Background

- There is a need to enhance medical education for frontline health workers, particularly in resource-constrained environments.
- **SMARThealth Pregnancy** is a digitally supported tool for frontline health workers (ASHAs) to identify, screen and refer high risk pregnant women.
- ASHAs and pregnant women asked us for support of their continuous learning and for a way to provide real-time answers to questions women want to know about their pregnancy.

Aim

To develop, technically and clinically validate, an LLM suitable for community health workers in rural India to improve healthcare education and support guideline-based pregnancy care.

Methods

1. Development of retrieval-augmented generation pipeline
2. Parameter optimization
3. Iterative technical and clinical validation

### Phase 1: Clinician Evaluation

Rating of model generated answers to 180 questions based on accuracy, completeness, appropriateness, and presence of bias.

Clinicians provide gold standard answers.

### Phase 2: Iterative Superuser Evaluation

Model improvement

- Technical evaluation
- Superuser testing and feedback

### Phase 3: Beta Testing

Evaluation by ASHAs

Model improvement

- Rating of model generated answers based on clarity, readability, length and usefulness
- Assessing the impact of the model on ASHAs’ knowledge and confidence

### Phase 4: Field Evaluation

Observing the supervised LLM use of ASHAs interacting with pregnant women.

Assessing how the LLM is used and received by pregnant women.