcomes aligned?	Are there population health results?

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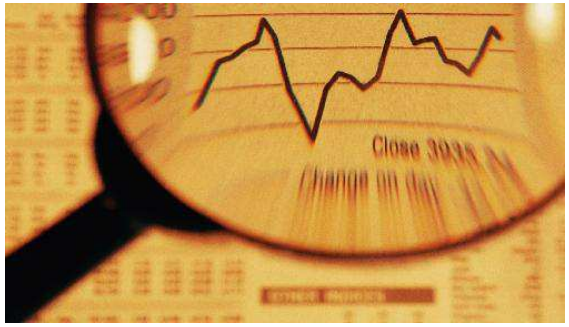
Data Collection

Outcome	Outcome Indicators	Data Source	Data Collection Tool	2011 Baseline	2012 Data
Reduced % pregnant women who smoke in program by December 2012	% pregnant women who smoke	Client assessment tool	Database (Form entered or gathered electronically)	120 clients 42 smoke 35%	TBD



You have to look at your data . . .

this is the most important and valuable part of having a logic model.

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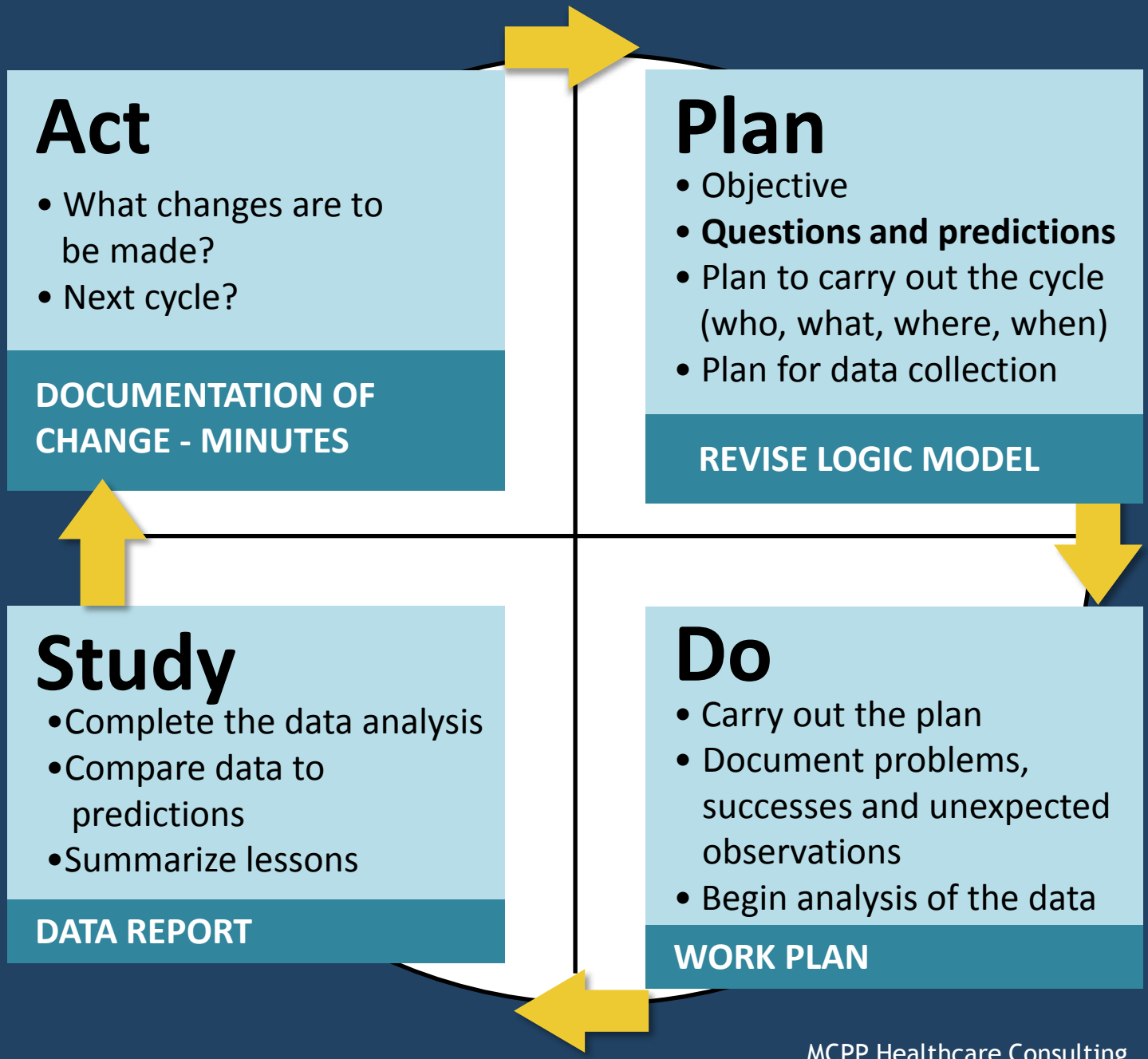
Revisit and Realign

- Set time to analyze data
- Clarify path of activities to effects
- Expand activities to reach goals
- Establish or revise mile markers (steps)
- Redefine the boundary of your program
- Reframe goals or desired outcomes



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Key points about Logic Models

- Take time, but have huge value
- Align activities to outcomes
- Put data collection tools in place
- Focus activities on what's important, not on what's nice to do
- Become the way you do your work
- **The greatest value is pulling the logic model data and looking at the results**

Resources

- University of Wisconsin – Extension: Planning and Evaluating Education and Outreach Programs with a Logic Model
  - uwex.edu/ces/lmcourse#
- Community Tool Box: Developing a Logic Model
  - ctb.ku.edu/
- NW Center for PH Practice – Online training
  - nwcphp.org/training/courses/logic-models
- Logic Model templates
  uwex.edu/ces/pdande/evaluation/evallogicmodelworksheets.html
- Center for Disease Control
  - cdc.gov/eval/resources/index.htm
- W.K. Kellogg Foundation Logic Model Development Guide
  - wkkf.org/Pubs/Tools/Evaluation/Pub3669.pdf
- How Logic Models Can Help NIDRR Grantees Plan and Demonstrate Progress
  - ncddr.org/du/researchexchange/v09n02/1_logic.html

Please complete the evaluation survey we send out!

Our Upcoming **In-person** Training Events

Experiencing the QI Method
July 18, 2012, 9 AM to 3:30 PM,
Tacoma-Pierce County Health Dept.

Preparing for National Public Health Accreditation
September 20, 2012, 9 AM to 3:30 PM,
Tacoma-Pierce County Health Dept.

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What Questions Have You Thought Of?