Framing Impact Evaluation through Theory of Change

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Executive Education Course in Evaluating Social Programs
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Course Overview

1. **Framing Impact Evaluation through Theory of Change**
2. Measuring impacts (outcomes, indicators)
3. Why randomize?
4. How to randomize?
5. Sampling and sample size
6. Threats and Analysis
7. Project from Start to Finish
What is Evaluation?

- Evaluation
- Program Evaluation
- Impact Evaluation
Program Evaluation

- Impact Evaluation
- Program Evaluation
- Evaluation
Monitoring and Evaluation
Program Evaluation

Monitoring

Evaluation

Program Evaluation

Impact Evaluation
Components of Program Evaluation

- Needs Assessment
- Theory of change
- Process Evaluation
- Impact Evaluation
- Cost Effectiveness

- What is the problem?
- How, in theory, does the program fix the problem?
- Does the program work as planned?
- Were its goals achieved? The magnitude?
- 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
Who is this Evaluation For?

- Academics
- Donors
  - Their Constituents
- Politicians / policymakers
- Technocrats
- Implementers
- Proponents, Skeptics
- Beneficiaries
DOES AID WORK?
I have identified the specific investments that are needed [to end poverty]; found ways to plan and implement them; [and] shown that they can be affordable.

Jeffrey Sachs
End of Poverty
“After $2.3 trillion over 5 decades, why are the desperate needs of the world's poor still so tragically unmet? Isn't it finally time for an end to the impunity of foreign aid?”

Bill Easterly
The White Man’s Burden
How can Impact Evaluation Help Us?

- Surprisingly little hard evidence on what works
- Can do more with given budget with better evidence
- If people knew money was going to programs that worked, could help increase pot for anti-poverty programs
- Instead of asking “do aid/development programs work?” should be asking:
  - Which work best, why and when?
  - How can we scale up what works?
What do you think is the most cost-effective way to increase immunization rates?

A. Community mobilization campaign
B. Improve healthcare worker attendance
C. Develop new vaccines, such as pneumococcal
D. Hold special ‘immunization camps’
E. Incentivize parents to immunize their children
Components of Program Evaluation

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Identifying the problem

NEEDS ASSESSMENT
The Need

- Every year, between 2 and 3 million people die from vaccine-preventable diseases
- Only 54% of 1-2 year olds in India receive the basic package of immunizations
- In rural Rajasthan, this rate falls to 22%
The Goal

- To increase the full immunization rate among children in rural Rajasthan
The Problem

- In India, immunizations are offered for free… but the immunization rate remains low

- Average household is within 2 kilometers of the nearest clinic

- High absenteeism at government health facilities – 45% of Auxiliary Nurse Midwives are absent on any given workday
The Solution(s)
Really the Problem?

- Cultural resistance, distrust in public health institutions—memories of Emergency India

- People don’t value immunizations: short-term cost for long-term (and invisible) benefits

- Limited income: parents can’t afford to take a day off
Devising a Solution

- What is the theory behind your solution?
- How does that map to your theory of the problem?
THEORY OF CHANGE

Blueprint for Change
Theory of Change

- Program Theory Assessment
- Logical Framework (Log Frame)
- Results Framework
- Outcome Mapping
What is Theory of Change?

“A theory of change is a road map of where we are going (results) and how we are getting there (process)”
Causal Hypothesis

Q: How do I expect results to be achieved?

A: If [inputs] and [activities] produce [outputs] this should lead to [outcomes] which will ultimately contribute to [goal]
Theory of Change

Supply-side limits on immunization

Establish regular camps

Parents believe camps are regular

Parents bring children to regular camp

Camps provide immunizations

Increased immunization rates

Incentives for full course

Parents value incentive

Parents do not value immunization

Incentives regularly paid
Assumptions

Assumption:

A **necessary** and positive **external condition** that should be in place for the chain of cause and effect (in an intervention) to go forward
Theory of Change

- Supply-side limits on immunization
  - Establish regular camps
    - Parents believe camps are regular
      - Parents bring children to regular camp
        - Camps provide immunizations
          - Increased immunization rates
  - Incentives for full course
    - Parents value incentive
      - Incentives regularly paid
  - Parents do not value immunization
Results Levels

Inputs → Activities → Outputs → Outcomes → Goal

Resources → Actions → Products and services → KASBs → Dev. status
### Log Frame

<table>
<thead>
<tr>
<th>Impact (Goal/ Overall objective)</th>
<th>Objectives Hierarchy</th>
<th>Indicators</th>
<th>Sources of Verification</th>
<th>Assumptions / Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased immunization rates</td>
<td>Immunization rates</td>
<td>Household survey</td>
<td>Adequate vaccine supply, parents do not have second thoughts</td>
<td></td>
</tr>
<tr>
<td>Outcome (Project Objective)</td>
<td>Parents attend the immunization camps repeatedly</td>
<td>Follow-up attendance</td>
<td>Household survey; Immunization card</td>
<td>Parents have the time to come</td>
</tr>
<tr>
<td>Outputs</td>
<td>Immunization camps are reliably open; Incentives are delivered</td>
<td>Number of kg bags delivered; Camp schedules</td>
<td>Random audits; Camp administrative data</td>
<td>Nurses/assistants will show up to camp and give out incentives properly</td>
</tr>
<tr>
<td>Inputs (Activities)</td>
<td>Camps + incentives are established</td>
<td>Camps are built, functional</td>
<td>Random audits of camps</td>
<td>Sufficient materials, funding, manpower</td>
</tr>
</tbody>
</table>

Needs assessment → Impact evaluation → Process evaluation
“Theory of change thinking is a habit not a product.”
Making the program work

PROCESS EVALUATION
Components of Program Evaluation

- Needs Assessment
  - What is the problem?

- Program Theory Assessment
  - How, in theory, does the program fix the problem?
  - Does the program work as planned?

- Process Evaluation

- Impact Evaluation

- Cost Effectiveness
Solving the Black Box Problem

Low immunization rates

Intervention

Black Box

No increase in full immunization

Needs Assessment

Intervention design/Inputs

Final outcome
Identifying Theory Failure vs. Implementation Failure

**Successful intervention**

- Inputs → Activities → Outputs → Outcomes → Goal

**Implementation failure**

- Inputs → Activities → Outputs → Outcomes → Goal

**Theory failure**

- Inputs → Activities → Outputs → Outcomes → Goal
Why is Theory of Change Important

For evaluators, reminds us to consider process

- Create modules for 12-session active partnership model
- Recruit active partner NGOs and train in theory and practice of 'right fit' M&E
- Document experiences from active partnerships in case study format
- Observe and document M&E practices of learning partner NGOs
- M&E case studies prepared (active partnerships)
- M&E case studies prepared (learning partnerships)
- Modules for active partnership model developed
- Active partner NGOs recruited and trained in theory and practice of 'right fit' M&E
- Write and publish book of case studies promoting 'right fit' M&E

For programmers, it helps us be results oriented

- NGOs gain the skills to apply basic concepts and approaches of 'right fit' M&E
- NGOs understand basic concepts and approaches of 'right fit' M&E
- NGOs appreciate and are motivated to implement 'right fit' M&E
- Development NGOs create and manage 'right fit' M&E systems
- Development NGOs make strategic and programmatic decisions based on quality M&E data
- More effective and efficient social and economic development
Process Evaluation

- Supply Side
  - Logistics
  - Management

- Demand Side
  - Assumptions of response
  - Behavior Change?
Process Evaluation: Logistics

- Establish camp
  - Hiring nurses and administrators
  - Installing temporary camp site
  - Procuring vaccines and other medical supplies

- Organize incentive scheme
  - Identify viable incentive
  - Purchase kilos and dinner plate sets
Process Evaluation: Demand-side

- Do parents visit the camps?
- Do they come back?
Process was okay, so....

- What happened to immunization rates?
Measuring how well it worked

IMPACT EVALUATION
Did we Achieve our Goals?

- Primary outcome (impact): did camps (or camps + incentives) raise the full immunization rates?

- Also distributional questions: what was the impact for households who had come once vs. households who had never come?
What is Impact?
How to Measure Impact?

- What would have happened in the absence of the program?

- Take the difference between
  
  what happened (with the program) …and
  
  - what would have happened (without the program)
  
  = IMPACT of the program
Non-random Treatment and Comparison Groups
Non-Random Treatment and Comparison Groups
Constructing the Counterfactual

- Counterfactual is often constructed by selecting a group not affected by the program.

- Randomized:
  - Use random assignment of the program to create a control group which mimics the counterfactual.

- Non-randomized:
  - Argue that a certain excluded group mimics the counterfactual.
How Impact Differs from Process?

- When we answer a process question, we need to describe what happened.

- When we answer an impact question, we need to compare what happened to what would have happened without the program.
The “gold standard” for Impact Evaluation

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
Immunization Example

Total Population (700+ villages) → Target Population (134) → Not in evaluation (0) → Evaluation Sample (134) → Random Assignment → Camps (30) → Camps + Incentives (30) → Control (74)
Impact

- Control: 6%
- Camps: 17%
- Camps + Lentils: 38%
Making Policy from Evidence

- National scale-up?
  - How representative is rural Rajasthan? (Recall: 22% vs. 44% nationally)
  - Same barriers to immunization?
Evidence-Based Policymaking

COST-EFFECTIVENESS ANALYSIS
Costs per fully Immunized Child

- **Immunization Camps**: Rs. 2202
- **Camps + Incentives**: Rs. 372 + Rs. 730
Cost-Effectiveness Diagram

Figure 1: J-PAL COST-EFFECTIVENESS: additional days of provider attendance per $100 spent
www.povertyactionlab.org

- Contract vs. Civil Service KENYA
- Girls' Merit Scholarships KENYA
- Camera Monitoring INDIA
- Community Monitoring UGANDA
- Community Monitoring MADAGASC.
- Community Information INDIA
- Incentives & Supervision KENYA
- Test Score KENYA
- Attendance Incentives INDIA

COMMUNITY MONITORING
INCENTIVES
$ MULTIPLE OUTCOMES
When is a good time to do a Randomized Evaluation?

A. After the program has begun and you are not expanding it elsewhere
B. When a positive impact has been proven using rigorous methodology
C. When you are rolling out a program with the intention of taking it to scale
D. When a program is on a very small scale e.g one village with treatment and one
When to do a Randomized Evaluation?

- When there is an important question you want/need to know the answer to

- Timing—not too early and not too late

- Program is representative not gold plated
  - Or tests an basic concept you need tested

- Time, expertise, and money to do it right

- Develop an evaluation plan to prioritize
When NOT to do an RE

- When the program is premature and still requires considerable “tinkering” to work well

- When the project is on too small a scale to randomize into two “representative groups”

- If a positive impact has been proven using rigorous methodology and resources are sufficient to cover everyone

- After the program has already begun and you are not expanding elsewhere
Developing an Evaluation Strategy

- Start with a question
- Verify the question hasn’t been answered
- State a hypothesis
- Design the evaluation
- Determine whether the value of the answer is worth the cost of the evaluation
- With key questions answered from impact evaluations, process evaluation can give your overall impact
- If you ask the right question, you’re more likely to care
- A few high quality impact studies are worth more than many poor quality ones
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