

OnCoTECH
**Oncology Collaboration Technologies to Empower Caregivers in
Healthcare**

The Empowered Health Cancer-Free Challenge

School of Informatics and Computing
Department of Human-Centered Computing
Human-Computer Interaction Program
Indiana University Purdue University at Indianapolis



OnCoTech: Oncology Collaboration Technologies to Empower Caregivers in Healthcare

Focus: **Treatment and family members collaboration throughout the treatment.**

Parents interviewed: **16**

Solution

A mobile application enables collaboration to have short synchronous meetings to stay organized.



Impact

Better communication and co-ordination of needs to family members and extended family members.



Care is not an individual task but requires teamwork and coordination. Collaboration technologies can empower families to provide care, keep track of information, and stay close throughout the cancer journey.



Literature Review

What is known already?

Literature Review

Previous research on families with hospitalized children shows a **lower level of stress and a higher level of communication** among family members are significant predictors of long-term health outcomes after hospitalization.



Literature Review

Most scientific studies relevant to connected care technology concentrate on collaboration:

- **Between patients and providers**
 - Schroeder et al. work on supporting patient-provider collaboration through food and symptoms journal
- **Between patients and caregivers**
 - Miller et al. work on partners in care: providing design considerations for the involvement of caregivers and patients in care during a hospital stay
- **Within patients**
 - Halder et al. work on use and impact of an online community for hospital patients to provide peer support



Literature Review

Most of the scientific studies on family collaboration technology:

- Concentrate on collaboration within family members in normal settings
 - Home Setting (i.e., Brush et.al. work on “LINC-ing” the family through the participatory design of a Family Calendar located in the kitchen)
 - Remote (i.e., Ballagas et al. work on family communication across distance focusing on the phone conversations with children)
- Do not target families under stress
 - When practices continuously change
 - When unexpected events occur



Literature Review

There is a need to understand how collaborative technologies can help family members of hospitalized children (Family Caregivers) collaborate and coordinate with **EACH OTHER** during the stressful extended hospitalization period.





Personas

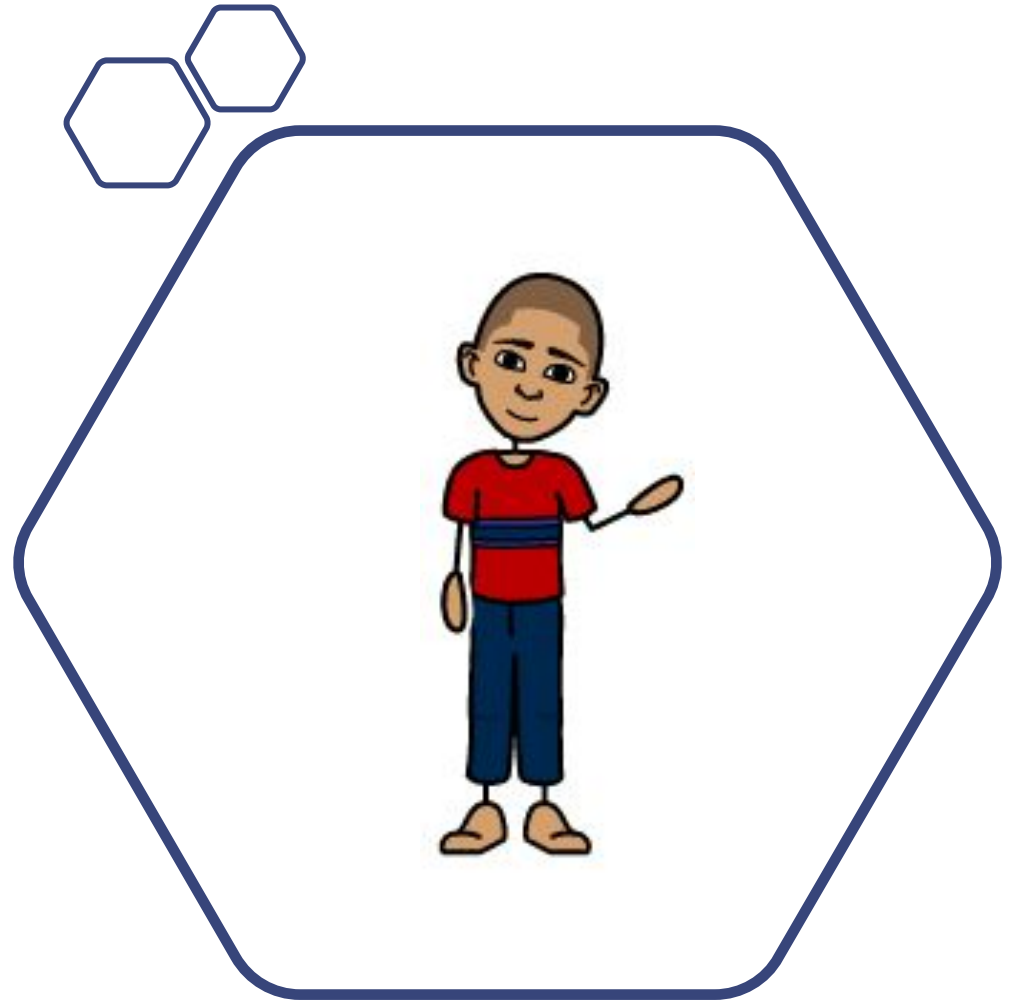
Based on interviews with 16 parents

Meet Terry Warrior

8 years old

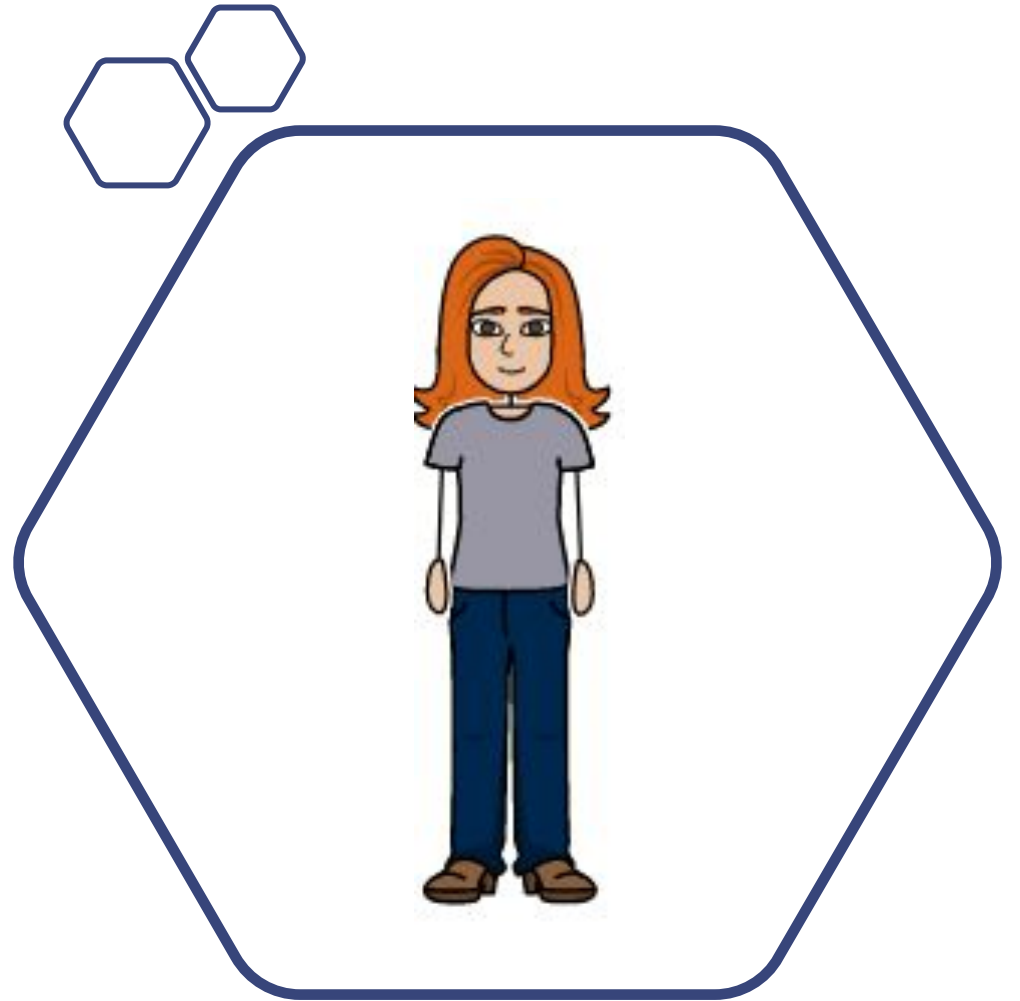
Got diagnosed with Cancer 8 months ago

Been hospitalized 3 times in the past 8 months



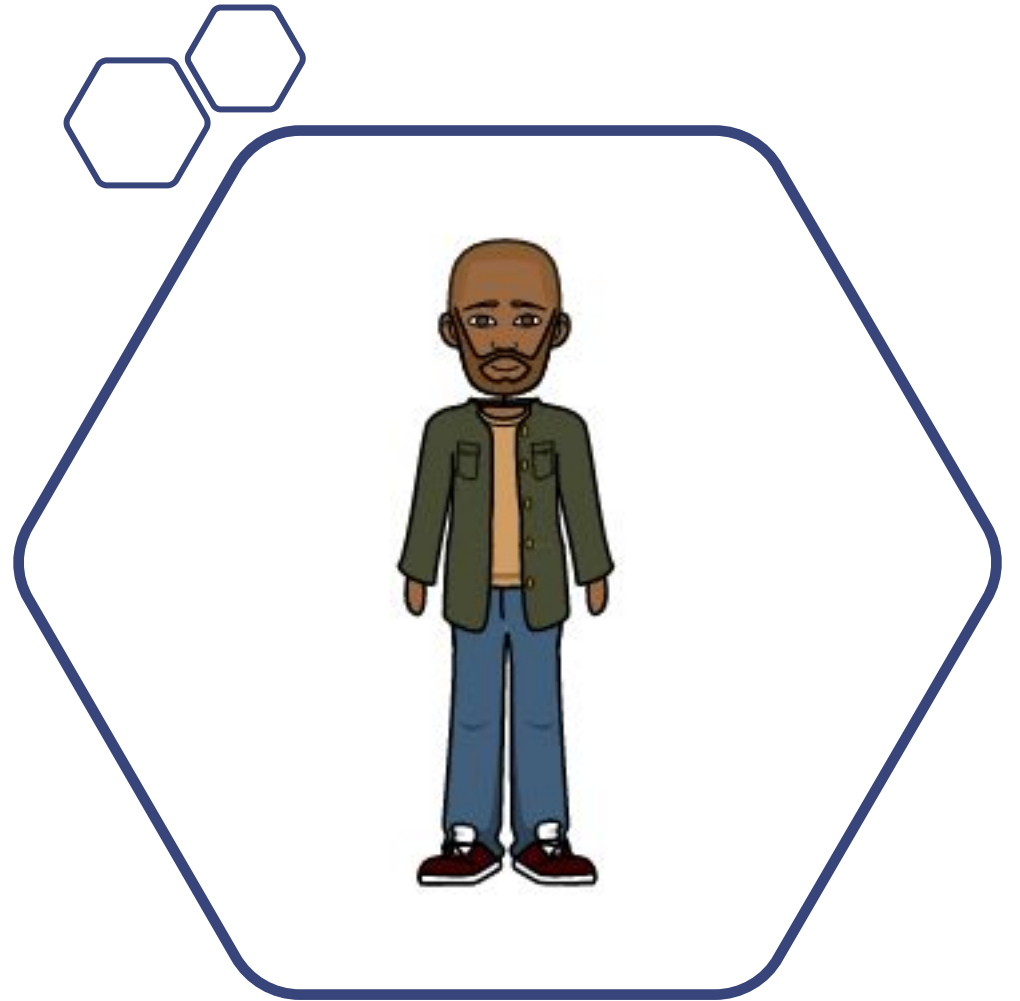
Meet Terry's Mom

His Mom, Millie changed to a part time job to be able to provide care to him at the hospital



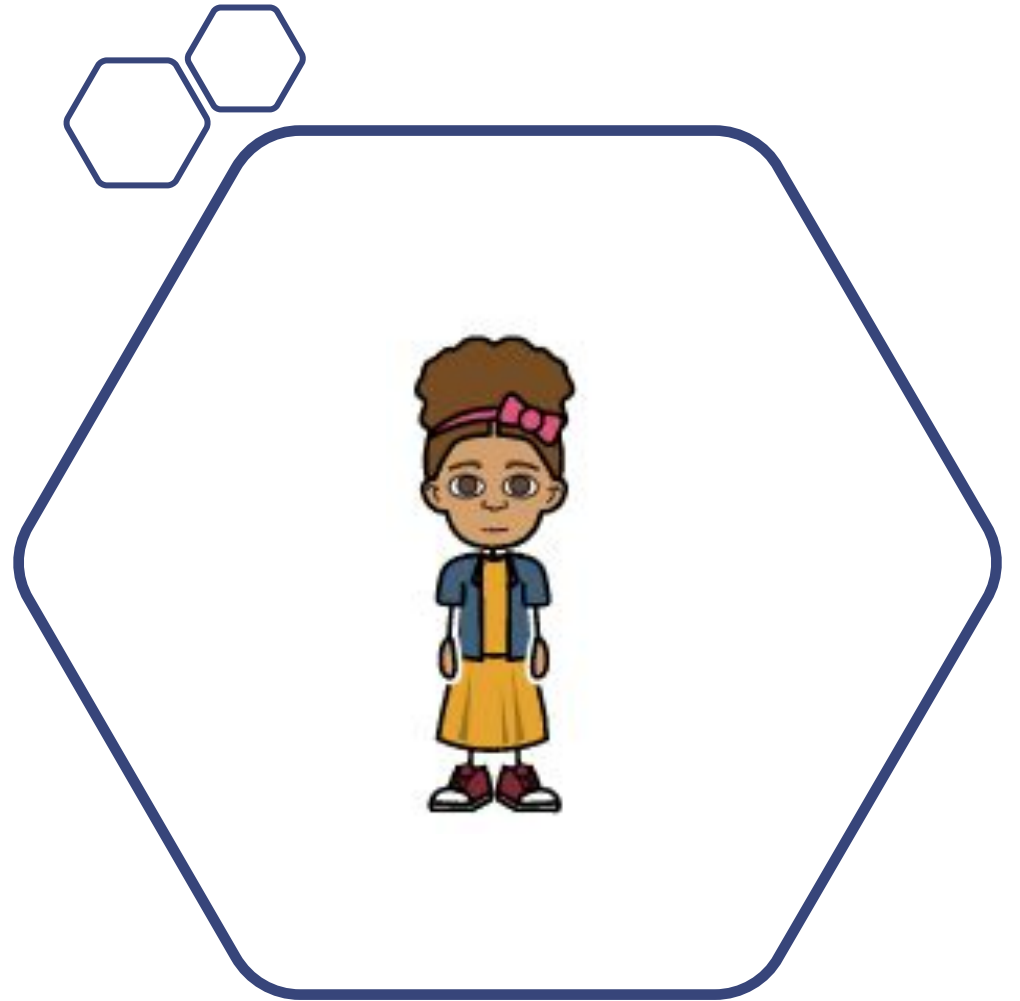
Meet Terry's Dad

His Dad, Francis has a job with no hour flexibility so he cannot be in the hospital except for the weekends



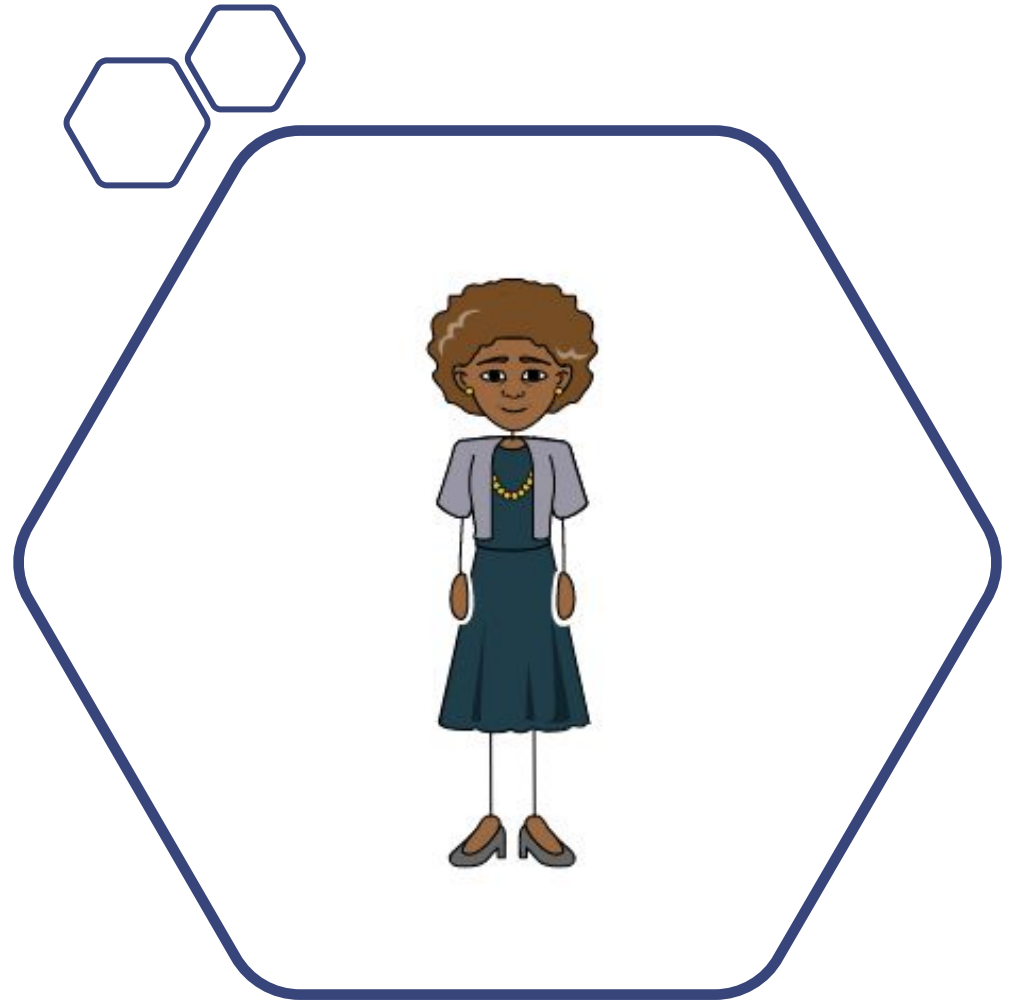
Meet Terry's Sister

His sister, Lisa that parents also need to take care of.



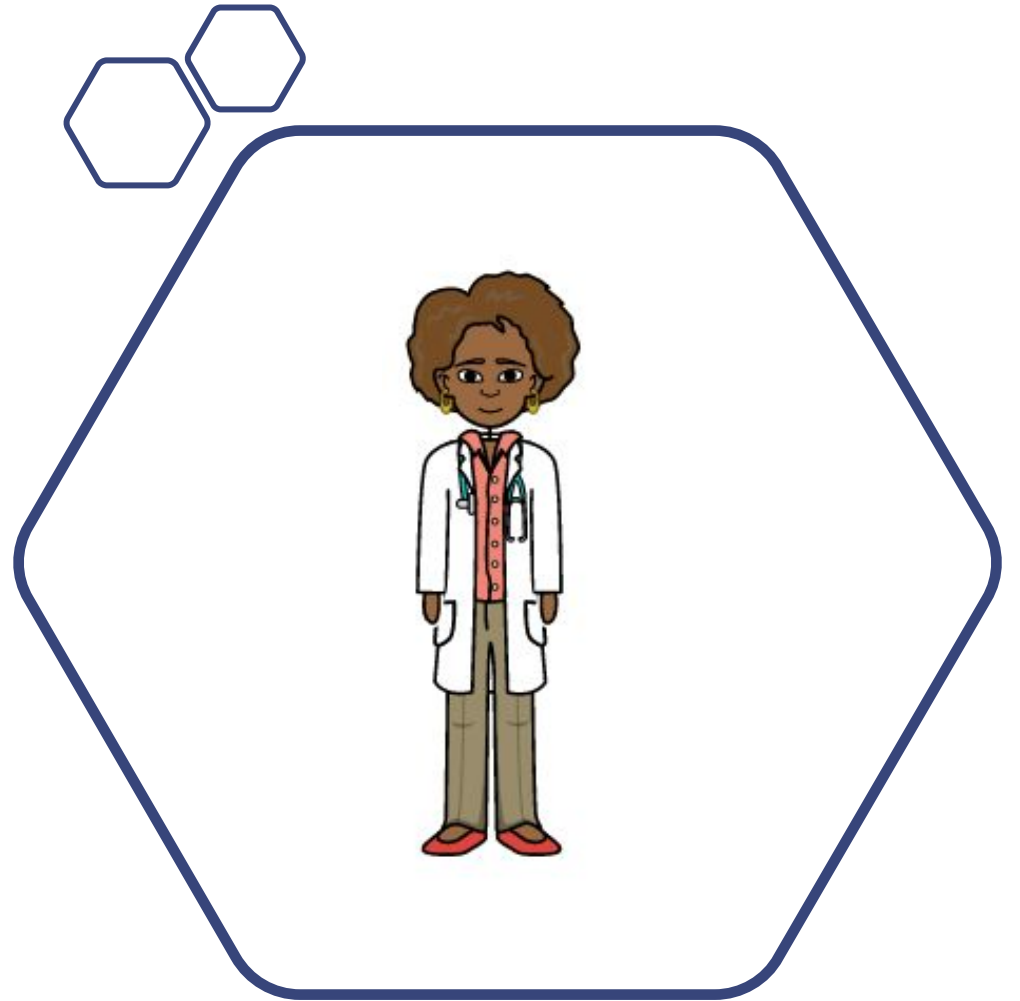
Meet Terry's Family

His grandma Mary, helps the family with the hospital and home chores



Meet Terry's Doctor

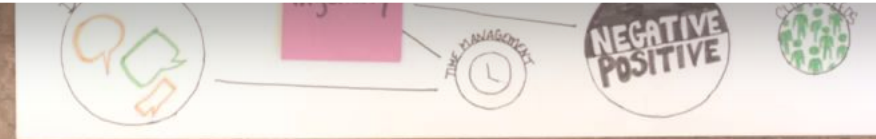
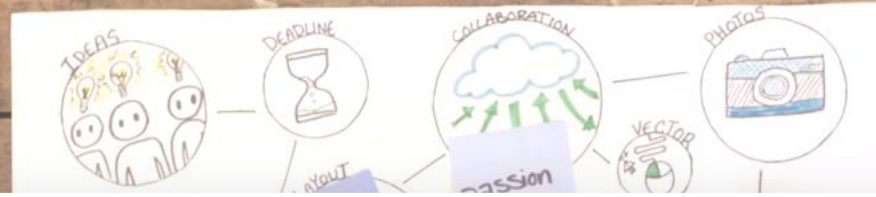
Dr. Elizabeth: She meets Terry and his family caregivers on a daily basis during the morning rounds and talk to them about the treatment plans



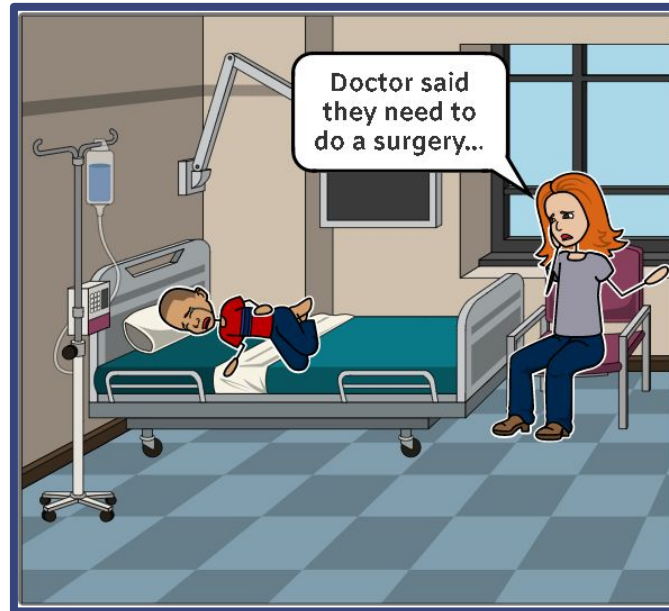
When it comes to implementing technology in cancer care, the doctor is the focus of most research studies



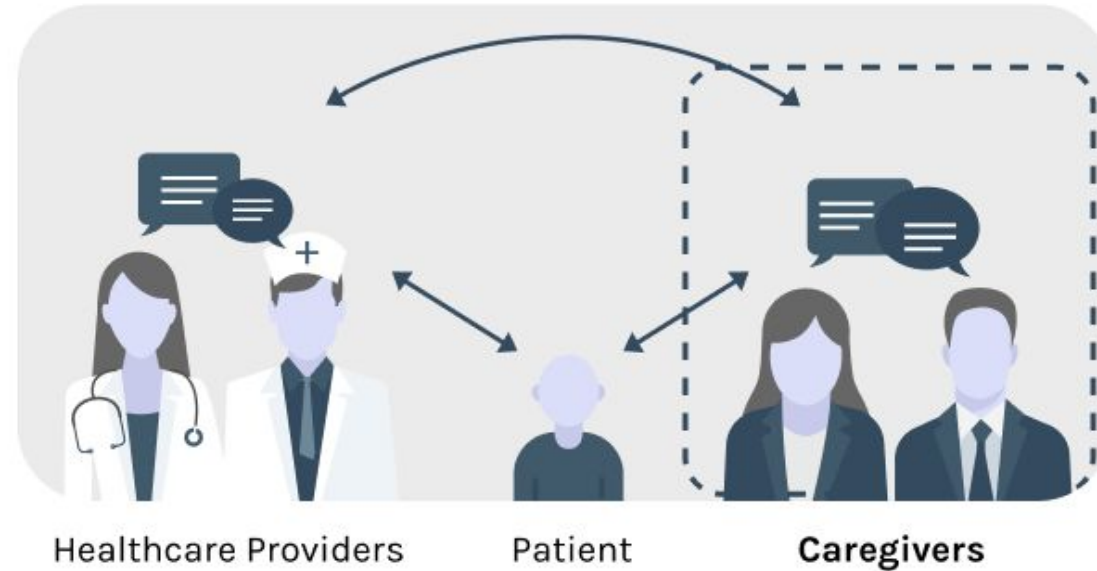
Care is a collaborative task



One day at the hospital...



Focus on Family Caregivers Collaboration



Practices and Challenges

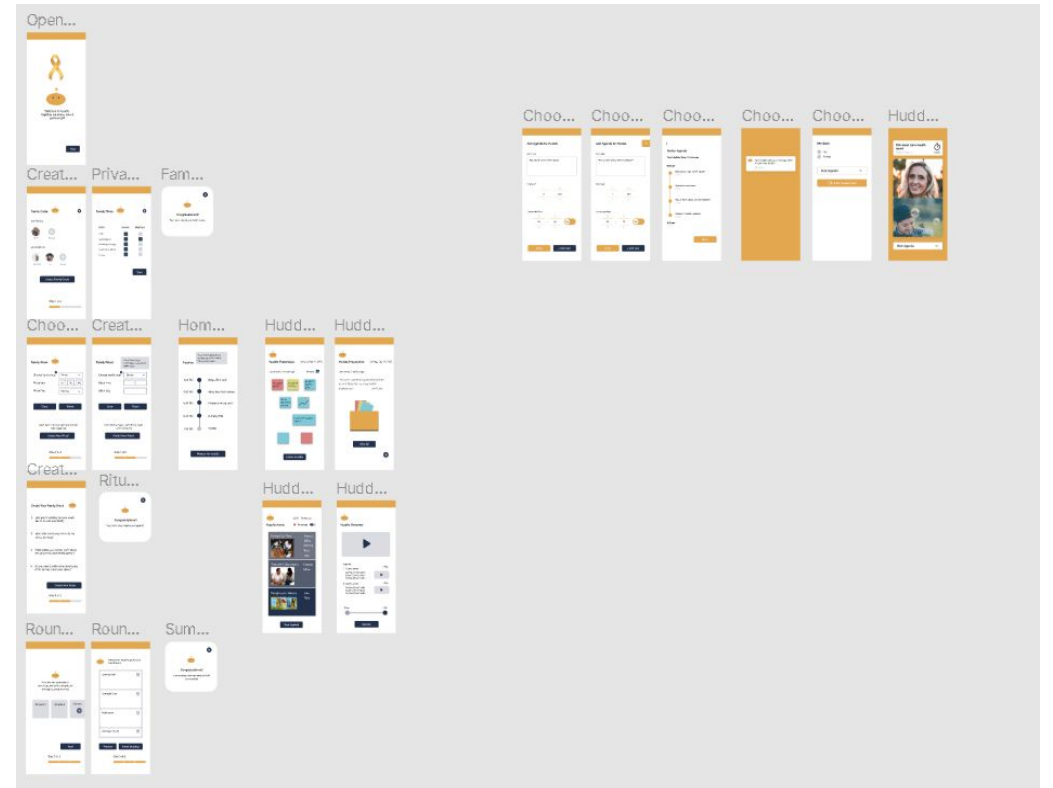
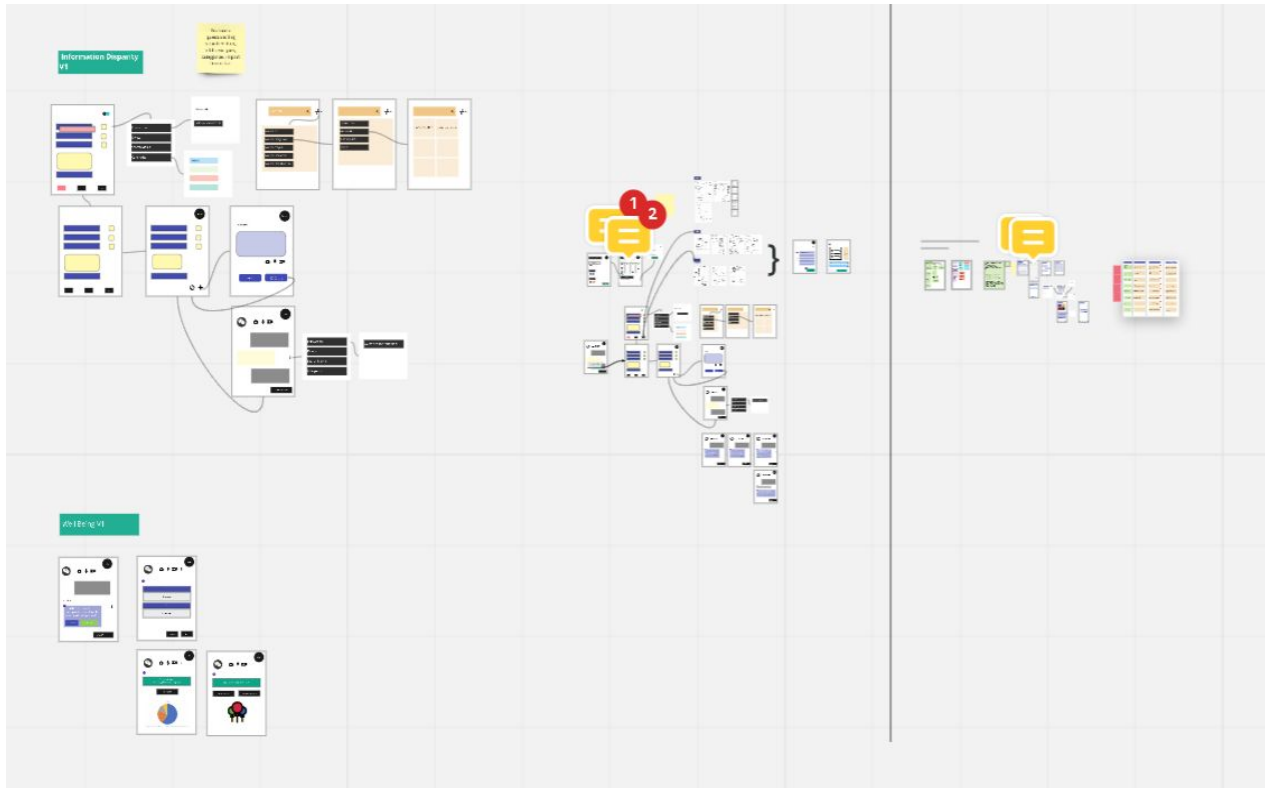
- Adapting after they learn about the cancer diagnosis
- Provide care to the hospitalized child
- Stay connected and update each other while in the hospital
- Managing daily activities, Jobs, and the hospital tasks
- Processing the medical information
- Tolerate ambiguities and unexpected events that occur in the hospital
- Managing negative feelings and emotions
- Being prepared for the discharge or more rounds of hospitalization



User Journey Map



Early-stage prototyping



A Set of Design Activities

1. PARTICIPATORY DESIGN



- 1.1. Devise study protocol
- 1.2. Send requests and schedule interviews
- 1.3. Conduct participatory design sessions
- 1.4. Follow up with questions

2. ANALYSIS & IDEATION



- 2.1 Code session responses
- 2.2 Form themes
- 2.3 Prioritize features

3. PROTOTYPE & ITERATE



- 3.1. Prototyping
- 3.2. Expert Evaluation
- 3.3. User Evaluation

Contributors

Dr. Andrew Miller, Assistant Professor, School of Informatics and Computing, IUPUI

Sarah Nikkhah, Ph.D. Candidate, UX Researcher, School of Informatics and Computing, IUPUI

Geetha Priya Padmanabhan, HCI Masters Graduate, UX Researcher, School of Informatics and Computing, IUPUI

Barsa Tandukar, HCI Masters Graduate, UX Researcher, School of Informatics and Computing, IUPUI

Akash Rode, HCI Masters Student, UX Researcher, School of Informatics and Computing, IUPUI



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Thank you!

