Use of financial incentives to increase adult vaccination coverage: A narrative review of lessons learned from COVID-19 and other adult vaccination efforts

Nina Schwalbe, PhD, MPH

CEO and Founder, Spark Street Advisors, New York

DD MMMM 2025

Based on a review by: Nina Schwalbe, Layth Hanbali, Marta C Nunes, Susanna Lehtimaki

Spark Street Advisors
Data Driven Strategies

Types of incentives

Incentives aimed at individuals to encourage them to get vaccinated have included direct cash transfers, lottery tickets, and non-financial incentives, such as food, appliances, and cannabis. In New York City, residents were offered a range of items—from a $100 pre-paid debit card, to free amusement park tickets, to a trip to the Statue of Liberty.




Source: Unsplash

Research question: To what extent have financial incentives increased adult vaccine coverage? Lessons for COVID-19

Vaccine: X 12 (2022) 100225

Contents lists available at ScienceDirect

Vaccine: X

journal homepage: www.elsevier.com/locate/jvacx

Use of financial incentives to increase adult vaccination coverage: A narrative review of lessons learned from COVID-19 and other adult vaccination efforts

Nina Schwalbe [a,b,c,*], Layth Hanbali [b], Marta C. Nunes [d], Susanna Lehtimaki [b]

- We conducted a narrative review to understand:
  - What was the evidence base informing these programs?
  - To what extent were they effective?
- The review spanned COVID-19, influenza, hepatitis B, maternal tetanus, and HIV adult vaccination programs in nine countries, including India, Mexico, and Nigeria.

We identified 26 relevant papers

Vaccination types

- COVID-19: 12
- Influenza: 5
- Maternal tetanus: 2
- Hepatitis B: 2
- HPV: 2
- Adult tetanus, pneumococcus, and influenza: 1
- A mix of vaccinations: 1

Target groups

(where specified)

- Adolescents: 2
- Elderly: 2
- Health and social care workers: 2
- Students: 2
- People who inject drugs: 2
- People with substance misuse disorders: 1

Incentive types

- Financial incentives: 18
- Lotteries (or other opportunities to win cash prizes): 5
- Time off: 1
- A mix of incentives: 2

Only 4 papers from LMICs

Summary of findings

Where any evidence of impact, more effective for first dose

Financial incentives (18/26) In addition to cash, some programs handed out shopping vouchers

- 12 on hepatitis B, HPV, influenza, or maternal tetanus vaccinations
- 6 on COVID-19

➢ Some evidence that cash transfers can increase coverage or intention to be vaccinated (but only by a few percentage points)

Non-cash incentives (8/26) including one-hour time off, gifts, perks, raffles, free drinks, bonus/rewards or lottery tickets

- 2 on influenza (time off, others)
- 6 on COVID-19 (lottery)

➢ Lottery programs ranged from none to 2.1 percent increase in coverage
➢ No evidence of positive effects of other non-cash transfers

Source:

Mexico's *Oportunidades* program: Required children to attend health clinics and schools.

Tetanus, pneumococcus, and influenza vaccine uptake

- Sample size: 12,146
- Intervention: Preventive health check-ups
- Outcome: Incentive recipients were more likely to receive each vaccination
  - Influenza: 46% compared to 41% for non-recipients
  - Pneumococcus: 52% compared to 45% for non-recipients
  - Tetanus: 79% compared to 71% for non-recipients

Salinas-Rodríguez and Manrique-Espinoza *BMC International Health and Human Rights* 2013, **13**:30
http://www.biomedcentral.com/1472-698X/13/30

BMC International Health & Human Rights

RESEARCH ARTICLE Open Access

Effect of the conditional cash transfer program *Oportunidades* on vaccination coverage in older Mexican people

Aarón Salinas-Rodríguez[†] and Betty Soledad Manrique-Espinoza[*†]

- *Oportunidades* was established in 1997 with the intention of reducing extreme poverty and is one of the world's largest conditional cash transfer programs today.
- **Cash transfers are contingent on target families' adherence to a number of conditions, some of which are health-related (compliance with vaccination schedules) while others include school enrollment for children aged 6-16.**

Source: Salinas-Rodriguez A, Manrique-Espinoza B. Effect of the conditional cash transfer program Oportunidades on vaccination coverage in older Mexican people. BMC Int Health Human Rights 2013;13:30. https://doi.org/10.1186/1472-698X-13-30

India's Mamata Scheme: Cash received upon fulfilment of health-promoting conditions such as regular health check-ups

Maternal tetanus vaccine uptake

- Sample size: ~200,000
- Intervention: Tetanus vaccination during antenatal care visits
- Outcome: Increase in maternal tetanus vaccine uptake
  - 84.6% to 88.9%

ELSEVIER

The Journal of Nutrition

Volume 151, Issue 8, August 2021, Pages 2271-2281

Maternal and Child Health Benefits of the Mamata Conditional Cash Transfer Program in Odisha, India

Chakrabarti Suman [1], Pan Anwesha [2], Singh Parvati [3]

- The Mamata Scheme targeted pregnant and lactating women aged ≥19.
- **The authors define conditional cash transfers as "demand-side interventions that link cash receipt to fulfilment of health-promoting conditions such as regular health check-ups and investment in human capital".**

Source: Chakrabati S, Pan A, Singh P. Maternal and Child Health Benefits of the Mamata Conditional Cash Transfer Program in Odisha. India J Nutrit 2021;151: 2271–81. https://doi.org/10.1093/jn/nxab129

Nigeria's SURE-P pilot: Cash transfers are prorated based on the achievement of four milestones.

MNCH service uptake

- Sample size: 20,133
- Intervention: Tetanus vaccination during antenatal care visits
- Outcome: Conditional cash transfer for preventive care was associated with a 21.66 per 100,000 increase in maternal tetanus vaccine uptake

Okoli *et al. BMC Pregnancy and Childbirth* 2014, **14**:408
http://www.biomedcentral.com/1471-2393/14/408

BMC Pregnancy & Childbirth

RESEARCH ARTICLE Open Access

Conditional cash transfer schemes in Nigeria: potential gains for maternal and child health service uptake in a national pilot programme

Ugo Okoli[1], Laura Morris[1*], Adetokunbo Oshin[1], Muhammad A Pate[2], Chidimma Aigbe[1] and Ado Muhammad[3]

- Nigeria's Subsidy Reinvestment and Empowerment Programme (SURE-P) was the pilot phase for a national Conditional Cash Transfer program "targeting pregnant women in rural and underserved areas".
- **Cash transfers are pro-rated based on achievement of four milestones: registration and attendance of first ANC consultation; a minimum of three further ANC visits; delivery with skilled assistance; and first immunization of neonate and/or post-natal visit with family planning advice for mother.**

Source: Okoli U, Morris L, Oshin A, Pate M, Aigbe C, Muhammad A. Conditional cash transfer schemes in Nigeria: potential gains for maternal and child health service uptake in a national pilot programme. BMC Pregnancy Childbirth 2014;14:408. https://doi.org/10.1186/s12884-014-0408-9

Nigeria's tetanus pilot: Cash incentives of varying amounts, some of which were enough to compensate for travel to clinic

Maternal tetanus vaccine uptake

- Sample size: 2,482
- Intervention: Tetanus vaccination for women of child-bearing age
- Outcome: Financial incentives were associated with increase in vaccination uptake.
  - 85.5% for 800 naira
  - 75.7% for 300 naira
  - 54.8% for 5 naira (control group)

HUMAN VACCINES & IMMUNOTHERAPEUTICS
2020, VOL. 16, NO. 5, 1181–1188
https://doi.org/10.1080/21645515.2019.1672493

Taylor & Francis
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RESEARCH PAPER

Check for updates

Effect of cash incentives on tetanus toxoid vaccination among rural Nigerian women: a randomized controlled trial

Ryoko Sato [a] and Benjamin Fintan[b]

[a]Harvard T.H.Chan School of Public Health, Global Health and Population, Boston, MA, USA; [b]Adamawa Satate Primary Healthcare Development Agency, Nigeria

- The trial focused on women of child-bearing age (15-35 years old, including pregnant women) who had not received a tetanus vaccine within the last six months.
- **Transportation cost is one of the major barriers that hinders vaccination uptake.**
  - **The effect of a cash incentive is stronger if respondents face transportation costs that are less than the cash incentive offered. Cash incentives compensate for transportation costs unless such costs are large.**

Source: Sato R, Fintan B. Effect of cash incentives on tetanus toxoid vaccination among rural Nigerian women: a randomized controlled trial. Hum Vaccin Immunother 2020;16(5):1181–8. https://doi.org/10.1080/21645515.2019.1672493

Overall findings

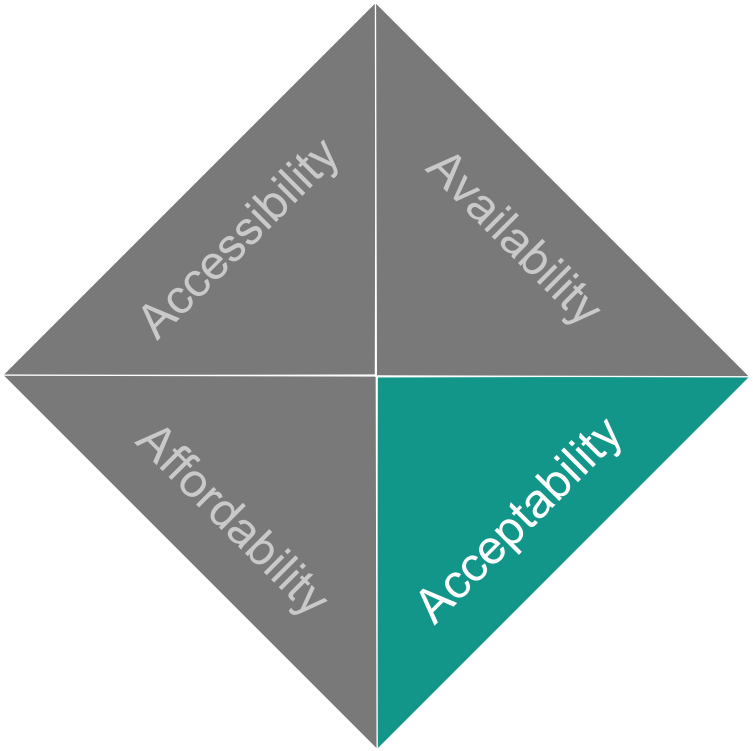
🐄 Non–cash financial incentives were not effective.

💰 Cash incentives can be effective, but it depends

- Increments in the amount offered were not proportional to increases in willingness to vaccinate
- More effective on the “undecided” rather than the hesitant.
- Uptake of a single incentivized dose/vaccine did not generally lead to higher course completion rates
- Where linked to health-seeking behaviors and aimed at vulnerable populations

“Perhaps most surprising, there was no evidence presented in any of the studies on the extent to which incentives serve to address the concerns of those who are hesitant or even increase uptake among this specific subset of the population.”

Key takeaway: There is no simple fix to hesitency



- What we know:
  - Adults: trust between provider and client; clarity about safety and efficacy; honest about side effects; explanation of the role of vaccines at the individual and community level;
  - Children: trust in/role of primary care provider

- As researchers (and implementors) , we must
  - **Unpack** the underlying theory/ies of change and understand whether they resonate with those who are truly hesitant and/or those who are simply undecided.
  - **Assess** the cost-effectiveness of these incentives against other known and effective ways to improve coverage.
  - **Monitor** the longer term impact of these programs at both the individual and population levels.

Thank you!

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