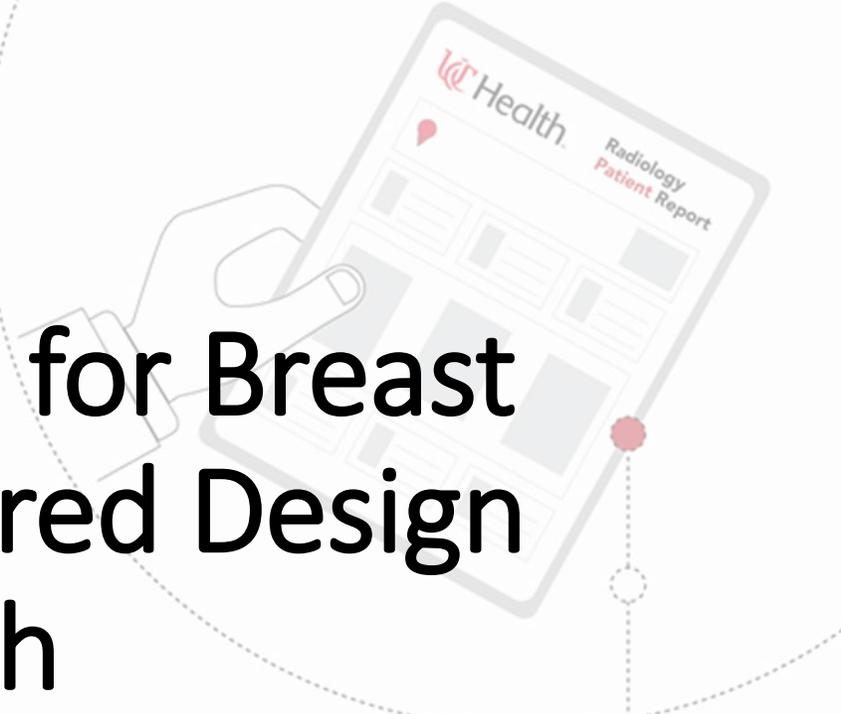


# Interactive Patient Reports for Breast Screening: A Human-centered Design Thinking Approach



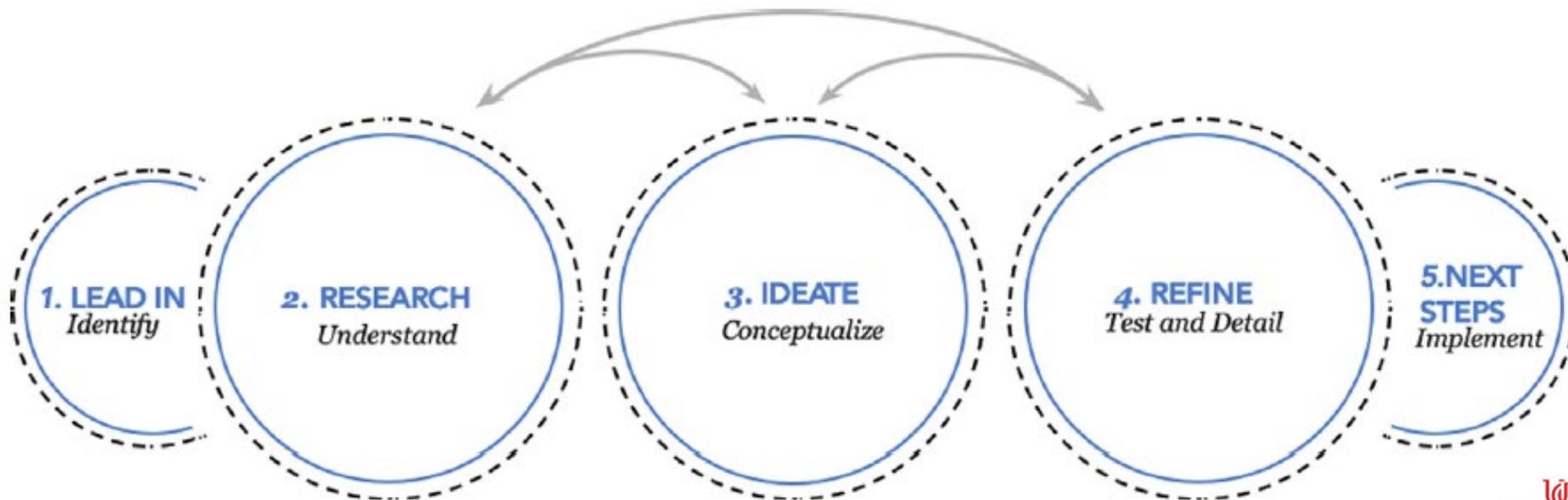
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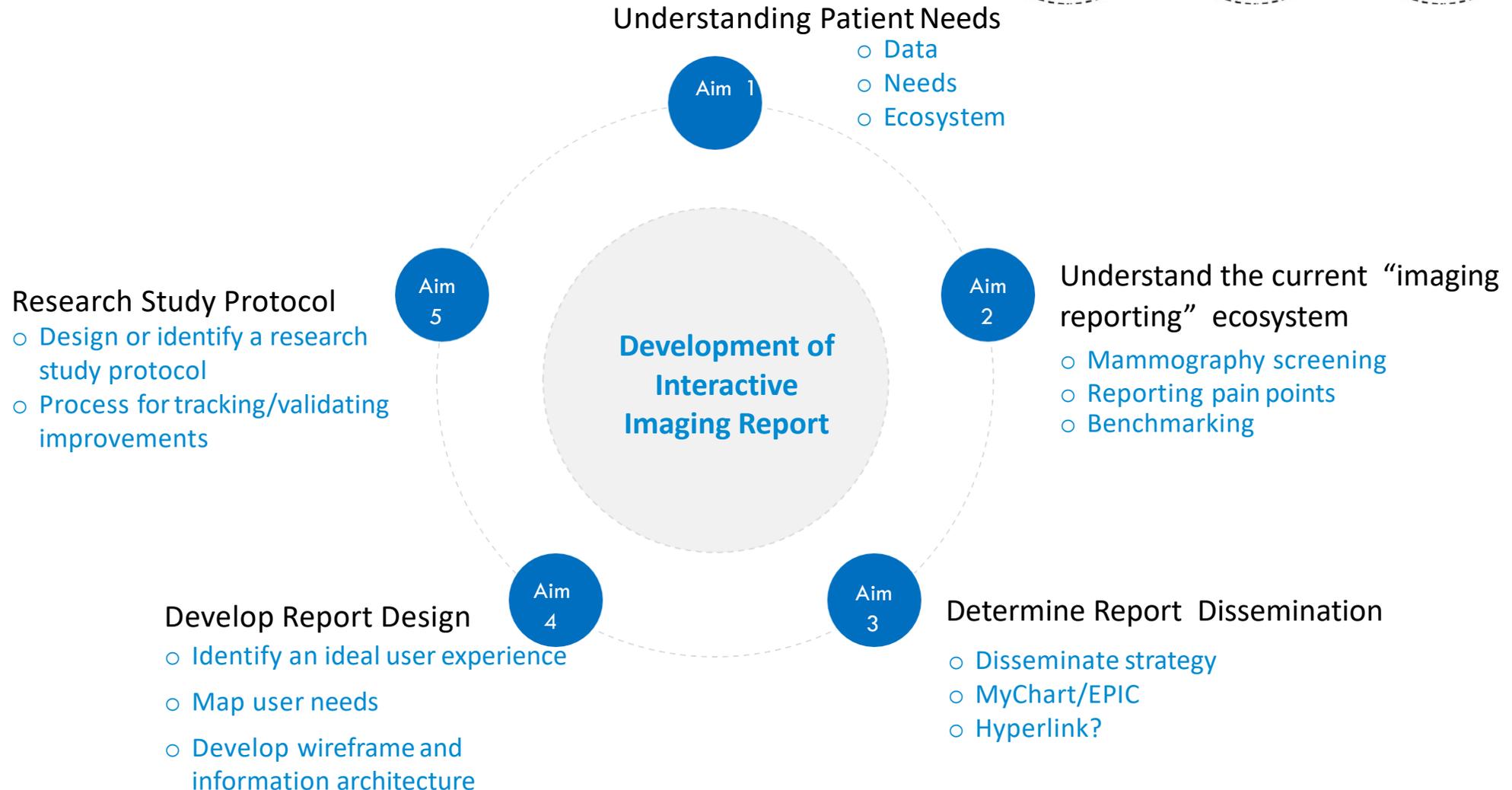
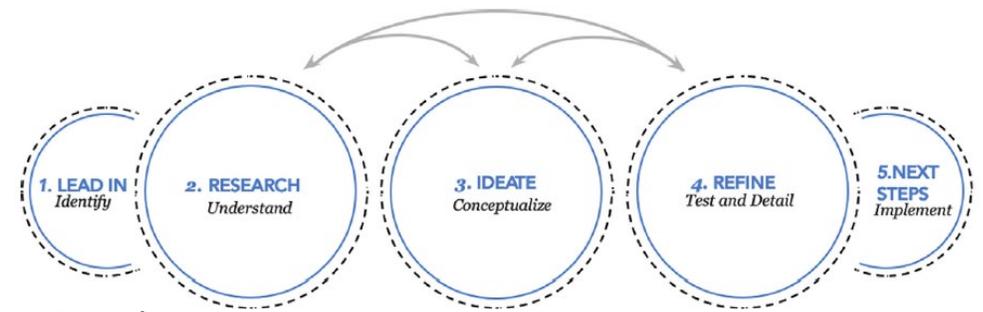
<sup>2</sup>College of Design, Architecture, Art, and Planning (DAAP), University of Cincinnati

# Introduction-Purpose

- Using human-centered design, our purpose was to develop an **interactive imaging report for breast screening patients** that provides simple access to scan information and reduces confusion by providing easier to understand terminology.
- **Integrates user emotions and empathy** and actively engages patients, providers, and multiple other stakeholders to create solutions and to redesign systems.
- Our team included all stakeholders: 13 breast imaging patients, 6 design students, 2 design faculty advisors, hospital patient experience officers, members of patient and family advisory council, radiology managers, breast imaging technologists, and 5 radiologists including subspecialized breast imagers.



# Project Objectives



# Research Phase

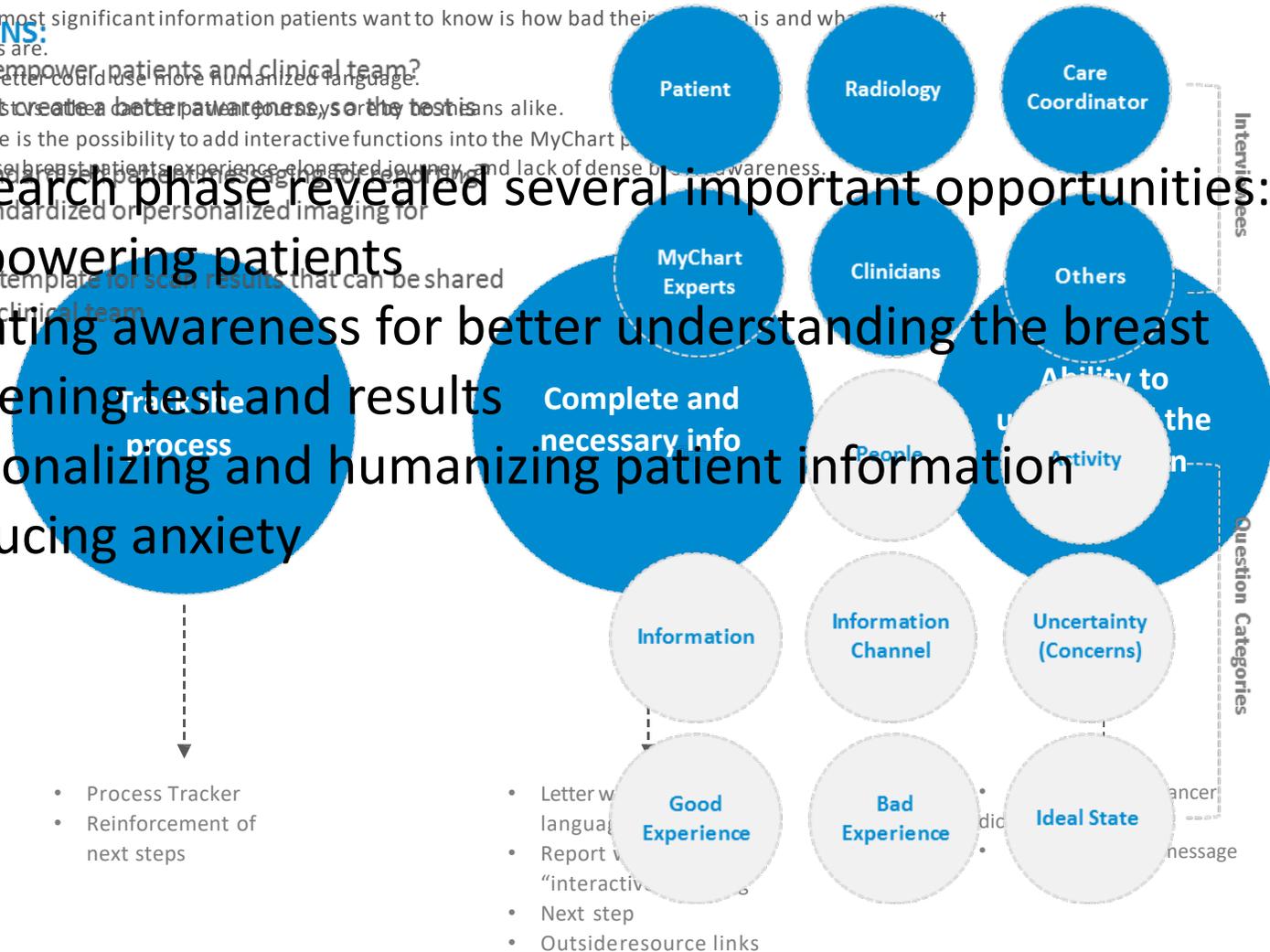
1. The waiting time for abnormal results for patients is the main trigger for their anxiety.
2. The most significant information patients want to know is how bad their condition is and what the next steps are.

## KEY CONSIDERATIONS:

1. How does this tool empower patients and clinical team?
  2. How does the report create a better awareness so the test is better understood?
  3. The letter could use more humanized language.
  4. There is the possibility to add interactive functions into the MyChart platform.
  5. There are dense breast patients experience elongated journey, and lack of dense breast awareness.
- Opportunity for standardized or personalized imaging for reporting?
  - Establish a format/template for scan results that can be shared between patient & clinical team

Our research phase revealed several important opportunities:

- Empowering patients
- Creating awareness for better understanding the breast screening test and results
- Personalizing and humanizing patient information
- Reducing anxiety



# Ideation Phase

## Key Questions:

- How can the ideation concepts fit into existing software used by the hospital?
- How can we personalize the information patients receive to fit their specific needs?

## Deliverables:

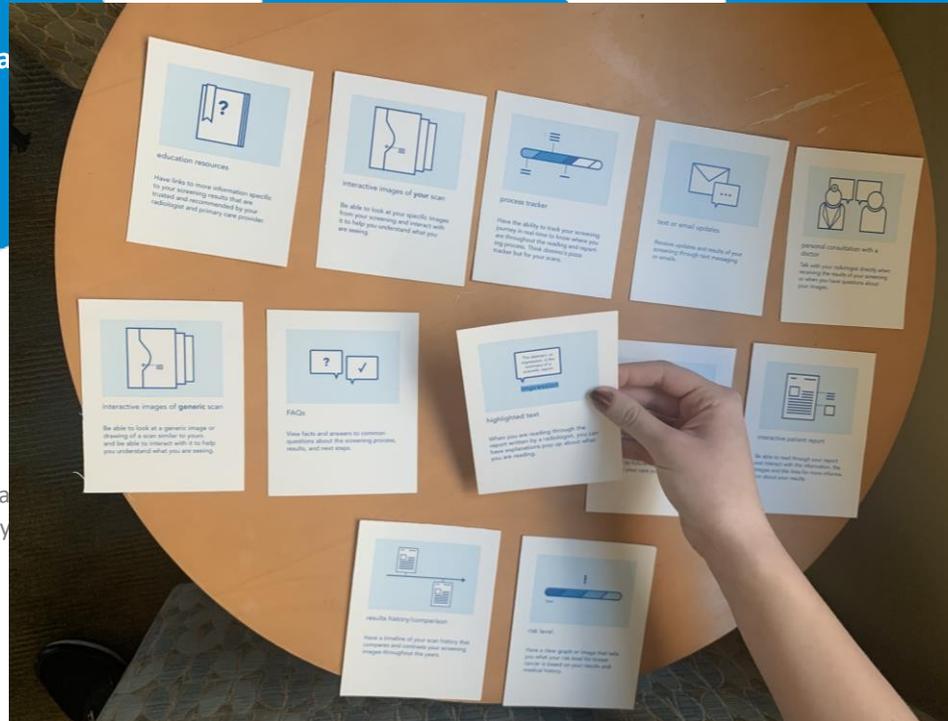
- 13 breast cancer patient support tool concepts
- Survey/activity data and insights
- Early prototyping

- Existing service in UC Health

## Interactive patient report

Includes:

- Interactive images
- Results history
- Next steps
- Risk level



- Ideation helped us focus on the existing personal consultation with physician and create an interactive patient report that included interactive images, results history, next steps, and their risk level of breast cancer.
- We also prototyped a process tracker, an important component of patient understanding of the next steps with an associated timeline.

# Refinement Phase

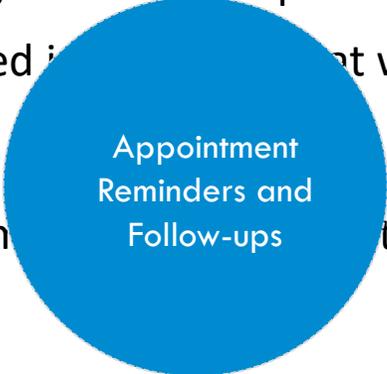


- Performed internal and external benchmarking and co-created a functional prototype of an interactive patient report.
- Refined adding important features of chart integration.
- Prototyped a process tracker, an important component of patient understanding of the next steps with an associated timeline.

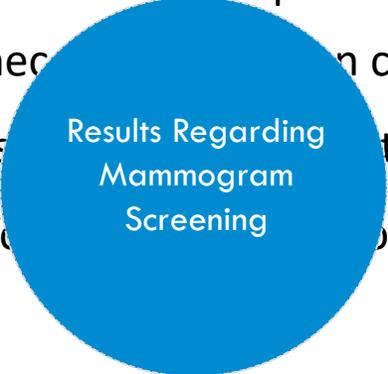
# Patient Centered Letters

## Categories of Letters: Updates:

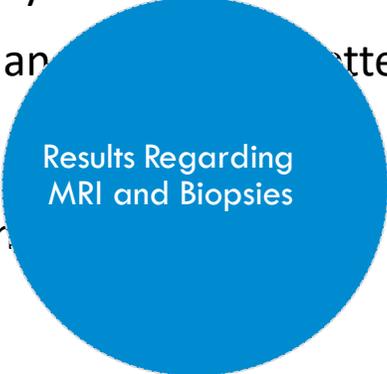
- Changed words and phrasing to make the letters patient friendly
- Deleted information that was not necessary for patient content and readability
- Made letters more concise and easier to read
- Reformatted letters to allow for better readability



- Includes:
- Annual Screening
  - Additional Testing
  - Re-imaging
  - Missed Appointments



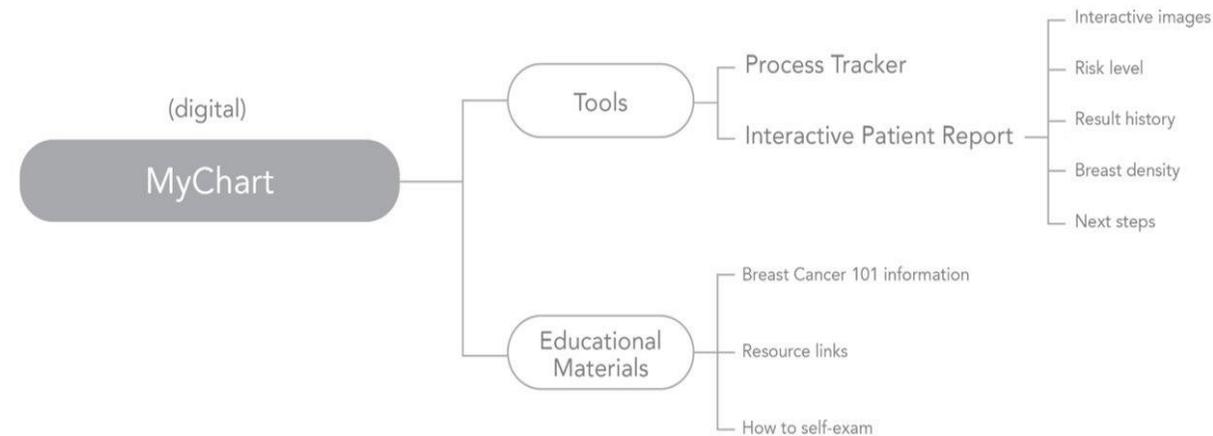
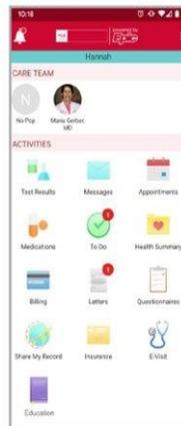
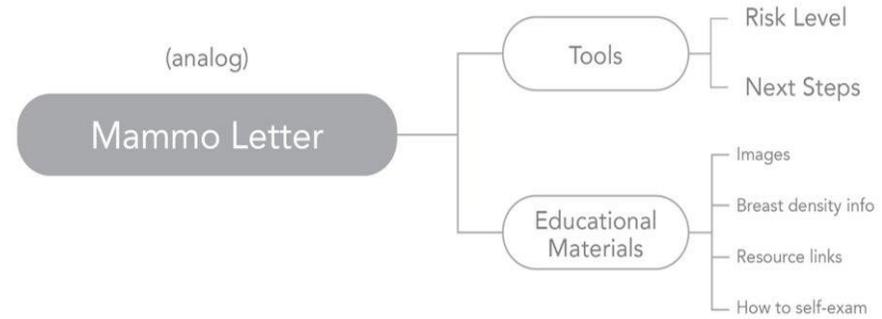
- Includes:
- Results of Mammogram
  - Information on why you need a mammogram
  - Breast Density Information
  - UC Health's Capabilities



- Includes:
- Results of MRI
  - Why MRI's are needed
  - Possible recommendations for next steps in care



# Prototypes: Information Hierarchy



Our prototype also included a comprehensive electronic patient portal including letter with interactive patient report, a to-do tracker, an education suite for further inquiry into their care and condition.

# Conclusion

- Through the lens of design thinking, we developed a human-centered, interactive patient report and letter for breast screening patients.
- Our next steps are to implement this interactive report and letter to all our outpatient breast imaging centers.

