



**SMARThealth ChatGPT** : Supporting community health workers to provide guideline-based maternal care in rural India – May 2024



The George Institute  
for Global Health

## Facts:

- India leads a list of 10 countries that together account for 60 per cent of global maternal deaths, stillbirths and newborn deaths. Lack of access to quality care is a major contributing factor for these deaths, especially in rural areas.
- Up to 75% of Indian women with diabetes in pregnancy will develop high blood sugar levels or type 2 diabetes within five years of giving birth.
- India is home to the largest number of anemic pregnant women, accounting for about 80% of maternal deaths caused by anemia in South-East Asia.

## Project Cycle:

2023–2024

## Partners:

The George Institute India  
The George Institute for Global Health  
Imperial College London  
Computational Health Informatics Lab, University of Oxford

## Supporters:

Bill & Melinda Gates Foundation

## Principal Investigator:

Dr Devarsetty Praveen  
Professor Jane Hirst

## Contact:

To find out more about this project and its principal investigators or The George Institute please contact Tina Wall +61 410 411 983 or [twall@georgeinstitute.org.au](mailto:twall@georgeinstitute.org.au)

## Background:

- In India, approximately 1 million community health workers, known as ASHAs, care for 25 million pregnant women and their babies each year.
- Detecting high-risk conditions in women before complications arise is crucial for averting maternal and newborn mortality and morbidity. In rural India, factors like anaemia, hypertension and gestational diabetes persist as significant risk factors.
- SMARThealth Pregnancy improves community-based screening and management of anaemia, diabetes and hypertension during pregnancy and the postnatal period. Integrating our large language model (LLM) chatbot into the SMARThealth Pregnancy platform will enable real-time assistance for ASHAs through the provision of guideline-based information.

## Aims:

- To collaboratively develop an LLM to help ASHAs deliver guideline-based care for pregnant and postpartum women in rural India.

## Methods:

- This pioneering initiative aims to collaborate with ASHAs to co-create an LLM-based chatbot customised to their needs that will provide contextually precise, clinically accurate and gender-equitable responses tailored for maternal healthcare. Multiple rounds of user testing and feedback has already been gathered from ASHAs on the utility, accuracy, biases and limitations of the approach.
- Machine learning techniques will be implemented on a pre-trained ChatGPT 4.0 model, after which a repository of gold-standard questions will be developed with clinically validated answers. A user-friendly interface will be created in Hindi and Telugu with text-to-text, text-to-voice and voice-to-voice input/output options, and user personas tailored to ASHAs' preference.

## Impact:

- Improving ASHAs' access to guideline-based information will strengthen their capacity to provide maternal care and promote health-seeking behaviour among women in rural India.
- By supporting the early detection of the three leading high-risk conditions in pregnant and postpartum women (anaemia, diabetes and hypertension), SMARThealth ChatGPT could improve outcomes and quality of life for millions of women.

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