J-PAL
ABDUL LATIF JAMEEL POVERTY ACTION LAB

Generalizing & Applying Evidence

Course Overview

1. Why Evaluate
2. Theory of Change & Measurement
3. Why & When to Randomize
4. How to Randomize
5. Sample Size & Power
6. Randomized Evaluation from Start to Finish
7. Threats & Analysis
8. Ethical Considerations
9. Generalizing & Applying Evidence

Outline

I. Evidence use in decision making

II. Introducing the Generalizability Framework

III. Using the Generalizability Framework: Immunization

IV. Example of Evidence to Scale

Learning objectives

- Discuss how **evidence can be used** across the program lifecycle
- Understand what goes into an **evidence informed program design**
- Introduce a **systematic framework** for assessing whether a program found effective in one context is likely to be effective in another context
- Go through an **example** of how to apply the generalizability framework
- **Interactive session**!

Outline

I. **Evidence use in decision making**

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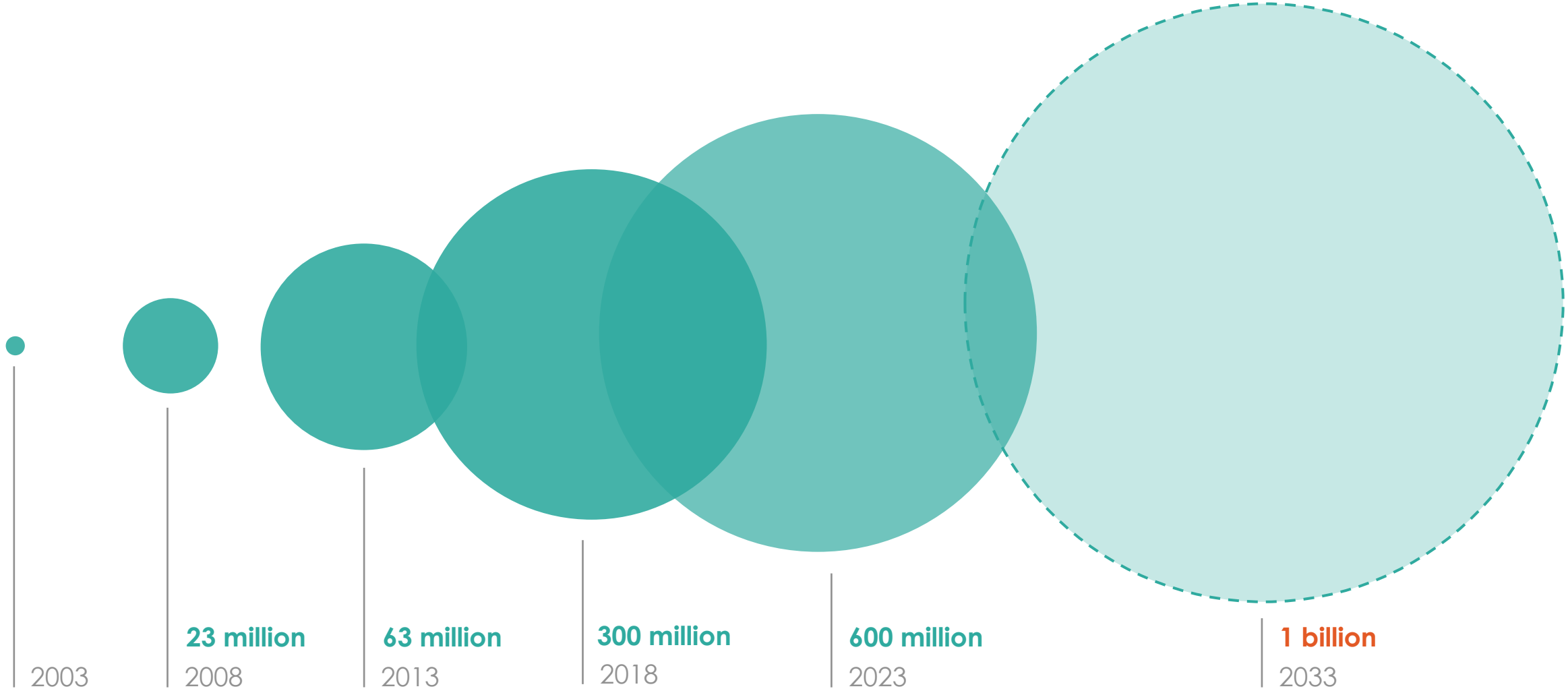
III. Using the Generalizability Framework: Immunization

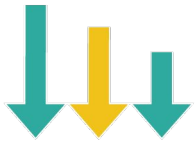
IV. Example of Evidence to Scale

Evidence-informed policies and programs have reached over 600 million people to date

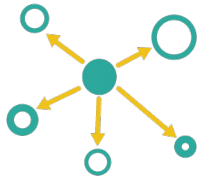


Evidence can influence policy and practice through different pathways

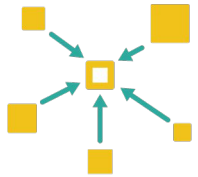
Scaling up an evaluated pilot



Scaling back an evaluated program



Adapting and scaling a program



Applying research insights

Shifting global thinking

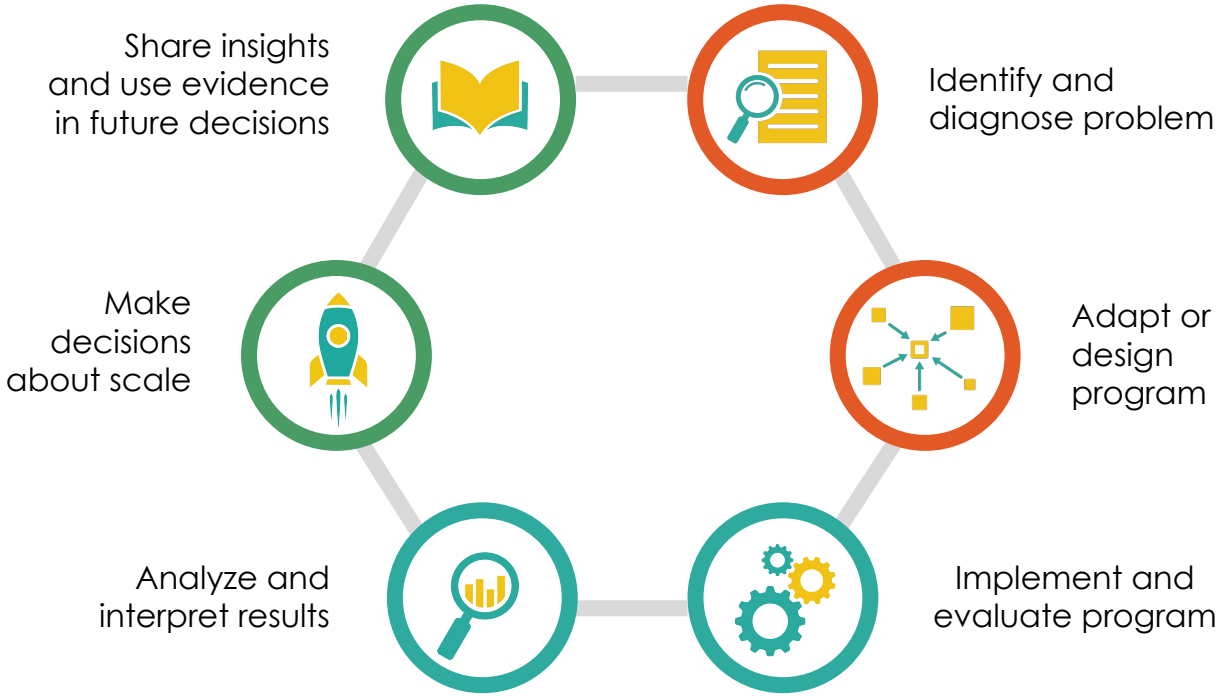
Institutionalizing evidence use

Read more about these pathways and case studies from our experience at www.povertyactionlab.org/evidence-to-policy

Ideally, evidence is used systematically in all phases of program lifecycle

Phase 3: Decision-making

Evidence use to inform decision about scale



Phase 1: Diagnosis and design

Evidence use to inform program design

Phase 2: Evaluation and learning

Evidence generation to improve implementation and learn about program impact

However, there are many barriers to evidence use

Lack of evidence that we view as relevant to our work / context

Decision-making timelines are too fast-moving

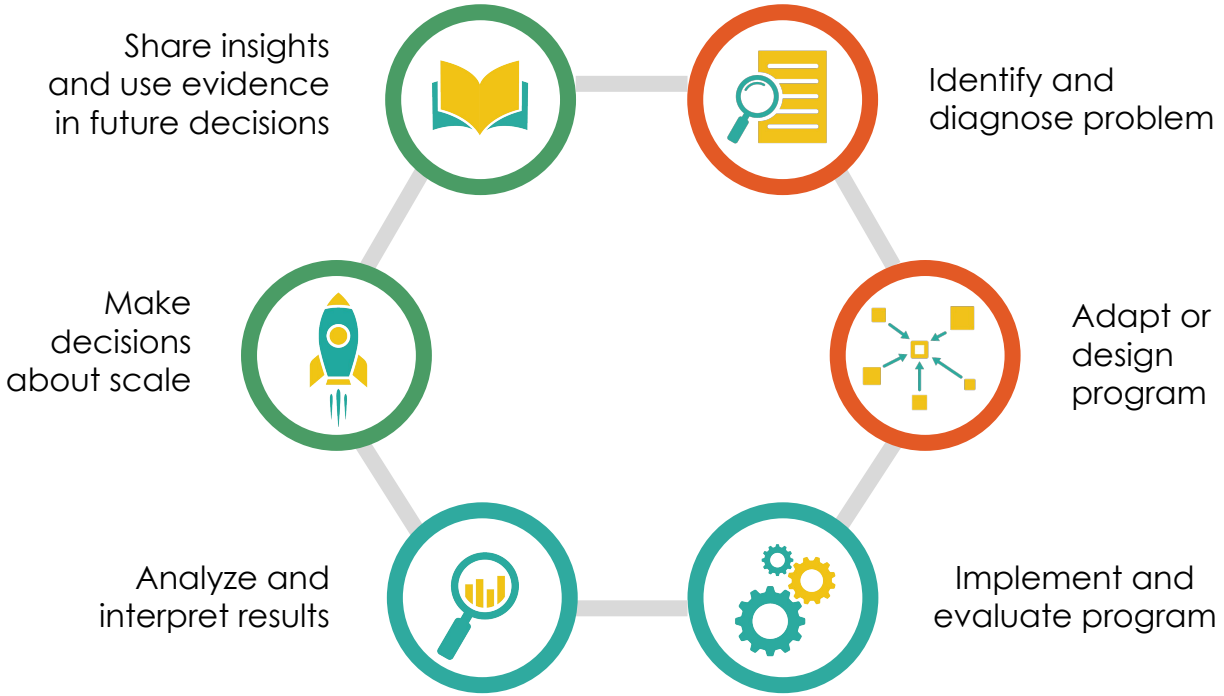
Insufficient professional incentives (e.g., using evidence is not rewarded)

Limited technical capabilities to interpret evidence

Focusing on Phase 1: Applying evidence to program design is not straightforward

Phase 3: Decision-making

Evidence use to inform decision about scale



Phase 1: Diagnosis and design

Evidence use to inform program design

HOW???

Phase 2: Evaluation and learning

Evidence generation to improve implementation and learn about program impact

Using data and evidence in program design goes beyond identifying an "evidence-based program"

Data-driven needs assessment	Thorough literature review	Data-driven adaptation
Understand the **extent of the problem** and who is most in need Identify the **root causes, barriers, and levers**	Identify **promising programs** and general lessons from literature Assess whether lessons are likely to **generalize** to your context	Can program be implemented with **core mechanisms** intact? **Pilot program** with intensive oversight and **monitor** implementation

How have you tried to use evidence to inform program design or policy decisions?

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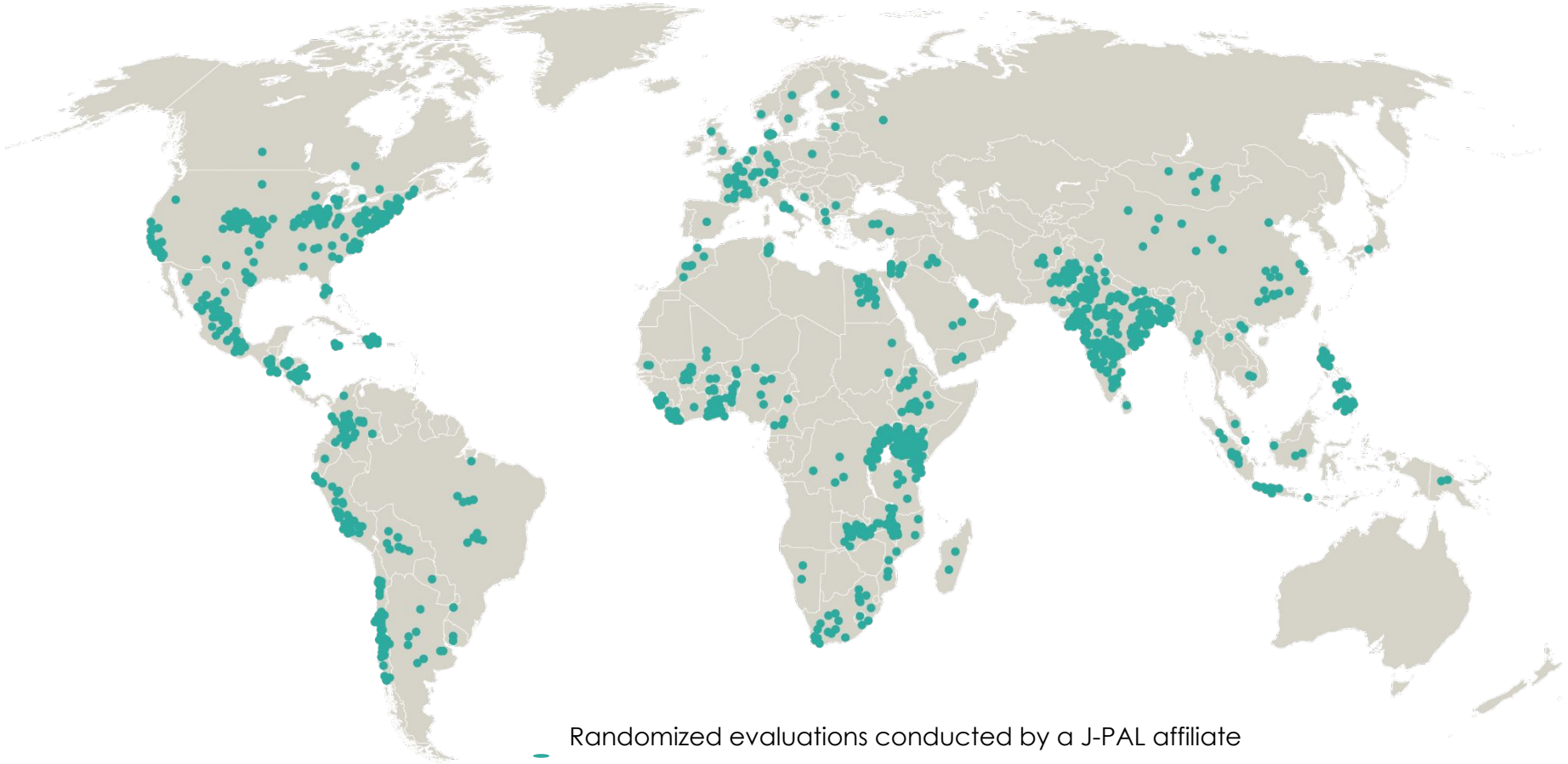
We keep running into the same problem from place to place to place. … The solutions, in a sense, can be the same. You learn something general, and from this general finding, you can extract a lesson that policymakers will then tailor to each individual context."

—**Esther Duflo,** Interview after the announcement of the 2019 Prize in Economic Sciences https://bit.ly/2WI37Bk

Illustration: Niklas Elmehed

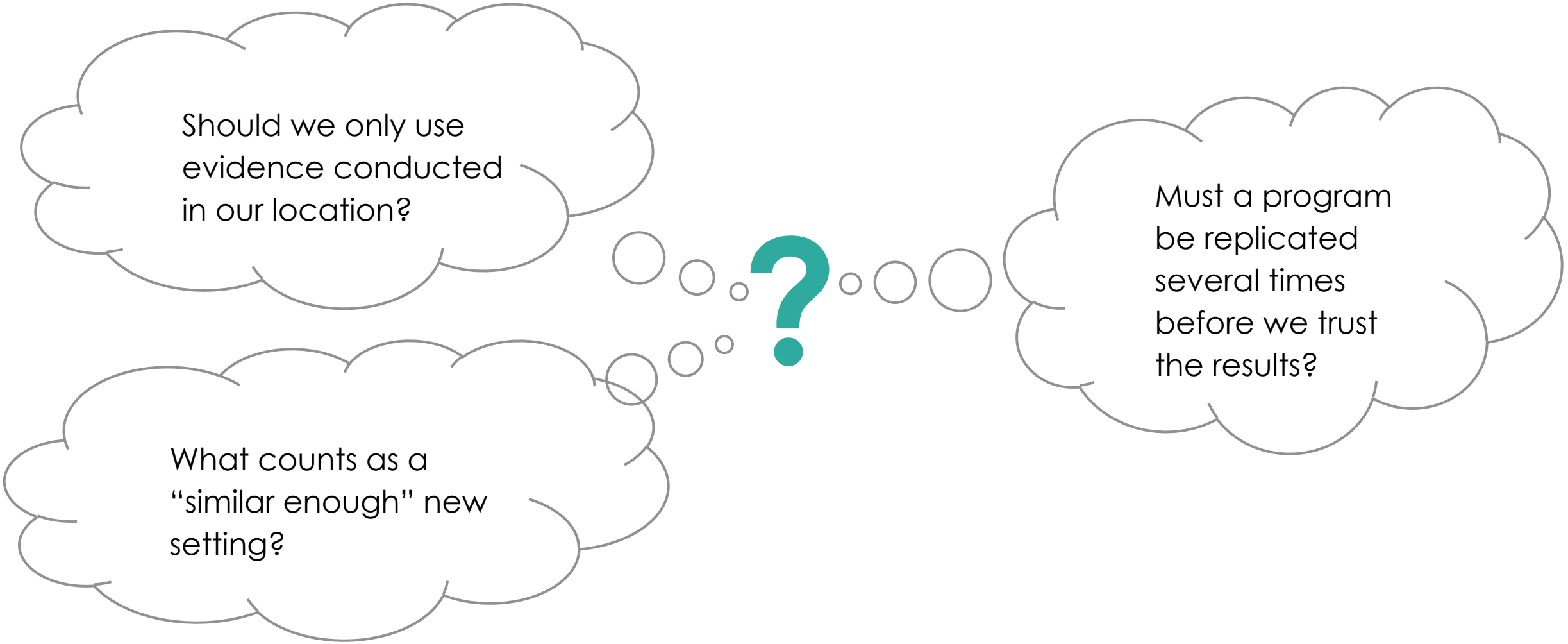
The existing body of evidence is very rich: 2,200+ evaluations completed in 90+ countries by J-PAL researchers



This session: How we can leverage the existing evidence base to ensure that we get to effective, evidence-informed solutions faster.

Have you ever learned about a program and wondered whether it would be effective in your context?

Some common questions when reviewing evidence



Shifting which questions we ask about evaluations

Instead of asking…

Are the **locations** similar?

How many times has the program been evaluated?

Think about…

Are the **problem** and its **underlying causes** similar?

Why did the program work? And what is the strength of the evidence on the **general behavior change**?

Generalizability Framework

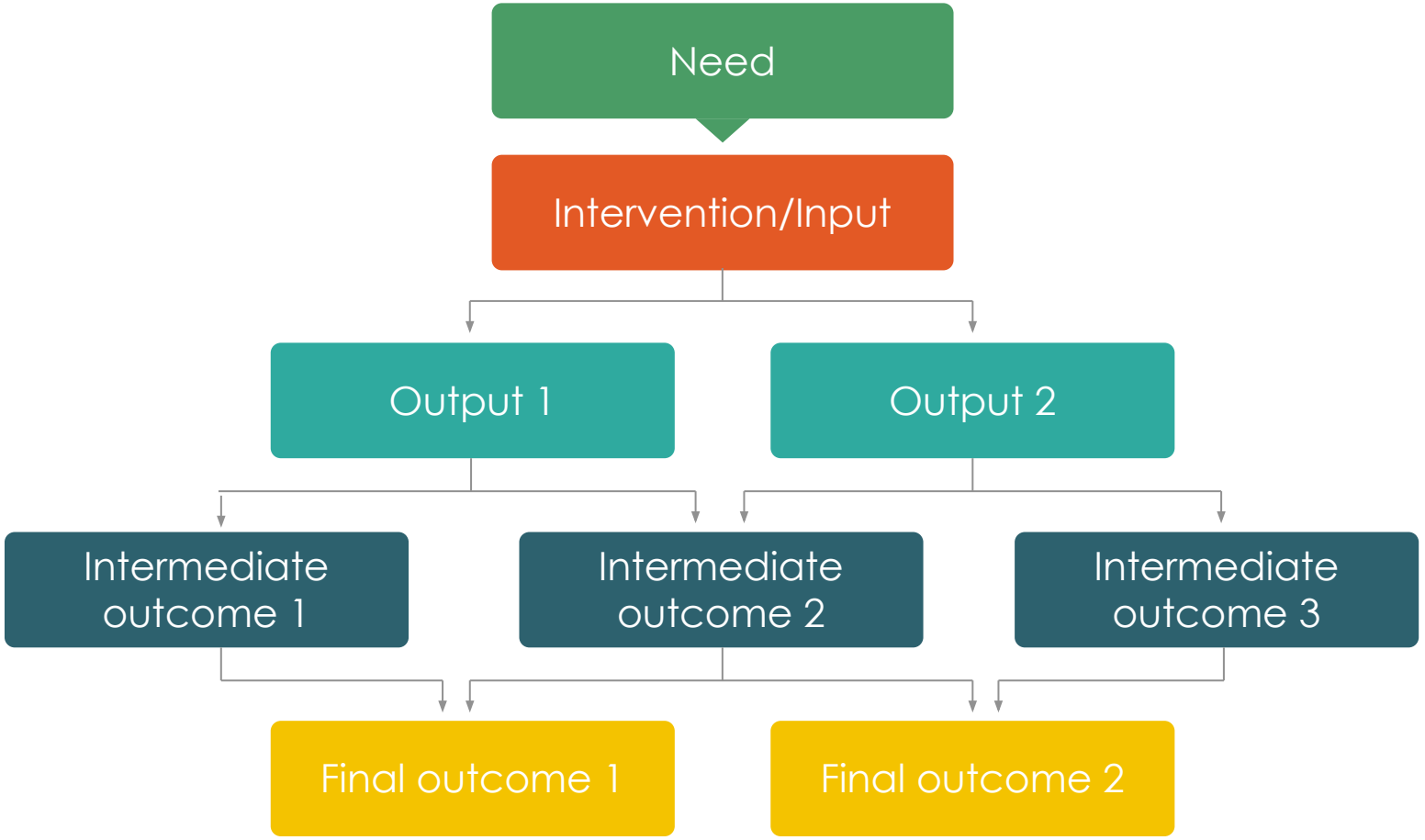
Applying the Generalizability Framework

Discussed in Theory of Change and Measurement

Step 1: Program theory

What is the **theory of change** behind the program?

What **underlying conditions** must have held for the program to have had an impact?



Applying the Generalizability Framework

Step 2: Local Conditions

Does the **problem** the original intervention solved also exist in your community?

Are the **underlying causes** the same? Do the important **local conditions** hold true in your context?

Step 3: General Lessons from Existing Evidence

What evidence do we have to support the **underlying mechanism** of change of the original program?

Is the underlying mechanism of change **likely to be valid** in your context?

Step 4: Local Implementation

Can you implement the program with the **critical elements in place** and with fidelity to the original model?

Who would implement the program and do they have the capacity?

Generalizability Framework

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Imagine that you are a **program officer** in the government in country A in West Africa, and you are responsible for designing a program to increase the **immunization rates** of a life-saving vaccine.

Your mandate is for the program to be strongly backed by evidence but to be adapted appropriately to your local context.

As part of your needs assessment, you want to consider:

What might be contributing factors to the low immunization rates in your context?

Possible contributing factors to low immunization rates

Supply barriers

- Lack of access to centers that provide immunizations
- Insufficient medical staff present at medical centers
- Lack of vaccines at clinics

Demand barriers

- Lack of information about value of immunizations
- Full immunization schedule not salient
- Norms against immunization
- Lack of trust in vaccinations
- Opportunity cost too high

As part of your evidence review you come across this study, which you think sounds promising:

Evaluations | Policy Publications

Search our database of 1169 randomized evaluations conducted by our affiliates in 95 countries. To browse summaries of key policy recommendations from a subset of these evaluations, visit the Policy Publications tab.

Incentives for Milk Cleanliness and Production Quality in Indian Cooperatives

Ashish Shenoy, Manaswini Rao

The Effects of a Gender-based Violence (GBV) Curriculum on GBV and Education in Mozambique

Selim Gulesci, Sofia Amaral, Aixa Garcia-Ramos, Alejandra Ramos, Maria Micaela Sviatschi, Sarita Ore-Quispe

The Impact of Disclosing Soft Skills Certificates at Recruitment on Labor Market Outcomes in Uganda

Vittorio Bassi, Aisha Nansamba

Search Terms

immunization

Sector: All | Intervention Type: All | Country: All | Show all filters

Apply

Improving Immunization Rates Through Regular Camps and Incentives in India

Abhijit Banerjee, Esther Duflo, Rachel Glennerster, Dhruva Kothari

In rural Rajasthan, India, researchers evaluated whether improving access to vaccines via immunization camps could increase immunization rates, and whether additionally offering a non-financial incentive such as lentils could further increase rates. They found that providing incentives alongside...

Source: https://www.povertyactionlab.org/evaluations

Program to improve immunization rates in rural Rajasthan, India through camps and incentives

Implementation of the program

Program implemented by a local NGO (Seva Mandir) to increase immunization rates in Udaipur, rural Rajasthan, India

Components of the program

1. **Reliable infrastructure:** regular monthly immunization camps with nurse present without fail (**supply**)
2. **Incentives:** 1kg lentils for every vaccination, set of plates on completed immunization schedule (**demand**)

Photo: J-PAL/IPA

A parent receives a kilogram of lentils at a vaccination clinic in Rajasthan, India

You can find the evaluation summary here.

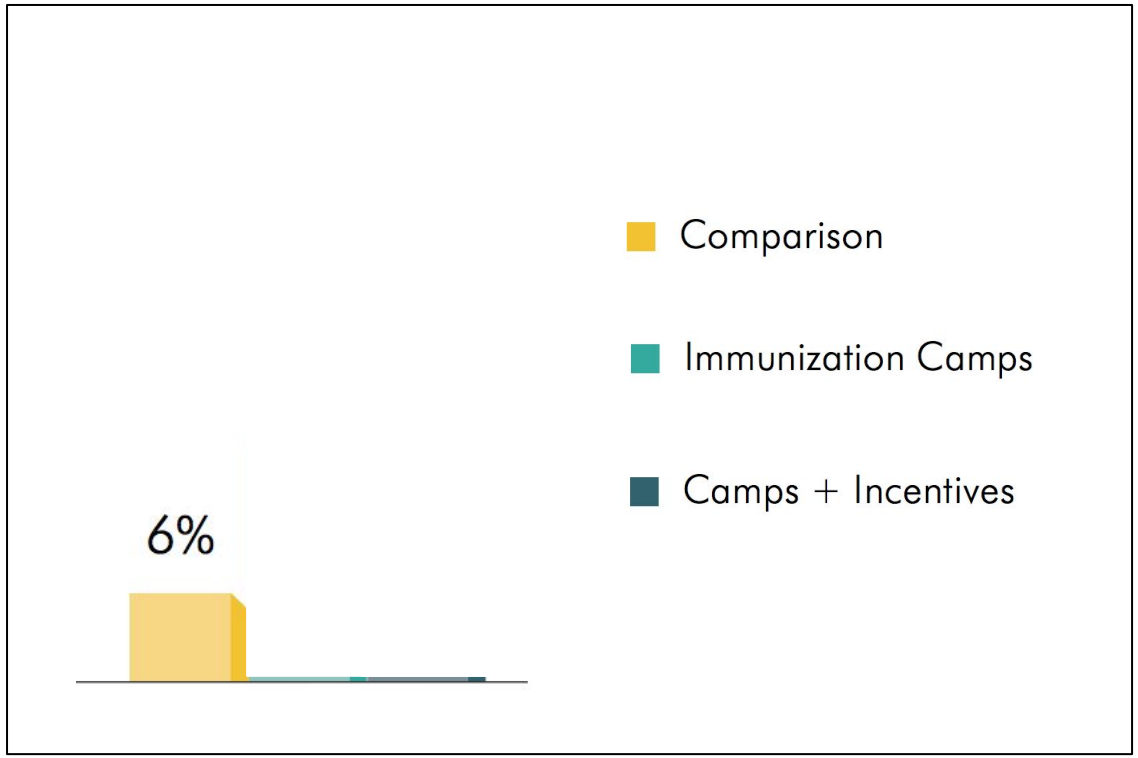
Effects of program to improve immunization rates in rural Rajasthan through camps and incentives

Evaluation and impact of the program

Impact evaluated with **large-scale RCT** (134 villages with almost 2,000 children):

- Immunization camps: 30 villages
- Immunization camps + incentives: 30 villages
- Comparison group: 74 villages

Figure: Percentage of children aged 1-3 years who are fully immunized (i.e., five shots)



Should we consider implementing demand-side incentives in Country A?

We should always be careful to view evidence in isolation

- Only one RCT, in South Asia not Africa
- Program conducted by NGO, not government
- Lentils not core part of typical diet in West Africa

What would you want to know before considering demand-side incentives to improve immunization rates in country A in West Africa?

Reminder: Generalizability Framework

Step 1: Program theory of change

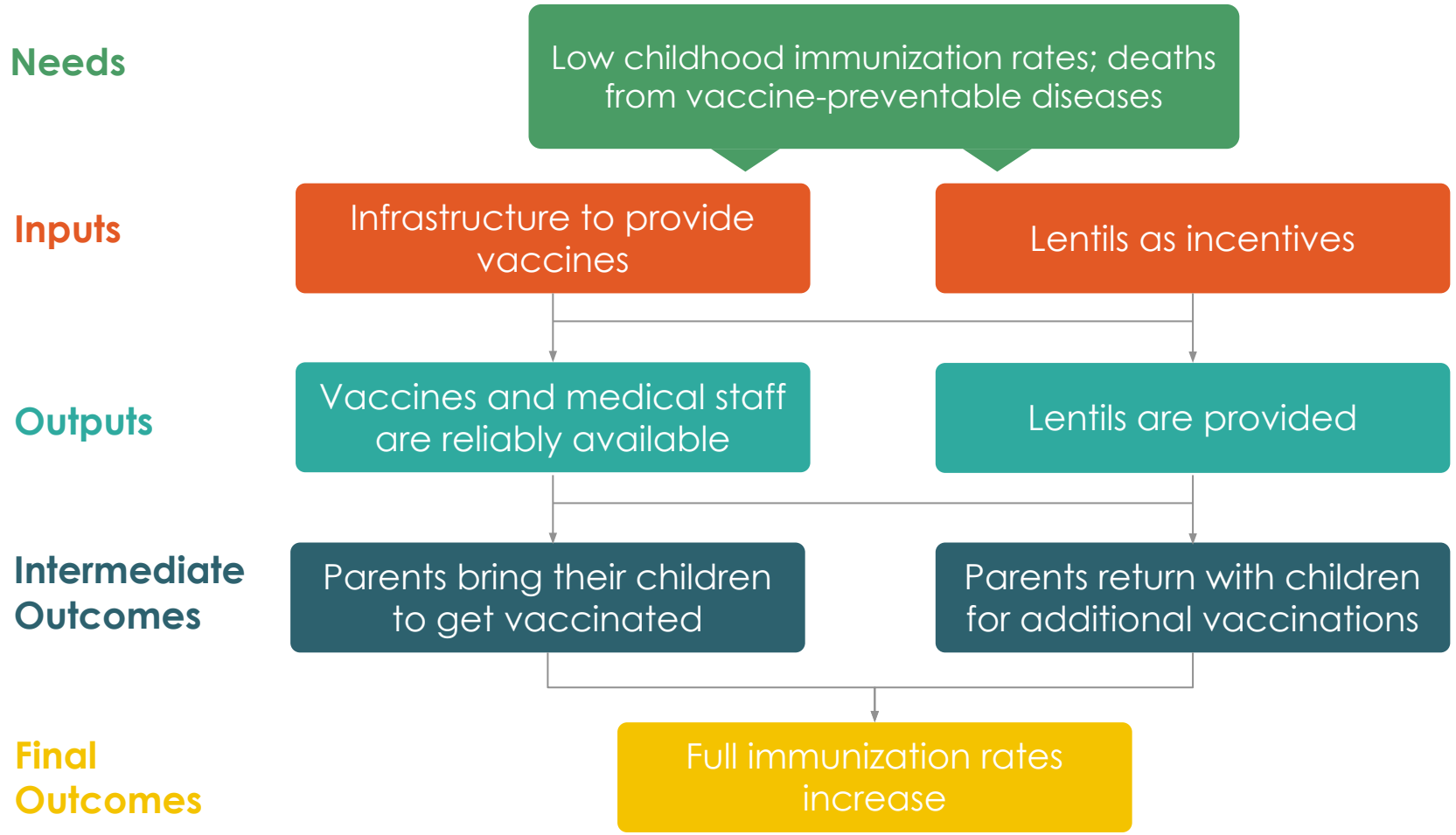
Key questions (about the original program):

- What needs does the original program address?
- What is the disaggregated theory behind the program?

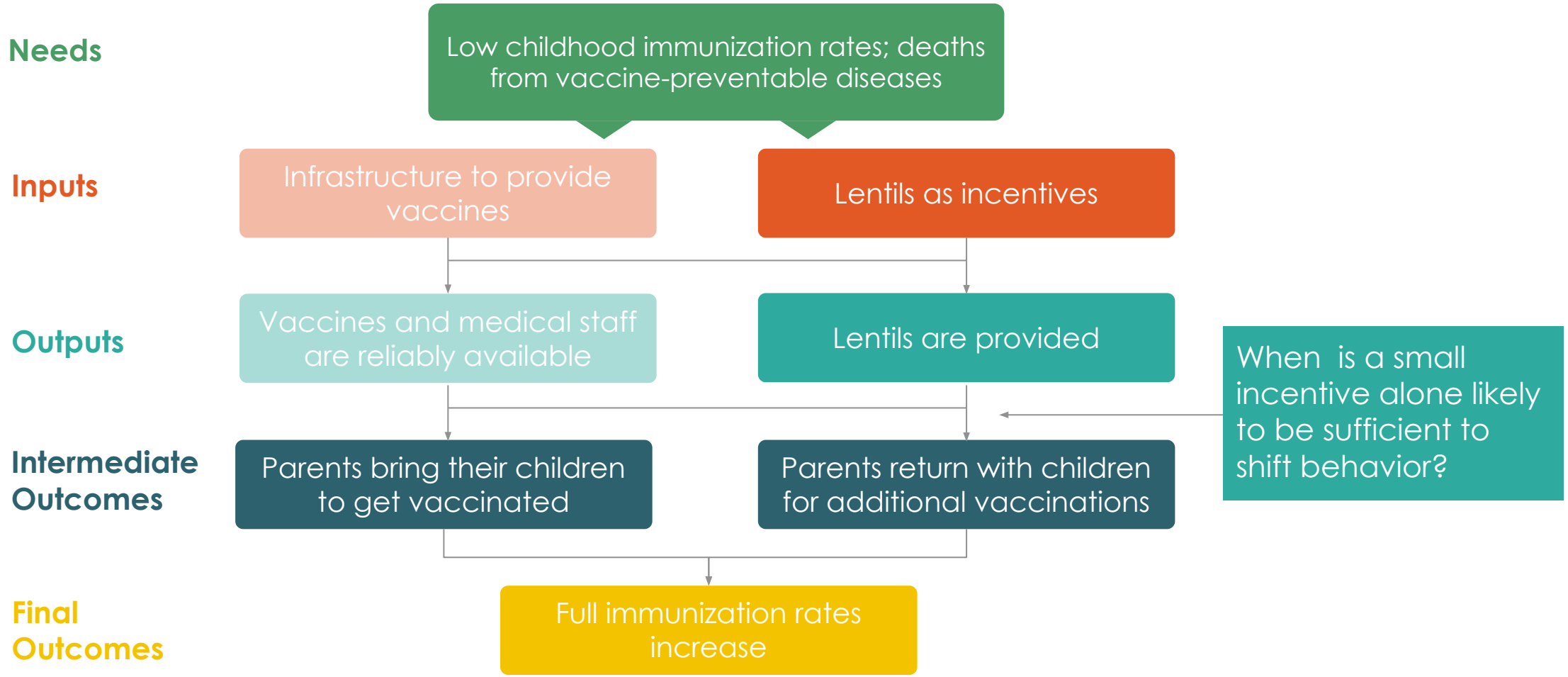
Actions:

- Understand the underlying need that the original study is trying to address and map the theory of change for the original program(s)
- Articulate the key conditions that must have been in place for the program to have worked

Step 1: Understand the underlying **need** and map out **theory of change** for the evaluated program



Step 1: Articulate the **key conditions** that must have been in place for the program to have worked



Step 1: Articulate the **key conditions** that must have been in place for the program to have worked

Underlying conditions

- There are limited **supply-side constraints** to vaccinating children
- Parents **want** to vaccinate their children
- The lentils **incentivize** parents to get their children vaccinated

What might have been the main barriers for parents to vaccinate their children if a small incentive can get them to change behavior?

Step 1: Articulate the **key conditions** that must have been in place for the program to have worked

Underlying conditions

- There are limited **supply-side constraints** to vaccinating children
- Parents **want** to vaccinate their children
- The lentils **incentivize** parents to get their children vaccinated

Possible main barriers

- High **opportunity-cost** of time
- Insufficient **follow-through**
- Lack of **information** about vaccine schedule or benefits of vaccines

Step 2: Local conditions

Key questions:

- Are the local needs similar
- Do the local conditions hold for that theory of change to apply?

Actions:

- Use data to better understand whether the underlying need and whether the key conditions are also likely to be at play in your context

Step 2: Use **data** to understand whether need and local conditions are similar in your context

Underlying conditions

- There are **limited supply-side constraints** to vaccinating children
- Parents **want** to vaccinate their children
- Main barriers are about **demand**

What data would you look for/collect to determine whether the need and the conditions also hold in your context?

Step 2: Use **data** to understand whether need and local conditions are similar in your context

Underlying conditions	Possible data sources
• There are **limited supply-side constraints** to vaccinating children • Parents **want** to vaccinate their children • Main barriers are about **demand**	• Site visits at health centers • Interviews with parents • Analysis of vaccine data • Immersion in local culture

Which of the two hypothetical countries might be a good fit for an incentives program and why?

Vaccination Schedule	Country 1 Rate	Country 2 Rate
1st vaccine	84%	47%
2nd vaccine	74%	41%
3rd vaccine	67%	41%
4th vaccine (full immunization)	49%	38%

Step 3: Generalized lessons on behavior

Key questions:

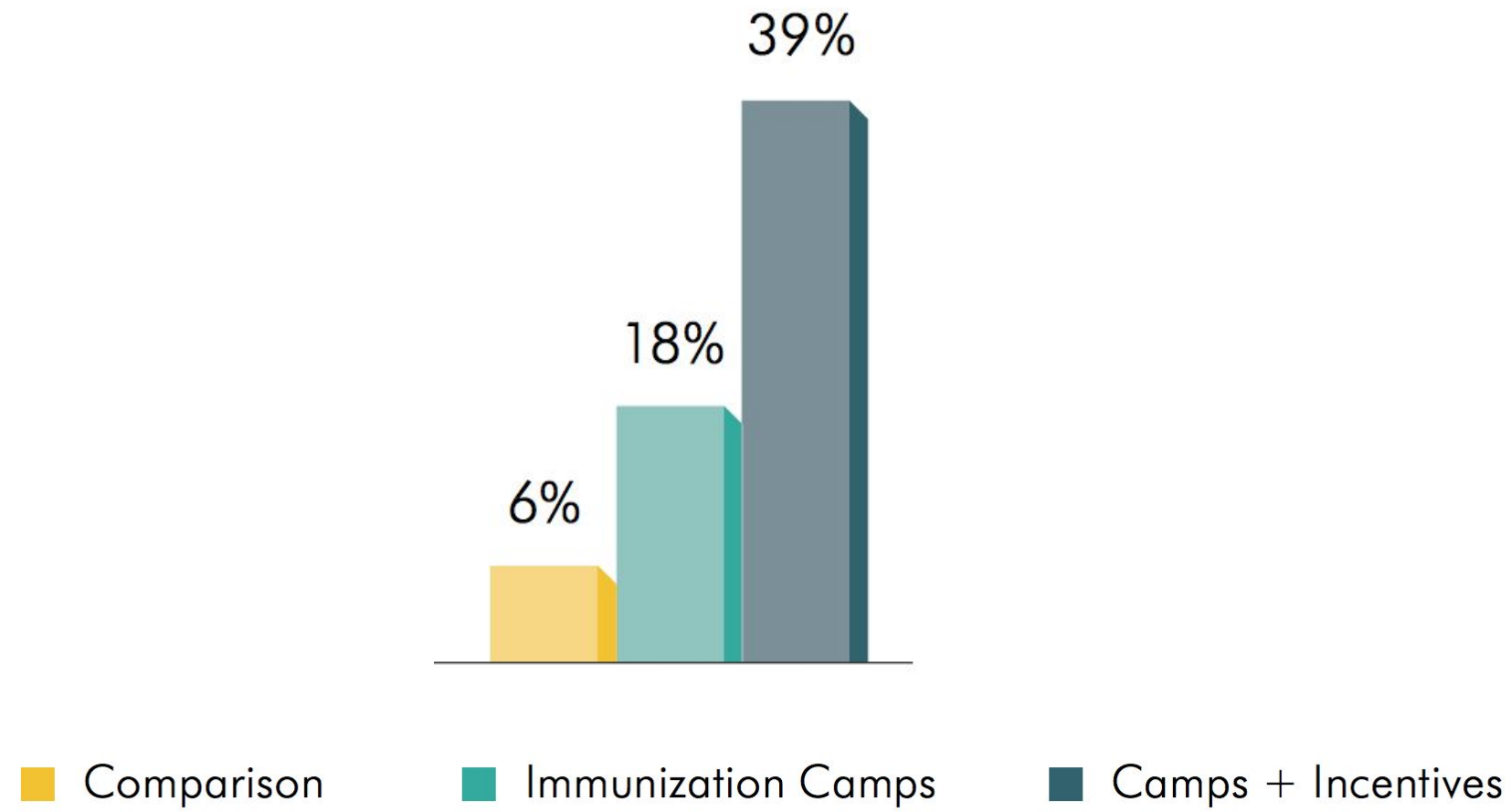
- How strong is the evidence base for the required general behavioral change?

Actions:

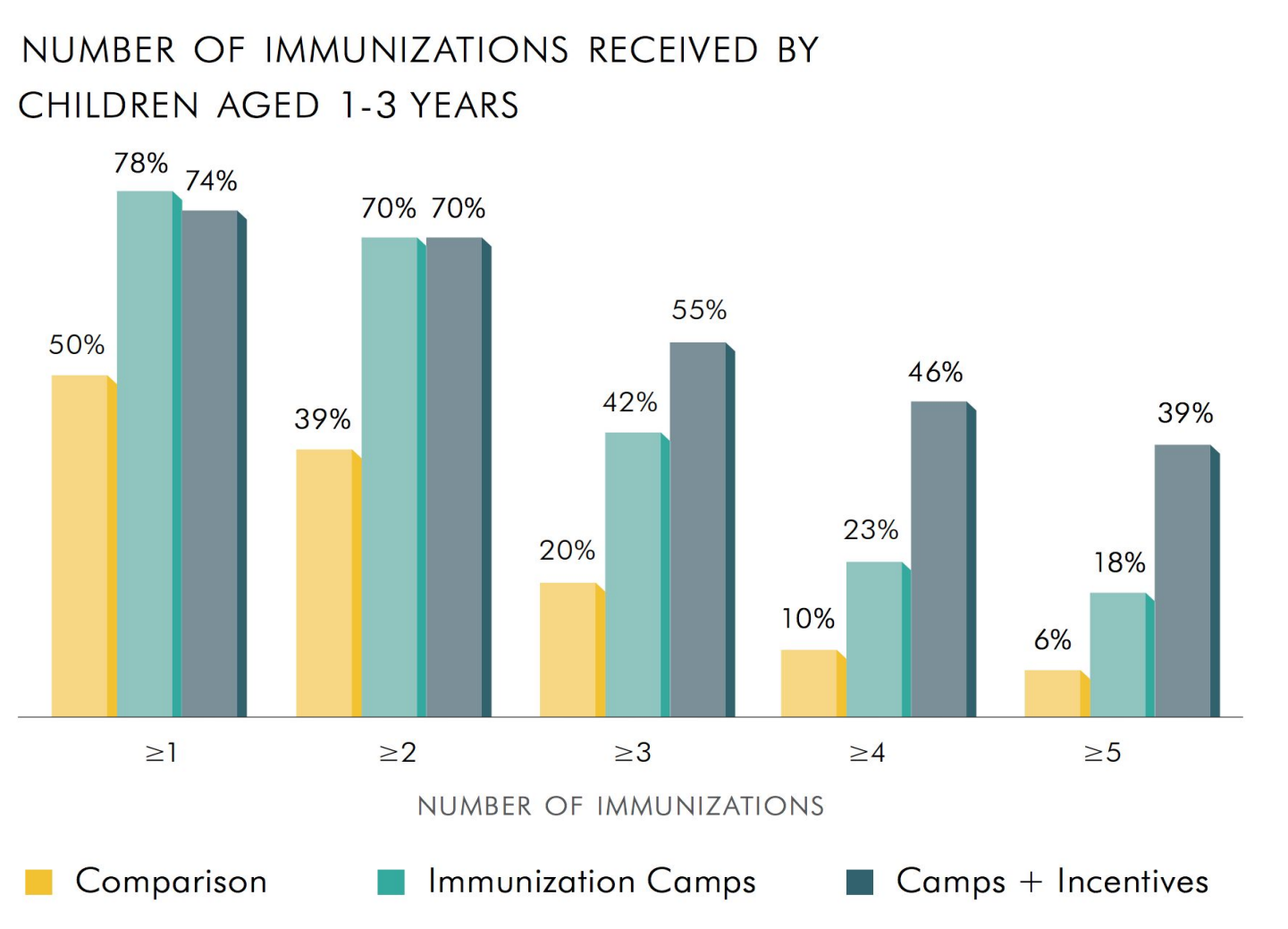
- Back out the mechanisms through which the program likely worked in the original context(s)
- Assess the strength of the evidence for that general behavior
- Combine evidence base and data from local context to assess whether the mechanisms are likely to hold in your context

Step 3: Back out the **mechanisms** of the original study

Percentage of children aged 1-3 years who are fully immunized (i.e., five shots)



What can you learn about mechanisms from these RCTs results?



- Lack of reliable supply was a barrier to getting the first doses
- Parents don't persist with the full immunization schedule **despite availability**
- Incentives help parents persist

Step 3: Back out the **mechanisms** of the original context, i.e. **why** did the original program work?

Possible mechanism		Possible mechanism
The incentives, albeit small, helped parents **overcome a hurdle** to persist	**And/or**	The incentives **communicated information** about the full vaccination schedule or the societal value of vaccines

Step 3: Assess the strength of the evidence for the mechanisms that made the original program effective

Instead of asking…

What is the strength of the evidence to offer incentives to increase immunization rates?

Narrow!

Consider asking…

What is the strength of the evidence to offer incentives when people fail to persist with beneficial behavior?

Expansive!

Evidence base: Even very small incentives, when valued, salient and timely, can influence non-trivial decisions

Learning HIV Status in Malawi

Respondents who received cash voucher were twice as likely to go to the testing center to obtain their HIV test results

Health

Evaluation summary here

Educational Incentives in India

Rewarding parent or children with 100 rupees for achieving a set goal increased test scores

Education

Evaluation summary here

Incentives for Savings in Mexico

Offering a lottery ticket per every additional MXN 50 deposited increased the number of bank accounts opened

Finance

Evaluation summary here

Steps 1-3: Combine evidence base and data from local context to assess whether the mechanism and key conditions are likely to hold in your context

If…	Then…
…the main barrier preventing parents from vaccinating their children is lack of persistence and/or high opportunity costs	…the incentive program's impact might generalize to your context if implemented with fidelity to the original program
…there are stiffer barriers at play, such as lack of access to health centers, strong norms against vaccinations, etc.	…the impacts of implementing incentives on vaccination rates are unlikely to generalize to your context

Step 4: Local implementation

Key questions:

- Assess whether you or another organization can successfully implement the intervention with fidelity to the original model.

Actions:

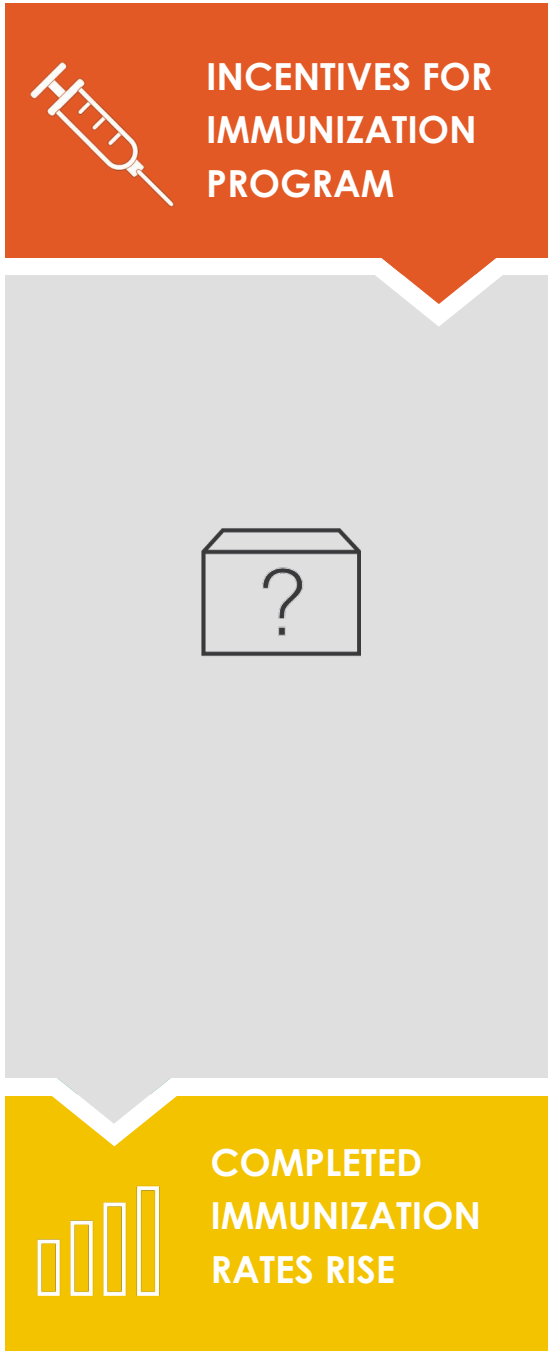
- Map out what is needed to implement the program with fidelity to the theory of change
- Determine whether good implementation is feasible in your context

What is needed for this intervention to be delivered with fidelity to the original model and the theory of change?

Step 4: What is needed for good implementation?

- Delivery of incentives to health centers is reliable
- In-kind incentives can be stored at health facility or delivered at a sufficient frequency
  - Consider value of incentive and whether it is perishable
- Digital incentives (mobile money, airtime) can be delivered to recipients
  - Do recipients have phones? Do they need national IDs to set up mobile money accounts?
- Vaccines can be tracked reliably and incentives are delivered reliably and in accordance with the schedule
- Distribution of incentives does not place such a burden on health-care staff that it crowds out other services

Generalizability of demand-side incentives - **before**



Generalizability of demand-side incentives – **after**

INCENTIVES FOR IMMUNIZATION PROGRAM

LOCAL CONDITIONS

- Parents want to vaccinate children
- Parents can access a reliable clinic

- Parents fail to follow through/ persist on desired behavior
- Incentives can help overcome barrier to follow through

GENERALIZED LESSONS ON BEHAVIOR

LOCAL IMPLEMENTATION

- Incentives can be delivered and stored in clinic
- Incentives can be delivered reliably to parents

COMPLETED IMMUNIZATION RATES RISE

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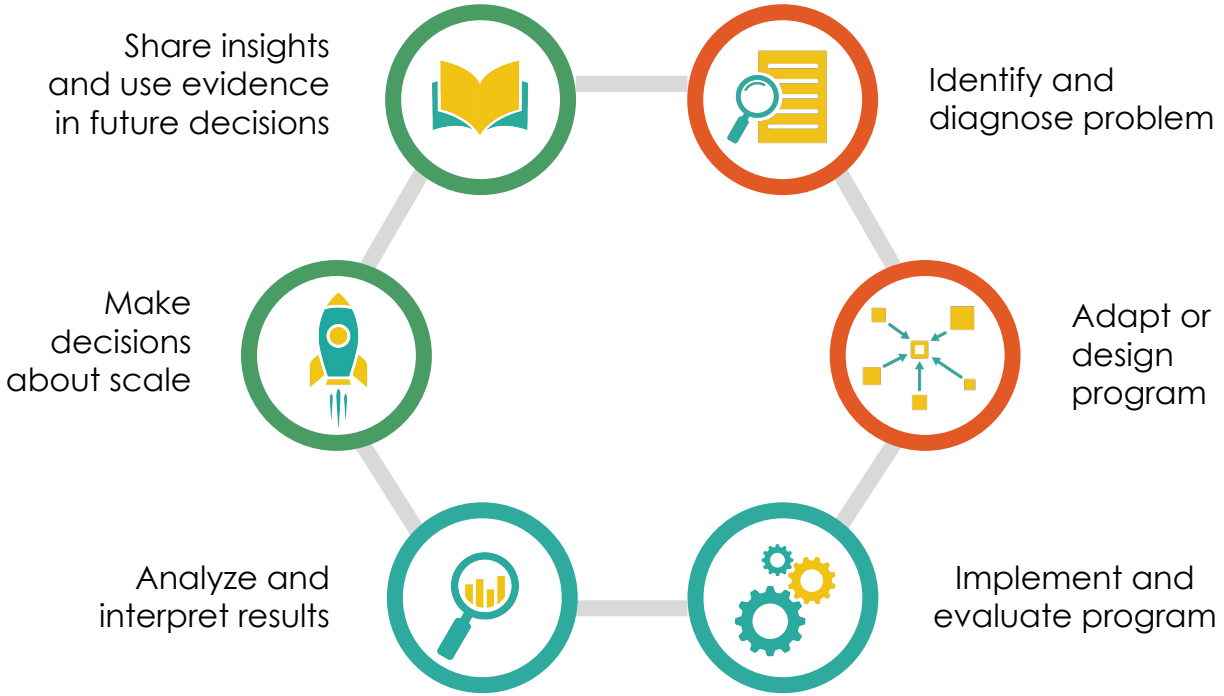
The journey from first generated evidence to scale-up can be long to but is very exciting!

Phase 3: Decision-making

Evidence use to inform decision about scale

HOW???



Phase 1: Diagnosis and design

Evidence use to inform program design

Phase 2: Evaluation and learning

Evidence generation to improve implementation and learn about program impact

Evidence to Scale: Demand-Side Incentives for increased child immunization rates

Improving immunization rates through regular camps and incentives in Rajasthan, India
2004-2007; Almost 2000 children

Improving immunization coverage through incentives, reminders, and social networks in Haryana, India
2016-2019; Almost 295,000 children

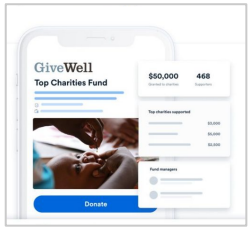
Low childhood immunization rates in many countries

Gavi The Vaccine Alliance

J-PAL

Gavi decides to implement and evaluate DSIs in four sub-Saharan African countries
$3.5 million

Improving immunization rates through ambassadors, SMS reminders, and mobile credit in Pakistan
2017-2018; 11,197 children



GiveWell recommendation to invest in Cash incentives for routine childhood vaccines
Citing "Exceptionally strong evidence of impact"

GiveWell recommendation

CHARITY 4 OF 4

Cash incentives for routine childhood vaccines

OVERVIEW

In Nigeria, **43% of infants did not receive all recommended childhood vaccines** in 2019.[11] This program provides cash transfers to incentivize caregivers to bring babies to clinics for routine childhood vaccinations, which prevent disease and reduce child mortality. It operates in North West Nigeria.

COST-EFFECTIVENESS

About **$155** to vaccinate an infant.[12] In 2022, we directed funding to New Incentives to support this program at an estimated average cost-effectiveness of **$5,000** per life saved.[13]

Compare to most charities' programs

EVIDENCE OF IMPACT

Exceptionally strong. A high-quality study of New Incentives' program found strong impact. New Incentives conducts valuable, high-quality ongoing monitoring.

Compare to most charities' programs

A mother and child wait at a clinic in Jigawa while a Routine Immunization Provider prepares paperwork before administering the infant's routine childhood immunizations. Photo credit: New Incentives

Source: https://www.givewell.org/charities/top-charities

Concluding Remarks

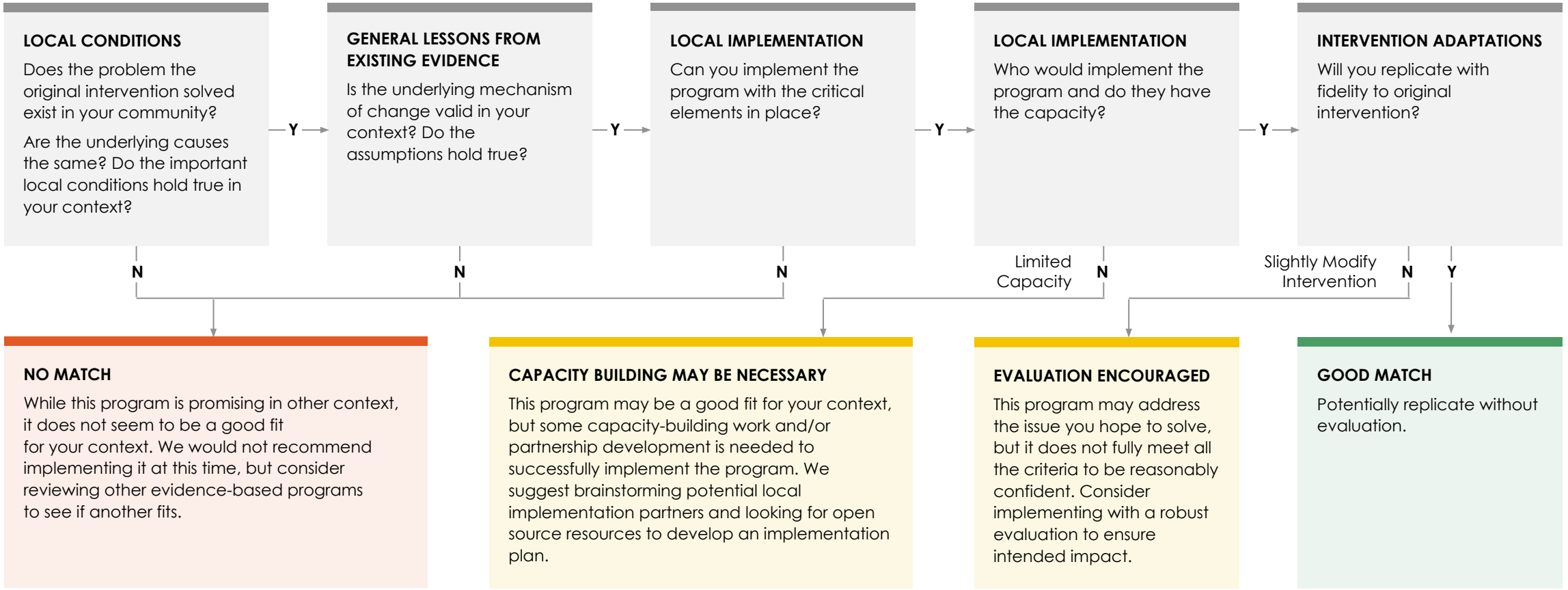
Key takeaways

- Ideally evidence is used in all phases of the learning cycle
- A key step of **applying evidence to program design** is to assess whether an evidence based program is likely to succeed in your context
- The generalizability framework presents a **systematic way** of doing this assessment by asking:
  - Whether the **needs and underlying conditions** are similar (steps 1 and 2)
  - What is the evidence base for the **underlying behavior change** (step 3)
  - Whether the program can be **implemented with fidelity** to the original program
- The generalizability framework can also be used to think about whether your program can generalize to other contexts!

Applying the Generalizability Framework

ESP WORKBOOK

The workbook contains more detailed guidance to walk you through the process of deciding to apply existing evidence.



References

- Bates, M.A. and Glennerster, R. 2017. "The Generalizability Puzzle." *Stanford Social Innovation Review*.
- Banerjee, A., Duflo, E., Glennerster, R., and Kothari, D. 2010, "Improving immunisation coverage in rural India: Clustered randomised controlled evaluation of immunisation campaigns with and without incentives." *BMJ* (340).
- J-PAL evaluation summary: Improving Immunization Rates Through Regular Camps and Incentives in India

Further reading and resources

- Kremer and Glennerster, 2012, Chapter in *Handbook of Health Economics*
- J-PAL Evidence to Policy page
- J-PAL self-guided case study on Applying the Generalizability Framework to Complex Health Care

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Appendix:

Suggestion for conducting an iterative evidence search

Start with **syntheses** of evidence

Read **original studies** from the syntheses that seem most promising

Go through **reference list** of relevant studies for related material

+

Search for **material informed by relevant studies**

Where to start looking for evidence

Single studies/evaluations
Original or summaries

- Journal articles found on digital repositories such as JSTOR
- J-PAL evaluation database
- IPA evaluation database
- 3ie Evidence Impact Summaries
- IADB's Evaluation Hub
- Givewell Intervention Effectiveness Reports
- World Bank's Evidence to Policy
- World Bank reports
- Ungated Research

Reviews/syntheses
Systematic or non-systematic

- J-PAL policy publication database
- J-PAL policy insights
- 3ie Evidence Maps
- 3ie Development Evidence Portal
- Campbell Systematic Reviews
- VoxDev Literature Reviews
- MCC evidence platform
- Annual Review of Economics
- Impact Evidence
- AidGrade

A non-exhaustive list of data sources

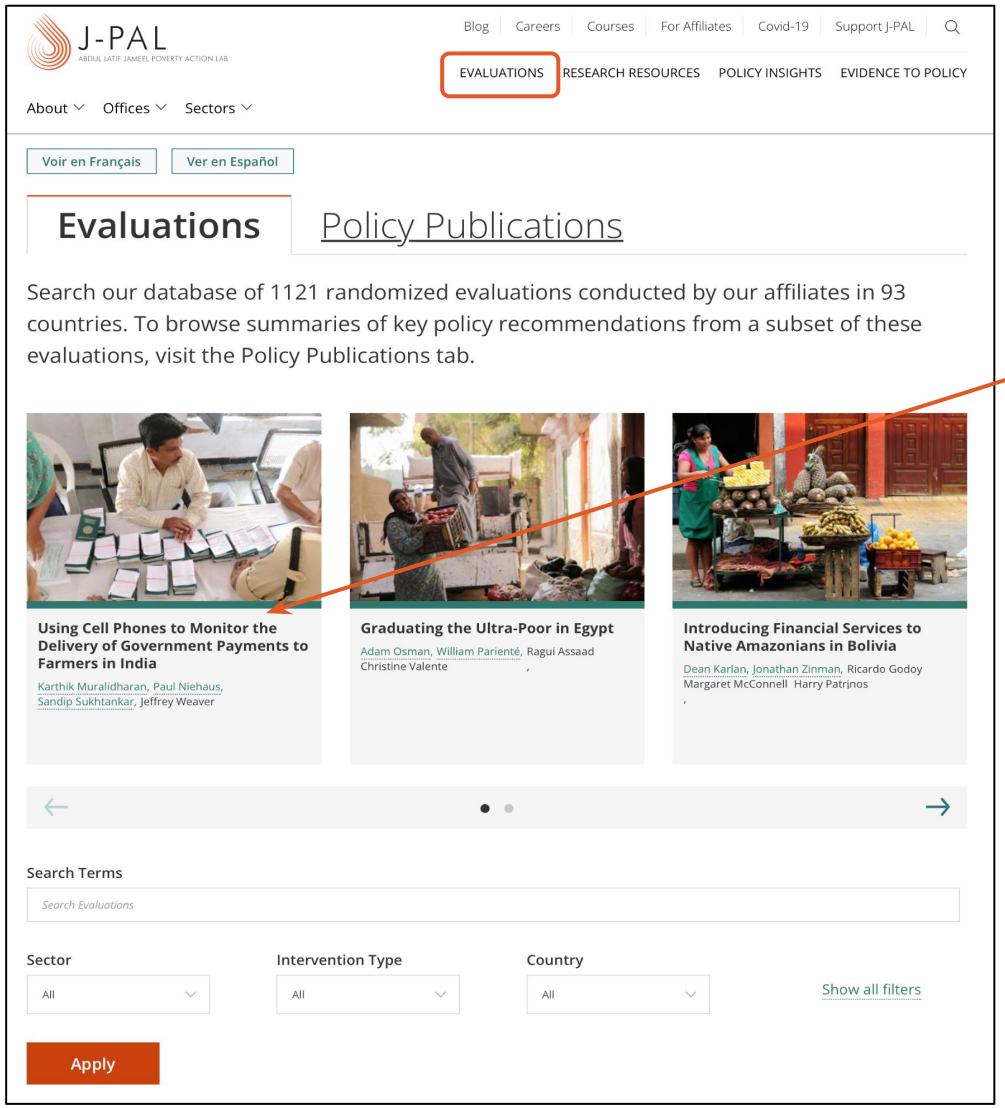
Administrative data sources

- World Bank data (e.g., World Development Indicators including population data)
- UN data (e.g., SDGs and trade)
- J-PAL North America catalog of administrative datasets (US focus)
- Researchers have compiled an inventory of datasets used to study education
- The American Economic Association hosts resources enumerating sources and procedures for accessing US federal administrative data.
- Google's Dataset Search tool

Non-administrative data sources

- J-PAL/IPA Datahub for field experiments in economics and public policy
- World Bank microdata catalogue
- IFPRI microdata catalogue
- The Guardian has compiled list of existing datasets for international development
- AEA repository (from published papers)
- ISPS data repository (from experiments)
- Zenodo (very diverse)
- For more data sources, see J-PAL's research resource on Introduction to Measurement and Indicators

J-PAL evaluation database



POLITICAL ECONOMY AND GOVERNANCE | AGRICULTURE | J-PAL SOUTH ASIA

Using Cell Phones to Monitor the Delivery of Government Payments to Farmers in India

Researchers: Karthik Muralidharan, Paul Niehaus, Sandip Sukhtankar, Jeffrey Weaver

Fieldwork by: J-PAL South Asia, Institute for Financial Management and Research (IFMR)

Location: Telangana, India

Sample: 5.7 million farmers across 30 districts

Timeline: 2018 - 2018

Target group: Civil servants; Farmers; Rural population

Outcome of interest: Social service delivery

Intervention type: Information; Monitoring

AEA RCT registration number: AEARCTR-0002942

Data: openICPSR

Research papers: Improving Last-Mile Service Delivery using Phone-Based Monitoring

Partners:

In low- and middle-income countries, even well-designed social policies can face implementation challenges when it comes to the actual delivery of government services like teaching or disbursing benefits. Researchers conducted a large-scale randomized evaluation to test the impact of a cell phone-based monitoring system on the delivery of government payments for 5.7 million farmers in Telangana, India. Phone-based monitoring significantly improved the likelihood of farmers ever receiving their payments as well as receiving them on time, indicating improved performance by on-the-ground service providers. Researchers found this program was highly cost-effective—costing 3.6 cents for each additional dollar delivered—suggesting that phone-based monitoring can be a cheap, simple, and flexible tool for improving last-mile service delivery at a large scale.

Policy issue

In low- and middle-income countries, even well-designed social policies can face implementation challenges when it comes to the actual delivery of government services like teaching[1] or disbursing benefits.[2] One reason implementation can be challenging is that it can be difficult for

J-PAL policy insights

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Policy Insights

What have we learned from randomized evaluations that policymakers, practitioners, and funders can use to improve social programs? J-PAL's Policy Insights, organized by sector, highlight lessons emerging across multiple studies and the mechanisms that help explain the results.

J-PAL's Sector Chairs and staff draw these insights from relevant randomized evaluations, updating and adding insights as the body of evidence grows. Each Policy Insight briefly summarizes their perspective on the evidence on a specific topic, with links to the original research and policy summaries. Read this blog post for more information about how we develop Policy Insights.

When combined with a detailed understanding of context and program implementation, we hope these insights can be practical inputs for policy and program design. For examples of how insights from randomized evaluations have informed policy, visit our Evidence to Policy page.

All Sectors

Digital financial services to improve formalized access and inclusion

Last updated: June 2024

Digital financial services have dramatically improved access to formal accounts, especially for marginalized communities. Increased access to digital services has led to a reduction in remittance transaction costs, which has facilitated risk-sharing and alleviated poverty.

FINANCE

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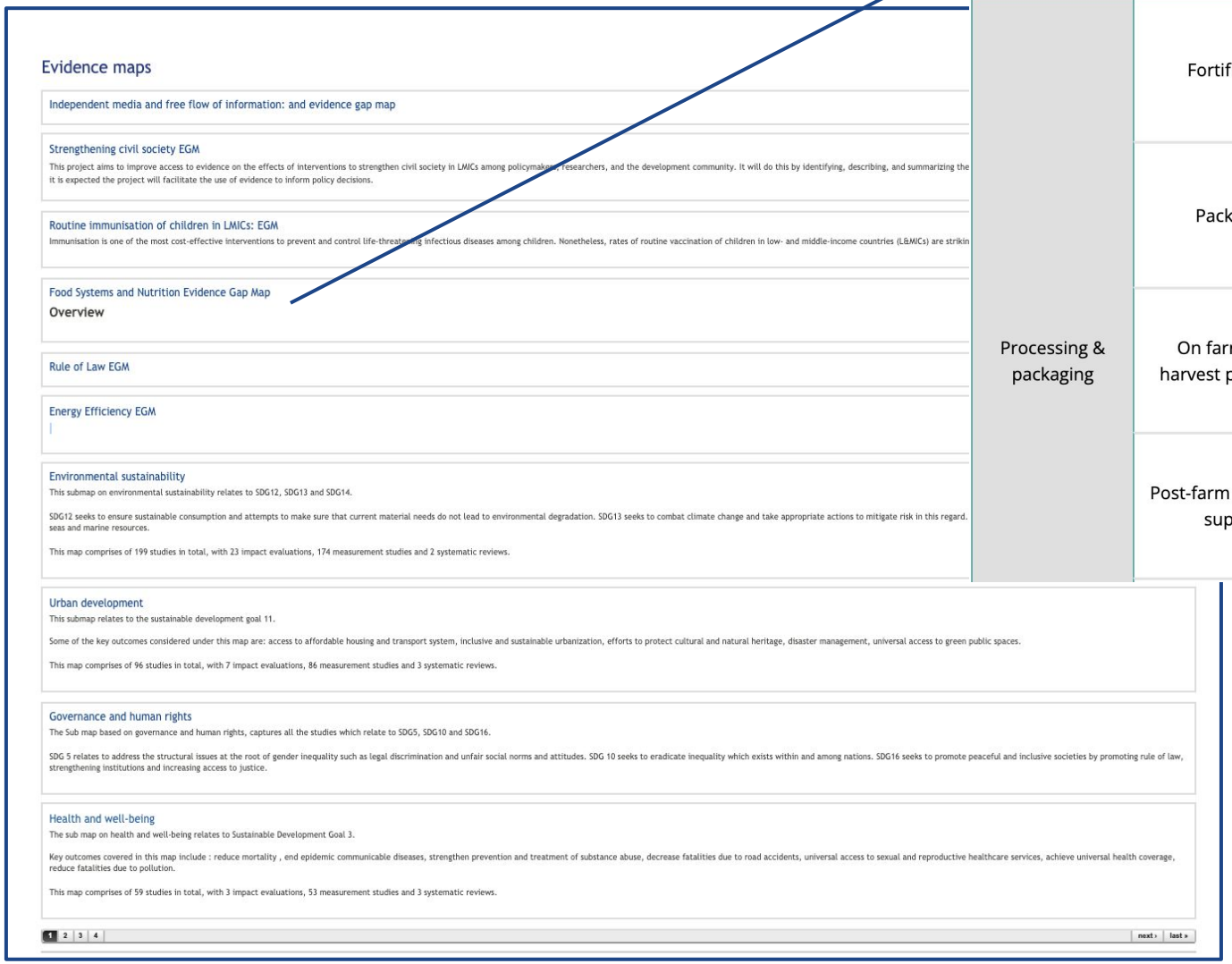
Summary

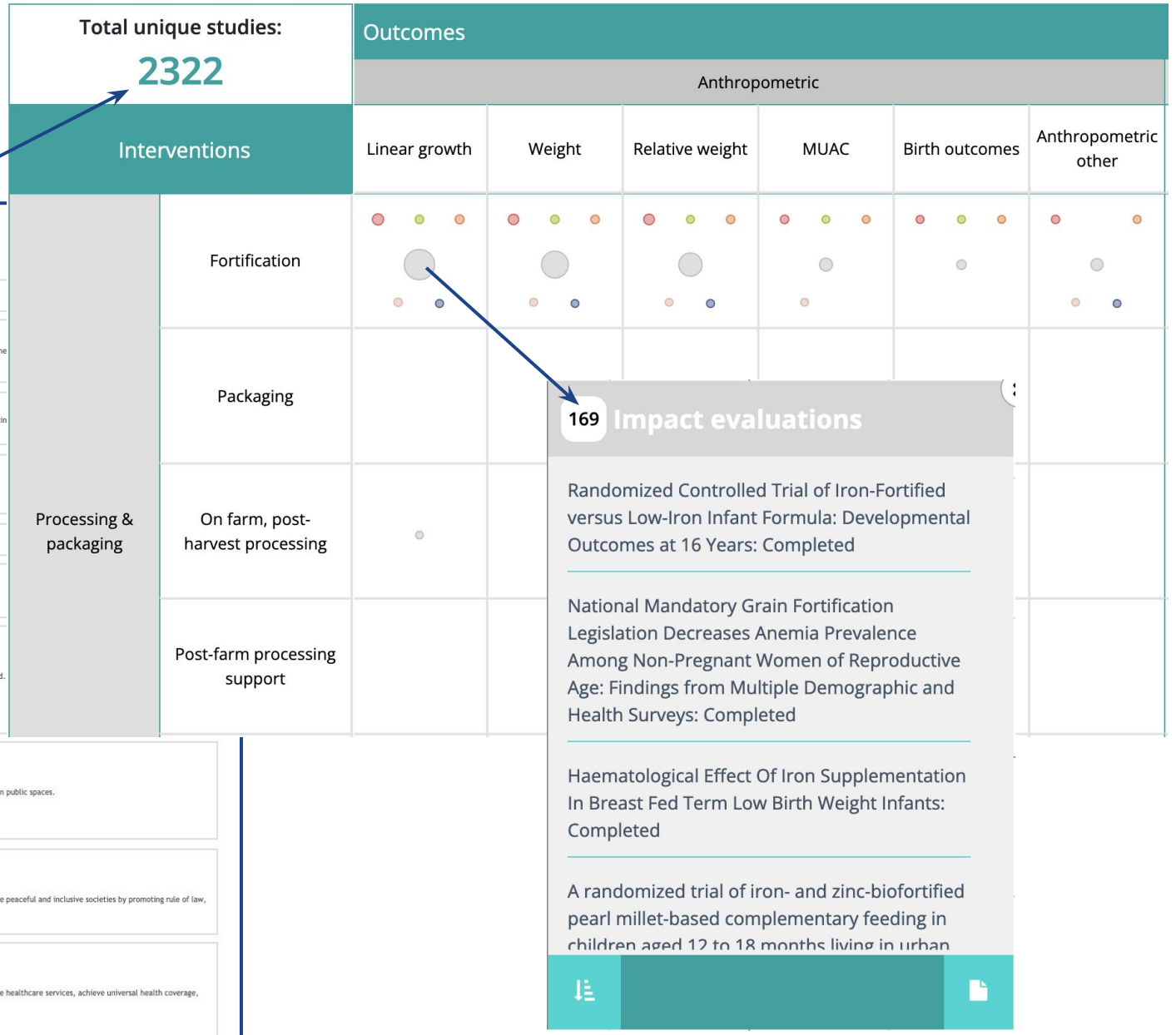
Between 2014 and 2021, the share of adults making digital payments in low- and … economies doubled, rising from 26 percent to 51 percent. Concurrently, the propo… account owners engaging in digital payments increased from about half to over tw… Digital financial services enhance financial inclusion by providing cost-effective, eff… secure access to financial products, bridging the gap for underserved populations. … mobilizing savings, improving resilience, providing pathways to increase credit acc… reaching last-mile users offer opportunities to boost financial inclusion for margin… The widespread availability of cell phones, even in low-income and rural areas, fac… adoption of services like mobile banking, credit, and payments. However, further … needed to understand overborrowing, consumer protection risks, bank accounts … formal institutions versus privately provided accounts, and women's uptake and u… Additionally, the structural design of digital services, including considerations such… between government-implemented and privately provided infrastructure, identific… prioritizing interoperability[1], and addressing regulatory frameworks and technolog… compatibility, is crucial for maximizing the potential of digital finance in advancing global financial inclusion efforts.[2]

Table 1. Impacts of Digital Financial Interventions

Intervention	Impact
Access to mobile money and mobile banking	• Increased profit [9] • Increased ability to cope with shock [8][25][29][35] • Increased consumption [8][29][32][33] • Financial security [9] • Increased savings [7][29] • Increased subjective well-being [7][8] • Migration [8][29] • Labor reallocation [1][8][34]
Digitized payments	Social Protection • Increased financial well-being [26] • Increased food security, resilience [3][14][26] • Reduction in leakages [14] • Increased administrative efficiency, transaction costs [2][3][14] Financial Services and Wages • Increased profits [32] • Financial control [23] • Increased resilience [13] • Increased savings [13] • Promotes technological literacy [13]
Digital credit	• Subjective welfare [10] • Reduced sales volatility [16] • Increased resilience [35] • Perceived financial well-being [12]

3ie Evidence maps





Source: [3ie Evidence Maps]

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