



Project facts

Key words

Behavioral interventions, Maternal care services, Primary health care services

Behavioral themes

Human centred design (HCD), Social and behavioral science (SBS)

Research design

Field experiment- with randomized controlled trial (RCT), SITE (Study, Ideate, Test, Extend) framework- proprietary research framework, and Qualitative study

Scope

Start date: June 2021

End date: May 2023

n=845

Location

Nigeria: Gombe (Dukku and Yamaltu Deba), Niger (Katcha and Chanchaga)

Partner

Funder: Gates Foundation

Primary partner: Nigerian National Primary Health Care Development Agency (NPHCDA)

Consortium of partners: Centre for Communication and Social Impact (CCSI), Solina Centre for International Development (SCIDaR), Nigerian Traditional Leaders Council on PHC (NTLC)

Ethics approval

Nigerian National Health Research and Ethics Committee (NHREC)

What behavioural interventions increase the demand for maternal care at primary health care centres in Nigeria?

Investigating the impact of non-digital incentivized interventions and digital behaviour change communication on maternal care services. Our findings identify that the main barriers that impede maternal care uptake are direct and indirect costs of maternal care, service quality and proximity to primary health care centres (on the supply side), and overconfidence bias and present bias (on the demand side).

Background: Maternal care in Nigeria

This project aimed to demonstrate how the application of HCD and SBS principles can drive demand for primary health care centre (PHC) services. We specifically designed this study to address Nigeria's poor global performance across maternal health indicators and sub-optimal access to, and utilization of primary health care centres within the country. The project addressed two main goals.

1. Training public health professionals across NPHCDA (the primary client) on behavioural science and its health care application.
2. Applying HCD and SBS to ideate and test interventions to improve the uptake of maternal primary health care at a PHC.

Conducting the research

Our approach utilized a proprietary research framework, SITE (Study, Ideate, Test, Extend) to guide the design and implementation of the project. The study phase featured qualitative research to identify the main barriers and enablers of maternal care uptake at a PHC, whereas the ideation phase involved co-creating interventions for the same with key stakeholders.

Two interventions were then tested to study the uptake of antenatal care (ANC) and delivery with a skilled birth attendant (SBA). The testing was conducted using an RCT that involved 845 participants, 503 of whom were women and 342 men.

- » The incentivised ANC card tracker significantly increased the probability of ANC uptake by 24.1 percentage points ($p < 0.01$) in Niger, and 18.2 percentage points ($p < 0.01$) in Gombe, relative to the control group.
- » The effect of the IVR intervention on ANC, in both Niger and Gombe was statistically insignificant.
- » The probability of engagement with an SBA was estimated to be 5.5 percentage points ($p < 0.01$) in Gombe but statistically insignificant in Niger.

Implications

Public Health professionals and Policymakers:

- The findings of this study highlight that non-digital personalised commitment devices, such as the ANC card tracker, can serve as a salient reminder of maternal care services and double as a medium to communicate the consequences of neglecting maternal care. This strategy when supplemented with gamified incentivization like raffles may provide a more cost-effective solution to bolster behaviour change in the short term. However, more evidence is needed on the longevity of this.
- Digitized solutions like behavioural messaging may improve maternal care adherence in late pregnancy, but their effectiveness depends on consistent mobile phone access and usage.

Recommendations for future research

Future studies should seek to understand how male-centred or spousal interventions influence maternal care uptake. In addition, research should also characterize the effects of incentivized and non-incentivized interventions, both digital and non-digital, on maternal care uptake at the primary health care level.

Another key area of inquiry is the role of key community influencers, such as traditional birth attendants, in shaping maternal care compliance and generating demand for services. And finally, studies should explore the application of alternative methodological approaches, such as survival analysis, to provide a more comprehensive understanding of the multiple and intersecting factors that affect the uptake of maternal care interventions.

Further reading

Alhaji, M. M., Yusuf, M. A., Umar, L., Nyaga, R., Okafor, A., Meyo, F., Shayau, Z. H., Ozohu Suleiman, Y., Isah, Z. I., Dodo, A. M., Abubakar, M., Umar, A. I., Abubakar, H., Kolo, H. N., Adamu, U. S., et al. (2025). Applying behavioral science to increase use of maternal care services: Findings from a field experiment in northern Nigeria. *Health Promotion Practice*. Advance online publication. <https://doi.org/10.1177/23794607251382993>

Alhaji, M. M., Umar, L., Yusuf, M. A., Nyaga, R., Singh, J., Okafor, A., Meyo, F., Shayau, Z. H., Isah, Z. I., Abubakar, M., Umar, A. I., & Ozohu-Suleiman, Y. (2025). Supply and demand barriers to PHC maternal care services uptake: Qualitative and behavioural insights from Gombe State, Nigeria. *BMC Pregnancy and Childbirth*, 25(1), Article 939. <https://doi.org/10.1186/s12884-025-08071-4>

Study team

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