Problem Statement

Bias & Discrimination

- Stigma and blame for sexual activity
- Judgmental care
- Confidentiality breaches
- Age / gender / marital status

Access to Care

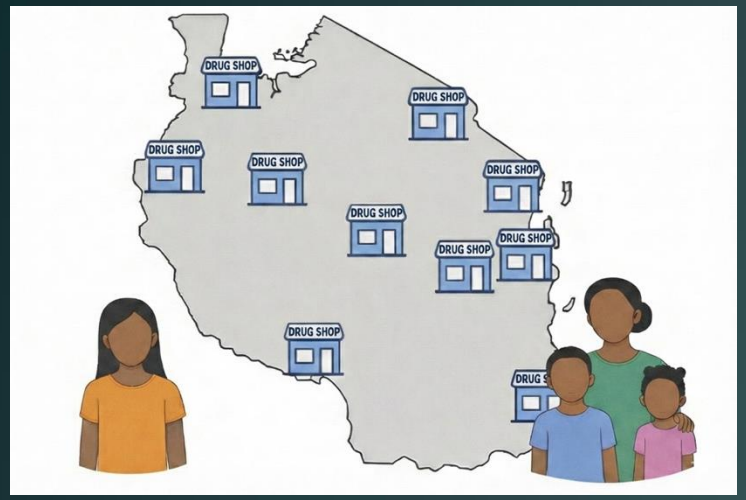
- Delayed care-seeking for symptoms
- Missed STI testing and treatment
- Reduced access to contraceptive methods

Health Outcomes

- Higher risk of HIV/STI acquisition
- Higher rate of undetected transmission of STIs
- Unintended pregnancy / misuse of contraceptive methods

Research Question: ***Can we measure provider quality-of-care using Large Language Models?***

Data and Design



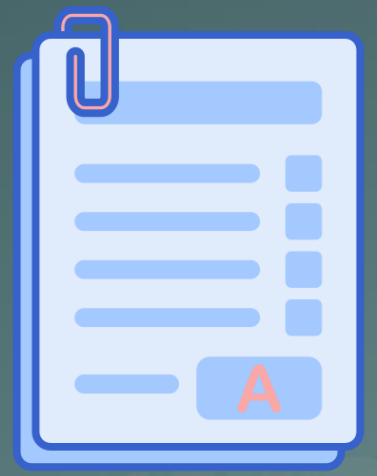
2 Actor Profiles

88 Drug shops

139 Visits



Voice recordings of each visit and the corresponding debrief session.

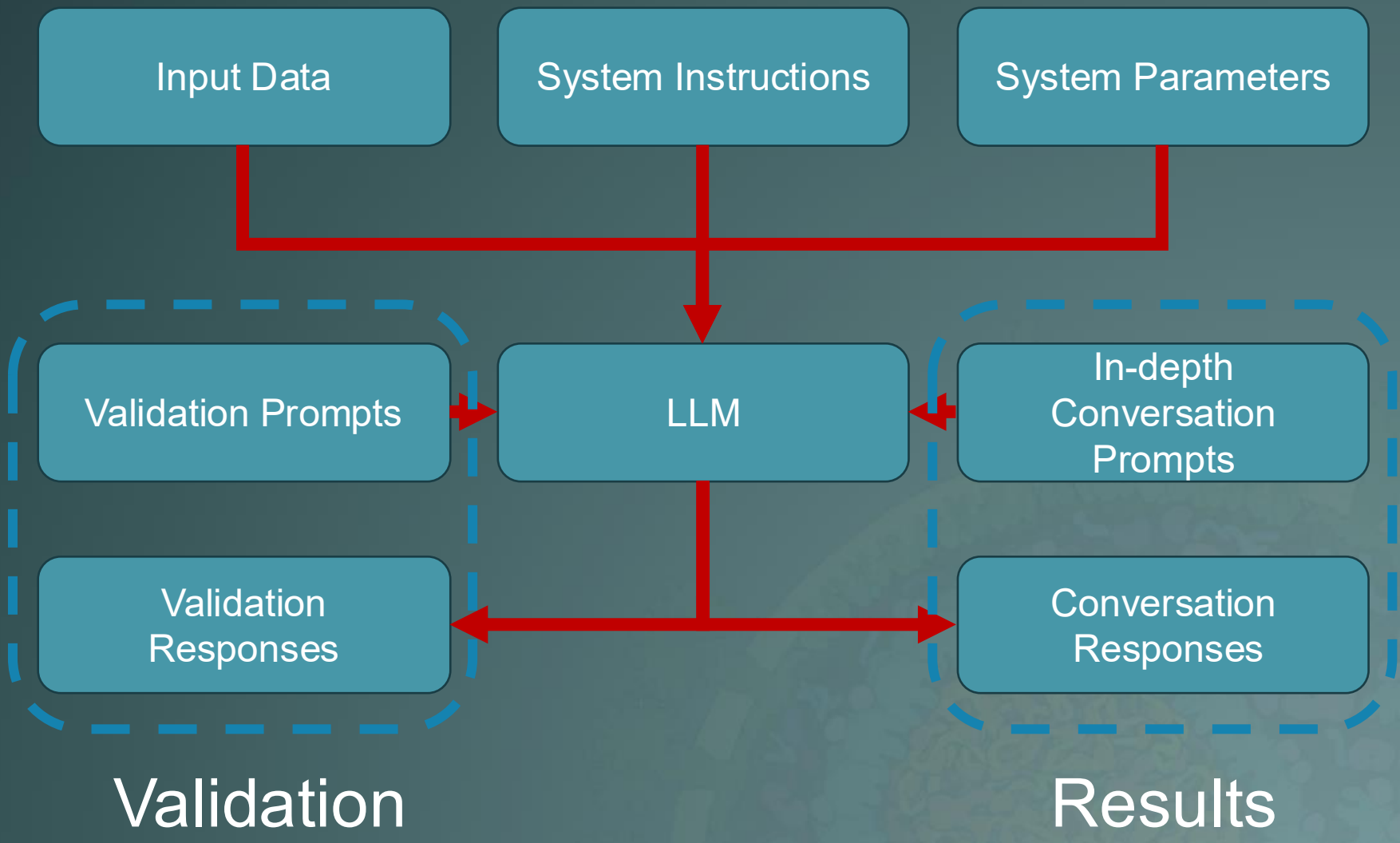


Transcription in native Swahili; translation to English language using human experts.

Methods

For input data, manual cleaning was performed using human expert technicians for:

1. De-identification
2. Standardization



Results & Key Takeaways

Criteria	Question	Response Format
Welcoming & Respectful	Greeted me in a friendly and welcoming way	Likert 1–5
	I felt comfortable and respected during my visit	Likert 1–5
	Shopkeeper was patient and took time to answer questions	Likert 1–5
Non-judgmental & Non-discriminatory	Did not judge or make assumptions about my age/relationship/needs	Likert 1–5
	Any negative or discouraging comments due to age or marital status?	Yes/No
Confidentiality & Privacy	Privacy and confidentiality were respected	Likert 1–5
	Discreet way to ask for sensitive services available	Yes/No
Information Clarity & Comprehensiveness	Clear and accurate information about contraceptive methods, side effects, and use	Likert 1–5
	Explained product use (e.g., HIV self-test, condoms) with examples/materials	Thoroughness 1–4
	Checked understanding or invited questions	Yes/No
Support, Autonomy & Motivation	Encouraged my own informed choice (not dismissive or directive)	Likert 1–5
	Encouraged me to return or follow up if needed	Yes/No
	Offered supportive or motivational messages (e.g., future goals)	Yes/No
Non-Coercion & Youth Services	Told about or offered youth-friendly services, programs, or benefits	Yes/No
	Eligibility or age handling for youth services	4-level category
Overall Atmosphere & Satisfaction	Comfort seeking contraceptive and HIV services in this shop	5-level
	Would recommend this shop to a same-age friend seeking contraceptive services	Yes/No/Not sure

LLM-generated Provider Quality-of-Care Instrument.

Key Findings

- LLMs can be successfully applied to develop a Provider Quality-of-Care Instrument directly from standardized-patient (SP) transcripts with drug shopkeepers in Tanzania.
- LLMs can then successfully utilize the Instrument to score a large corpus of SP visits in a scalable, reproducible, and comparable manner.

Key Takeaways

- LLMs can be leveraged as a powerful tool for measuring provider quality-of-care and driving future strategies for implementation science.
- Automation of pre-processing steps need to be addressed for real-world deployment, involving present concerns about privacy and fidelity.