Evaluation design: Assignment of treatment
What can be randomized?

- **Access**: We can choose which people will be offered the program

- **Timing of access**: We can choose when to provide access to the program

- **Encouragement**: We can decide which people will be provided encouragement to participate in the program
Types of randomization designs

• Simple lottery
• Phase in
• Encouragement
Simple lottery

Randomly sample from area of interest

Randomly assign to treatment and control

Randomly sample from both treatment and control
Example: Entrepreneurship training in Tanzania

Tested the impact of business training and coaching on female entrepreneurs’ business performance

Eligible women who applied (821 women)

- Treatment (547 women)
  - Training (274 women)
  - Training + coaching (273 women)

- Control (274 women)
## Simple lottery

<table>
<thead>
<tr>
<th>Design</th>
<th>Most useful when...</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Lottery</td>
<td>• Program oversubscribed</td>
<td>• Easy to understand&lt;br&gt; • Easy to implement&lt;br&gt; • Can be implemented in public</td>
<td>• Control group may not cooperate&lt;br&gt; • Differential attrition</td>
</tr>
</tbody>
</table>
Phase-in

- Takes advantage of program expansion (example: lack of capacity to implement in all villages in the first year)

- Everyone gets program eventually

- Natural approach when expanding program faces resource constraints
Phase in: Laptop program
Phase 0:
No one treated yet
All control
Phase 1: 
1/4 treated 
3/4 control
Phase 2:
2/4 treated
2/4 control
Phase 3:  
3/4ths treated  
1/4th control
Phase 4:
All treated (experiment over)
Example: Deworming through schools in Kenya

School based mass deworming program tested the impact of providing deworming drugs and worm prevention education on education outcomes.

Rationale for phase in: Logistical and financial constraints

<table>
<thead>
<tr>
<th>75 Schools in Southern Busia District</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1</strong></td>
</tr>
<tr>
<td>Group 1 (25 schools)</td>
</tr>
<tr>
<td>Group 2 (25 schools)</td>
</tr>
<tr>
<td>Group 3 (25 schools)</td>
</tr>
<tr>
<td><strong>Year 2</strong></td>
</tr>
<tr>
<td>Group 1</td>
</tr>
<tr>
<td>Group 2</td>
</tr>
<tr>
<td>Group 3</td>
</tr>
<tr>
<td><strong>Year 3</strong></td>
</tr>
<tr>
<td>Group 1</td>
</tr>
<tr>
<td>Group 2</td>
</tr>
<tr>
<td>Group 3</td>
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</table>

## Phase-in

<table>
<thead>
<tr>
<th>Phase-In</th>
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<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>• Expanding over time</td>
<td>• Easy to understand</td>
<td>• Anticipation of treatment may impact short-run behavior</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Everyone must receive treatment eventually</td>
<td>• Constraint is easy to explain</td>
<td>• Difficult to measure long-term impact</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Control group complies because they expect to benefit later</td>
<td></td>
</tr>
</tbody>
</table>
Encouragement design

• Sometimes not possible to randomize program access
  • Vaccines, savings program, entitlement programs, etc.
• But many programs have less than 100% take-up

• Randomize encouragement to receive treatment
  • Something that makes individuals more likely to take the treatment
• Treatment differential comes from higher program take-up among the encouraged
Encouragement design

- Encourage
- Do not encourage
- Participated
- Did not participate

compare encouraged to not encouraged

do not compare participants to non-participants
Encouragement design

- Encourage
- Do not encourage
- Participated
- Did not participate

compare encouraged to not encouraged

do not compare participants to non-participants

These must be correlated
Example: Health insurance for the poor in India

Camps, information campaign, and door-to-door information to increase take-up of health insurance

Primary objective: Estimate impact of health insurance
## Encouragement design

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</tr>
</thead>
</table>
| Encouragement | • Program has to be open to all comers  
          • When take-up is low, but can be easily improved with an incentive | • Can randomize at individual level even when the program is not administered at that level | • Measures impact of those who respond to the incentive  
          • Need large enough inducement to improve take-up  
          • Encouragement itself may have direct effect |