J-PAL
ABDUL LATIF JAMEEL POVERTY ACTION LAB

WEBINAR

Increasing immunization demand and coverage

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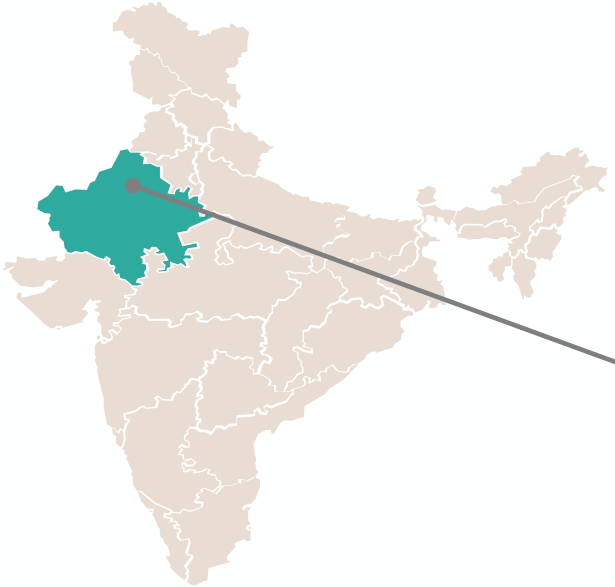
Motivation

- Immunization is one **best ways to prevent illness**, **disability**, and **death**
- Nearly **20 million children each year don't receive basic immunizations**, despite large increase in the supply of reliable immunization services.
- **How to fill the "last mile" problem?**
  - Make supply even better, even closer (presumably at great costs)?
  - Invest in community awareness or social networks?
  - Conditional cash transfer?
  - All of the above?

Incentives for Immunization:

Proof of concept



Rural Rajasthan, India

Improving immunisation coverage in rural India:
clustered randomised controlled evaluation of immunisation campaigns with and without incentives

Banerjee et al., 2010

Intervention

Photo: J-PAL/IPA. A parent receives a kilogram of lentils at a vaccination clinic in Rajasthan, India.

J-PAL Evaluation Summary: Improving Immunization Rates Through Regular Camps and Incentives in India

Implementation of the program

Implemented by a local NGO (Seva Mandir) to increase immunization rates in Udaipur district, 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**)

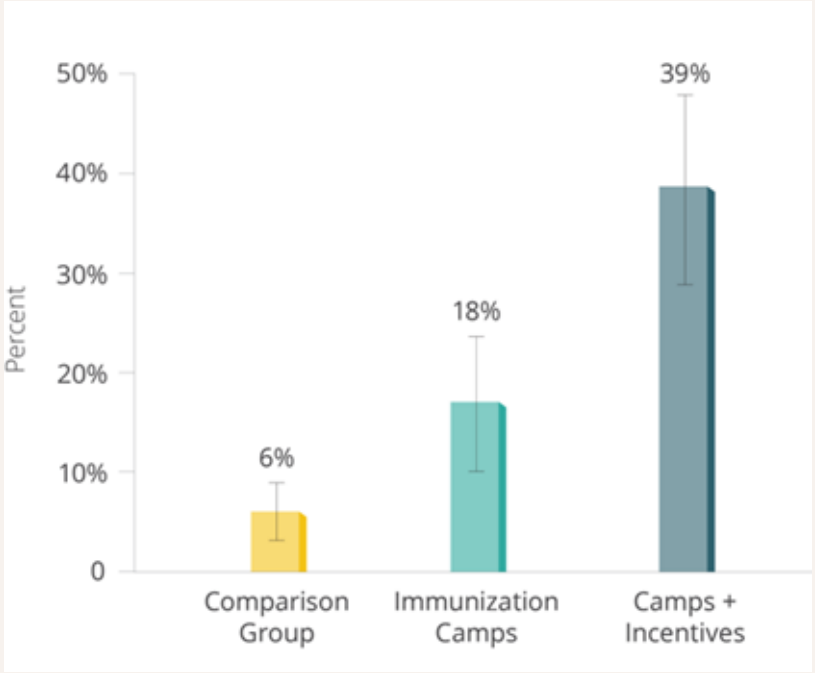
Incentives doubled the impact of improving supply alone

RCT design

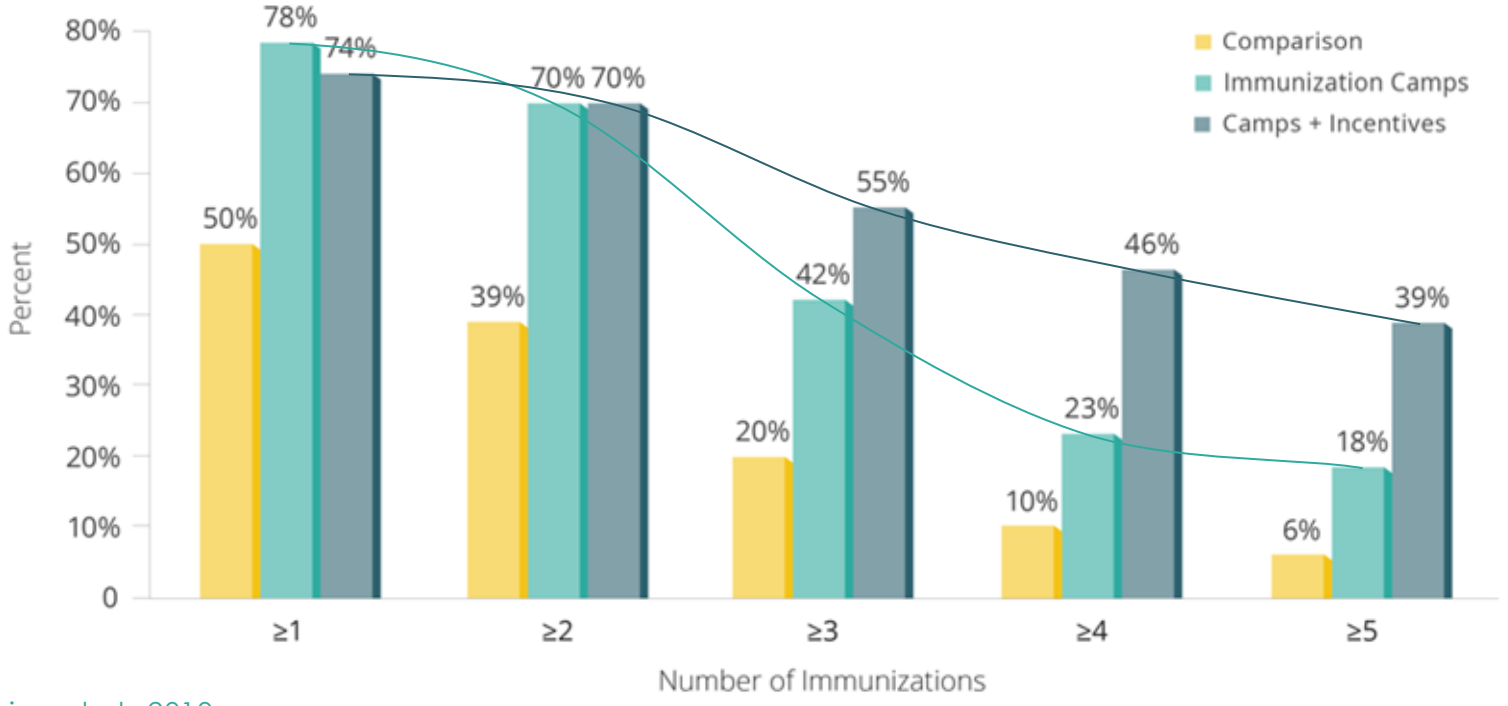
134 villages, ~2,000 children:

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

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



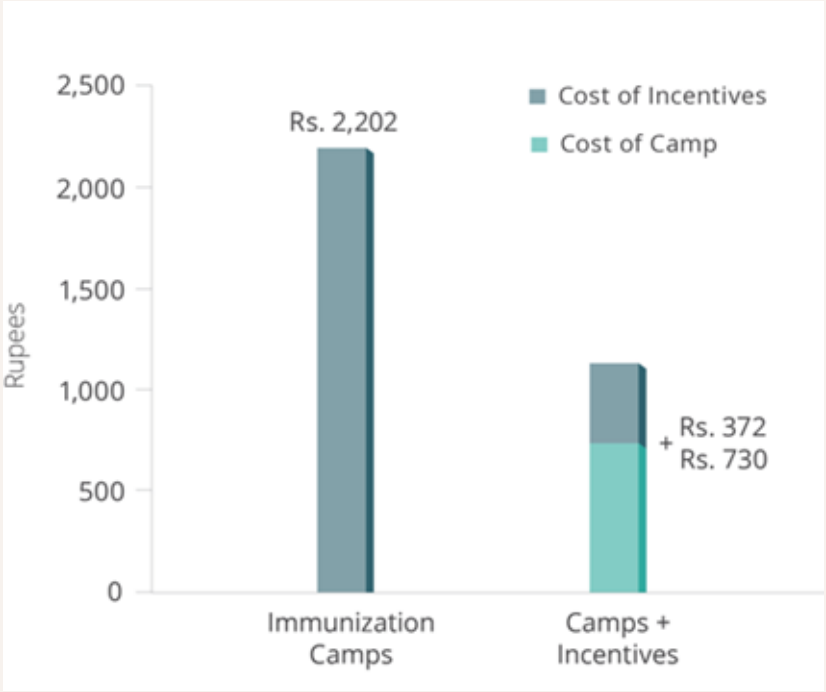
Incentives increased persistence to return for vaccination



Banerjee et al., 2010

Incentives reduced cost per immunization compared to improving access alone

Costs per fully immunized child

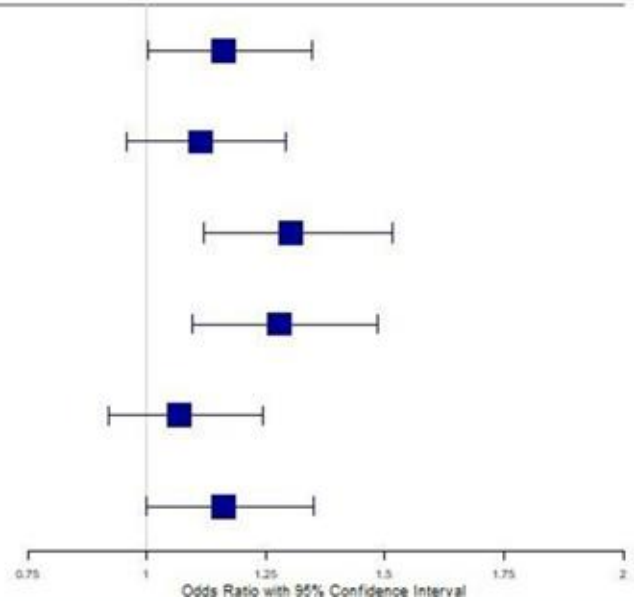


Banerjee et al. 2010

In Karachi, Pakistan, small incentives increased full immunization coverage and timeliness

Treatment Effect on FIC (12 Months) against SMS/Control Arm

Treatment Arm	Odds Ratio	95% Confidence Interval
SMS (Against Control)	1.162	(1.002,1.348)
Mobile Money	1.113	(0.959,1.293)
High x Flat	1.302	(1.119,1.515)
High x Sharp	1.277	(1.097,1.485)
Low x Flat	1.069	(0.921,1.242)
Low x Sharp	1.161	(0.999,1.349)



Chandir et al. 2022

At scale study with Haryana government–

75 bundles of demand-side interventions reaching 295,000 children

Haryana, India

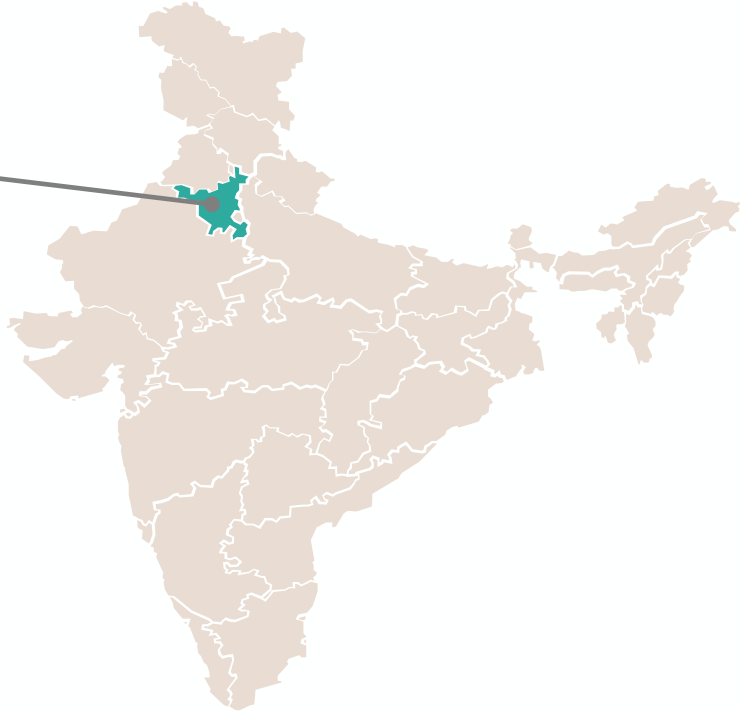
7 districts

140 primary health centers

755 sub-center clinics

1,300 nurses

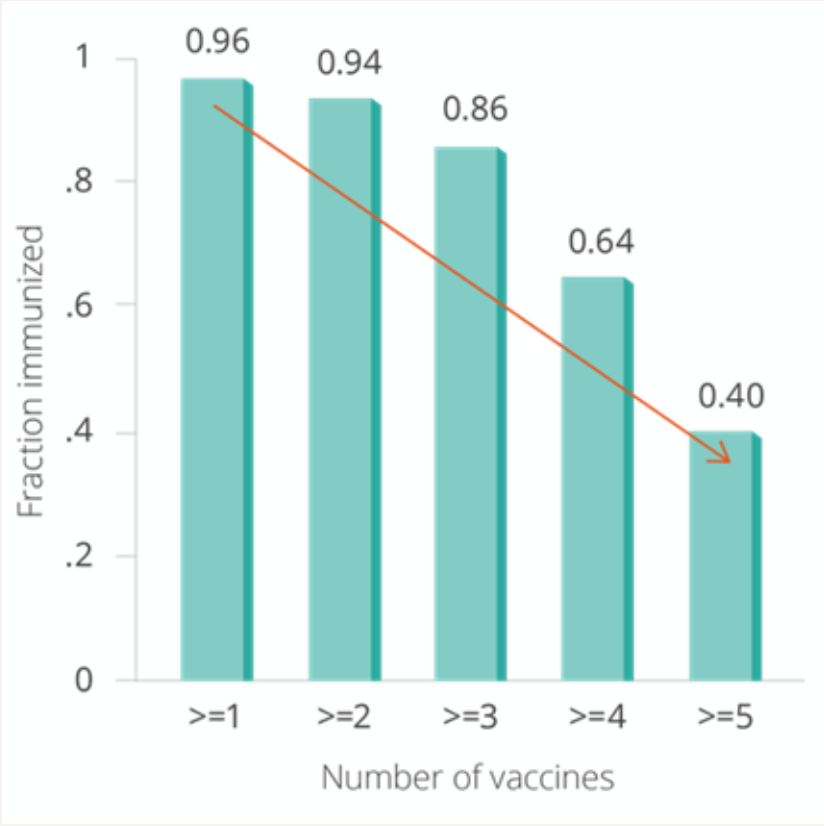
295,000 children



Baseline immunization coverage

- Nearly children get first vaccine (BCG), but only 40% complete the schedule
- Excellent supply of immunization was already in place
- Government felt they were hitting a ceiling on parental demand

Banerjee et al. 2025



Policy bundles of variants of 3 ways to create demand

What incentives characteristics matter most?

- *Increasing credit for each vaccine vs. same amount?*
- *Total credit of Rs. 250 vs. Rs. 450*

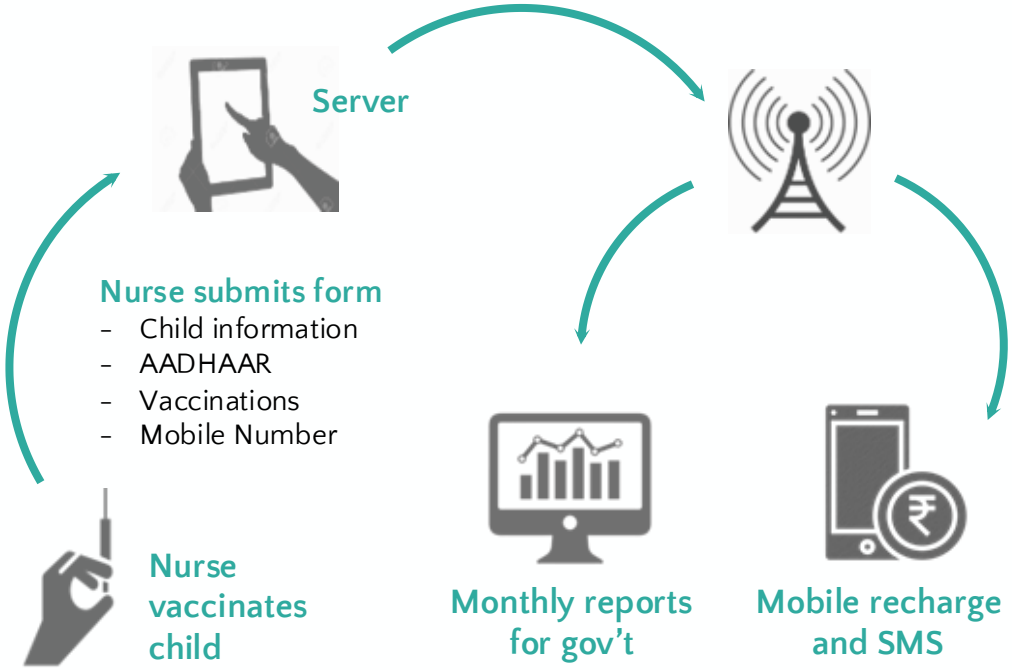
Can social networks influence immunization ?

Who are the people in this village, who when they share information, many people in the village get to know about it?

Can text reminders to the parent help ?

Hello! It is time to get the _____ vaccine administered for your child. Please visit your nearest immunization camp to get this vaccine and protect your child from diseases.

Incentives and delivery enabled through mHealth app



A nurse using a tablet for data collection at a clinic in Haryana.

Photo: Lisa Corsetto | J-PAL

Social networks arms enabled through light-touch community nominations and phone call/text activations

Community ambassador ("gossip") nomination prompt

Who are the people in this village such that when they share information, many people in the village get to know about it?

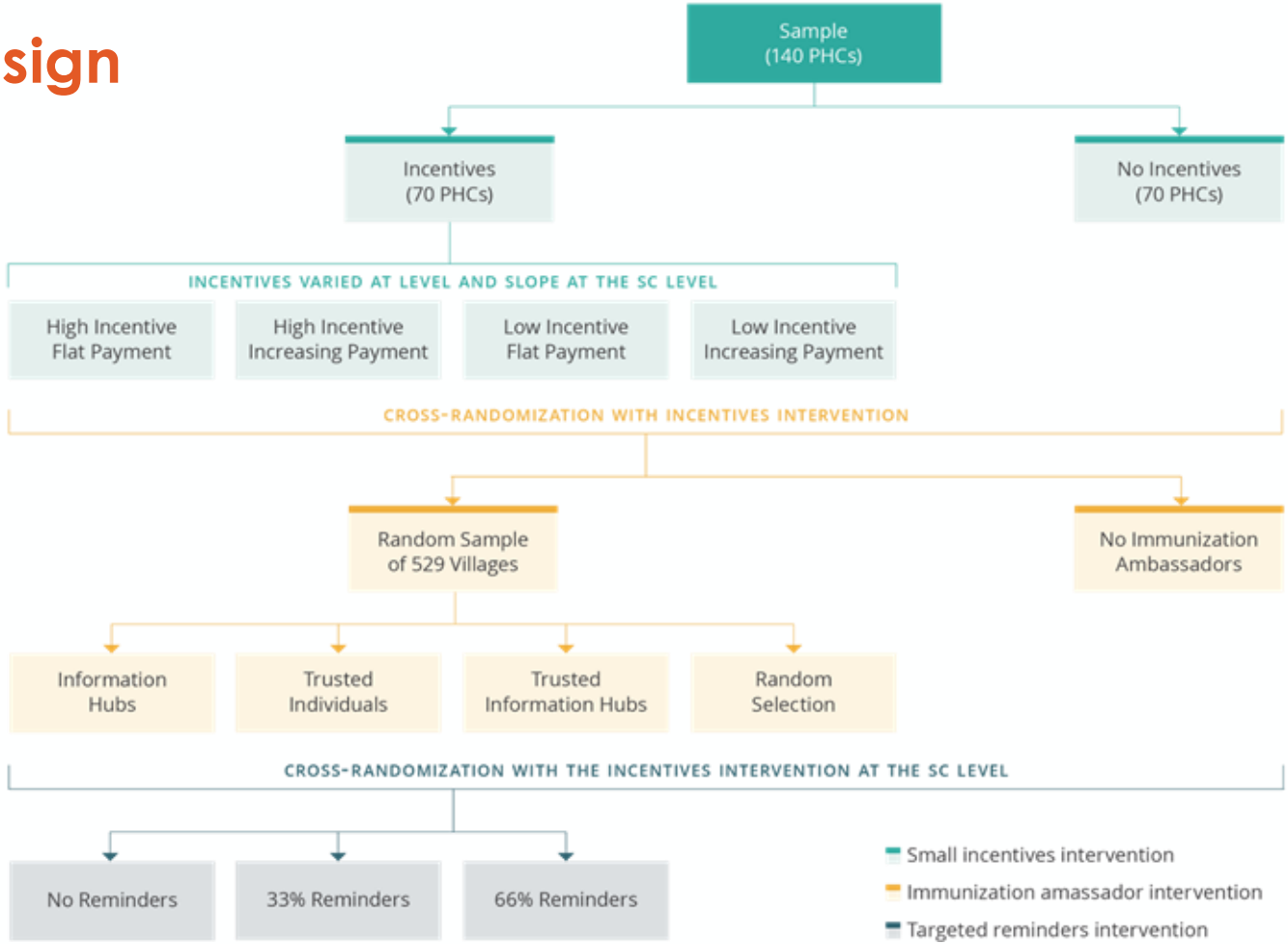
For example, if they share information about a music festival, street play, fair in this village, or movie shooting, many people would learn about it.

Activation: 1 call, 1 text a month

When you receive the SMS, you can spread the information to your family, friends, relatives, neighbors, coworkers, and any other person you feel should know about immunization.

This will make them aware of immunization camps in their village and will push them to get their children immunized.

RCT design


Sample
(140 PHCs)
Incentives
(70 PHCs)
No Incentives
(70 PHCs)
INCENTIVES VARIED AT LEVEL AND SLOPE AT THE SC LEVEL
High Incentive
Flat Payment
High Incentive
Increasing Payment
Low Incentive
Flat Payment
Low Incentive
Increasing Payment
CROSS-RANDOMIZATION WITH INCENTIVES INTERVENTION
Random Sample
of 529 Villages
No Immunization
Ambassadors
Information
Hubs
Trusted
Individuals
Trusted
Information Hubs
Random
Selection
CROSS-RANDOMIZATION WITH THE INCENTIVES INTERVENTION AT THE SC LEVEL
No Reminders
33% Reminders
66% Reminders
Small incentives intervention
Immunization amassador intervention
Targeted reminders intervention

Cross-randomization leads to 75 different combinations of policy interventions evaluated

Incentives options	Social networks	SMS reminders
(None)	(None)	(None)
High Flat	Ambassadors	33% saturation
Low Flat	Trusted	66% saturation
High Slope	Ambassadors & Trusted	
Low Slope	Random	

Headline results : 2 policy bundles stand out

Most Cost-Effective

Package 1: Increased vaccination coverage by **26%**

SMS Reminders

+

Community ambassadors

Most Effective

Package 2: Increased vaccination coverage by 44%

7x increase in lowest quintile villages

SMS Reminders

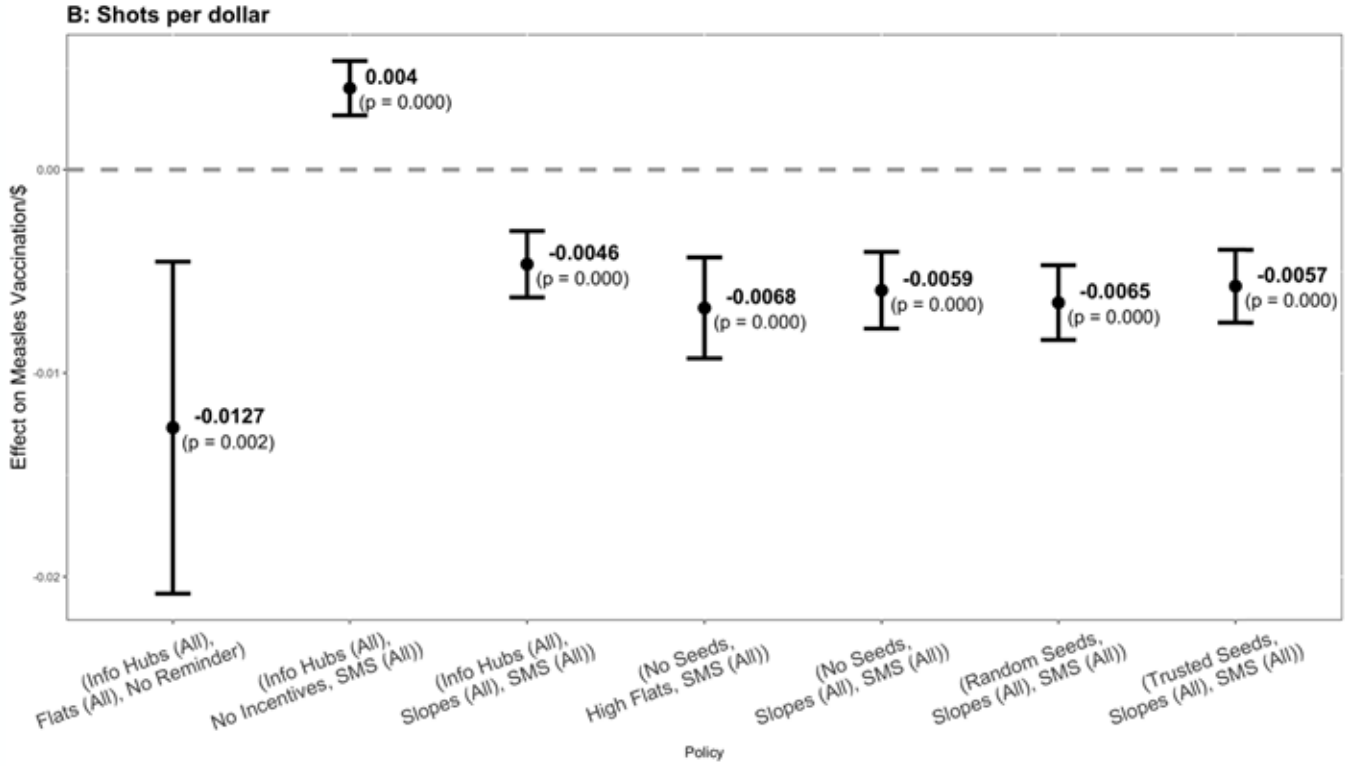
+

Community ambassadors

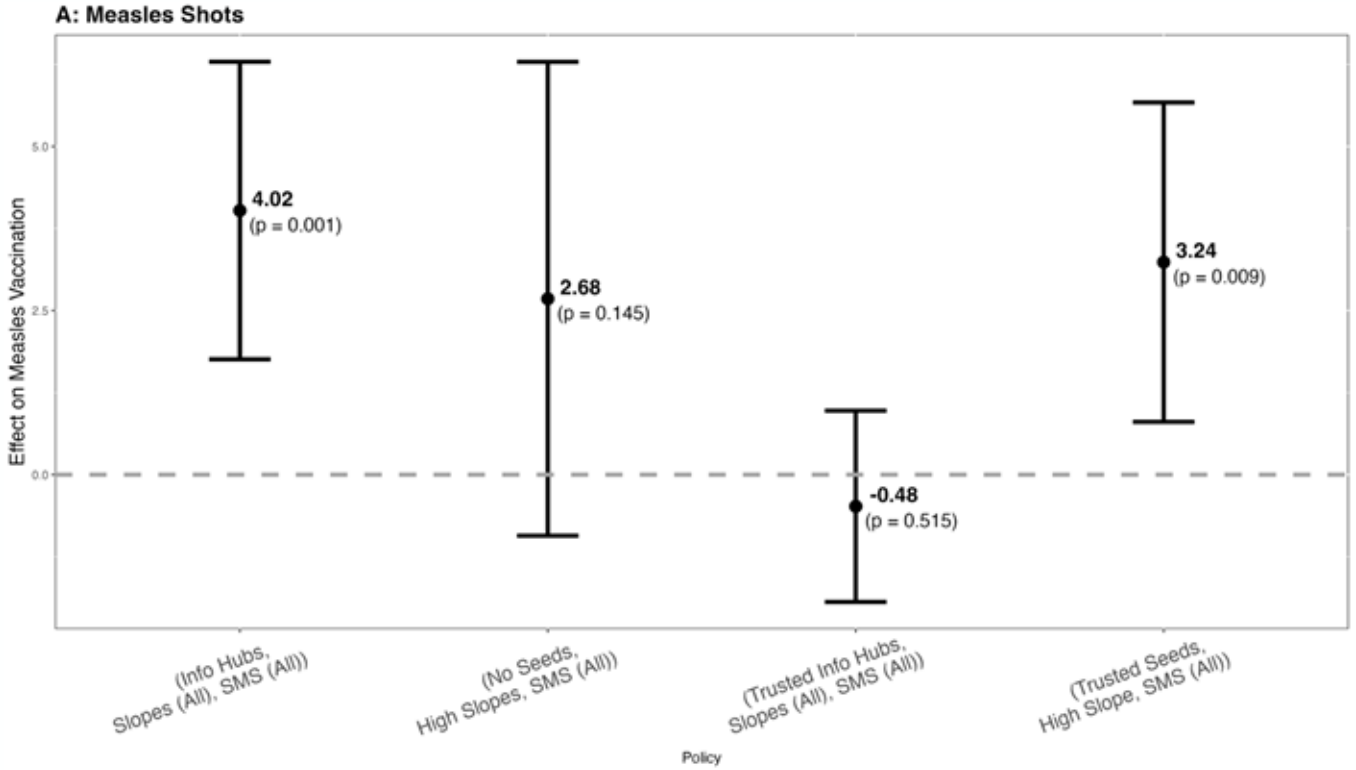
+

Sloped incentive

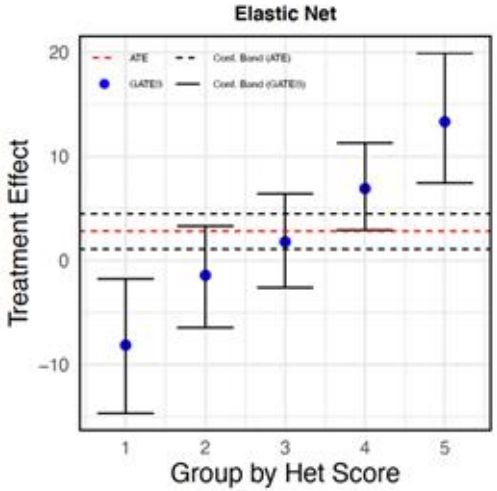
Community ambassadors and SMS reminders increased immunization coverage by 26% – also 9% more cost-effective than status quo



Adding sloped incentives (to community ambassadors and SMS reminders) increased full immunization rates by 44%



Biggest gains are where immunization rates started lowest – increased coverage by 7x for bottom quintile



	Elastic Net	
	20% Most (δ_5)	20% Least (δ_1)
Fraction of children received Measles vaccine by 15 months of age	0.133 (0.097,0.169) -	0.243 (0.209,0.276) -

Takeaways

- 4th RCT to demonstrate cost-effectiveness of incentives for immunization (Rajasthan, India, Nigeria, Pakistan)
- No effect of SMS reminders alone
- Ambassadors extremely cost effective
    - Can be used on their own or in combination with other interventions
- Most effective policy (ambassadors, incentives, reminders) had huge effects in lowest-performing areas at baseline
- Combined interventions worked better than each in isolation
- Huge interest at J-PAL applying insights from this reach to inform immunization demand program in other contexts