



# **MEASURING RESULTS**

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AND

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# **IMPACT EVALUATION**

**From Promises into Evidence**

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**How do we turn this teacher...**



## Answer these questions

- 1 Why is evaluation valuable?
- 2 What makes a good impact evaluation?
- 3 How to implement an impact evaluation?

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## Why Evaluate?

- 1** Need evidence on what works
  - Limited budget and bad policies could hurt
- 2** Improve program/policy implementation
  - o Design (eligibility, benefits)
  - o Operations (efficiency & targeting)
- 3** Information key to sustainability
  - o Budget negotiations
  - o Informing beliefs and the press
  - o Results agenda and Aid effectiveness



## Impact Evaluation Answers

What was the effect of the program on outcomes?

How much better off are the beneficiaries because of the program/policy?

How would outcomes change if changed program design?

Is the program cost-effective?

Traditional M&E  
**cannot answer these.**



## Impact Evaluation Answers

What is effect of scholarships on school attendance & performance (test scores)?

Does contracting out primary health care lead to an increase in access?

Does replacing dirt floors with cement reduce parasites & improve child health?

Do improved roads increase access to labor markets & raise income?



## Answer these questions

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## How to assess impact

- e.g. How much does an education program improve test scores (learning)?
- What is beneficiary's test score with program compared to without program?
- Formally, program impact is:
 
$$\alpha = (Y | P=1) - (Y | P=0)$$
- Compare same individual with & without programs at same point in time



## Solving the evaluation problem

- **Counterfactual:** what would have happened without the program.
- Estimated impact is difference between treated observation and counterfactual.
- Never observe same individual with and without program at same point in time.
- Need to estimate counterfactual.
- Counterfactual is **key to impact evaluation**.



## Counterfactual Criteria

- Treated & Counterfactual
  - (1) Have identical characteristics,
  - (2) Except for benefiting from the intervention.
- No other reason for differences in outcomes of treated and counterfactual.
- Only reason for the difference in outcomes is due to the intervention.



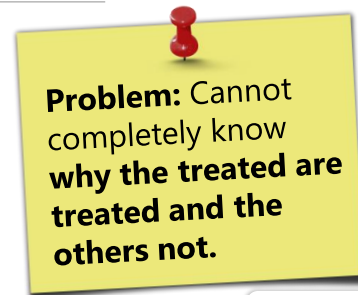
## 2 Counterfeit Counterfactuals

### Before and After

Same individual before the treatment

### Those not enrolled

- Those who choose not to enroll in the program
- Those who were not offered the program



## 1. Before and After: Examples

- Agricultural assistance program
  - Financial assistance to purchase inputs.
  - Compare rice yields before and after.
  - Before is normal rainfall, but after is drought.
  - Find fall in rice yield.
  - Did the program fail?
  - Could not separate (identify) effect of financial assistance program from effect of rainfall.
- School scholarship program on enrollment



## 2. Those not enrolled: Example 1

- Job training program offered
- Compare employment & earning of those who sign up to those who did not
- Who signs up?  
Those who are most likely to benefit -i.e. those with more ability- **would have higher earnings than non-participants without job training**
- Poor estimate of counterfactual



## 2. Those not enrolled: Example 2

- Health insurance offered
- Compare health care utilization of those who got insurance to those who did not
  - Who buys insurance?: those that expect large medical expenditures
  - Who does not?: those who are healthy
- With no insurance: Those that did not buy, have lower medical costs than that did
- Poor estimate of counterfactual





## Program placement: example

- Government offers a family planning program to villages with high fertility
- Compare fertility in villages offered program to fertility in other villages
- Program targeted based on fertility, so
  - (1) Treatments have high fertility and
  - (2) counterfactuals have low fertility.
- Estimated program impact confounded with targeting criteria



## What's wrong?

- 1 **Selection bias:** People choose to participate for specific reasons
- 2 Many times reasons are related to the outcome of interest
  - **Job Training:** ability and earning
  - **Health Insurance:** health status and medical expenditures
- 3 Cannot separately identify impact of the program from these other factors/reasons



## Need to know...

All the reasons why someone gets the program and others not.

All the reasons why individuals are in the treatment versus control group.

If reasons correlated w/ outcome cannot identify/separate program impact from other explanations of differences in outcomes.



## Possible Solutions

- Need to guarantee comparability of treatment and control groups.
- **ONLY** remaining difference is intervention.
- In this seminar we will consider:
  - Experimental design/randomization
  - Quasi-experiments (Regression Discontinuity, Double differences)
  - Instrumental Variables.

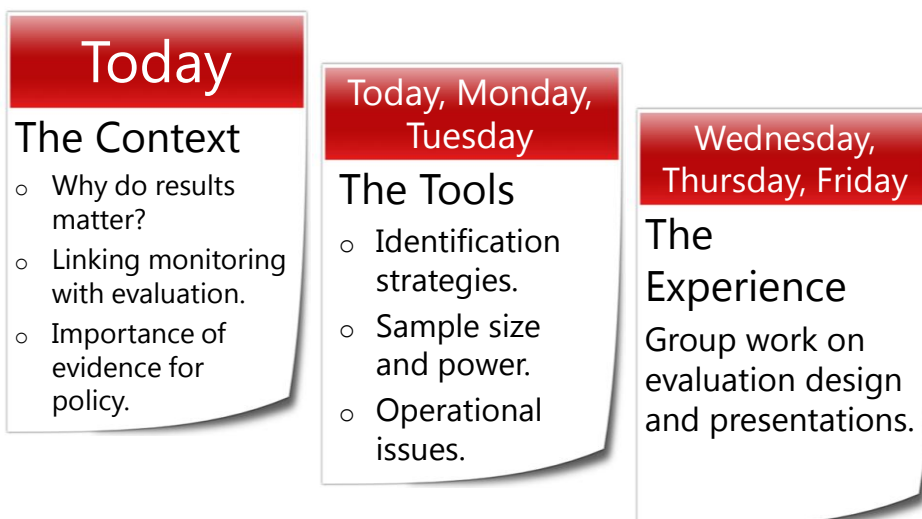


## These solutions all involve...

- Knowing how the data are generated.
- Randomization
  - Give all equal chance of being in control or treatment groups
  - Guarantees that all factors/characteristics will be on average equal btw groups
  - Only difference is the intervention
- If not, need transparent & observable criteria for who is offered program.



## Road Map: The next 5 days





# Thank You



# Q & A