What is Evaluation?

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Course Overview

1. **What is Evaluation?**
2. Outcomes, Impact, and Indicators
3. Why Randomize and Common Critiques
4. How to Randomize
5. Sampling and Sample Size
6. Threats and Analysis
7. Project from Start to Finish
8. Cost-Effectiveness Analysis and Scaling Up
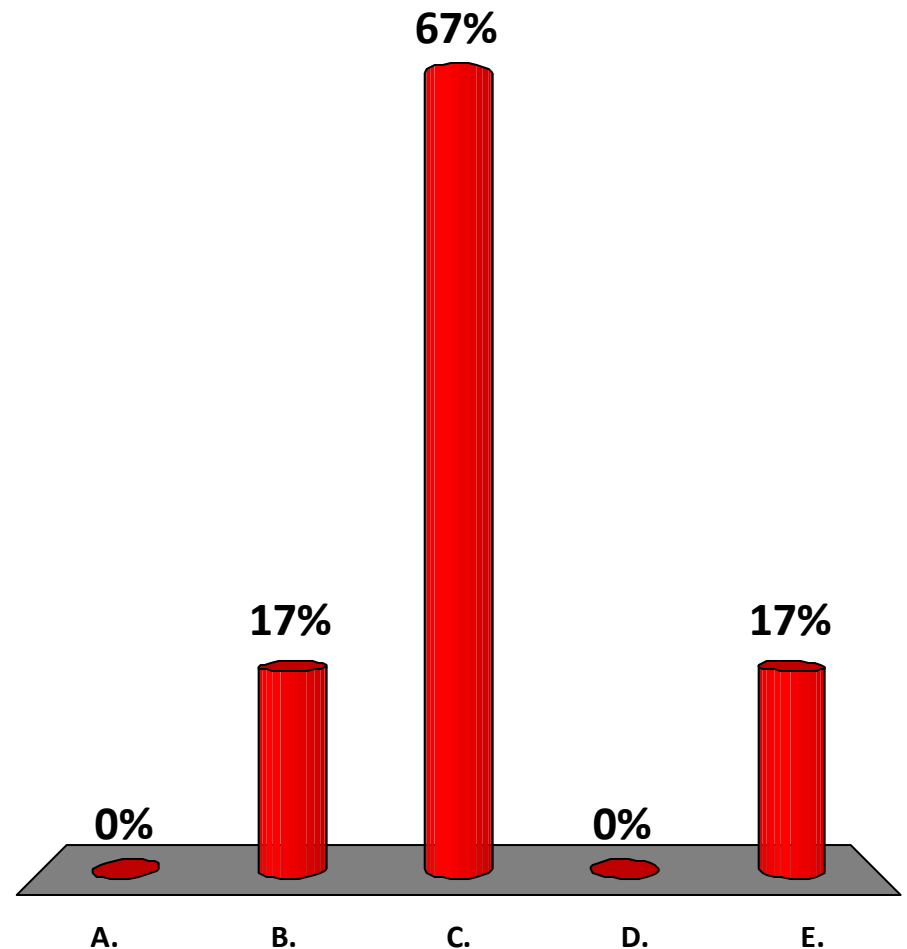
What is Evaluation?

Evaluation

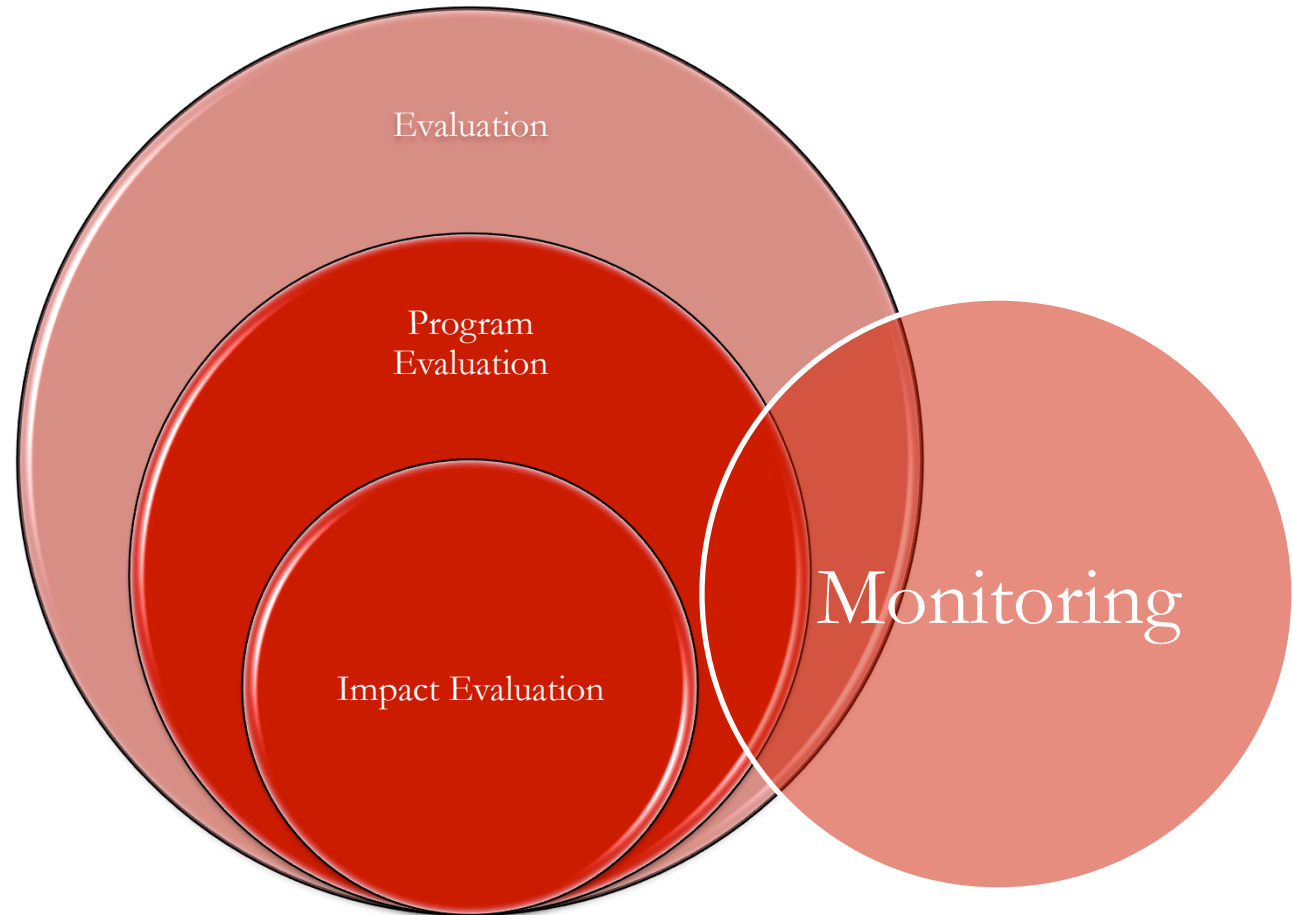Program Evaluation

Impact Evaluation

Program Evaluation
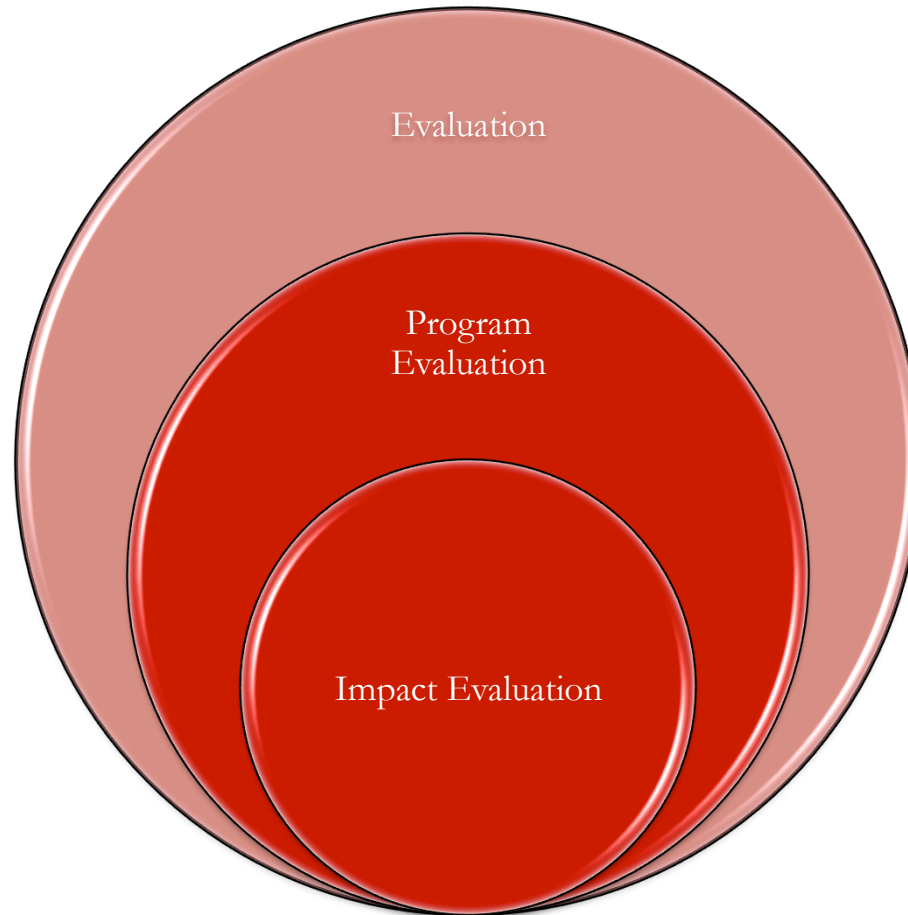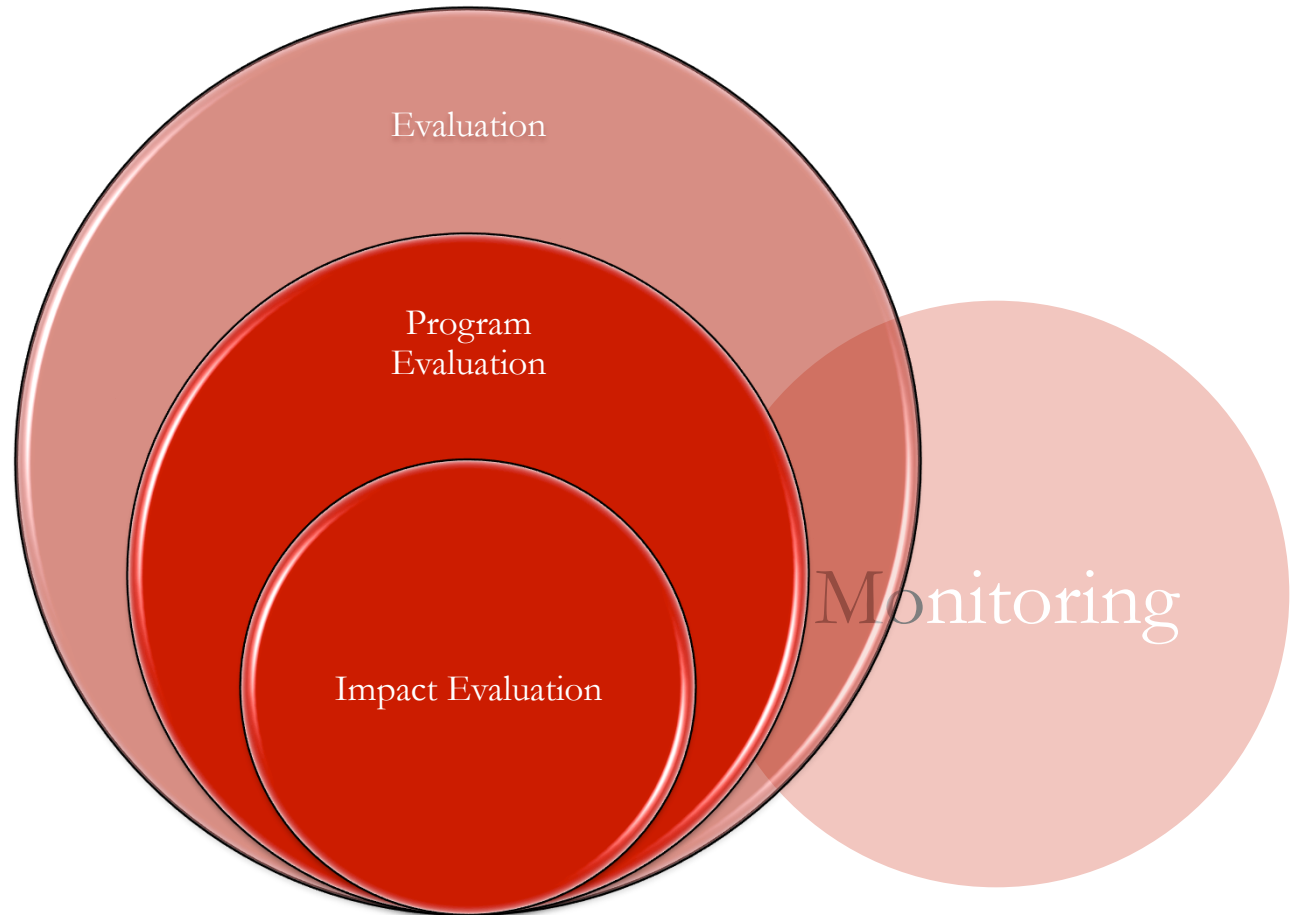
What's the difference between: Monitoring and Evaluation

A. Nothing. They are different words to describe the same activity

B. Monitoring is conducted internally, Evaluation is conducted externally

C. Monitoring is for management, Evaluation is for accountability

D. Don't know

E. Other

67%

17%

17%

0%

0%

A.   B.   C.   D.   E.

Monitoring and Evaluation

Program Evaluation

5 Components of Program Evaluation

1. Needs Assessment
2. Program Theory Assessment
3. Process Evaluation
4. Impact Evaluation
5. Cost Effectiveness

A. What is the problem?
B. How, in theory, does the program fix the problem?
C. Does the program work as planned?
D. Were its goals achieved? The magnitude?
E. Given magnitude and cost, how does it compare to alternatives?

Evaluation should usually be conducted:

A. Externally and independent from the implementers of the program being evaluated

B. Externally and closely integrated with program implementers

C. Internally

D. Don't know

71%

25%

0%

4%

A.   B.   C.   D.
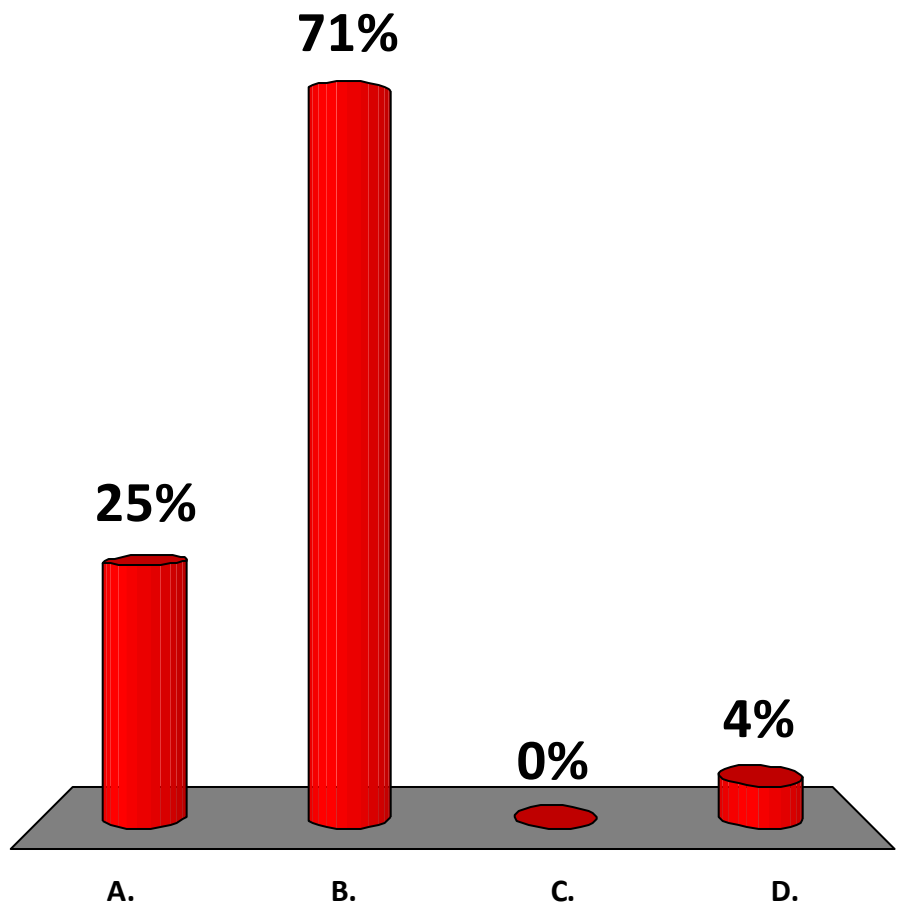
Who is this evaluation for?

A. Politicians / policymakers
B. Constituents
C. Donors
D. Donor Politicians / policymakers/ constituents
E. Academics
F. Technocrats / Experts/ Think Tanks
G. Implementers
H. Proponents, Skeptics
I. Beneficiaries

Who is your *most important audience* for evaluation?

A. Politicians / policymakers
B. Constituents
C. Donor leadership
D. Donor politicians / policymakers/ constituents
E. Academics
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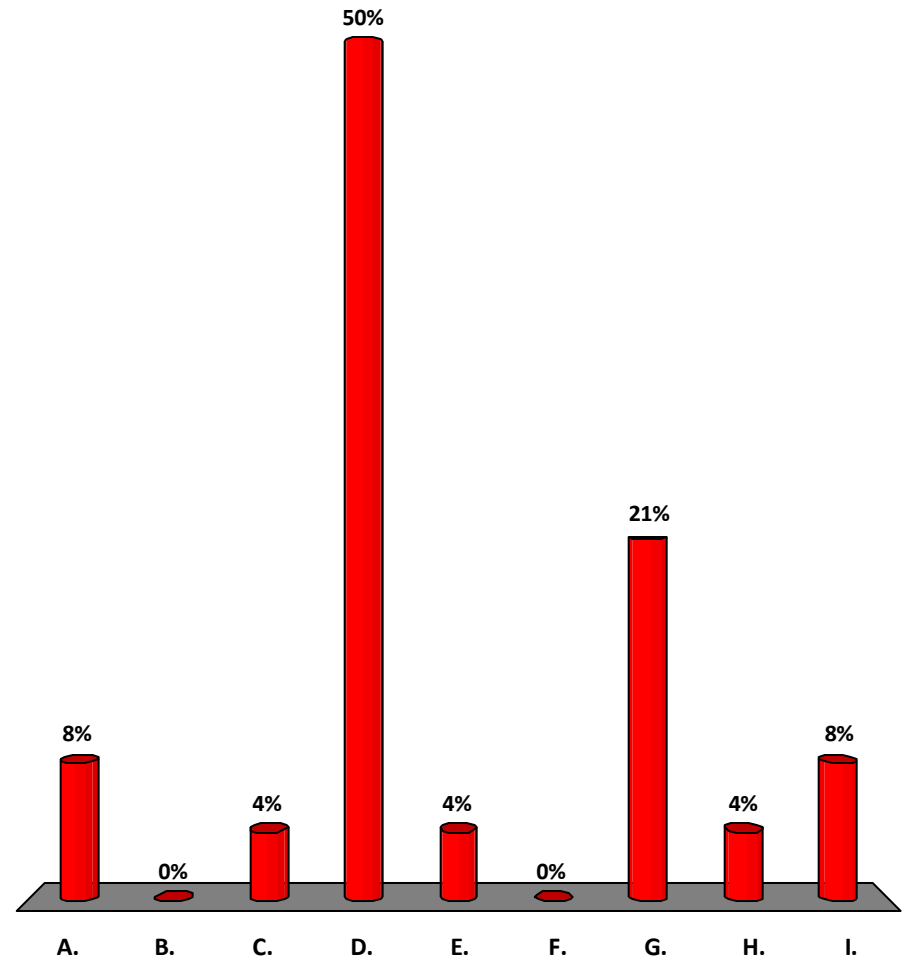
Programs and their Evaluations: where do we start?

Intervention

A. Start with a problem

B. Verify that the problem actually exists

C. Generate a theory of why the problem exists

D. Design the program

E. Think about whether the solution is cost effective

Program Evaluation

A. Start with a question

B. Verify the question hasn't been answered

C. State a hypothesis

D. Design the evaluation

E. Determine whether the value of the answer is worth the cost of the evaluation

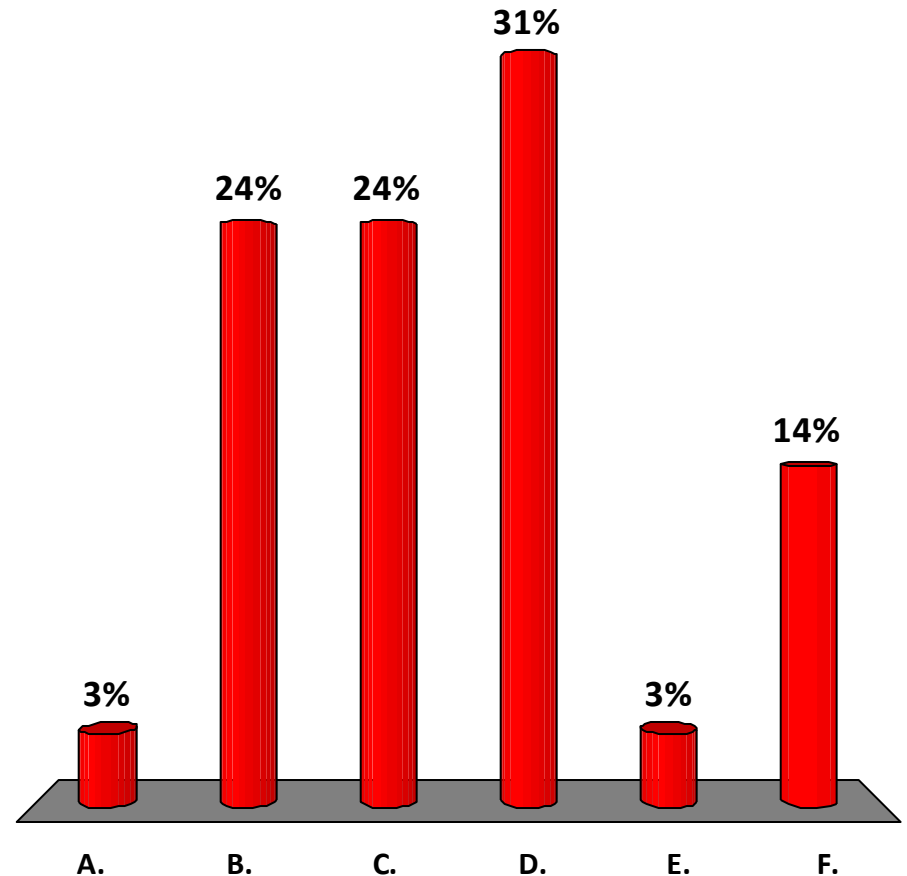An Example

WATER, SANITATION & HEALTH

What do you think is the most cost-effective way to reduce diarrhea?

A. Develop piped water infrastructure

B. Improve existing water sources

C. Increase supply of and demand for chlorine

D. Education on sanitation and health

E. Improved cooking stoves for boiling water

F. Improve sanitation infrastructure

A.	B.	C.	D.	E.	F.
3%	24%	24%	31%	3%	14%

Identifying the problem

NEEDS ASSESSMENT

The Need

A. Nearly 2 million children die each year from diarrhea

B. 20% all child deaths (under 5 years old) are from diarrhea

The Likely Problem

A. Bad Water

B. 13% of world population lacks access to "improved water sources"

The Goal

A. MDG: "reduce by half the proportion of people without access to sustainable drinking water"

The Solution(s)

Really the Problem?

A. Water quality helps little without hygiene (Esrey, 1996)

    A. 42% live without a toilet at home

B. Nearly 2.6 billion people lack any improved sanitation facilities (<u>WHO</u>)

C. *Quantity* of water is a better determinant of health than *quality* of water (Curtis et al, 2000)

D. People are more willing to pay for convenient water than clean water

E. Chlorine is very cheap,

    A. In Zambia, $0.18 per month for a family of six

    B. In Kenya, $0.30 per month

F. Yet less than 10% of households purchase treatment

Alternative Solution(s)?

Devising a Solution

A. What is the theory behind your solution?

B. How does that map to your theory of the problem?

Blueprint for Change

PROGRAM THEORY ASSESSMENT
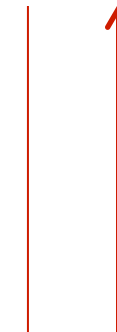
Program Theory Assessment

A. Logical Framework (Log Frame)

B. Theory of Change

C. Results Framework

D. Outcome Mapping

A. Causal chain
B. Causal model
C. Cause map
D. Impact pathways
E. Intervention theory
F. Intervention framework
G. Intervention logic
H. Investment logic
I. Logic model
J. Outcomes chain
K. Outcomes hierarchy
L. Outcome line
M. Program logic
N. Program theory
O. Programme theory
P. Results chain
Q. Theory-based evaluation
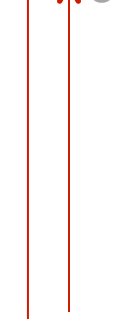R. Theory-driven evaluation
S. Theory-of-action

Log Frame

	Objectives Hierarchy	Indicators	Sources of Verification	Assumptions / Threats
Impact (Goal/ Overall objective)	Lower rates of diarrhea	Rates of diarrhea	Household survey	Waterborne disease is primary cause of diarrhea
Outcome (Project Objective)	Households drink cleaner water	(Δ in) drinking water source; E. coli CFU/ 100ml	Household survey, water quality test at home storage	Shift away from dirty sources. No recontamination
Outputs	Source water is cleaner; Families collect cleaner water	E. coli CFU/ 100ml;	Water quality test at source	continued maintenance, knowledge of maintenance practices
Inputs (Activities)	Source protection is built	Protection is present, functional	Source visits/ surveys	Sufficient materials, funding, manpower

Needs assessment

Impact evaluation

Process evaluation

Source: Roduner, Schlappi (2008) Logical Framework Approach and Outcome Mapping, A constructive Attempt of Synthesis

Program Theory Assessment

A. How will the program address the needs put forth in your needs assessment?

  A. What are the prerequisites to meet the needs?

  B. How and why are those requirements currently lacking or failing?

  C. How does the program intend to target or circumvent shortcomings?

  D. What services will be offered?

Making the program work

PROCESS EVALUATION

With Process Evaluation

A. Was the program implemented as planned

B. Did people respond as expected

C. If it were…

    A. What about the concept?

Process Evaluation

A. Supply Side

    A. Logistics

    B. Management

B. Demand Side

    A. Assumption of knowledge, preferences

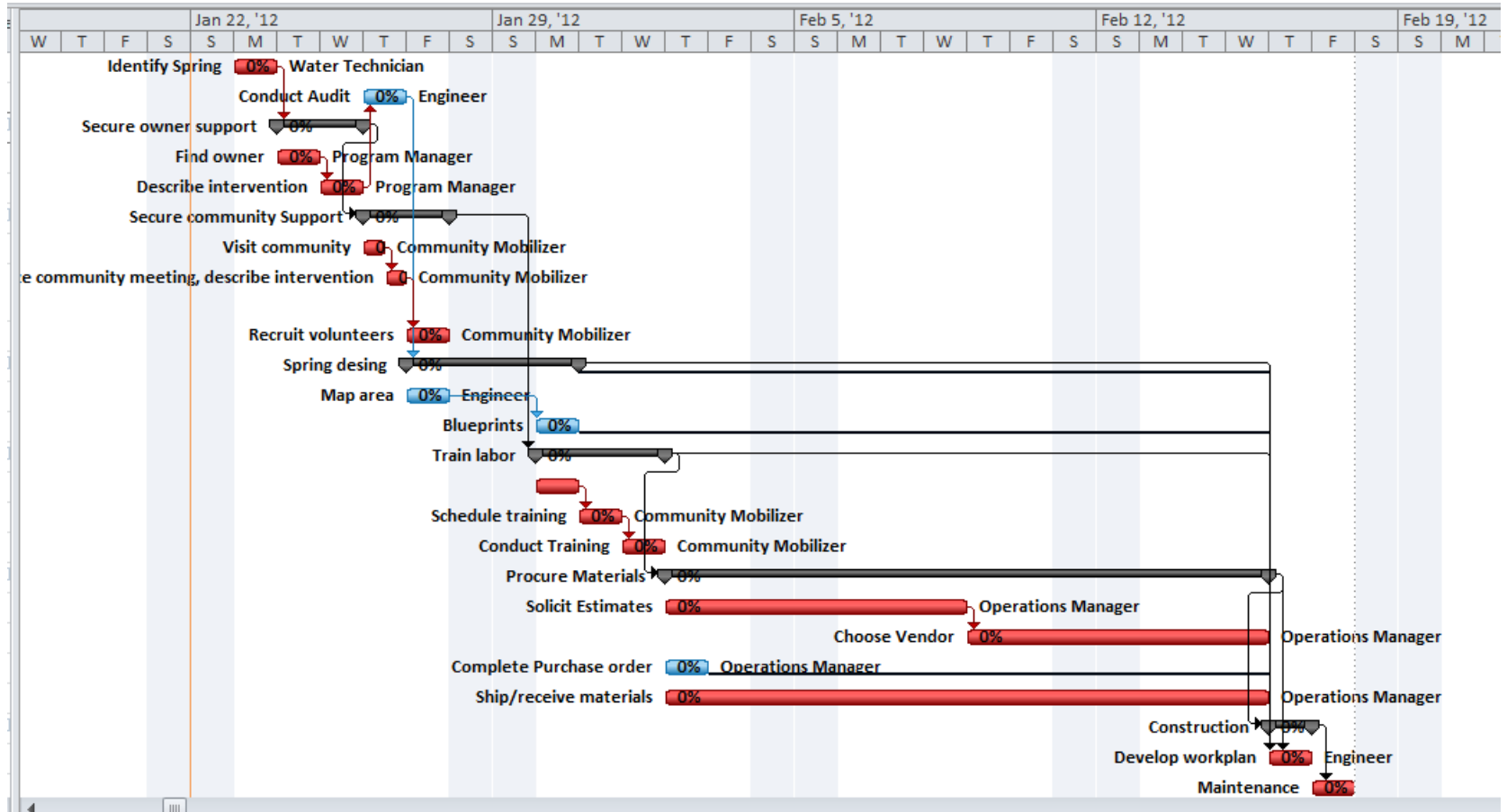   B. Assumptions of response

Process Evaluation: Logistics

A. Construction

    A. Construct spring protection

    B. Installing fencing

    C. Installing drainage

B. Maintenance

    A. Patch concrete

    B. Clean catchment area

    C. Clear drainage ditches

Process Evaluation: Supply Logistics

Process Evaluation: Demand-side

A. Do households collect water from improved source?

B. Does storage become re-contaminated?

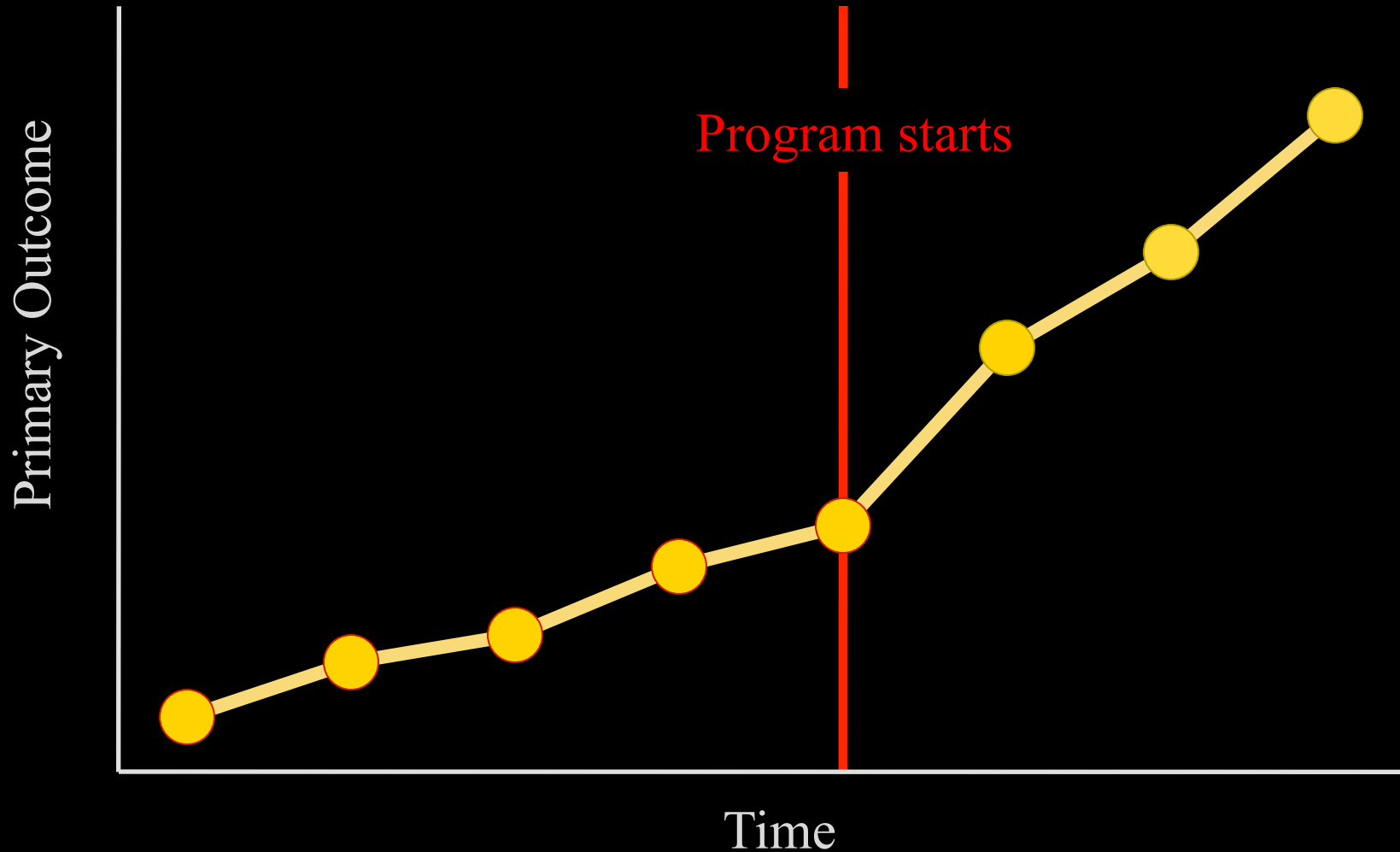C. Do people drink from "clean" water?

Measuring how well it worked

IMPACT EVALUATION

Did we achieve our goals?

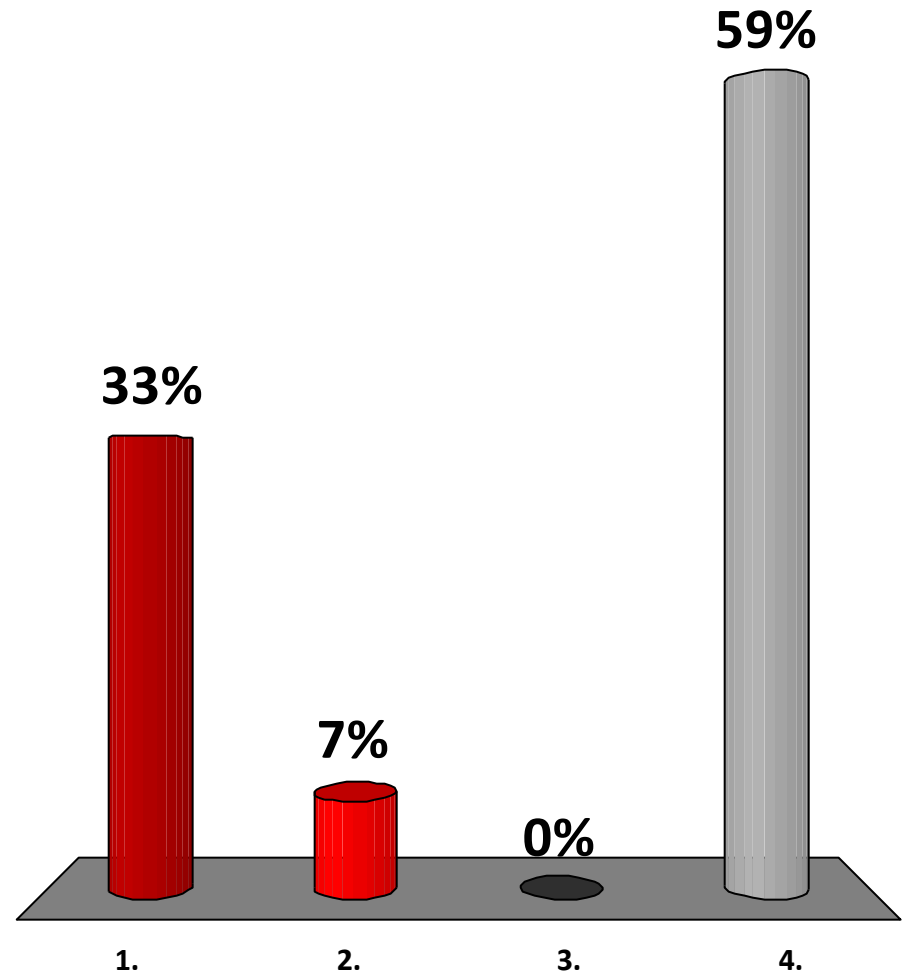A. Primary outcome (impact): did spring protection reduce diarrhea?

B. Also distributional questions: what was the impact for households with good v. bad sanitation practices?

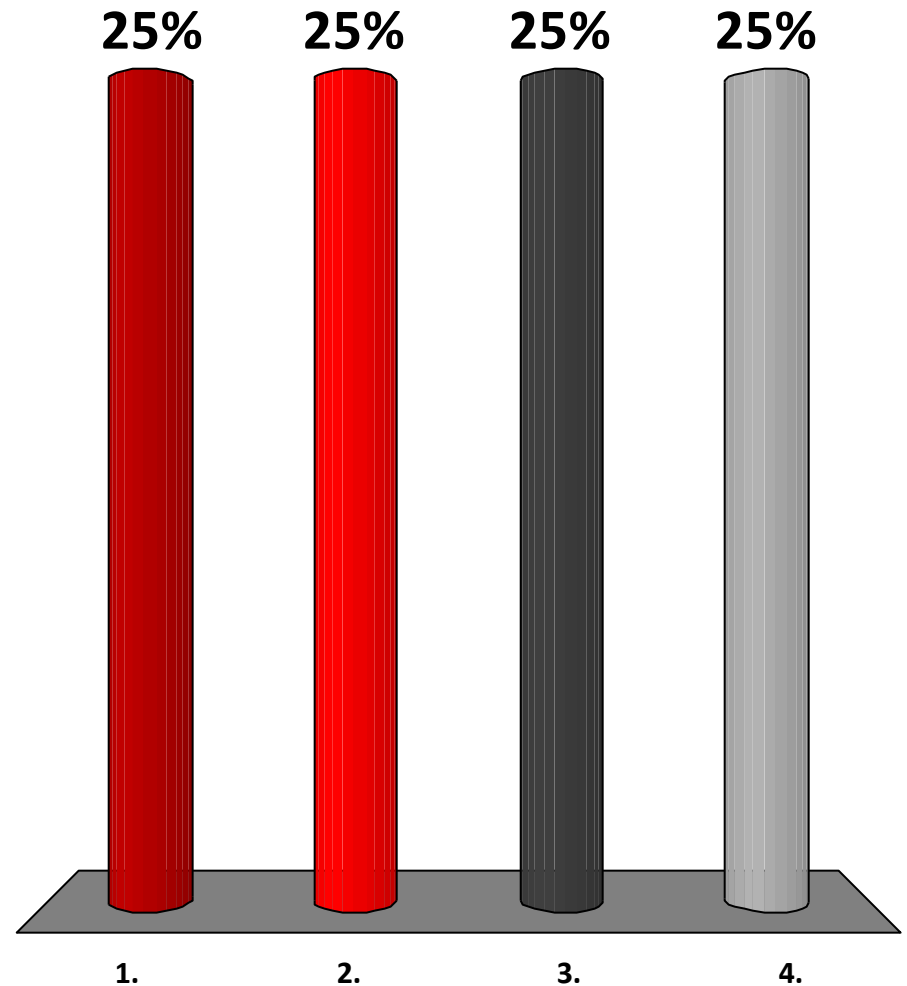# What is the impact of this program?

What is the impact of this program?

1. Positive
2. Negative
3. Zero
4. Not enough info

59%

33%

7%

0%

1.   2.   3.   4.

What is the impact of this program?

1. Positive
2. Negative
3. Zero
4. Not enough info

25%	25%	25%	25%
1.	2.	3.	4.

How to measure impact?

Impact is defined as a comparison between:

1. the outcome some time after the program has been introduced

2. the outcome at that same point in time had the program not been introduced (the "*counterfactual*")

Counterfactual

The *counterfactual* represents the state of the world that program participants would have experienced in the absence of the program (i.e. had they not participated in the program)

Problem: Counterfactual cannot be observed

Solution: We need to "mimic" or construct the counterfactual

Constructing the counterfactual

- Usually done by selecting a group of individuals that *did not* participate in the program

- This group is usually referred to as the *control group* or *comparison group*

- How this group is selected is a **key decision** in the design of any impact evaluation

Selecting the comparison group

- Idea: Select a group that is **exactly like** the group of participants in all ways except one: their exposure to the program being evaluated


- Goal: To be able to **attribute** differences in outcomes between the group of participants and the comparison group to the program (and not to other factors)
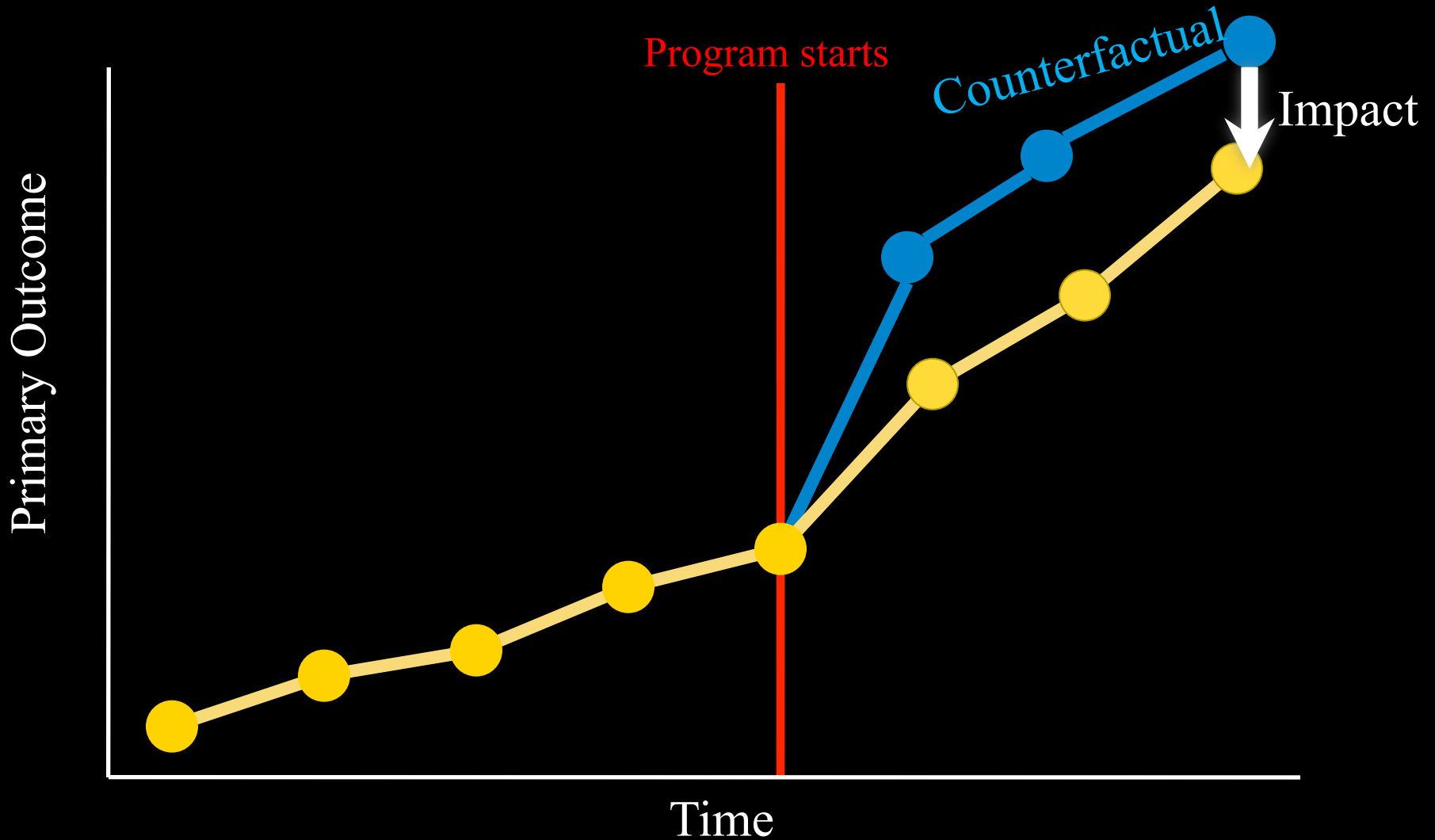
How to measure impact?

A. What would have happened in the absence of the program?

B. Take the difference between

    what happened (with the program) …and

 -    what would have happened (without the program)

 = IMPACT of the program
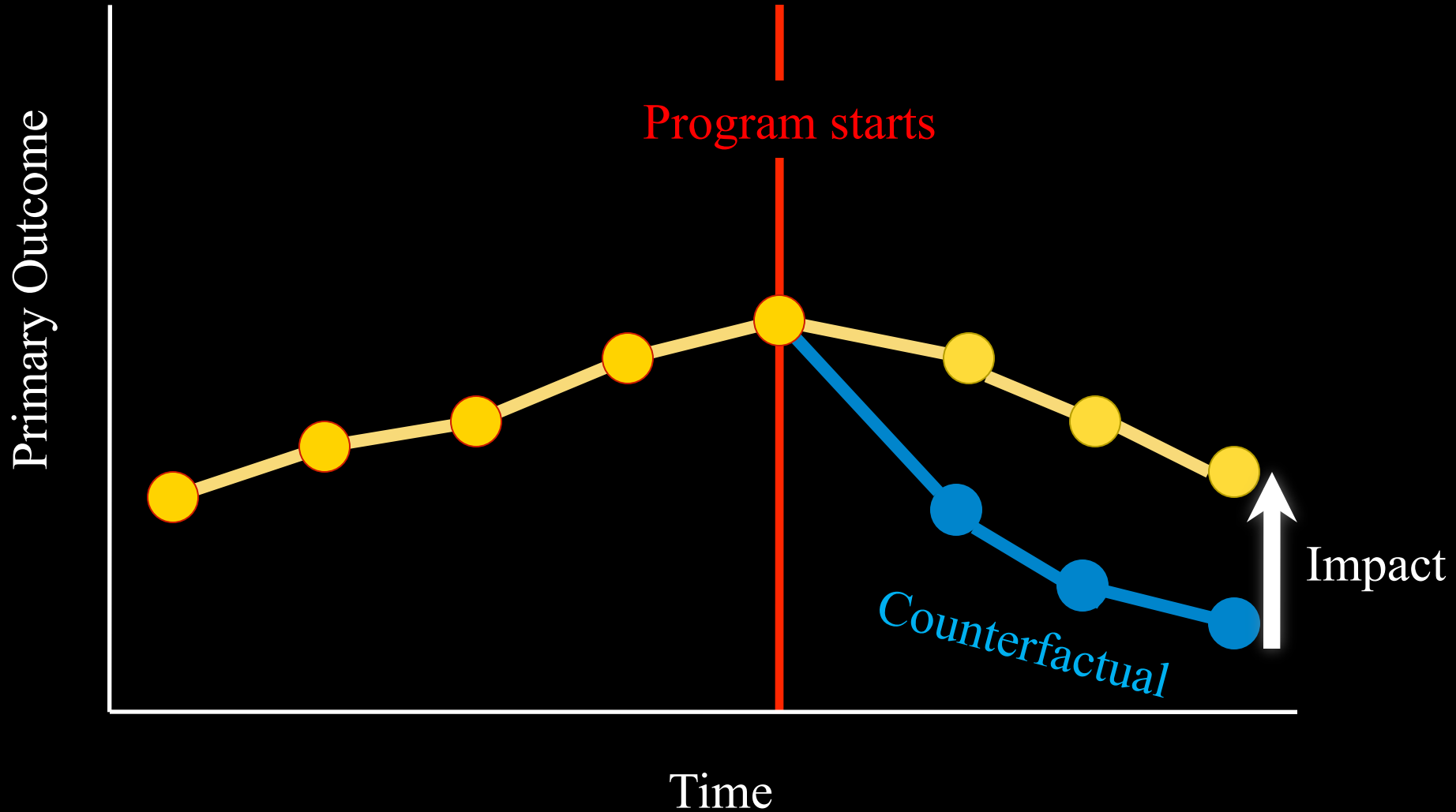
What is the impact of this program?
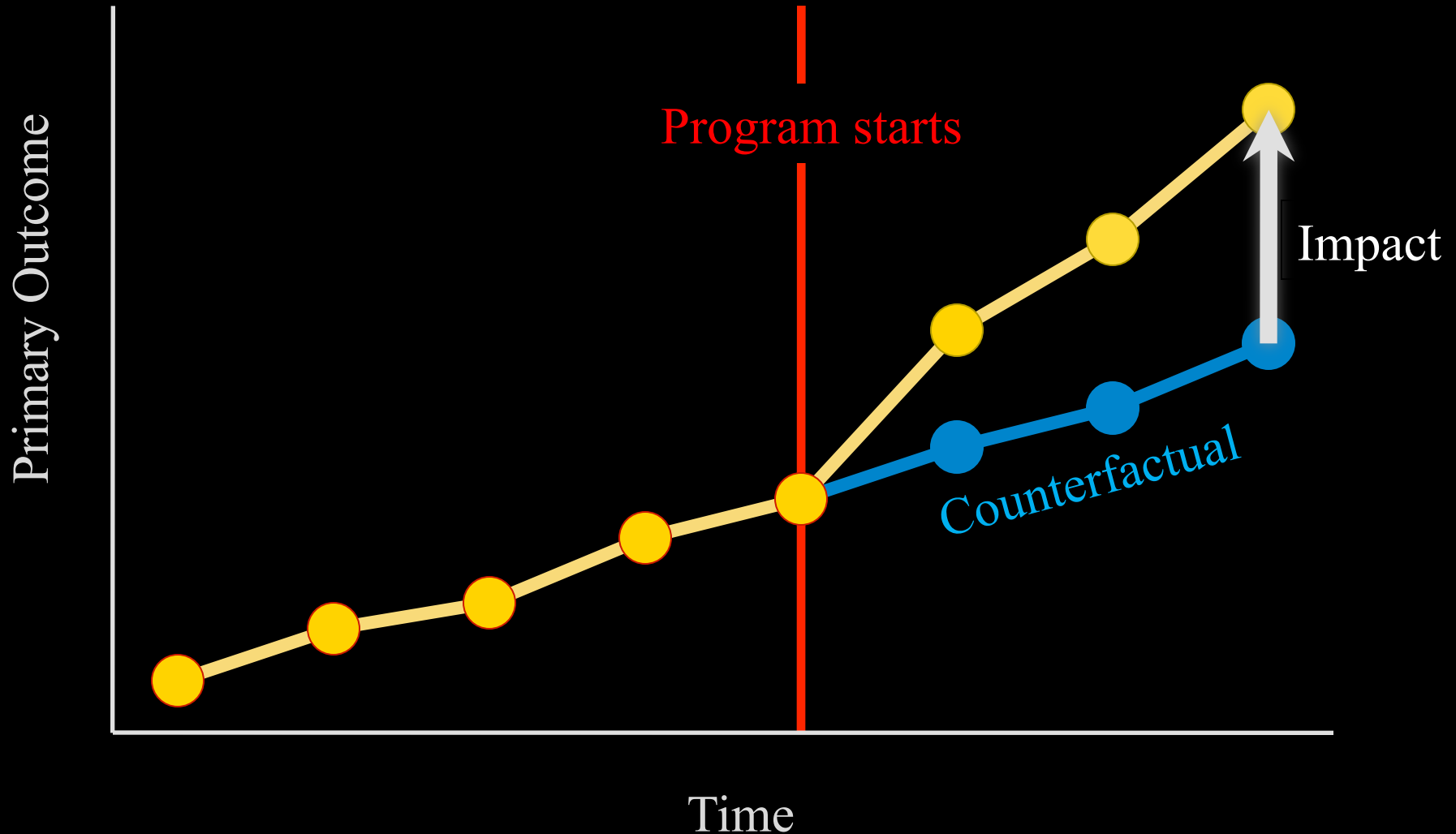
Impact: What is it?

Impact: What is it?

Impact evaluation methods

1. Randomized Experiments

- Also known as:
    - Random Assignment Studies
    - Randomized Field Trials
    - Social Experiments
    - Randomized Controlled Trials (RCTs)
    - Randomized Controlled Experiments

Impact evaluation methods

2. Non- or Quasi-Experimental Methods
   a. Pre-Post
   b. Simple Difference
   c. Differences-in-Differences
   d. Multivariate Regression
   e. Statistical Matching
   f. Interrupted Time Series
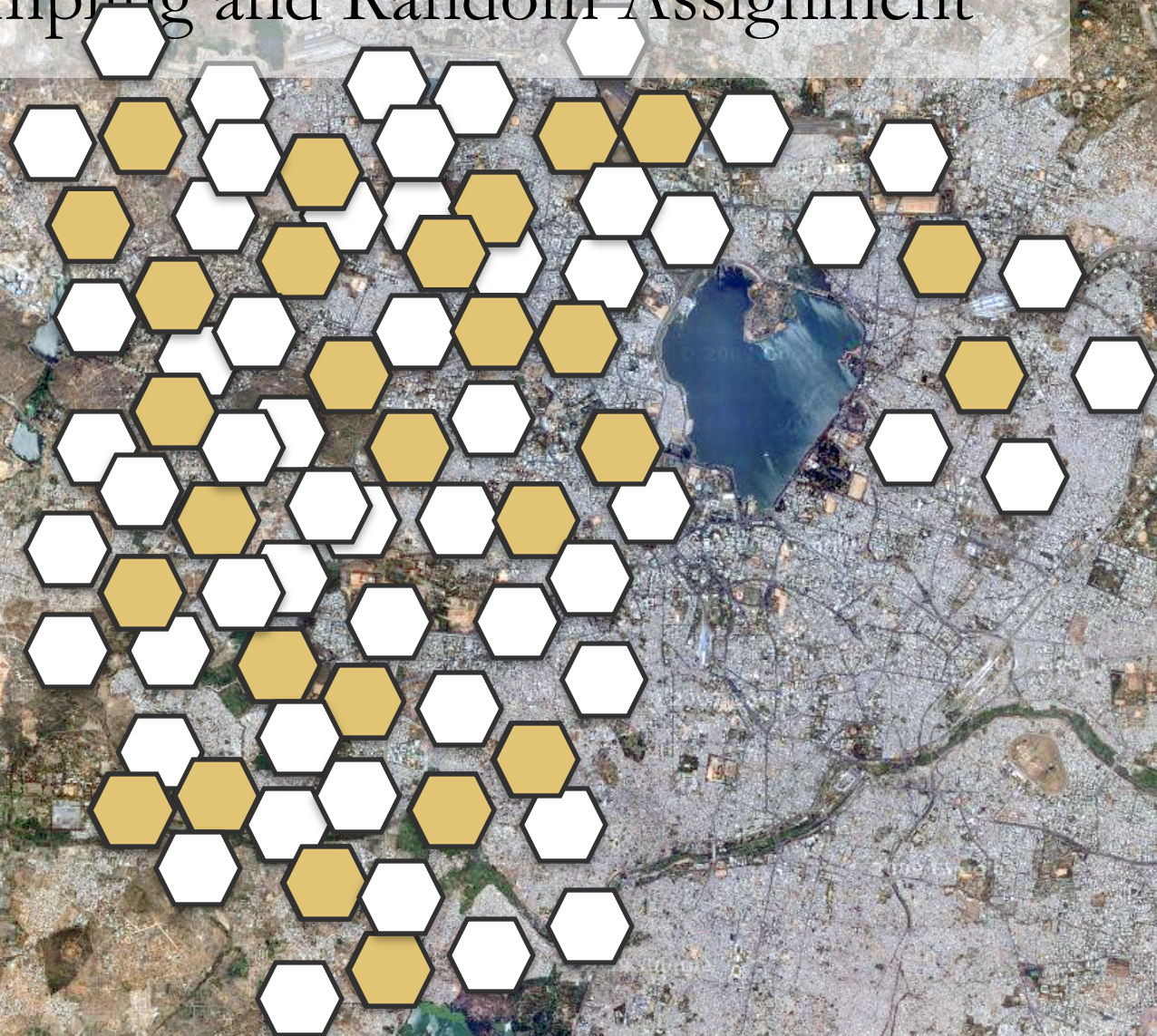   g. Instrumental Variables
   h. Regression Discontinuity

The "gold standard" <u>for Impact Evaluation</u>

RANDOMIZED EVALUATION

Random Sampling and Random Assignment
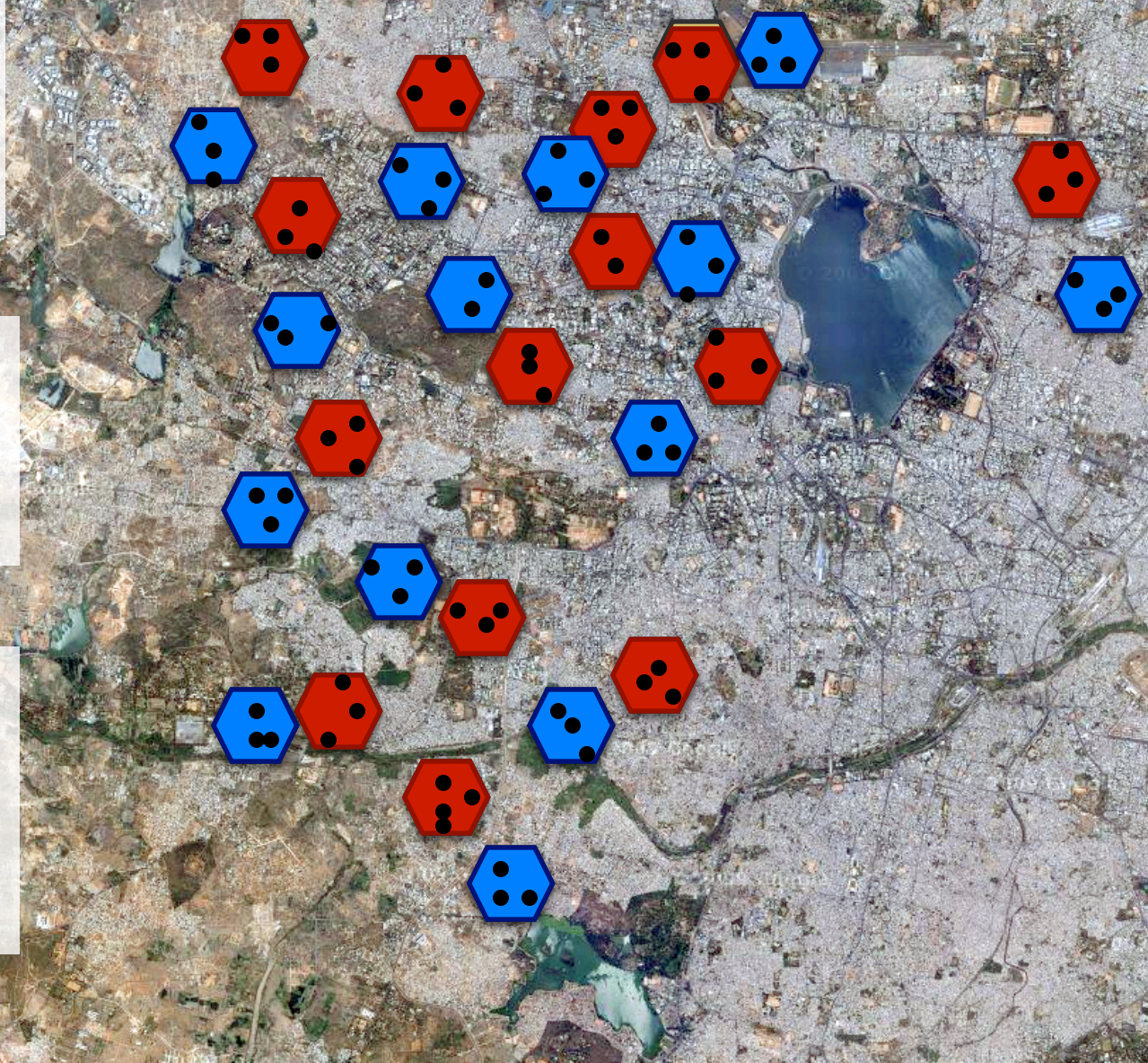
Randomly *sample* from area of interest

Random Sampling and Random Assignment

Randomly *sample* from area of interest

Randomly *assign* to **treatment** and **control**

Randomly *sample* from both treatment and control

Impact

A. 66% reduction in source water E coli concentration

B. 24% reduction in household E coli concentration

C. 25% reduction in incidence of diarrhea

Making Policy from Evidence

| Intervention	Impact on Diarrhea
Spring protection (Kenya)	25% reduction in diarrhea incidence for ages 0-3

Making Policy from Evidence

Intervention	Impact on Diarrhea
Spring protection (Kenya)	25% reduction in diarrhea incidence for ages 0-3
Source chlorine dispensers (Kenya)	20-40% reduction in diarrhea
Home chlorine distribution (Kenya)	20-40% reduction in diarrhea
Hand-washing (Pakistan)	53% drop in diarrhea incidence for children under 15 years old
Piped water in (Urban Morocco)	0.27 fewer days of diarrhea per child per week

Evidence-Based Policymaking

COST-EFFECTIVENESS ANALYSIS

Cost-Effectiveness Diagram
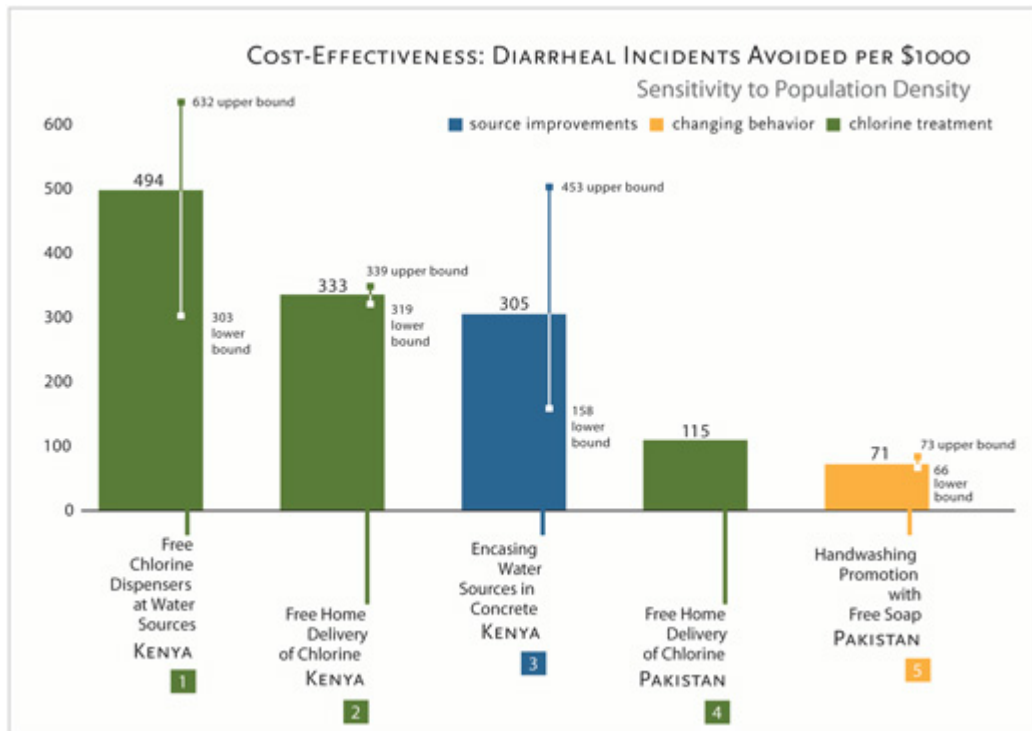
Developing an evaluation strategy

A. Start with a question
B. Verify the question hasn't been answered
C. State a hypothesis
D. Design the evaluation
E. Determine whether the value of the answer is worth the cost of the evaluation

F. With key questions answered from impact evaluations, process evaluation can give your overall impact
G. A few high quality impact studies are worth more than many poor quality ones

A. If you ask the right question, you're more likely to care

Components of Program Evaluation

A. Needs Assessment

B. Program Theory Assessment

C. Process Evaluation

D. Impact Evaluation

E. Cost Effectiveness

A. What is the problem?

B. How, in theory, does the program fix the problem?

C. Does the program work as planned?

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E. Given magnitude and cost, how does it compare to alternatives?

Methodologically, randomized trials are the best approach to estimate the effect of a program

1. Strongly Disagree
2. Disagree
3. Neutral
4. Agree
5. Strongly Agree

Some further readings