Course Overview

1. What is Evaluation?

2. Measurement & Indicators

3. Why Randomize?

4. How to Randomize?

5. Sampling and Sample Size

6. Threats and Analysis

7. **Generalizability**

8. Project from Start to Finish

Outline

i. **The Challenge**

ii. Example: Immunization

iii. Literature Reviews vs. Meta-Analyses

iv. Example: Sugar Daddies

v. Targeted Instruction for Zambia

vi. Conclusion

The Challenge of Using Evidence

- Dramatic rise in the number of rigorous impact evaluations of policy programs in last 20 years

- Unlikely to be rigorous evaluation of the program policy makers want to introduce in exactly same location

- How should we respond?
  - Wait to act until there is more evidence?
  - Always do new RCT before introducing in new context?
  - Only use less rigorous local evidence?
  - Use results from study conducted in another context?
  - Only use evidence from other countries if at least X replications or if replicated in a similar enough context?

- What counts as a "new" or "similar" context?

The Challenge of Using Evidence II

- Rigorous impact evaluations are hard to do well and we underutilize their potential if we only learn about the precise program and context they evaluate

- But understanding local needs, and informal and formal institutions is critical to good policy

- We should do more replications of RCTs of similar programs in different contexts but there are limits

- Policy makers never have 100% certainty
  - Basu (2014) tomorrow is a new context
  - Is imperfect evidence likely to be worse than no global evidence?

Structured Approach to Evidence in Policy

- Evidence from single study just one part of the puzzle
  - We weigh the evidence based on quality and adjust priors

- Combine, theory, descriptive evidence, and results of rigorous impact evaluations to answer:
  - Whether results from one country likely to replicate in another
  - When we need more evaluation and when we don't

- Draw on a theory based review of 70+ RCTs on health econ in dev countries (Kremer and Glennerster, 2012)

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Immunization Incentives, India

- Seva Mandir program to increase immunization rates in rural Rajasthan, tested with RCT
  - Banerjee, Duflo, Glennerster, Kothari, 2010

- Fixing supply: regular monthly immunization camps with nurse present without fail

- Incentive: 1kg dahl for every vaccination, set of plates on completed immunization schedule

Number of immunization received
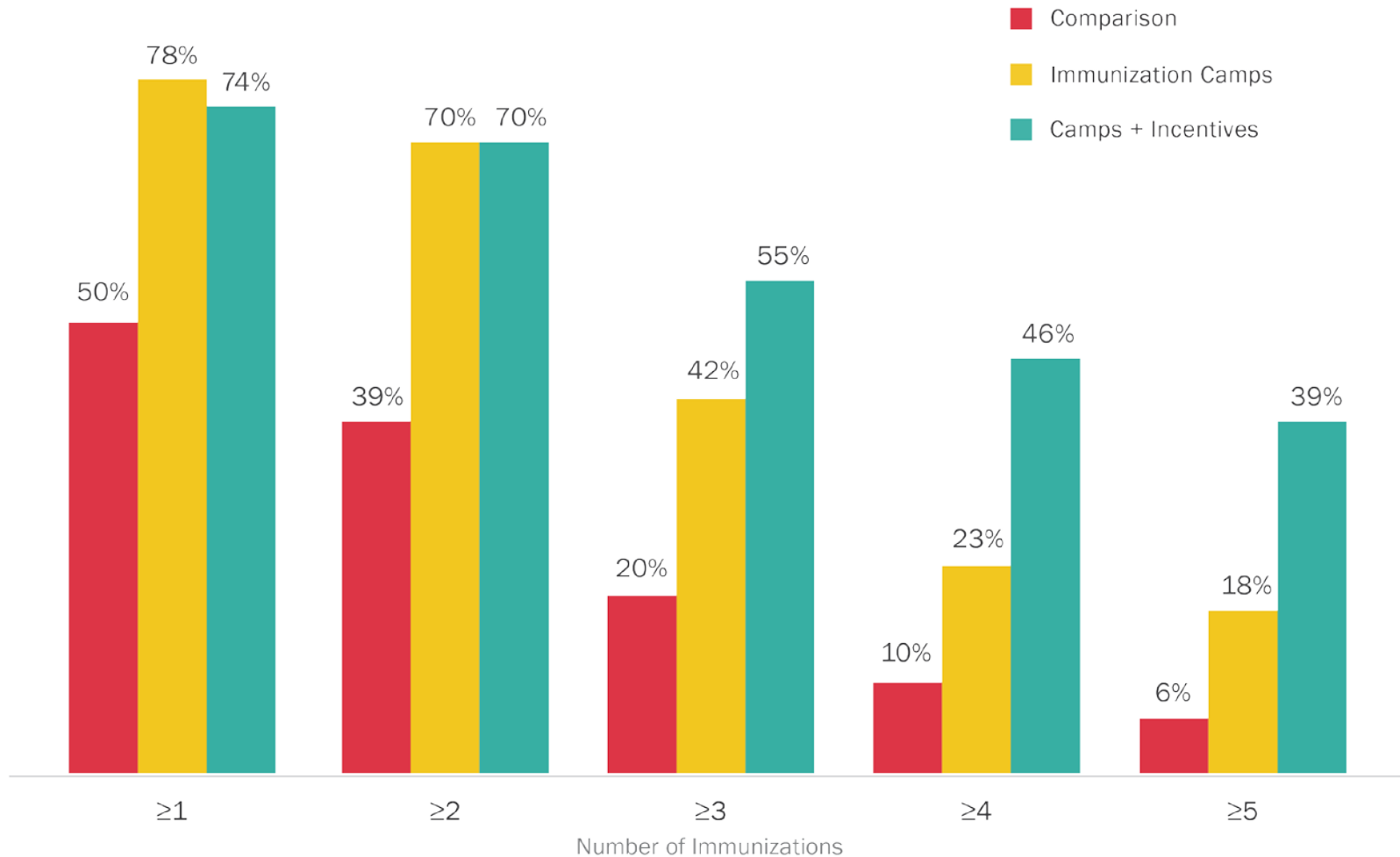
Source: Banerjee, Duflo, Glennerster, and Kothari, 2010.

Viewing Evidence in Isolation
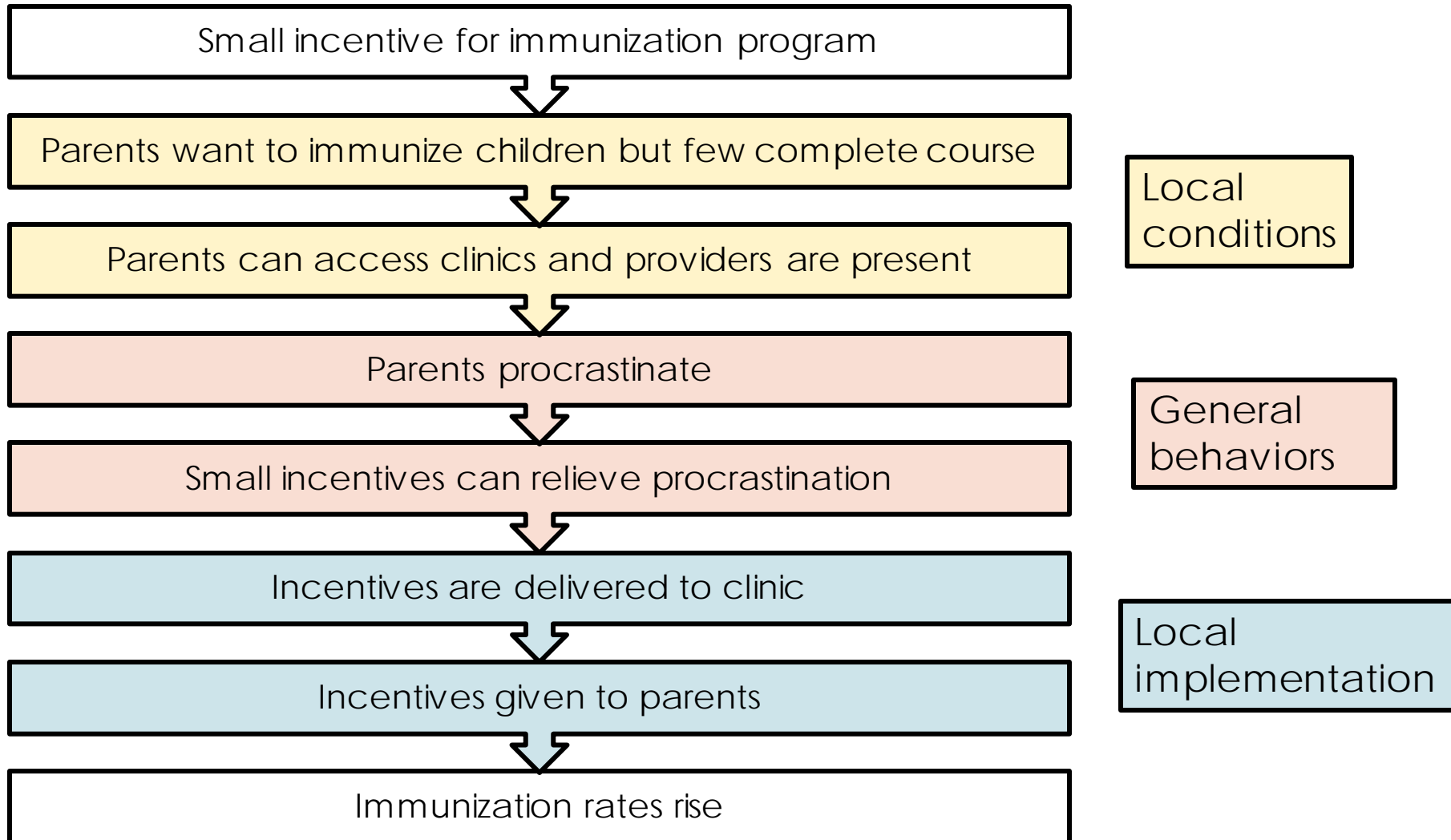
- If Govt in West Africa wanted to improved immunization rate, should they consider noncash incentives?

- Taking the evidence in isolation, how many times has the following been tested?

Providing small food incentives linked to vaccines

Increase in immunization rates
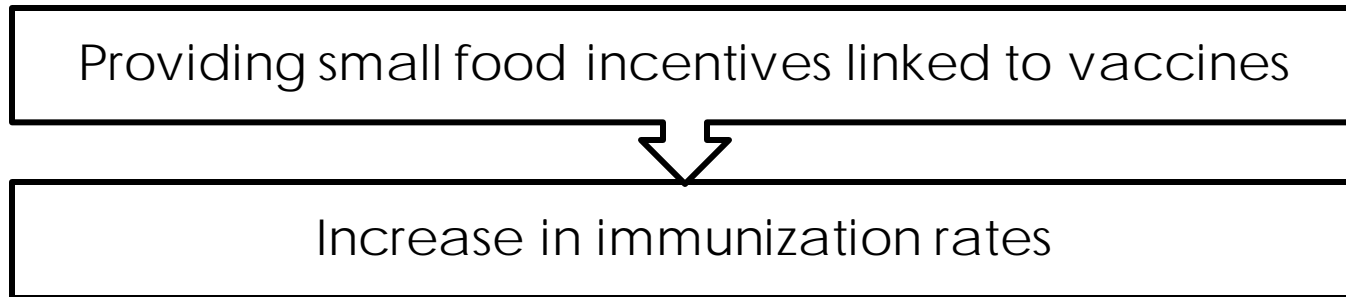
- Only one RCT in South Asia not Africa

- Program conducted by NGO not government

Breaking Apart the Black Box

Small incentive for immunization program

Parents want to immunize children but few complete course

Parents can access clinics and providers are present

Local conditions

Parents procrastinate

Small incentives can relieve procrastination

General behaviors

Incentives are delivered to clinic

Incentives given to parents

Local implementation

Immunization rates rise

Local Evidence on Basic Conditions

- Descriptive evidence:
    - 54% of households within 1 hour walk of clinic
    - Health worker absenteeism 44%
    - 84% of children receive DPT1

- Institutional knowledge:
    - unlike India, clinics often have multiple workers, only closed 12%. Immunizations on specific days when absenteeism is lower

Take-up Rates

| Immunization rates by antigen		
	Country 1	**Country 2**
DPT1	84	47
DPT3	74	41
Measles	67	41
Fully immunized	49	38

Evidence on Present Bias

- People procrastinate and find hard to stick with behavior they believe is good for them and their children
  - Good theoretical work showing how small changes to a standard discounting model produces series of testable conclusions and can explain many stylized facts (e.g. Laibson, 1997)

  - People are willing to pay to tie their own hands with commitment savings products: difficult to explain unless people know they are present biased (e.g. Gine et al. 2010)

Evidence on Small Incentives

- Small incentives can have big impacts on behavior

- 30+ RCTs of CCTs but usually much bigger incentives (Fiszbein and Schady, 2009)

- Malawi: smaller CCT same impact as bigger CCT (Baird et al 2010)

- Small incentives for HIV testing (Thornton 2008 Malawi), age of marriage (Field et al, in progress Bangladesh)

Price Sensitivity of Preventative Health
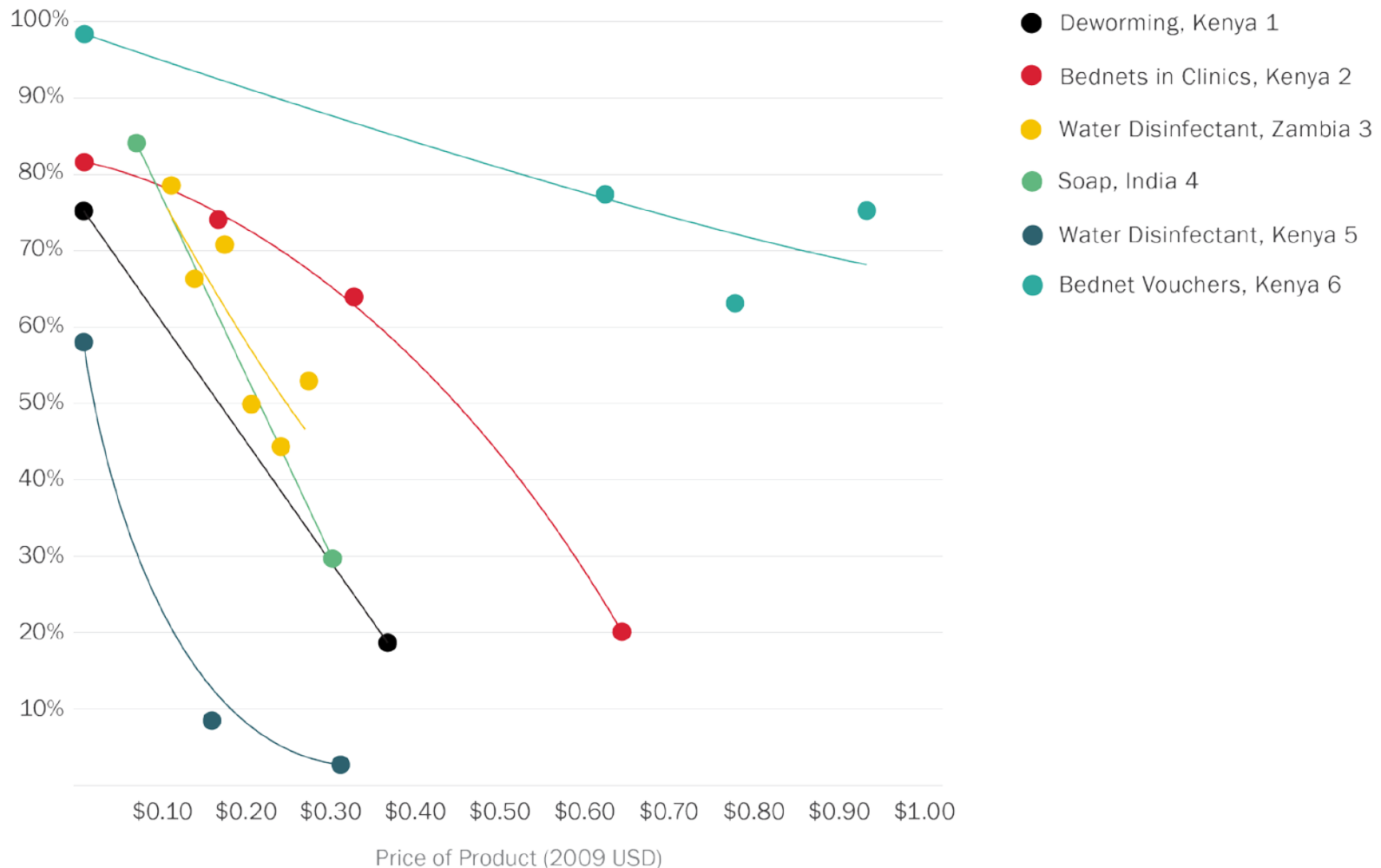
Source: Kremer and Miguel 2007, Ashraf et al 2010, Spears 2010, Dupas et al in process, & Dupas 2013. All as summarized in J-PAL Policy Bulletin. 2011..

Price Sensitivity Suggests Behavioral Bias

$142

BENEFIT

COST

Source: Kremer and Glennerster, 2010 & Baird et al, ongoing,

Local Evidence on Implementation

- This is where the switch from reliable NGO to government delivery will be critical

- Result with a government might be different than with NGO, should we do an RCT?

- What other information, evidence might be useful?

- Would be good to have more evidence on how to improve incentives for effective delivery within government

Should we recommend incentives for immunization?
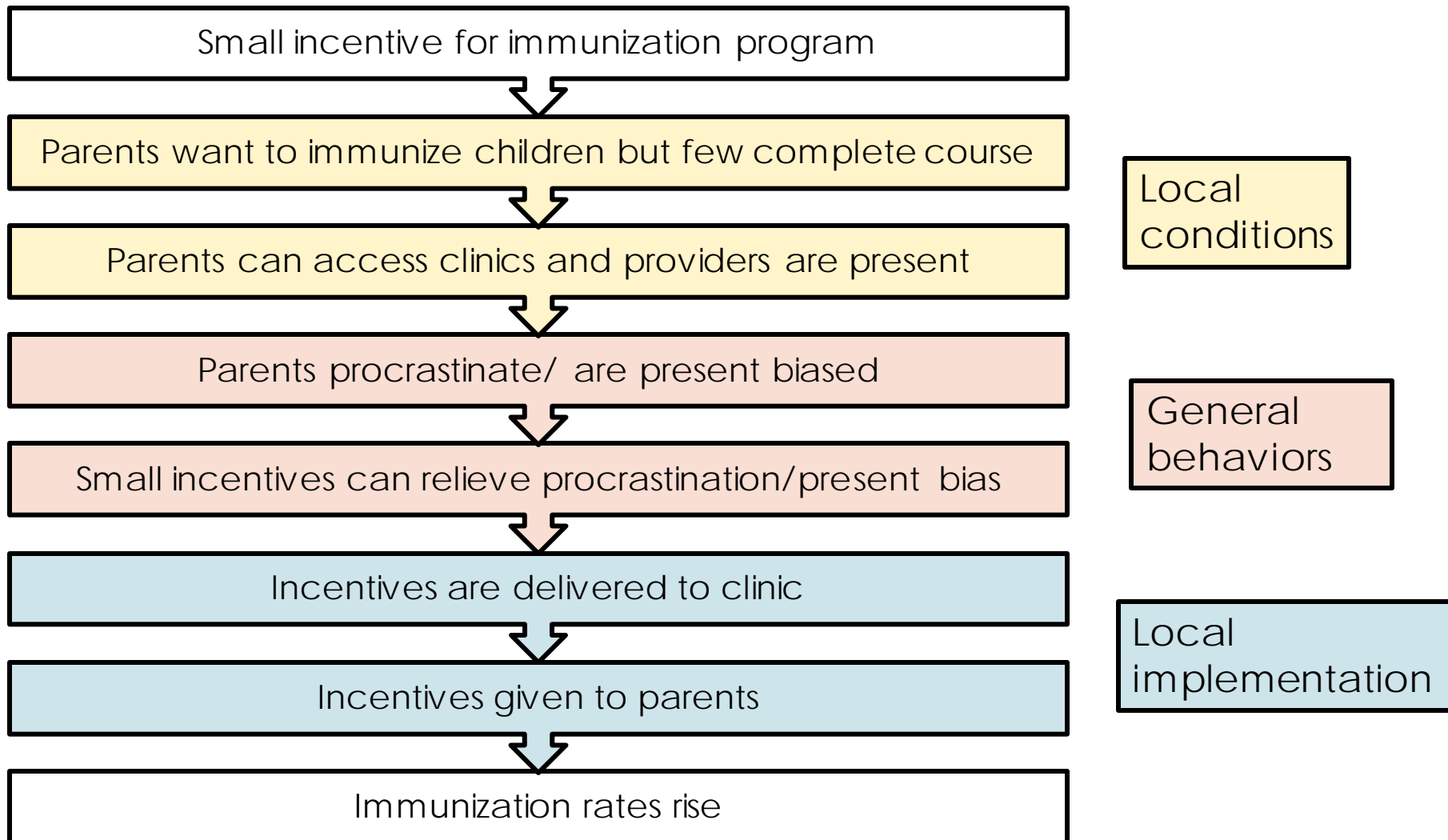
Small incentive for immunization program
↓↓
Parents want to immunize children but few complete course
↓↓
Parents can access clinics and providers are present
↓↓
Parents procrastinate/ are present biased
↓↓
Small incentives can relieve procrastination/present bias
↓↓
Incentives are delivered to clinic
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Literature Reviews vs Meta-Analysis

- Meta analysis common in medicine, literature reviews common in economics

- Benefits of meta analysis:
  - explicit criteria for inclusion reduces risk bias in picking studies
  - Pooling results from many studies gives more power
  - Useful when testing identical the same program

- Literature review rely on judgement and theory
  - Cross cutting lessons that are not from testing same program
  - Descriptive data can be used to support argument

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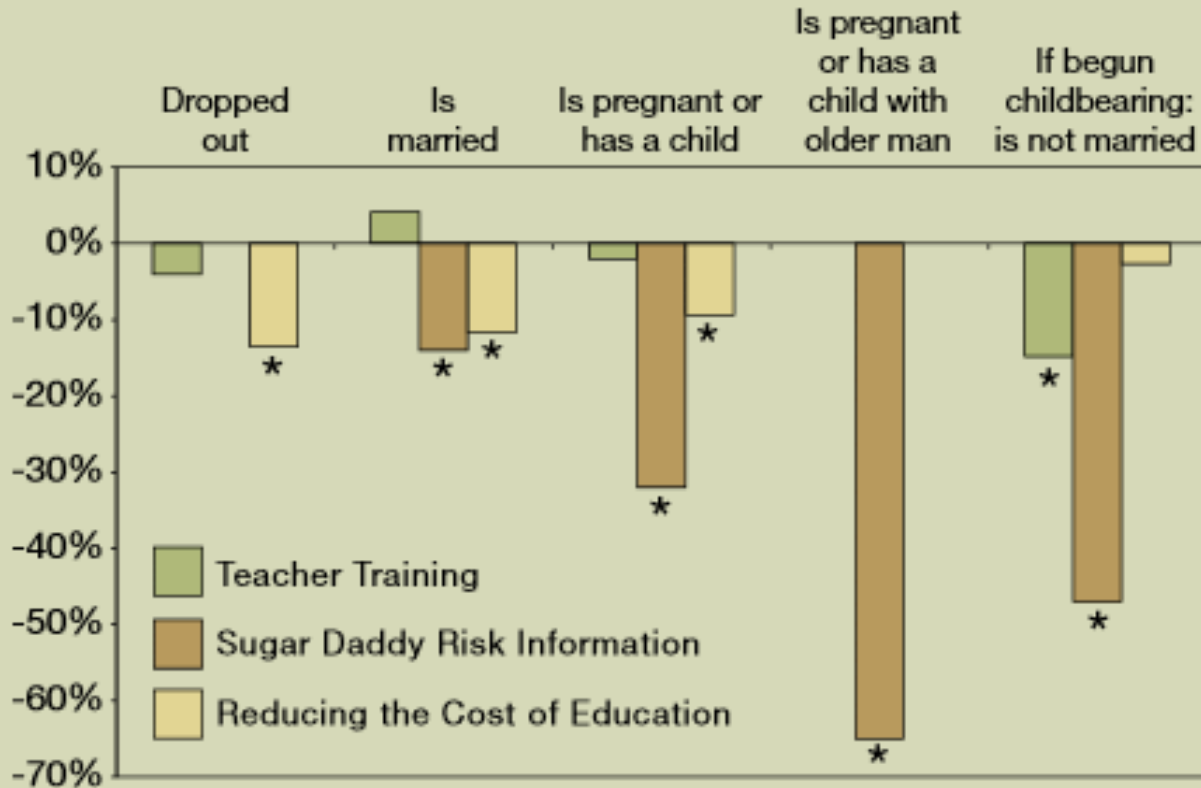Figure 1: HIV Rates Are Very Different by Age
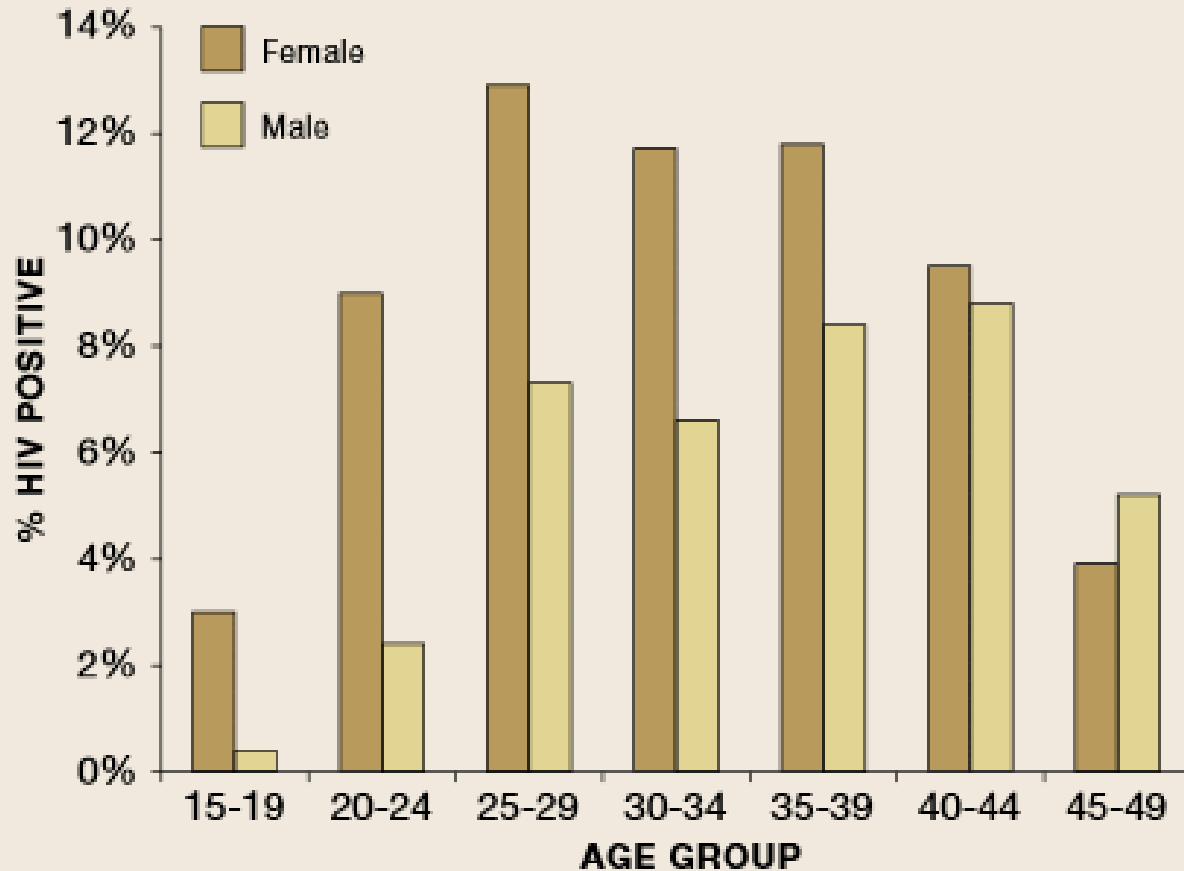
Source: The Kenya Demographic and Health Survey (Central Bureau of Statistics, Kenya, 2004)
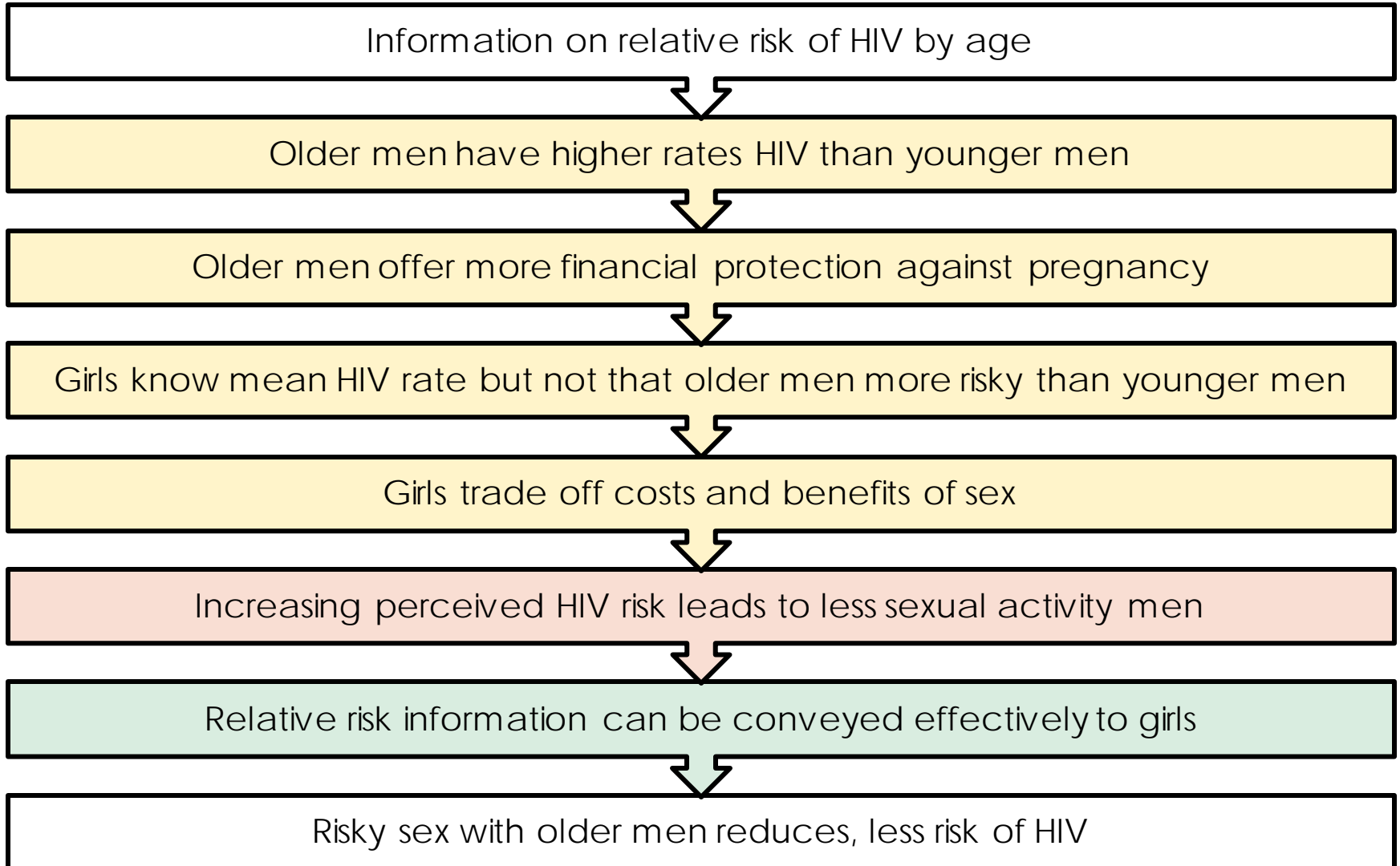
Impacts of Each Program on Girls' Behavior
(Percentage change relative to girls in comparison group)

*Indicates that the difference with the comparison group is significant at 10%

Legend:
- Teacher Training
- Sugar Daddy Risk Information
- Reducing the Cost of Education

Sugar Daddies Theory

Information on relative risk of HIV by age

Older men have higher rates HIV than younger men

Older men offer more financial protection against pregnancy

Girls know mean HIV rate but not that older men more risky than younger men

Girls trade off costs and benefits of sex

Increasing perceived HIV risk leads to less sexual activity men

Relative risk information can be conveyed effectively to girls

Risky sex with older men reduces, less risk of HIV

Is Rwanda the Right for Scale Up?

- Government of Rwanda interested in scale up
  - Low rate of HIV
  - Concern about increasing pregnancy rates of adolescent girls

- JPAL Africa and IPA worked with Rwanda Biomedical Council to do survey of HIV knowledge of adolescent girls
  - Girls already know older men are more likely to have HIV than younger men
  - Girls massively overestimate rate of HIV in the population

- What might be the impact of a relative risk information campaign in Rwanda?

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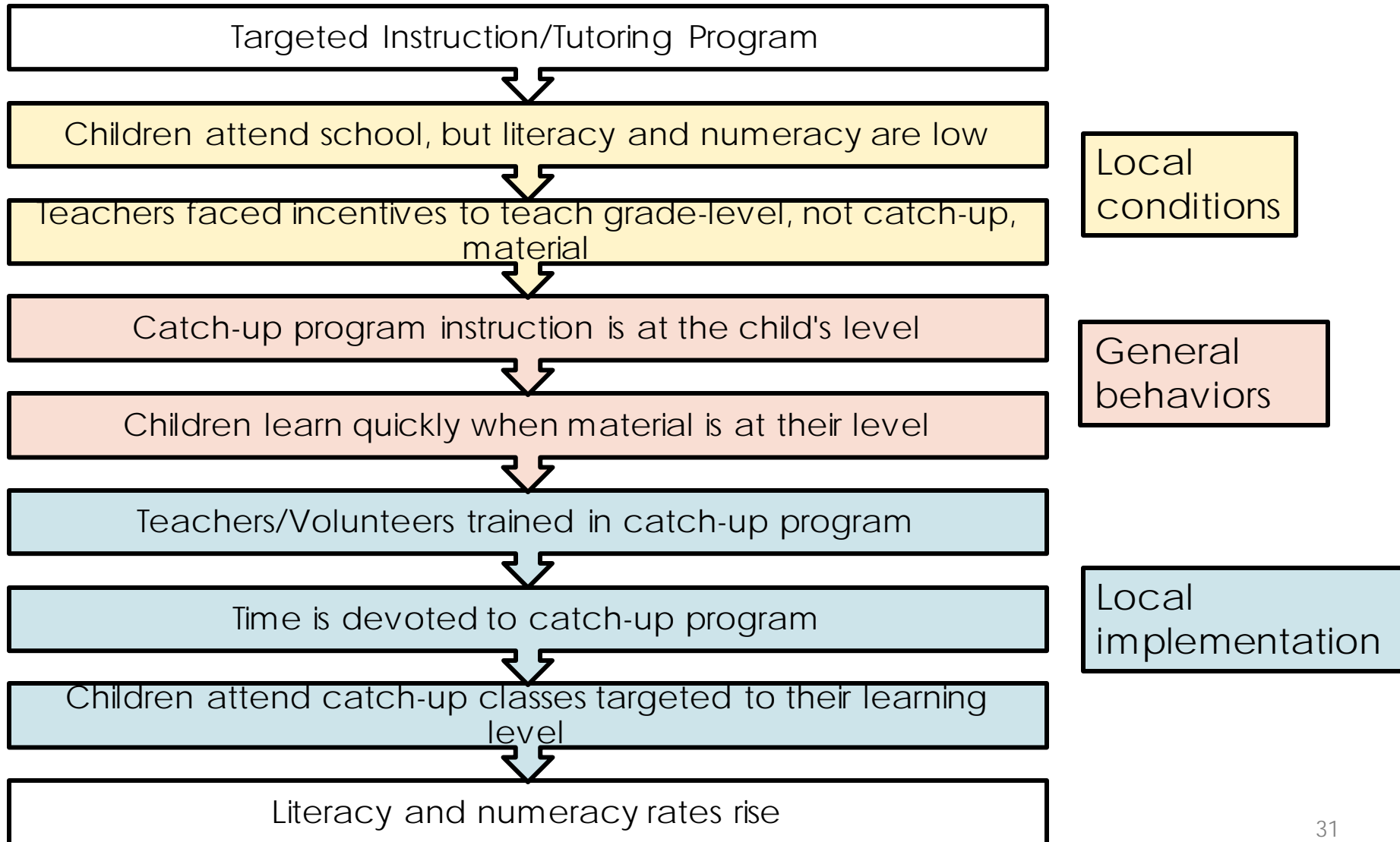v.   **Targeted Instruction for Zambia**

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Targeted Instruction Increases Learning

Series of studies shows targeted instruction can work in a variety of contexts:

1. Extra Teacher Programme in Kenya (Duflo et al 2011)

2. Balsakhi Assistant Programme in India (Duflo et al 2007)

3. Read India Programme (Banerjee et al 2007)

4. India Reading Camps (Banerjee et al 2010)

5. Haryana Learning Enhancement Programme (Berry et al 2013)

6. TCAI Programme in Ghana (Duflo and Kiessel in progress)

7. Computer Assisted Learning (Duflo et al 2007)

Necessary Steps for Targeted Instruction

Targeted Instruction/Tutoring Program

↓

Children attend school, but literacy and numeracy are low

↓

Teachers faced incentives to teach grade-level, not catch-up, material

Local conditions

↓

Catch-up program instruction is at the child's level

↓

Children learn quickly when material is at their level

General behaviors

↓

Teachers/Volunteers trained in catch-up program

↓

Time is devoted to catch-up program

Local implementation

↓

Children attend catch-up classes targeted to their learning level

↓

Literacy and numeracy rates rise

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Many Implementation Models

Who should lead the programme?	Where should the programme be held?	When should the programme be held?
1. Teachers	1. In schools	1. During the school day
2. Low-cost Tutors	2. Outside of schools	2. After school hour
3. Unpaid volunteers		3. On holiday breaks
4. Computer-Assisted		

Main lesson: Create a dedicated time to focus on the learning level of each child, especially those failing to grasp basic skills.

Results replicated in volunteer program in Chicago. Working with Government of Zambia to scale.

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Conclusion

- Does evidence from RCTs replicate to new context? Too big a question, need to break it down
  - What is the theory of change behind the RCT?
  - Do the local conditions hold for that theory to apply
  - How strong is the evidence for the general behavioral change
  - What is the evidence that the implementation process can be carried out well?

Conclusion

- If we have enough evidence to act, do we have enough evidence to stop evaluating impact? (always monitor)

  – we often need to act even when evidence is thin

- Often big overlap between when have enough evidence to launch big new initiative and when still worth evaluating

  – Questions may remain about best way to implement

- Trade off of between evidence in new areas, vs more on improving evidence on refining a program

For more reading and resources

Kremer and Glennerster, 2012, Chapter in Handbook of Health Economics

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