



LLM-powered agents help patients prepare for their health care visits

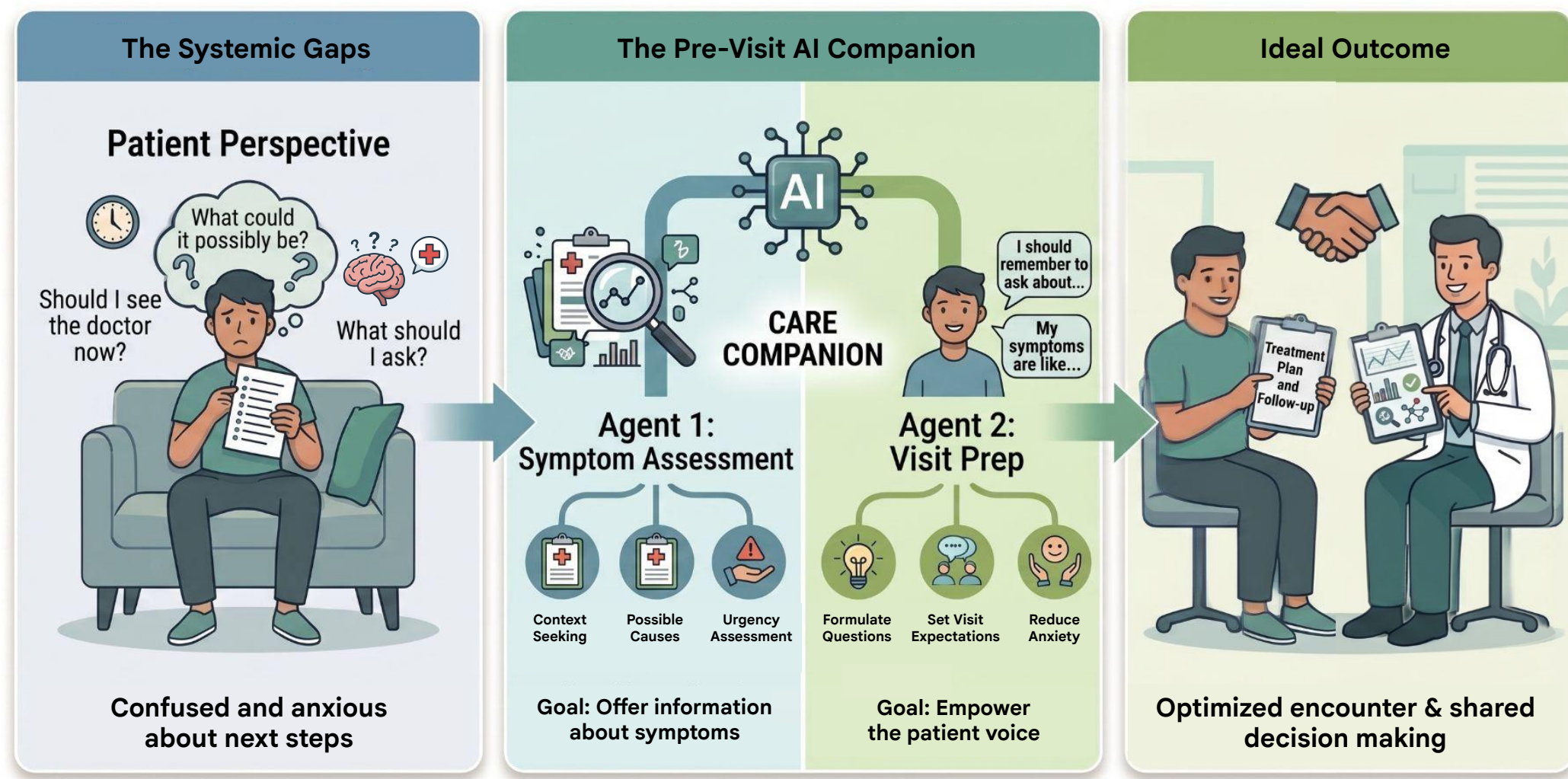
Insights from a preliminary study with ~1.8k participants

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Motivation

Utilize AI agents to empower patients for their visits

Preparing patients for doctor visits leads to better health outcomes and higher care satisfaction¹. We explore how AI-based assistants could boost patient readiness prior to their appointments.



User-Agent Interaction Flow

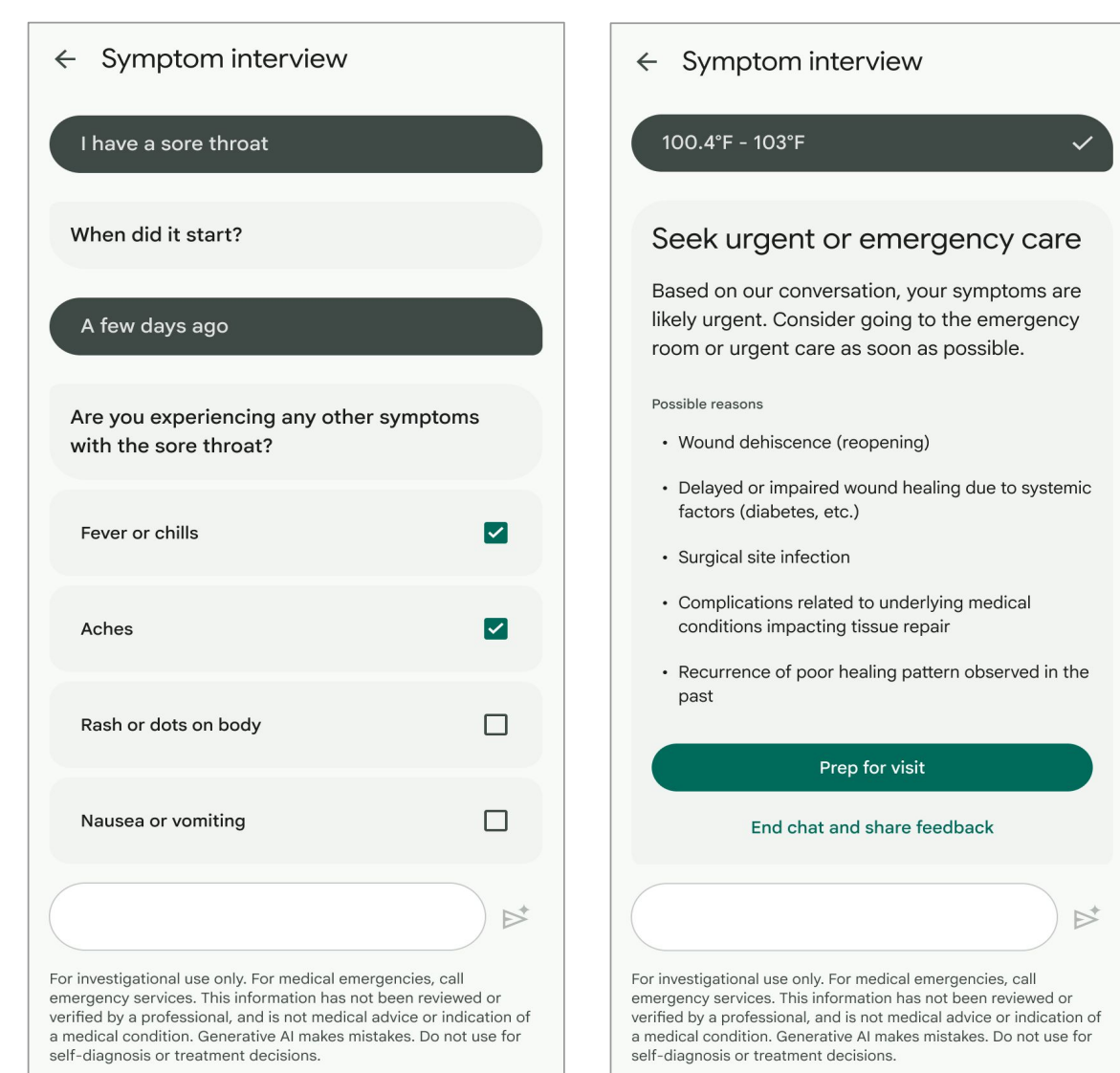
Language Model: Gemini 2.5 Flash

Deployment: Fitbit App, user engaging in multi-turn chat with the agents

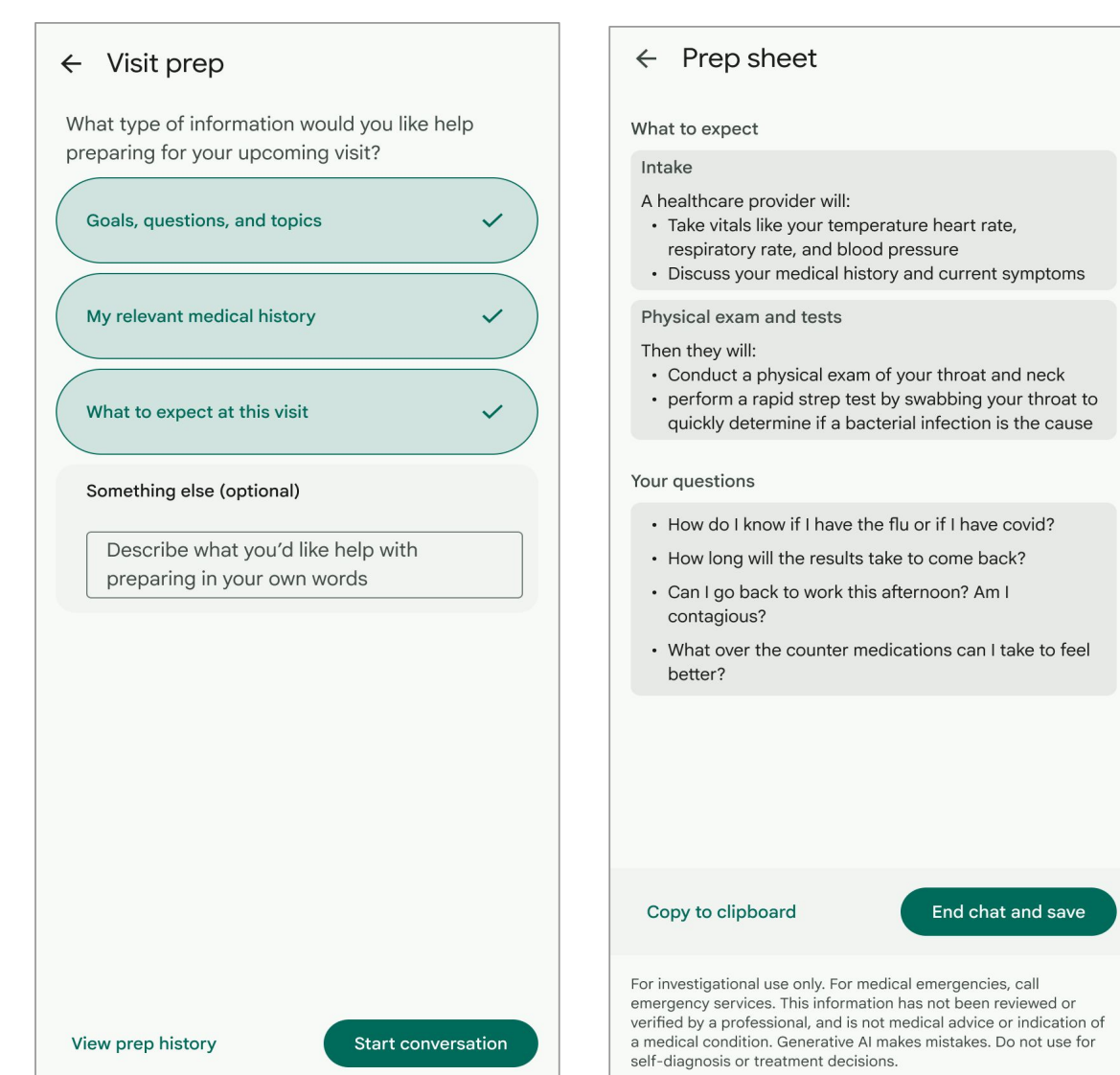
Agent Setup:

- Minimal instructions for baseline agent
- Fine-tuned instructions for specialized agents (visit prep, visit prep concise)

Symptom Assessment



Visit Preparation



Screenshots are samples for illustrative purposes and do not represent real patient data.

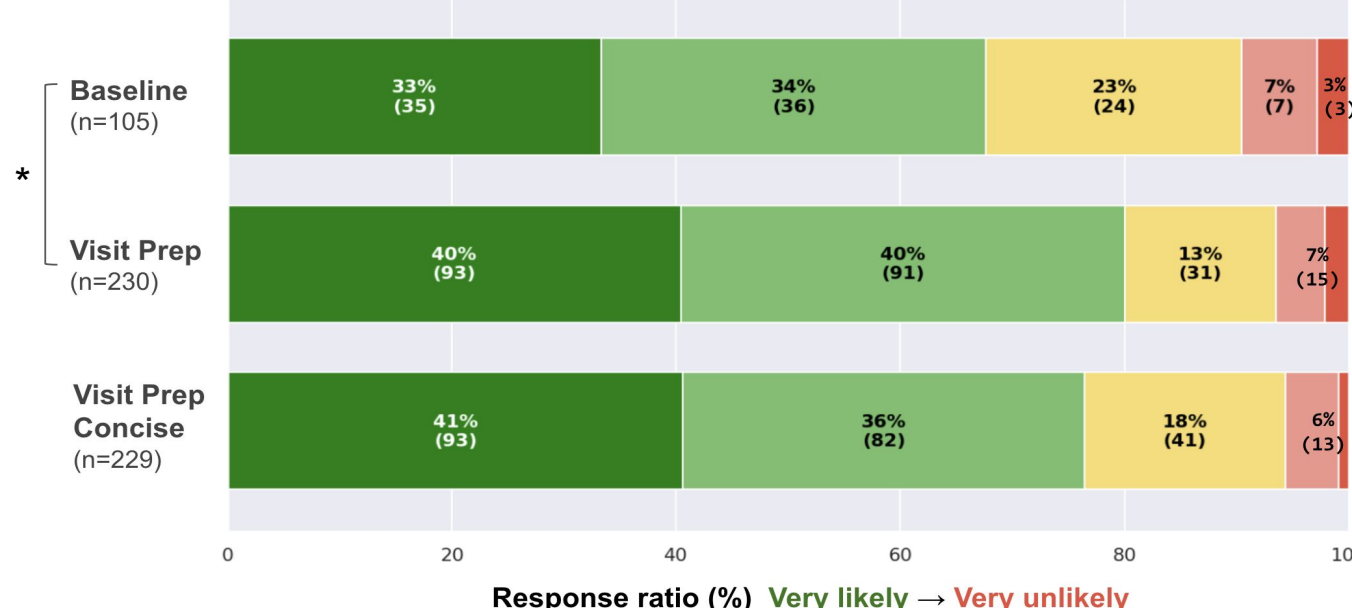
User Perspective (Visit Prep)

- A higher share of users reported feeling **satisfied** (7-10% more) and **well-prepared** (13-15% more) with the **specialized agents**
- Agent's conciseness does not impact the overall user-perceived utility

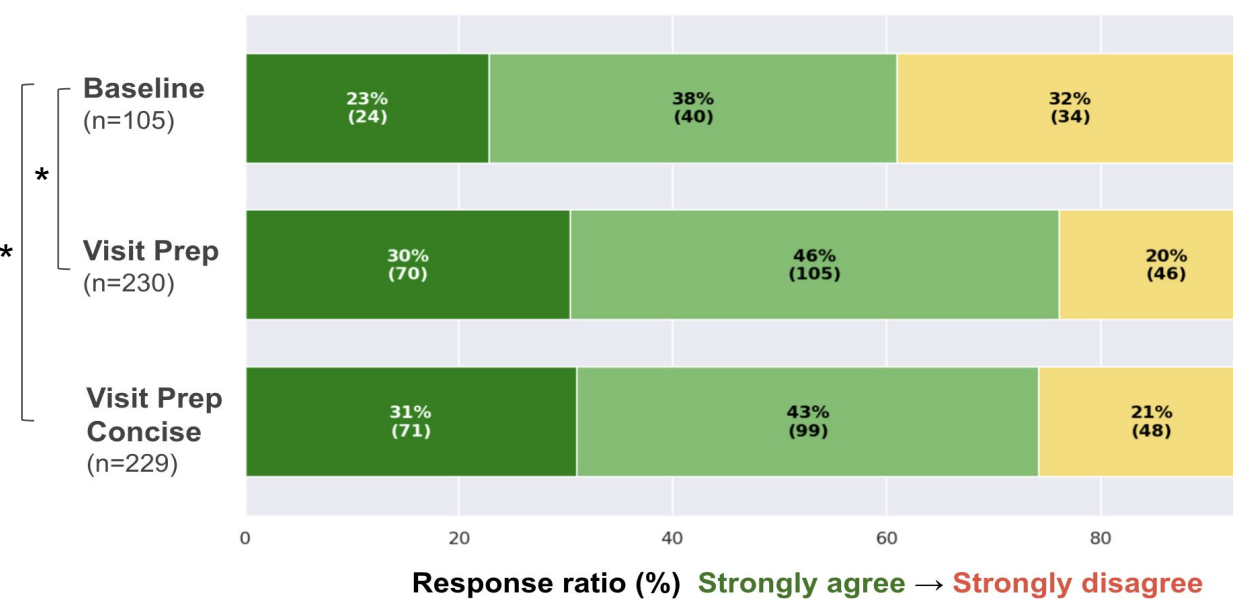
How satisfied are you with the tool you used? Mean score: Baseline: 3.84 | Visit Prep: 4.06 | Visit Prep Concise: 4.07



How likely are you to use this tool again? Mean score: Baseline: 3.89 | Visit Prep: 4.12 | Visit Prep Concise: 4.10



After using the tool, I felt well prepared for my visit Mean score: Baseline: 3.74 | Visit Prep: 4.01 | Visit Prep Concise: 3.97



How confident are you in your ability to make the most of your visit? Mean score: Baseline: 4.02 | Visit Prep: 4.26 | Visit Prep Concise: 4.09



Asterisks (*) indicate statistically significant difference (p < 0.05) without multiple testing correction.

Study Design

Participants

1,779 Fitbit users

Agent roles

- Symptom assessment
 - Propose top-5 most likely reasons of symptoms
 - Assess symptom urgency
- Visit preparation
 - Set visit expectations
 - Curate question list for visit
 - Organizes into a summary

Methods

Randomized 3-way to

- a baseline agent
- 2 specialized agents

Clinician evaluation

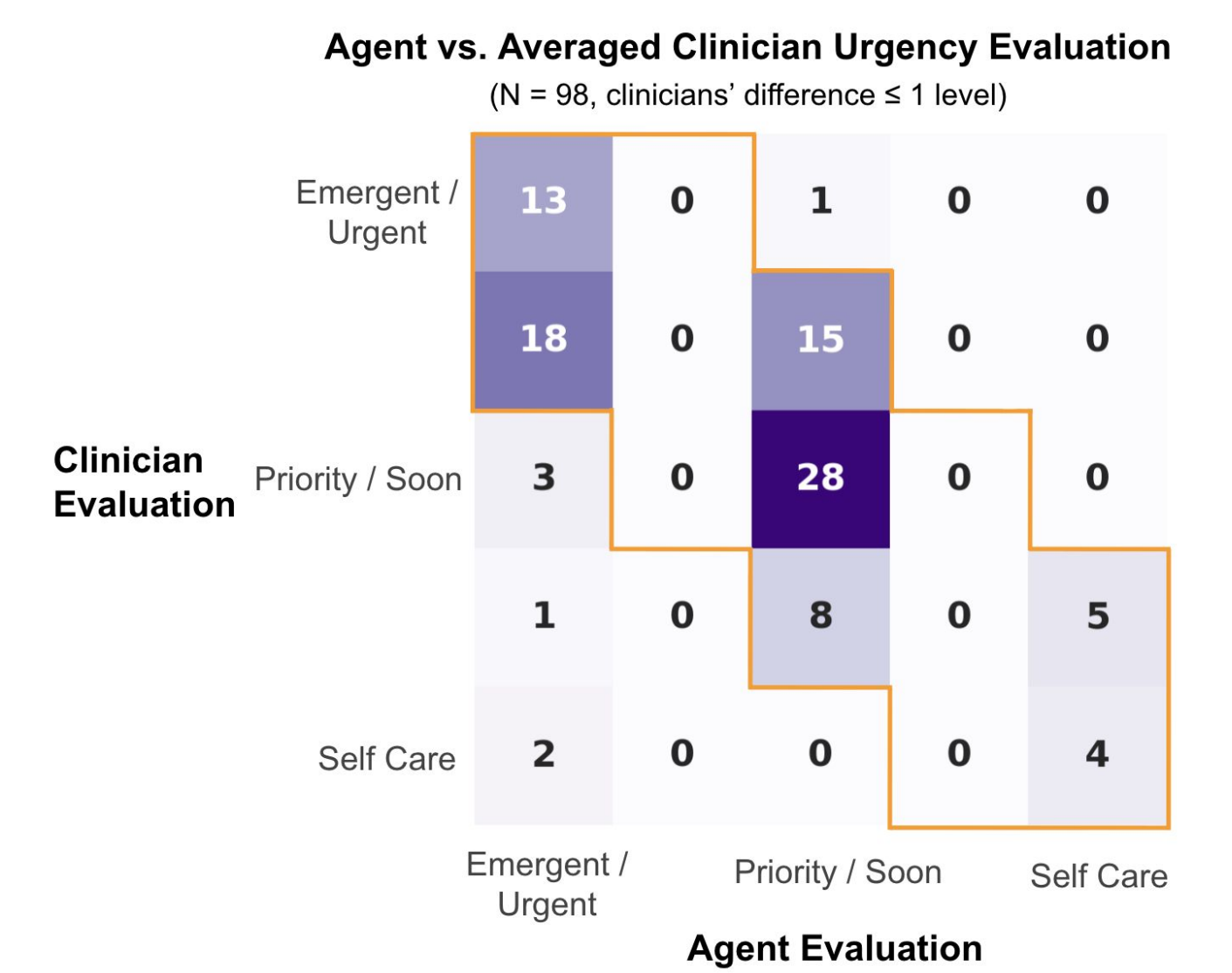
- 100 conversations
- 2 PCP clinician reviews per scenario

Survey of the user's perceived utility and satisfaction with the AI agents

Clinician Evaluation (Symptom Assessment)

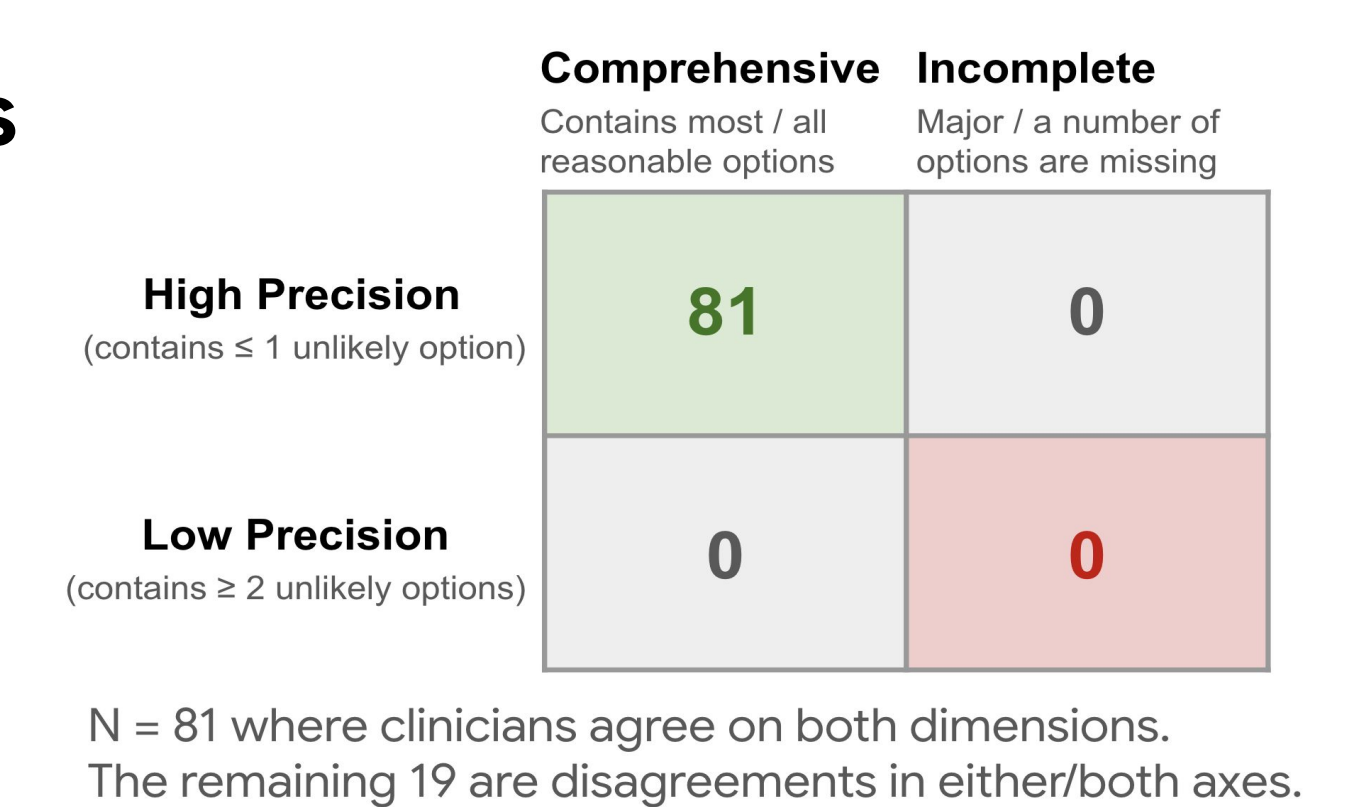
Urgency

- Specialized assessment agent demonstrates high clinical alignment, matching the urgency evaluation of at least one clinician in 92.9% of the cases
- The agent maintained a low under-call rate of 1.0% and an over-call rate of 6.1%



Possible reasons for symptoms

- Specialized assessment agent provides a list of predictions that is both comprehensive AND precise, based on 81 unambiguous cases out of 100



Clinical Safety

- Specialized assessment agent is generally safe and clinically appropriate
- The two instances of clinical inappropriateness resulted from extreme over-calls of urgency

The symptom assessment is...	Consensus Safe (Rating ≥ 4)	Consensus Risk (Rating ≤ 3)
Unlikely to cause harm (1 - 5)	78.8%	0.0%
Unlikely to cause severe harm, if acted upon (1 - 5)	87.9%	0.0%
Clinically appropriate (1 - 5)	62.6%	2.0%

Additional Findings & Conclusion

Qualitative findings on factors that drive user satisfaction:

- A balance of context-seeking and information provision
- Conversation elements
 - reduce excessive gratitude
 - reduce parroting back user info
 - limit multi-barreled questions per turn

Main Takeaway: Specialized pre-visit agents are helpful care companions to offer information about their symptoms and improve patient preparedness; % of patients feeling well-prepared increased.