VANDERBILT UNIVERSITY School of Medicine Biomedical Informatics

Patient Perspectives on Clinical Artificial Intelligence

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CHALLENGE: How can researchers assess the values patients hold around an AI tool they have no experience with?

INTRODUCTION

Health AI development and implementation often occur without input from patients and community members.

Assessing the concerns and values they hold about the use of AI in their health care could better align AI design and use with their values and identify unperceived risks and opportunities.

METHODS

Conduct **semi-structured interviews** (Table 1) with (a) adult participants who were seen in the emergency department for heart failure complications within two years of study participation and (b) family caregivers of eligible participants to capture **experiences** with heart failure, **interactions** with healthcare teams involved in their care, and **perspectives** on the clinical implementation of an existing **AI-based risk score** to predict the probability of 30-day readmissions for **heart failure complications**.

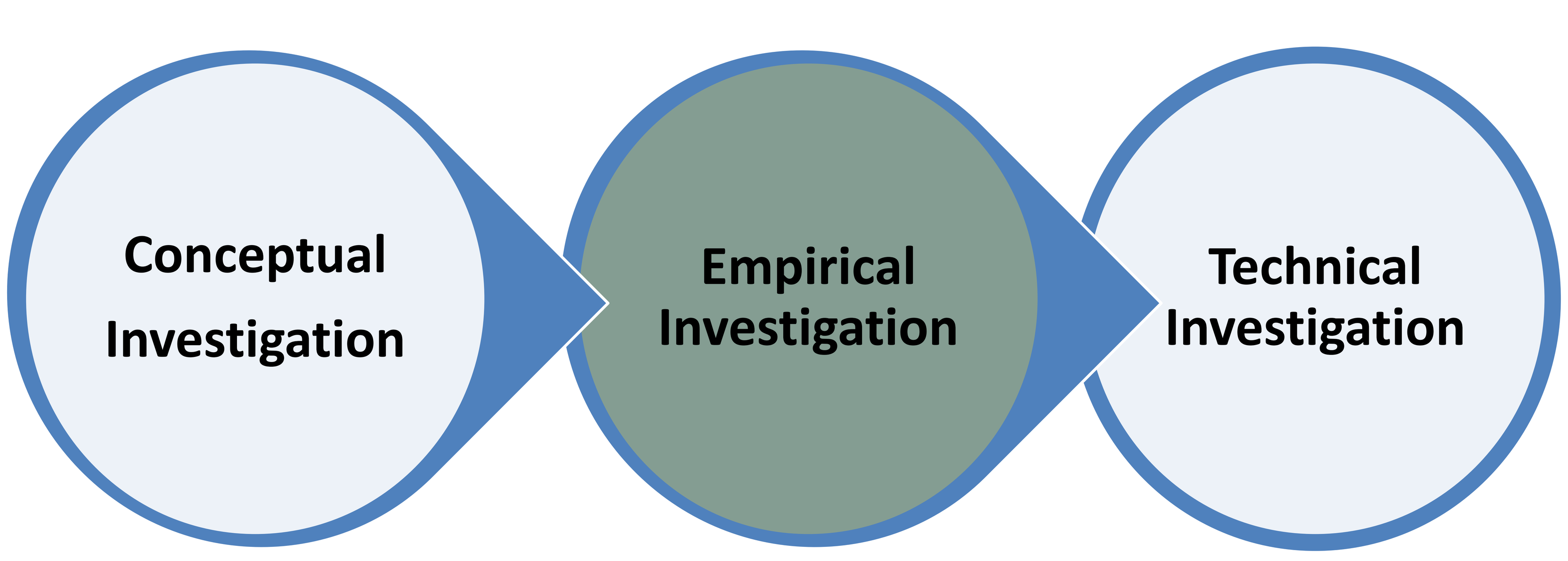
We will conduct **design workshops** (Table 1) with patients and community members with and without heart failure to **evaluate and co-design** implementation strategies for communicating heart failure risk.

Approach	Activity
Semi-structured Interviews	• Assess knowledge of AI • Understand information needs • Document communication preferences
Design Workshop 1	• Evaluate multiple artifacts that attempt to explain how AI models work (example in **Fig 1**) • Rate the design features of the artifacts
Design Workshop 2	• Evaluate multiple approaches for presenting information about AI models and their use in clinical care • Rate features of the artifacts presented, including visualization and format (e.g., video, text)

Table 1 Methods summary

VALUE SENSITIVE DESIGN

Patients want to be involved in **co-designing AI tools,** but they **don't know enough** about the technology **to meaningfully engage**.



Empirical Investigation: documenting preferences and informing design choices for technology, training, and implementation

PRELIMINARY INSIGHTS FROM INITIAL INTERVIEWS (n=3)

Should patients be involved in designing AI tools?

"Wow, that's kind of a hard one. Of course, I think we should, but **I don't know enough to know if I'm saying the right things** or asking the right questions."– P2

"Yes. Sometimes **patients can understand** what they need **better than the design team**." – P1

How should information about the risk score be communicated?

"I had this doctor one time, and she always **drew pictures**. We would go by this picture that she would draw, and it really explained a lot better for me because just **telling me stuff without showing me** something, sometimes **I just don't get it**." – P2

"I think you have to **find out how they best learn**. I mean, some people learn visually, some people learn orally, … and by listening. **It's not one-size-fits-all.**" -P3

Challenges

- Patients and caregivers often have minimal knowledge of AI and statistics
- Co-design involves patients and caregivers before the AI is fully implemented
- Participation can involve speculation about how they would react or feel.

Strategies

- Use realistic simulations in co-design
- Invest in educational strategies
- Invest in ongoing participation across multiple projects

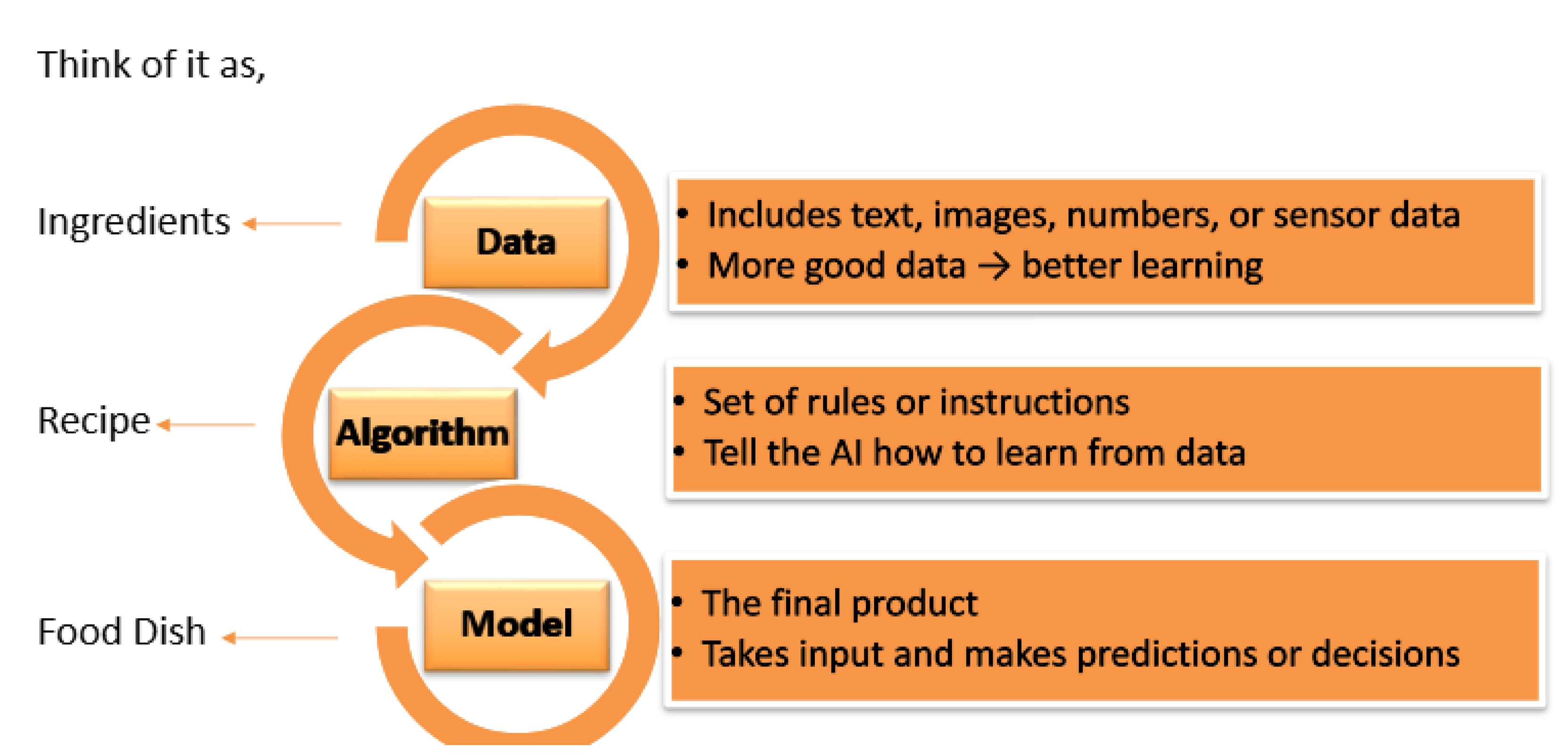


Fig.1 Illustration of key components of AI

CONCLUSION AND NEXT STEPS

Patients and community members have insights related to the use of AI in their care. Capturing and using those insights can be optimized using value sensitive design methods. Results from this work will inform design of artifacts that will be tested in a real-world scenario.

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