

Epidemiology Essentials for Public Health Practice: Planning your Programs

Kimberley Shoaf, DrPH

Associate Chief, Community Engagement
University of Utah, Division of Public Health

Community needs assessment



Community needs assessment STEPS

- Identify team and resources
 - Engage community partners and stakeholders
- Define purpose and scope
- Data collection
- Identifying priorities
- Communicating results
- Planning, implementation, and strategy
- Monitoring progress and evaluating results

Have identified the priority health concern....



The Health Education/Promotion Planning Model.

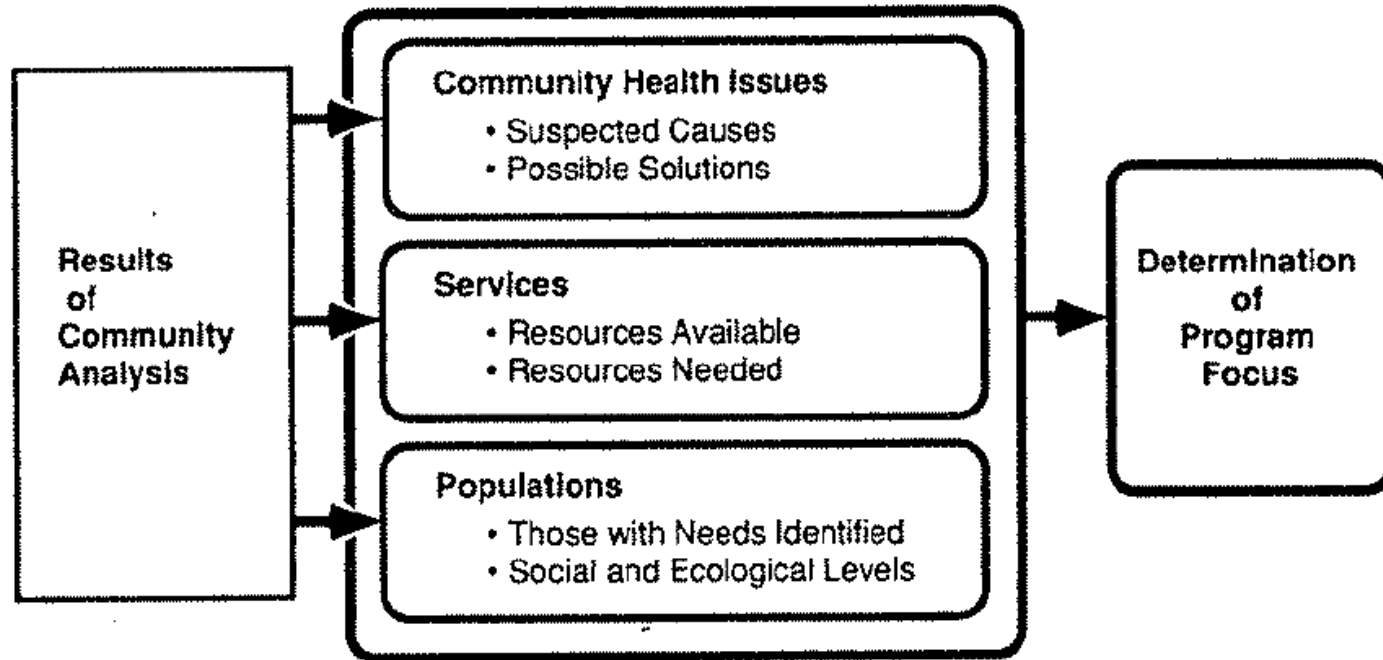


Fig. 3-1. A targeted assessment of researching and expounding on the specific results of the community analysis leads to appropriate determination of program focus and a sound, comprehensive program.

Selecting an evidence-based program to meet your community needs

Adopt, Adapt, Create

- Adopt an existing evidence-based program
 - Same (ish) populations
 - Same (ish) problems
 - Same resources
 - Must adopt the whole program
- Adapt an evidence-based program to your problem/population
 - No longer an “evidence-based program” must re-evaluate
 - Use theory to adapt
- Create a new program
 - Use theory and evidence as a basis



Theoretical framework

- Explanatory theory: what is the nature of the *problem* and what factors need to be modified?
- Change theory: informs the development and implementation of intervention strategies
- Without considering these factors, you may:
 - Address the wrong factors
 - Address too few of the factors
 - Miss elements that are needed to fully address the issue
- Example: Condom Use
 - Information alone will not improve use
 - Condoms must be available, accessible
 - Individuals need skills to comfortable negotiating use with partner
 - Individuals must believe that condoms will protect them, etc.

Theories

- Theories which explain health behavior and health behavior change by focusing on individual characteristics
- Theories which explain change in communities and communal action for health
- Models which guide communication to bring about behavior change
- Models for change in organizations and creation of supportive organizational practices
- Models for development and implementation of healthy public policy

National Cancer Institute

Theory at a Glance

A Guide For Health Promotion Practice

Theories

Using Explanatory Theory and Change Theory to Plan and Evaluate Programs

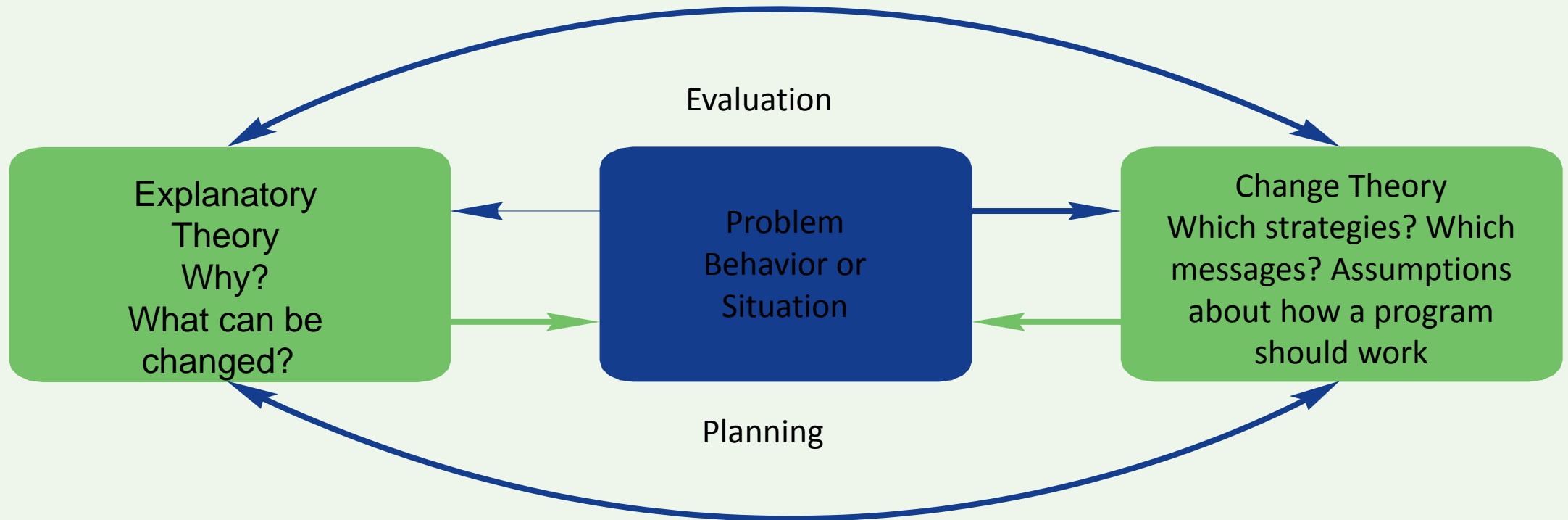
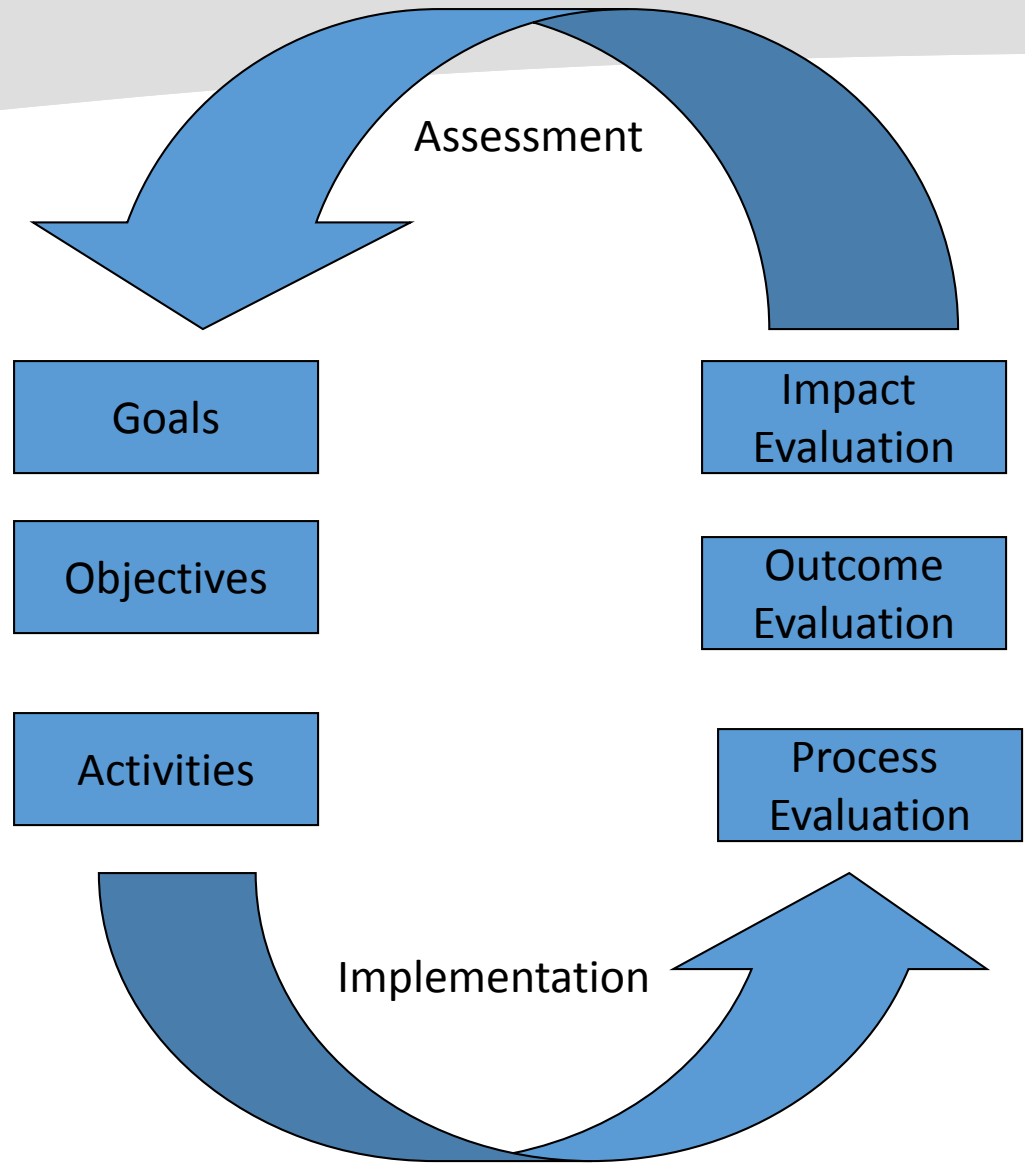


Table 11.		Summary of Theories: Focus and Key Concepts					
	Theory	Focus	Key Concepts				
Individual Level	Health Belief Model	Individuals' perceptions of the threat posed by a health problem, the benefits of avoiding the threat, and factors influencing the decision to act	Perceived susceptibility Perceived severity Perceived benefits Perceived barriers Cues to action Self-efficacy				
	Stages of Change Model		Precontemplation Contemplation Decision Action Maintenance				
	Theory of Planned Behavior		Individuals' attitudes toward a behavior, perceptions of norms, and beliefs about the ease or difficulty of changing	Behavioral intention Attitude Subjective norm Perceived behavioral control			
	Precaution Adoption Process Model		Individuals' journey from lack of awareness to action and maintenance	Unaware of issue Unengaged by issue Deciding about acting Deciding not to act Deciding to act Acting Maintenance			
	Interpersonal Level		Social Cognitive Theory	Personal factors, environmental factors, and human behavior exert influence on each other	Reciprocal determinism Behavioral capability Expectations Self-efficacy Observational learning Reinforcements		
			Community Level	Community Organization	Empowerment Community capacity Participation Relevance Issue selection Critical consciousness		
					Diffusion of Innovations	How new ideas, products, and practices spread within a society or from one society to another	Relative advantage Compatibility Complexity Triability Observability
					Communication Theory	How different types of communication affect health behavior	Example: AgendaSetting Media agenda setting Public agenda setting Policy agenda setting Problem identification, definition Framing



Goals

We can think of a goal as doing the following:

- Defines the destination
- Changes the direction to move toward the destination
- Changes the mindset to adjust to and support the new direction
- Creates the necessity to develop specific tactics

<http://www.investorwords.com/article/#ixzz3zuDuFbal>

Write a goal for your community

Objectives

- S = Specific
- M = Measurable
- A = Attainable
- R = Relevant
- T = Time-bound

Types of Objectives

- Outcome objectives
 - Health objectives
 - Knowledge objectives
 - Attitude objectives
- Process objectives
 - Intermediate steps to achieve outcomes

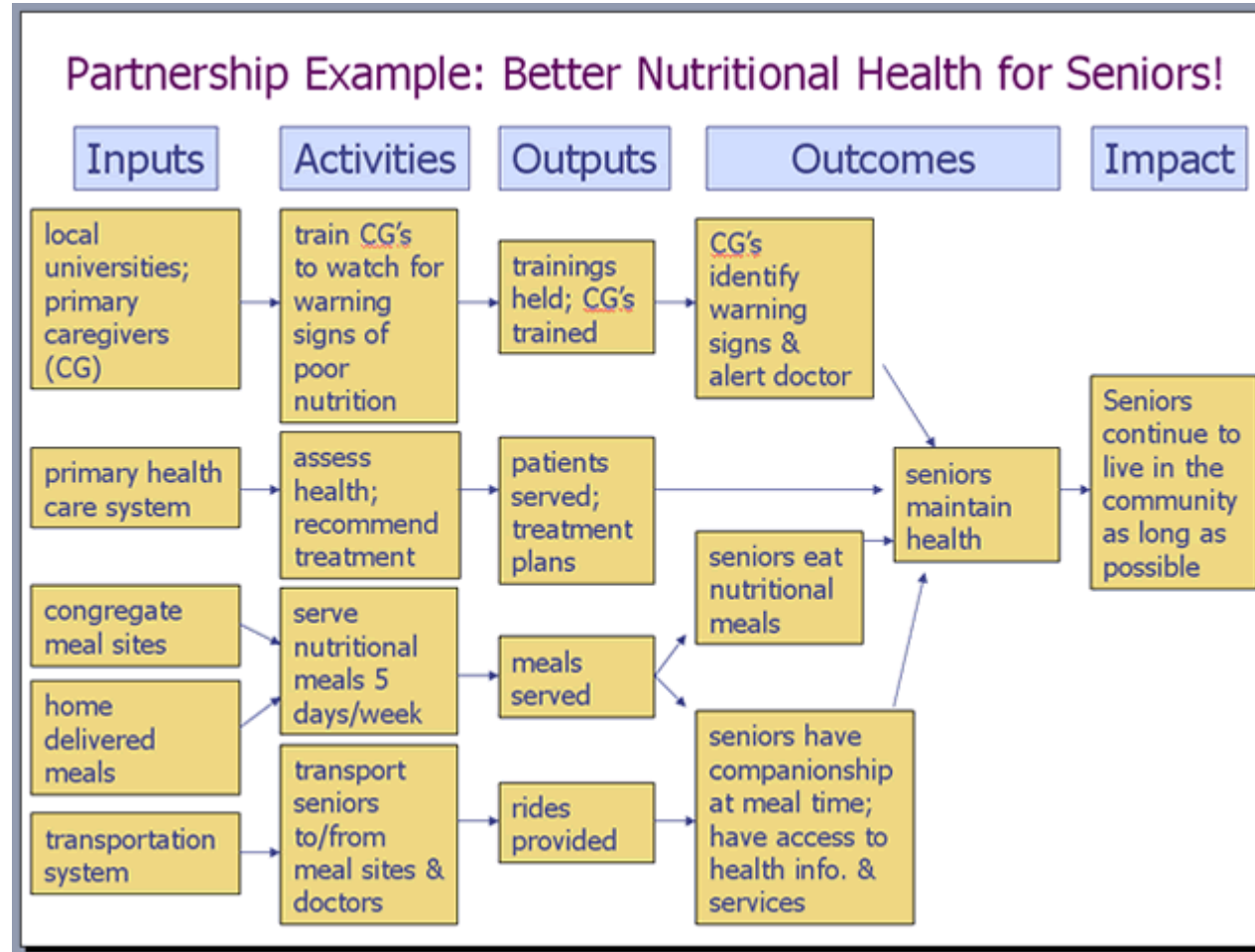
Write 3 objectives

Logic Models

- **Definition of a Logic Model**

- “A logic model is a systematic and visual way to present and share your understanding of the relationships among the resources you have to operate your program, the activities you plan, and the changes or results you hope to achieve.” (W.K. Kellogg Foundation 2004)

Logic Model Example



Start a Logic Model

- Add activities to achieve the outcome objectives

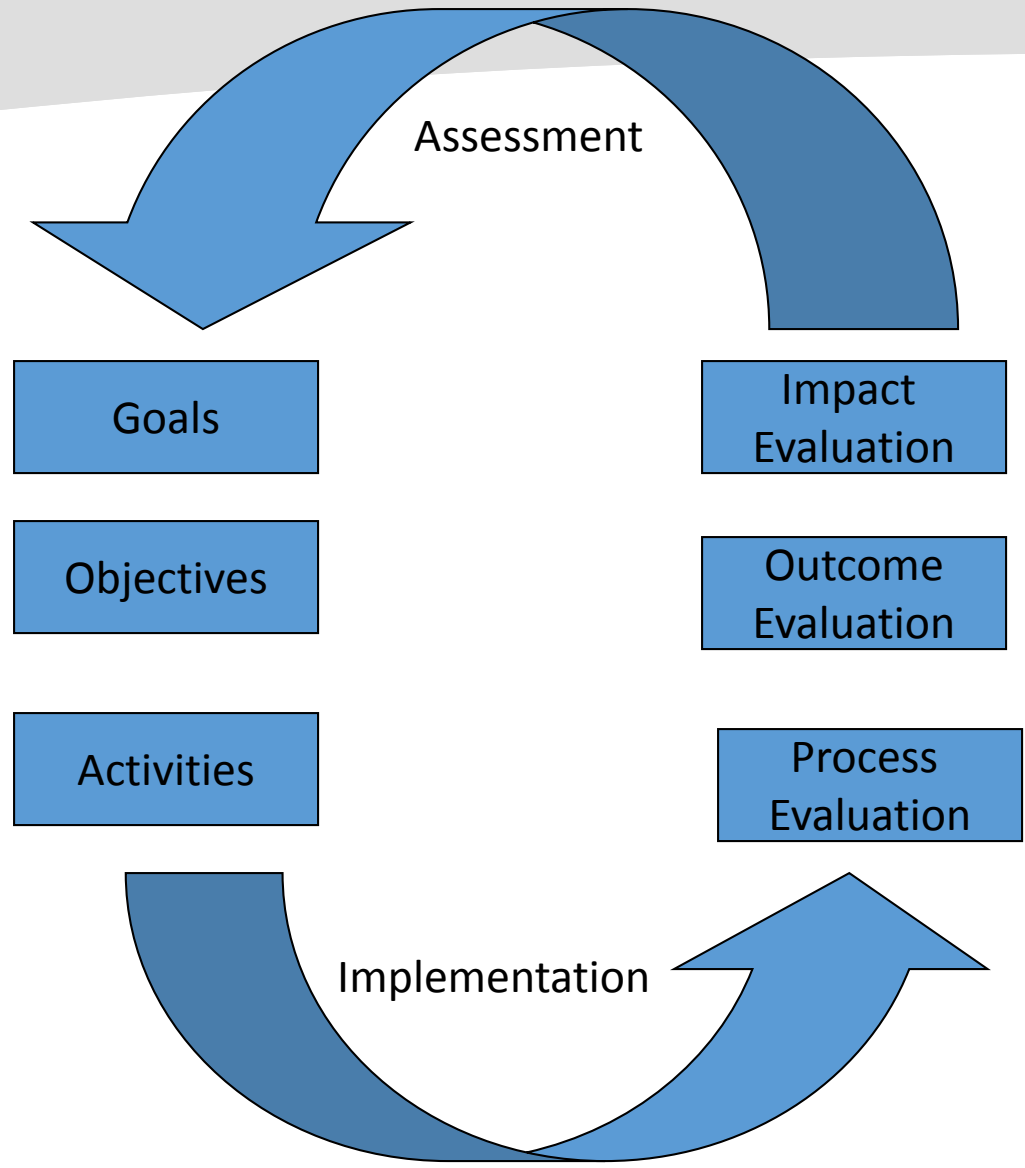
Implementation and Process Evaluation

Implementation

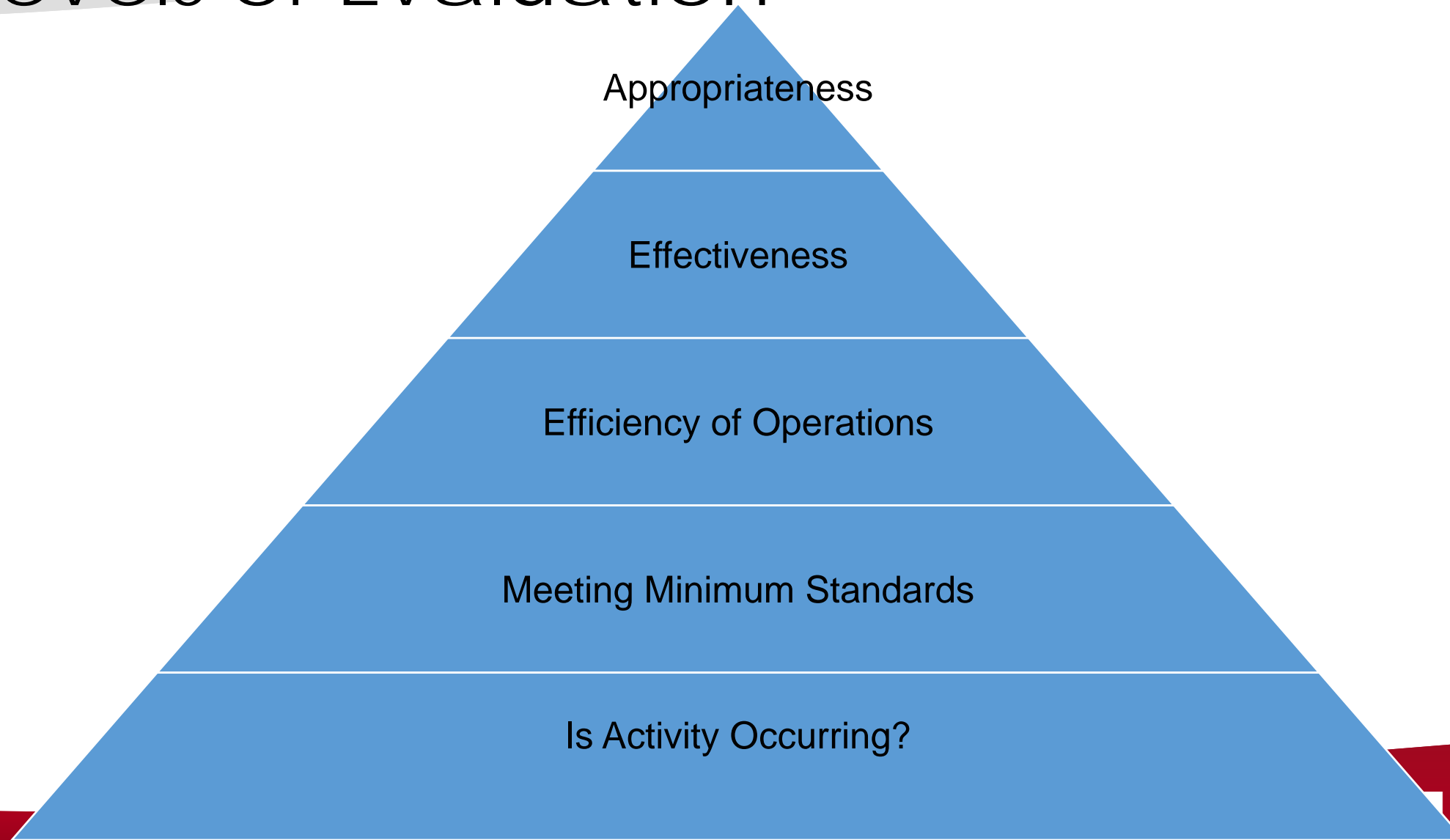
- Pilot project
- Staged Implementation
- Full-Scale Implementation

Implementation

- Gaining acceptance for program
- Ensuring resources and supplies
- Program management



Levels of Evaluation



Process Evaluation

- Procedures
- Policies
- Workflow
- Materials
- Personnel Management
- Programmatic Performance
- Efficiency

Process Objectives

- Write 3 process objectives to measure if activities have occurred.

Program Monitoring (Freeman/Rossi)

- Defined as the systematic examination of program coverage, delivery, and resource utilization data
- Begins when program begins: is carried throughout the life of the program
- May be continuous/may be at discrete points in time
- Presumes a system for data collection

Program Monitoring (Freeman/Rossi)

- Associated terms = quality assurance, treatment integrity, process evaluation
- Purposes of program monitoring
 - improvements to program delivery (early)
 - help interpret effectiveness results
 - assist in diffusion /technology transfer
 - allow “accountability “
 - collect resource/cost data for efficiency analysis

Program Monitoring Goals(Freeman/Rossi)

Target participation and service utilization - extent to which program reaching right target: recruitment and use (coverage)

Program organization - delivery of service consistent with program design (integrity)

Cost - what resources expended (accountability)

Outcomes -whether positive expected changes appearing (outcome monitoring)

Program Monitoring (Freeman/Rossi)

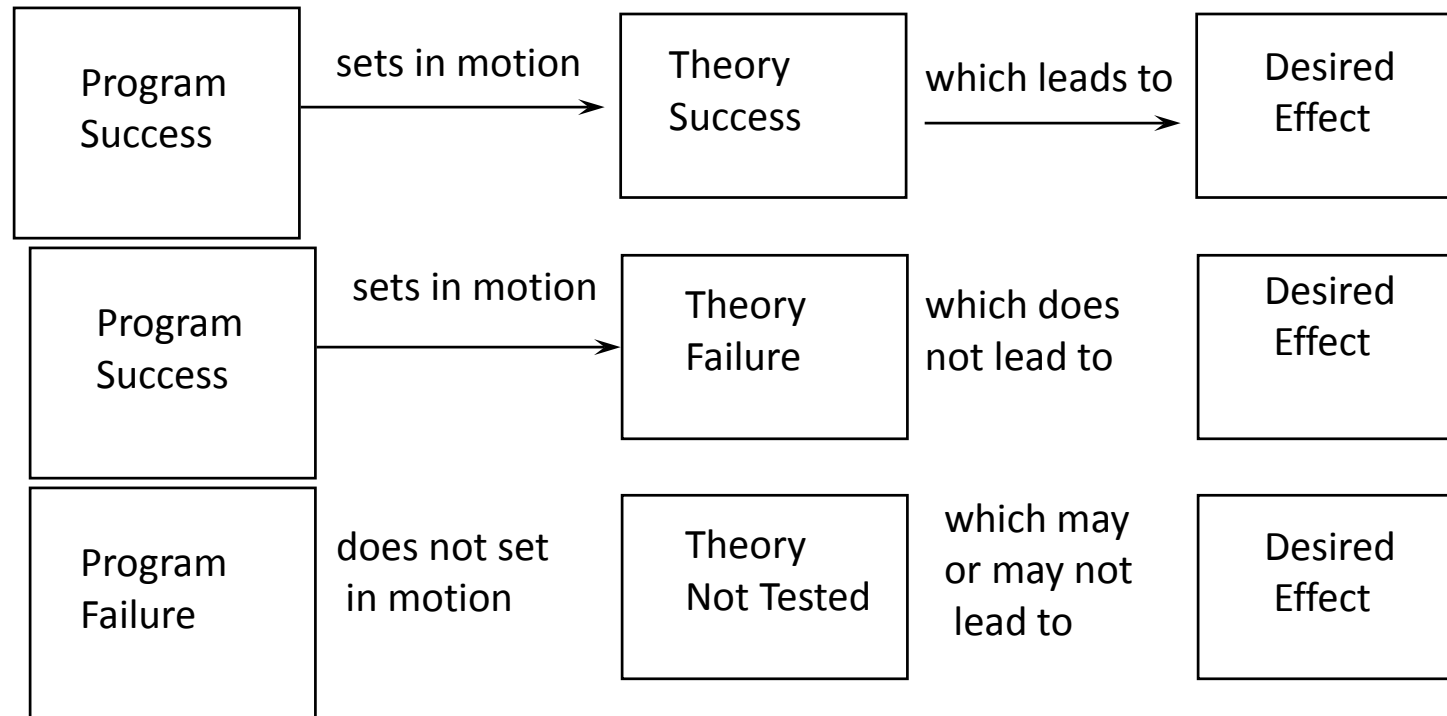
Criteria for judgment in program monitoring = process theory
elements in program theory determine what to assess:

- 1) what were program objectives
- 2) what are program performance indicators
- 3) what level of performance was proposed

Program Monitoring (Freeman/Rossi)

- Due to implementation failure
 - the program was not implemented as planned (Type III error)
- Due to theory failure
 - No relationship between proximal / distal outcomes (e.g the KAP gap/beh = health)

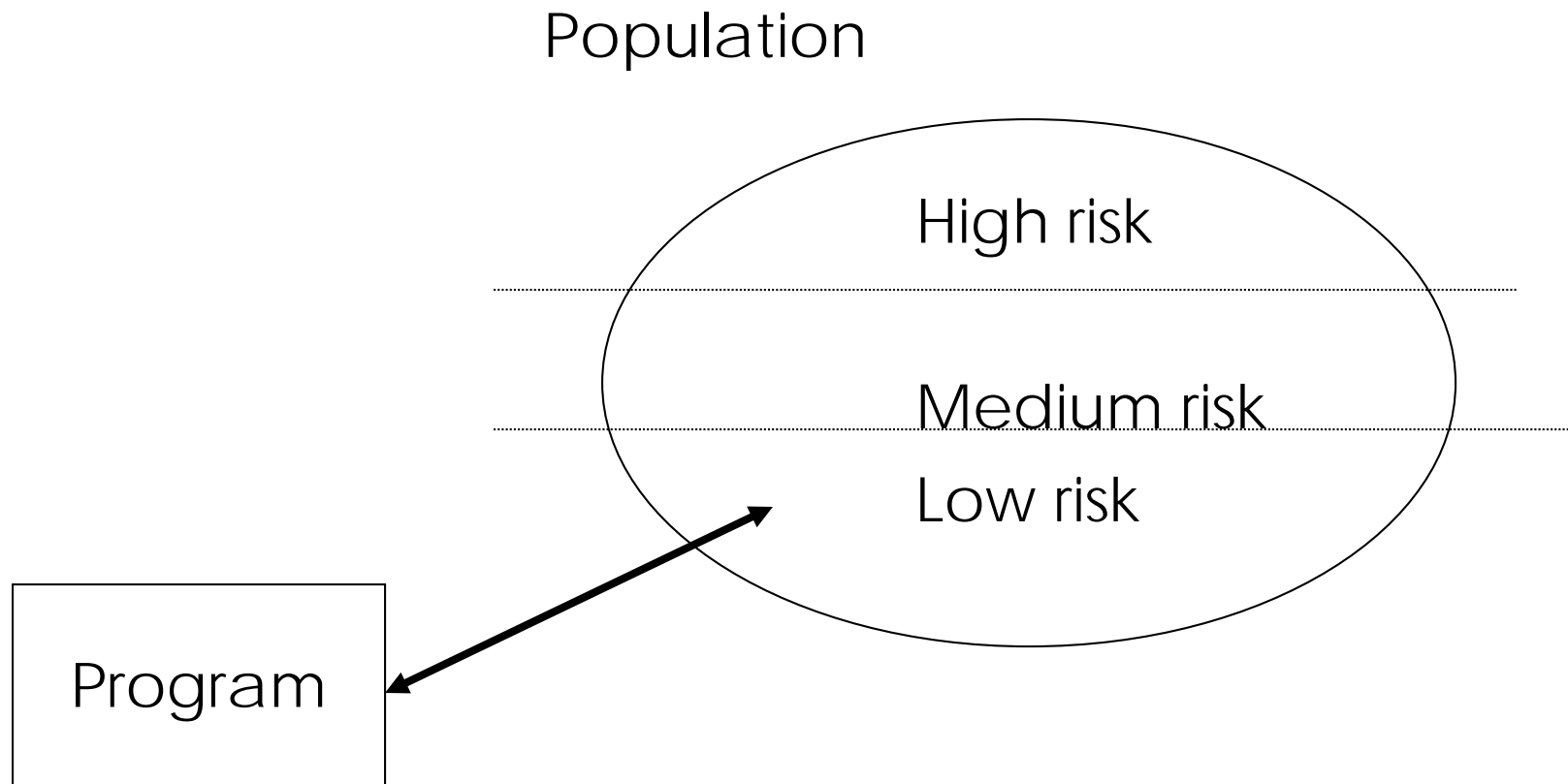
Figure : Weiss' View of Program vs. Theory Failures. (from Valente, 2002)



Monitoring target participation

- Coverage -the extent to which a program is reaching its intended target population
- Bias in coverage - the extent to which subgroups of a target population participate differentially in program=over coverage/ under-coverage
- Sources of bias in coverage = self selection, attrition, creaming.

Schema : Self-selection, creaming, attrition biases



Bias in coverage

- Can seriously impact the validity of impact assessment - e.g. populations are not comparable, persons drop out
- most common coverage problem - lack of full target participation = **under-coverage**
- see schema : always a danger that people most in need of program least likely to get it

Bias in coverage

- other problem -**over-coverage** -
 - eg. Bilingual education programs - some schools included English speakers so they could qualify for more DOE \$ - also a way to get “problem” children out of mainstream classes

Measuring coverage (Rossi /Freeman)

Efficient use of program resources:

- a) maximize the number of person served who are in need
- b) minimize the number of persons served who are not in need

Measuring coverage

Efficient use of program resources:

- maximize # served who are in need/
minimize # served who are not in need

$$\text{Coverage served efficiency} = 100X \left\{ \begin{array}{l} \frac{\# \text{ in need served}}{\text{Tot } \# \text{ in need}} \quad \frac{\# \text{ not in need}}{\text{Tot } \# \text{ served}} \end{array} \right\}$$

Measuring coverage

- Formula -

- + 100 actual number served = designated pop in need and no inappropriate targets served
- 100 only inappropriate targets served

$$\text{Cov eff} = 100 \times \left(\begin{array}{cc} 70 & 30 \\ \hline & - \\ 100 & 100 \end{array} \right) = + 40$$

Problem in estimating coverage : # in need?

Monitoring service utilization

Important from a number of perspectives:

- accountability - what are we spending ?
- management - who is doing what to whom?
- evaluation side - what does this mean ?
- critical if services are voluntary...Can be serious biases in coverage.

Service utilization flowchart

Rossi and Freeman pp 110 & 195

- Identify important events so that information can be collected about them
- Program monitoring - what happened at each step
- + What should happen at each step : poor program performance if does not happen
- Good or poor program performance depends on “standards of care “

Avoid the Black Box



Monitoring Delivery of Services

- First need basic understanding of what was delivered (who does what to whom in what sequence)
- 1) Specification of services : DIFFERENTIATE
 - who does it(staff, teachers, etc)
 - what do they do: specific tasks vs general description of time / energy spent administration, cost, resources

Monitoring Delivery of Services

2) Accessibility

- who gets it (target)
- what do they get (actual services)
- time and duration of participation
- performance sites, training sites

3) Program support functions: administration, cost, resources, referrals, pr , funding

Analyzing monitoring data

- Description of project - coverage , types and intensity of service, satisfaction
- Comparison between sites
- Discrepancies between program design and implementation
- Use of data to link to programmatic outcomes.

Monitoring data examples : Health com process analysis

- Communications monitoring - are messages getting out, reaching targets ?
- Product monitoring - are products promoted available in marketplace ?
- Health worker monitoring - are health workers getting trained/leading sessions ?
- Management monitoring - weekly logs of staff ..

Monitoring data examples IZ Curriculum distribution

- IZ curriculum -3000 copies printed...
- Did materials reach intended target?
- MIS system:
 - how initial contact made -
 - how teacher/nurse got curriculum
 - cost of distribution effort
 - utilization rates of teachers /nurses
- Best methods : conferences/county insiders

IZ Curriculum distribution monitoring

- What number of teachers who received curriculum are using
- Of 2975 sent out -
 - only 500 got to teachers and 308 to nurses - the people who will use
 - the rest are in county and district offices
- of 800 person in a teaching position who got them - only about 20% have used .

Monitoring Program Outcomes (Rossi/Freeman)

- Articulated by program impact theory
- What are most likely proximal outcome measures
- Program outcome indicators - only those measured for program participants (not generic social indicators)
- change measures good/ client satisfaction -easy

resources

- <http://www.cdc.gov/chinav/database/index.html>
- http://www.centertrt.org/?p=interventions_overview
- <http://thecommunityguide.org/index.html>
- <http://www.healthypeople.gov/2020/tools-resources/Evidence-Based-Resources>
- <http://www.cochranelibrary.com/>