

Designing Service Transitions

Introduction to UHN, PMCH & CDI

UHN is Canada's largest academic health sciences center, made up of multiple hospitals and research institutes.

As one of the top five cancer centers in the world, PMCH provides comprehensive cancer care—from prevention and diagnosis to treatment and survivorship—while leading cutting-edge research and education.

CDI is a design and innovation unit within PMCH focused on reimagining digital experiences in cancer care.

Problem with the Triage

An initial survey conducted by the client surfaced key challenges in the triage role—highlighting issues around role clarity, communication overload, and workflow inefficiencies.

1.0 **Lack of Clear Role Boundaries**

“It was supposed to be symptom management – now we do everything.”

Nurses are taking on non-clinical and administrative tasks, with unclear expectations.

2.0 **Inbox Overload from Unfiltered Requests**

“This inbox and role is a dumping ground for anything and everything.”

Too many low-priority emails and messages make it hard to focus on urgent needs.

3.0 **Unplanned Walk-ins and Patient Bypass Behavior**

“Walk-ins are always a surprise—no one tells them to come in.”

Patients show up or call directly, disrupting triage flow and delaying care.

4.0 **Time-Consuming Tasks Don’t Require Clinical Judgment**

“Carepath data takes a long time... and each call can go in five different directions.”

Long, non-urgent calls and documentation take time away from symptom management.

Understanding the real world

Through stakeholder interviews, on-site observations, and participatory methods, we mapped out current workflows and surfaced key frictions within the system.

1.0 Stakeholder Interviews

Nurses are taking on non-clinical and administrative tasks, with unclear expectations.

2.0 Contextual Inquiry

We watched how they work, the tools they use, the interruptions they face, the communications they juggle, and the challenges of their environment.

3.0 Participatory Design

Using storyboards and scenarios to explore key tensions, we generated diverse perspectives on solutions, and collaborative problem-solving.

4.0 Final Implementation

Using insights from the co-design sessions, we ideated, prototyped, and tested key features to ensure alignment with nurse workflows and priorities.

Creating Remote Oncology Centre “The ROC”

Princess Margaret, Care @ home Strategy

Care@Home aims to provide safe, seamless, and personalized care for patients, regardless of where they are.

A new space at Princess Margaret will centralize symptom monitoring and management for patients outside the cancer center. It will **co-locate nurses and staff from 16+ disease sites** to collaboratively address patient concerns between visits.



From Insights to Outcomes

From [Background Research Sep 2024] to [Stakeholder Interviews Dec 2025]

1.1 Phase 1: Key Questions and Insights Driving Remote Care Optimization

The research explored key questions, including centralizing triage outside clinics, remote nursing feasibility, ideal remote care team composition, and optimizing physical and digital environments.

Key Insights from Phase 1:

1.0

Stratify patient journeys by intensity, with tailored monitoring needs.

2.0

Use risk classification to guide care pathways and protocols.

3.0

Integrate clinical and operational workflows from eligibility to offboarding.

4.0

Leverage AI and automation for stable patient monitoring and flagging concerns.

1.2 Phase 1: Review of Secondary Research

Our secondary research phase focused on three key areas:

1.0

Healthcare Command Center implementations and best practices

Effective centers balance people, process, and tech—ensuring 24/7 coverage, clear protocols, and real-time data. Key challenges include system silos, tech reliance, and privacy concerns.

2.0

Remote Nursing Models Overview

Three models were reviewed: centralized monitoring, hub-and-spoke, and primary care-based. Success depends on clear roles, strong communication, and consistent evaluation.

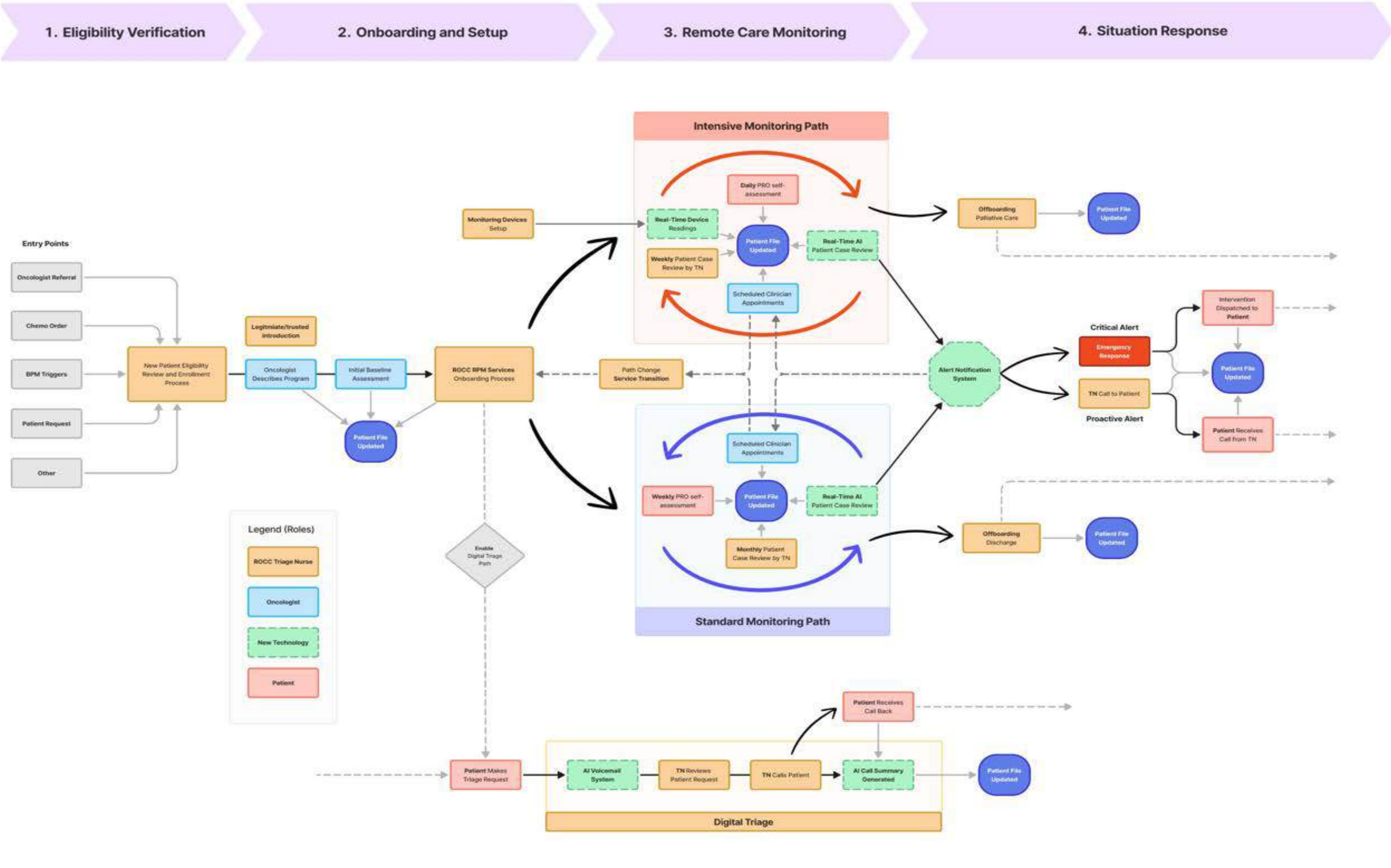
3.0

Nurse Survey Insights

Nurses cited challenges like admin burden, fragmented communication, and limited space. Improvements include better documentation tools, escalation protocols, and team coordination.

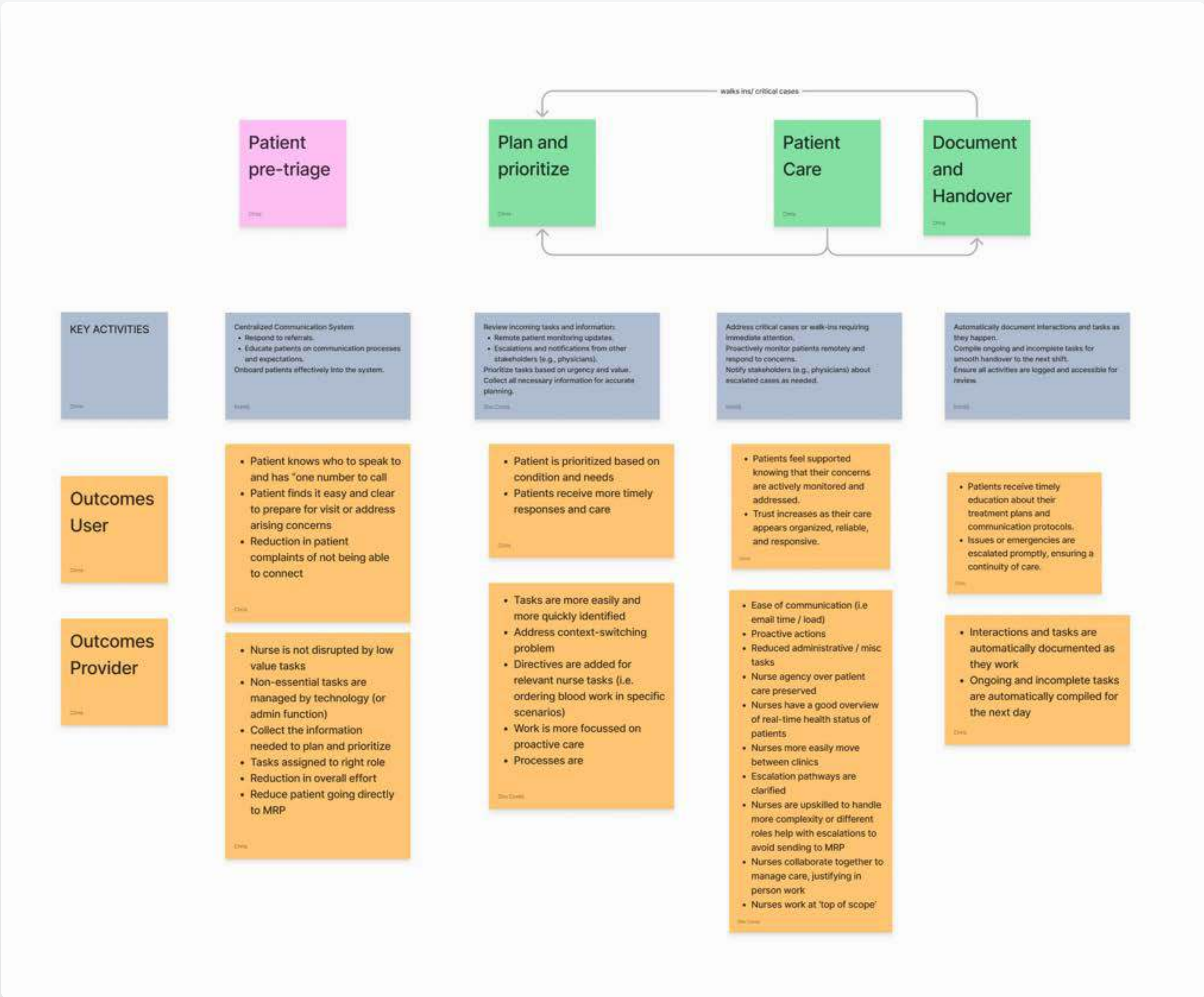
Review of Current Workflows and SOPs

ROCC Future Service Journey Model



Insights from Preliminary Stakeholder Interviews

Our analysis led to a detailed mapping of activities and outcomes:





Learning from the Frontlines

From contextual inquiry to synthesis—uncovering real-world insights into the triage role.

2.1 Phase 2: Contextual Inquiry

We shadowed nurses over the **course of 3–4 shifts across 6 different cancer clinics**. These were not scripted interviews or walkthroughs—we observed the real pace, decisions, and challenges as they unfolded in real time.

During these sessions, we:

1.0

Took detailed notes to capture real-time moments, especially during multitasking and interruptions.

2.0

Captured direct quotes to preserve the language nurses used when describing their experiences, tensions, or frustrations.

3.0

Logged common interruptions—such as phone calls, walk-ins, messages from physicians or allied health, and how nurses prioritized among them.

2.3 Phase 2: How we Analyzed the data

We analyzed our shadowing observations using a deductive approach, organizing what we saw into three main predefined categories:

- 1. Triage Tasks
- 2. Patient Care Tasks
- 3. Out-of-Scope Tasks

Tasks by Clinic							
Search for tools, help, and more (Alt + Q)							
File Home Insert Share Page Layout Formulas Data Review View Help Draw FRED ArcGIS							
Aptos Narrow (...) 9 A^ A^ B I U ab D Merge v General \$€ .0 .00							
15 X ✓ fx							
	A	B	C	D	E	F	G
1		GU	GYNE	Thoracic	Breast	GI	LMT
2							
3	Triage Tasks	1a. Email-related tasks (with physician, care team)	1a. Email-related tasks (physicians and care team):	1a. Email-related tasks (physicians and care team)	1a. Email-related Tasks (Physicians and Care Team)	1a. Email-related tasks (with physician, care team)	1a. Email-related tasks (with physician, care team)
4		Sending clinical updates and patient status reports to physicians	Monitoring resource nurse email inbox	Reviewing and responding to clinical emails	Reviewing and responding to care team emails about patient cases	Triaging and processing inbox emails (mentioned handling 39+ emails)	Nurses forward patient-specific emails to physicians when necessary.
5		Forwarding digital triage requests with screenshots to relevant team members	Coordinating with physicians via email about patient cases and orders	Drafting/sending patient status updates to physicians	Forwarding patient concerns/photos to appropriate specialists (radiation team, medical oncology)	Forwarding appointment changes to relevant team members	Emailing the physician with updates on patient symptoms, treatment adjustments, or test results.
6		Coordinating care plans and treatment modifications through email chains	Sending/receiving imaging requests and results	Including relevant patient identifiers (MRN) in subject lines	Writing detailed patient case summaries for physicians with complete context	Sending patient status updates to physicians	emergency room visits and following up with patients.
7		Organizing email folders and categorizing resolved cases	Communicating with other nurses (including WFH nurses)	Forwarding clinical trial inquiries to appropriate teams	Organizing email inbox (filing completed chains, marking urgent items)	CC'ing relevant team members (GI Clinic, Admin, etc.)	Sorting emails based on urgency and prioritizing which need follow-ups.
8		Sending educational resource requests to the care team	Following up on CCAC communications	CC'ing relevant departments/staff on communications	Coordinating with breast resource nurses via email	Following up on physician responses	and summarizing patient updates for the care team.
9		Coordinating medication changes and treatment plans via email	Monitoring virtual email box for patient document sharing	Email inbox organization (sorting, filing completed cases)	Using group email accounts (not personal) for team communication	Categorizing and filing completed email communications	Checking for CCAC coordinator emails regarding home care and medical orders.
10				Handling handoff tasks via email for next shift	Marking emails for handoff to next day nurse (email tag marking system)	Coordinating with research nurses and trial teams	
11							
12		1b. Phone-related tasks (to patients/family)	1b. Phone-related tasks (to patients/family):	1b. Phone-related tasks (to patients/family)	1b. Phone-related Tasks (Patients/Family)	1b. Phone-related tasks (to patients/family)	1b. Phone-related tasks (to patients/family)
13		Conducting follow-up calls about test results and symptoms	Responding to patient symptom inquiries	Regular checks of triage voicemail	Conducting patient symptom assessment calls	Monitoring voicemail system (averaging 20 calls/day, up to 40 before weekends)	nausea, fatigue, and side effects from treatment.
14		Providing medication education and instructions	Providing discharge instructions to family members	Return calls to patients/family members	Providing medication guidance and education over phone	Returning patient calls for various inquiries	or family members regarding medication concerns.
15		Communicating treatment plan changes	Conducting follow-up calls for post-treatment status	Conducting symptom assessments via phone	Leaving detailed voicemails with callback information	Making outbound calls to confirm appointment changes	Following up with patients after their ER visits to confirm their condition.
16		Calling to schedule/confirm appointments	Delivering test results and explaining implications	Providing guidance on appropriate care pathways	Monitoring voicemail system and checking for new messages	Providing telephone-based patient education	Informing patients about upcoming lab work and reviewing test results over the phone.
17		Providing updates on physician recommendations	Providing patient education during calls	Leaving detailed callback messages	Providing emotional support and reassurance during calls	Conducting symptom assessments via phone	Providing reassurance and symptom management advice for anxious patients.
18		Leaving voicemail messages for unreached	Making physician-initated proactive outreach		Following up on patient status and treatment		

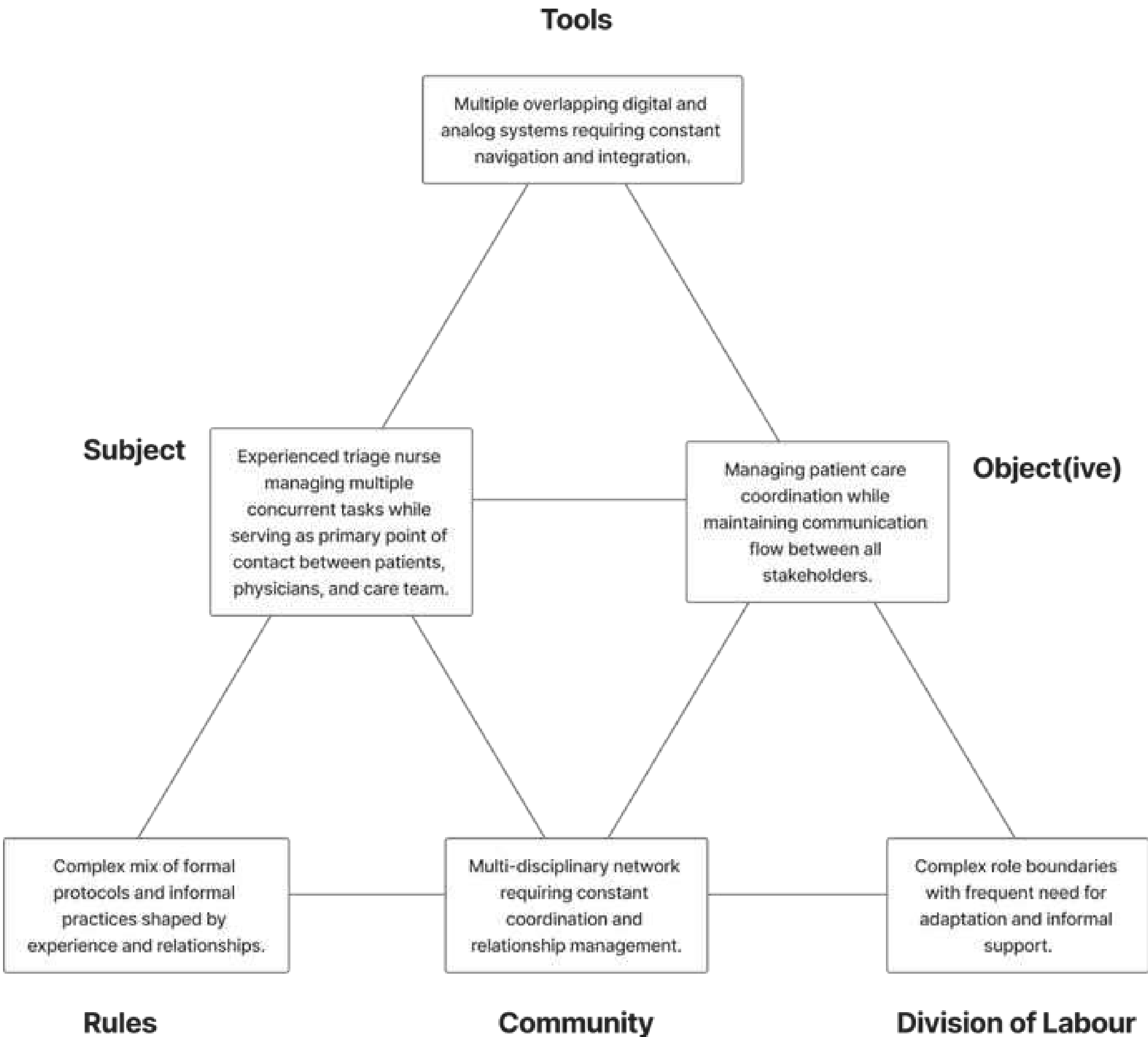
V4 - Workshop Analysis V3 - Current (Feb 18 2025) V3 - WORKING COPY V2 - Old V2 - Working Copy V1 - Old +

Workbook Statistics

2.4 Phase 2: Activity Theory

To organize our observations, we used a framework called **Activity Theory**, which maps a work system:

- Who:** The Nurse (Subject)
- Why:** Their Goal (Object)
- How:** The Tools they use



2.5 Phase 2: What We Learned

Key high-impact issues from your document, grouped and simplified into 6 categories for slide or discussion use:

1.0 *Carepath Burden and Documentation Overload*

Carepath reports aren't integrated with EPIC, forcing triage nurses to manually manage them, often during unpaid overtime.

2.0 *Escalation Delays and Physician Availability*

Nurses face inconsistent escalation pathways and often don't know if a physician is away, in clinic, or in surgery.

3.0 *Walk-ins Disrupting Workflow*

Unscheduled patient walk-ins cause major disruptions, especially when physicians aren't aligned on whether or not to see them

4.0 *Role Misalignment*

There's no shared understanding of what triage is meant to do. Many nurses feel pulled into admin work, coordination, and physician-initiated tasks, with little time for symptom management

5.0 *Misdirected & Ineligible Requests*

Nurses often receive calls or messages that fall outside the triage role—like from admitted patients, those out of country, or requests meant for other teams.



Designing the Future of Triage—Together

From co-design sessions to workshops, we collaborated with nurses to shape the future of triage.

3.1 Phase 3: Workshop with the Working Group

We set out to understand the triage role in action—not just what people say they do, but how that work actually unfolds in real-time.



3.2 Phase 3: Exploring the Tensions for Space

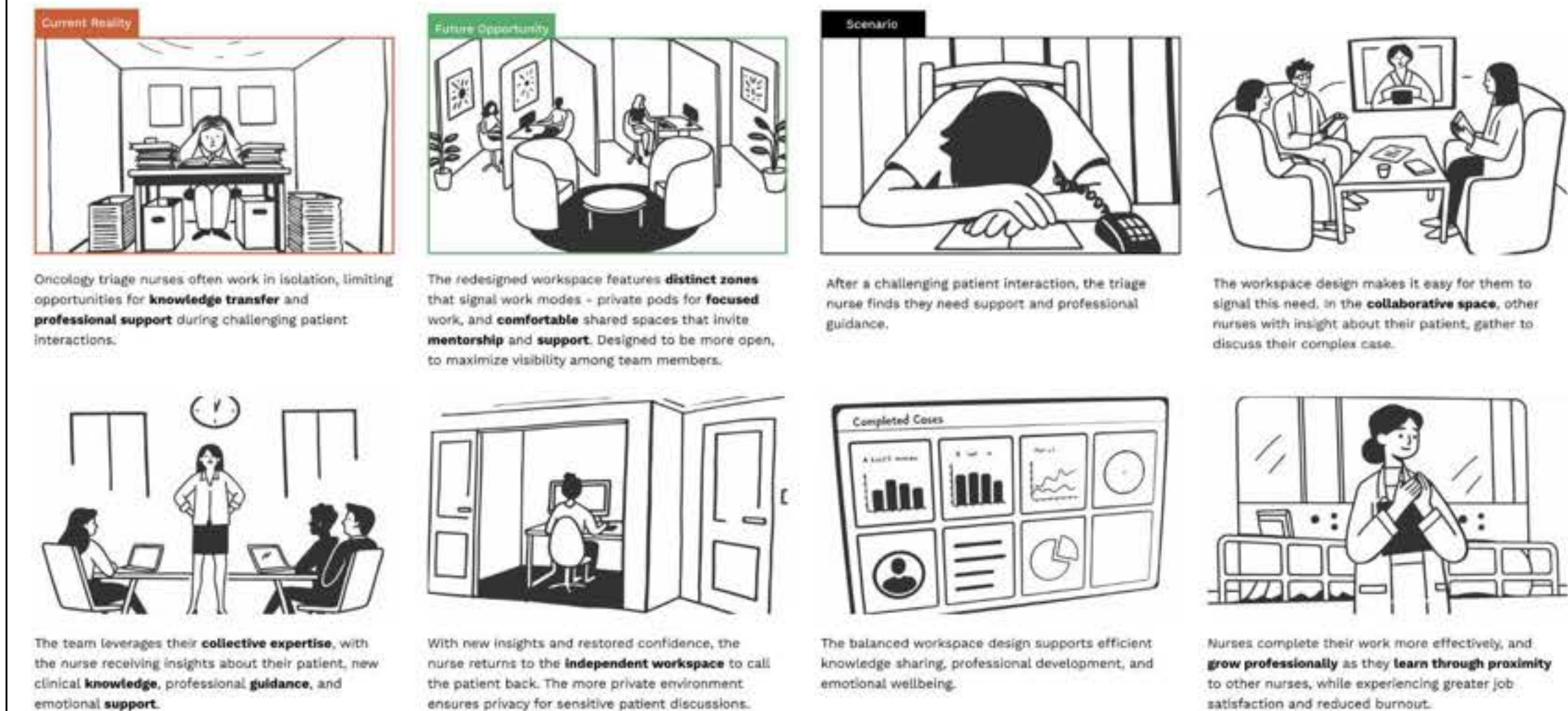
Our framework showed a tension between needing quiet focus (Tools/Rules) and needing team connection (Community).

Scenario 1 (Independence): Sound-proofed pods for focus, privacy, clear patient calls.

Scenario 2 (Collaboration): Hybrid space with pods and shared areas for easy mentorship and support.

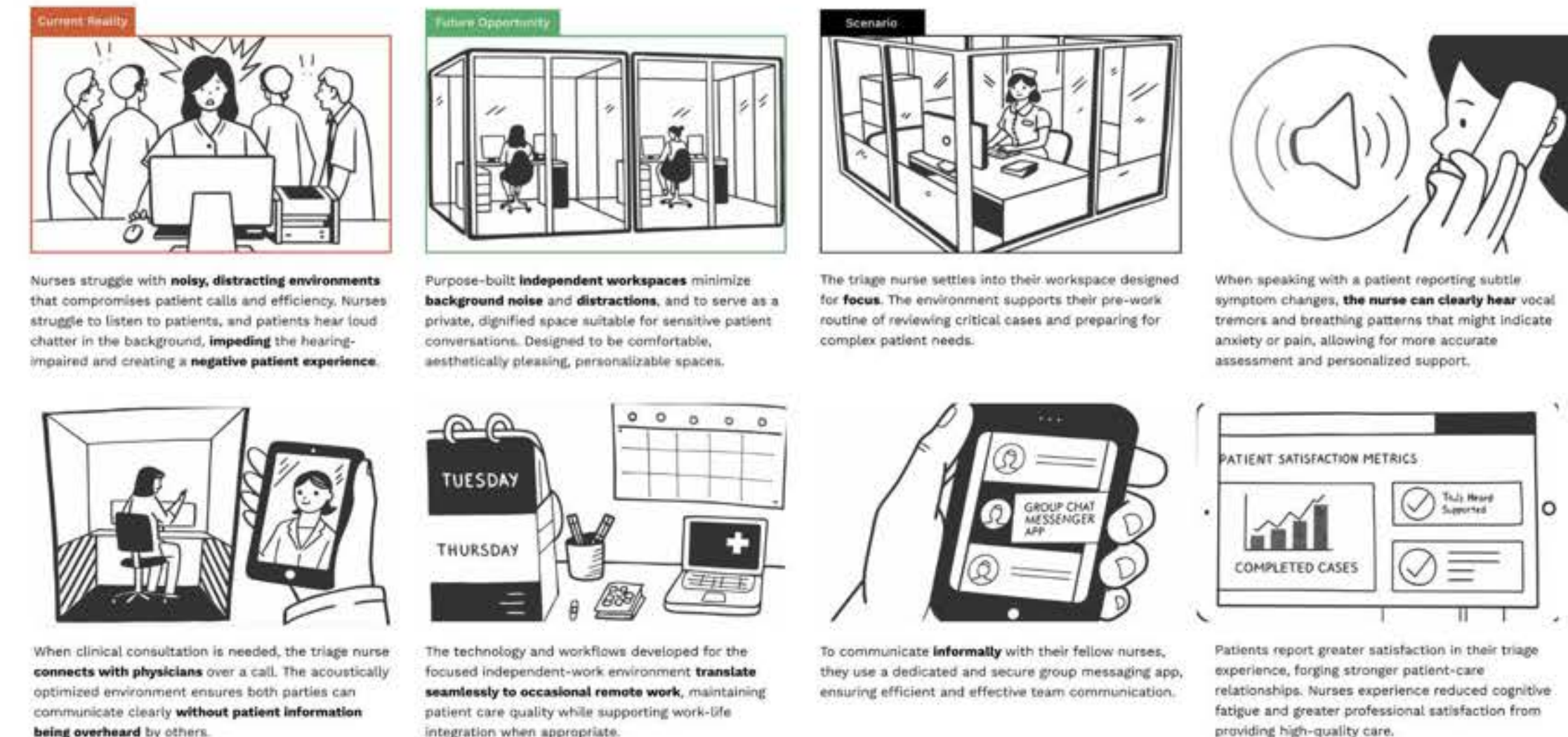
Space-Driven Collaboration

Transforming oncology triage nurses' workspace from isolated environments to a collaborative space, featuring distinct zones for both private work and shared interaction. To foster knowledge sharing and mentorship, camaraderie and support, and ultimately wellbeing and job satisfaction while improving patient care.



Space-Enabled Independence

Purpose-built independent workspaces designed to minimize interruptions and background noise, enabling triage nurses to communicate more clearly with patients, focus on complex cases, and collaborate with colleagues through appropriate technology.



3.3 Phase 3: Exploring the Tensions for Roles

Our framework showed tension between needing clear procedures (Rules/Division of Labour) and needing nurses to use their judgment (Subject/Community).

Scenario 1 (Flexibility): Nurses use their expertise to decide which tasks to handle vs. redirect, supported by smart tools.

Scenario 2 (Guardrails): Automated system filters tasks based on strict roles, protecting nurses' time for core clinical work.

Agency And Flexibility In The Role

Empowering triage nurses with the authority to define and enforce appropriate role boundaries through a redesigned triage that allows them to accept, redirect, or escalate tasks based on their professional judgment. This model addresses power imbalances by giving nurses control over their workflow.

Current Reality



Triage serves as organizational **"dumping-ground"** for misc. tasks, where nurses have little control over workload or capacity limits.

Future Opportunity



The redesigned role empowers nurses with tools to **manage their capacity** while **maintaining visibility** of all requests.

Scenario



The nurse reviews an incoming non-clinical **prescription refill request** decide if they need clinical attention. This prevents critical issues from slipping through the cracks.



The nurse accepts a task that seems administrative, but **requires clinical knowledge**, while redirecting another purely administrative request with **no clinical significance**.



For truly administrative tasks with no clinical significance, the nurse uses a **quick-action** tool to **delegate with a note**: "Routing to pharmacy - clinical assessment complete, no patient concerns".



The system addresses organizational power dynamics by creating **accountability** for all team members, protecting **nurse capacity** while maintaining respectful professional relationships.



Data creates insights about **workflow patterns** and the unique value of **nursing judgment**, helping the organization optimize when and how nurses engage with various task types.



By **directing their own role boundaries**, nurses maintain their valuable central position while ensuring sustainable workloads.

Specific Role Definitions With Guardrails

Implementing a system that automatically filters and routes tasks based on predefined role definitions, creating strict boundaries around the triage nurse role. Designed to maximize efficiency by preventing out-of-scope tasks from reaching nurses in the first place, automatically redirecting them to appropriate teams without requiring nurse review or decision-making.

Current Reality



Nurses often handle non-clinical tasks outside their scope, straining workload, personal time, and job satisfaction.

Future Opportunity

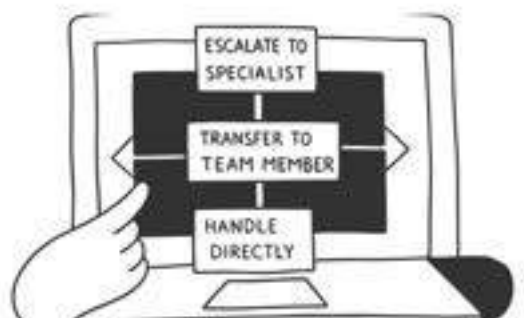


An **automated protocol** enforces task delegation, based on specific role definitions. It serves as a **guardrail** against out-of-scope tasks falling upon nurses, by **identifying** and **redirecting** the request to the appropriate contact.

Scenario



In the morning before the shift begins, a patient request from the voicemail line comes through, re: prescription refill. The system **automatically detects** this request as "belonging" to the pharmacist.



The system prompts the nurse to triage or escalate tasks, ensuring they go to the right person or resource.



Throughout the day, the nurse reviews digital triage requests. **Automation filters** non-essential tasks, ensuring only critical ones remain.



Clear boundaries let nurses focus on essential care, shielding them from non-clinical interruptions.



AI-powered filtering spots admin requests with clinical needs and routes them to nurses with context —ensuring safety without slowing things down.



Clear boundaries and protocols **prevent avoidable workload**, while demanding team-wide accountability. Enabling nurses to concentrate on higher value, more **proactive** oncology nursing activities.

3.4 Phase 3: Exploring the Tensions for Tools

Our framework highlighted the Tools nurses use and the tension between tech helping vs. hindering their goals (Object).

Scenario 1 (Enhancement): AI works in the background – transcribing voicemails, drafting notes, pulling info – freeing nurses for human connection.

Scenario 2 (Automation): AI handles most initial patient contact and routine tasks; nurses supervise and handle complex escalations.

Disclaimer: These scenarios are purely speculative, drafted for the purpose of facilitating a co-design workshop, and do not represent concrete plans or proposals.

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Tech Enabled Autonomous Triage

Advanced AI systems completely transform oncology triage by autonomously handling patient communications, gathering clinical data, and resolving routine matters, fundamentally shifting the nurse's role from reactive responder to strategic clinical supervisor.

Current Reality



In triage, nurses constantly react to **overwhelming** communication volume across **fragmented** systems.

Future Opportunity



The **AI Triage System** serves as the **first point of contact** for all patient communications, responding to calls, conducting initial clinical assessment and information gathering using best practice protocols.

Scenario



During patient calls, the AI gathers clinical data through **natural conversation** while simultaneously **documenting** the interaction in EPIC, eliminating both intake and documentation burden.



AI resolves most of the triage volume **autonomously** - scheduling low-risk follow-up appointments, sending materials/forms, explaining simple medications, addressing billing, and arranging refills **without nurse involvement**.



Nurse role transforms from **responder** to **supervisor**. With AI handling routine matters, nurses monitor dashboards of pre-triaged cases, focusing solely on situations requiring **human clinical judgment**.



AI **escalates** serious cases with **full patient context** and completed assessment data, enabling nurses to immediately focus on clinical decision-making rather than information gathering.



For complex cases, nurses provide **expert judgment** while AI **generates documentation**, prepares orders, and creates follow-up actions in real-time, requiring only quick verification.



The AI system **transforms** triage operations: streamlining workflows, increased job satisfaction, 24/7 immediate patient responses.

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Digitally-Enhanced Human Connections

Subtle AI systems work in the background to handle documentation and administrative tasks, maximizing the nurse's capacity for direct patient interaction and fostering human relationships while still leveraging technology to enhance clinical care.

Current Reality



Triage nurses currently **struggle to balance** administrative burden, which often takes precedence over personalized care, limiting time for meaningful patient communication.

Future Opportunity



An intelligent AI assistant **transcribes** and **analyzes** patient voicemails, highlighting concerns, issues, and emotional cues before the nurse initiates contact, enabling quick and prepared responses.

Scenario



The AI **prioritizes** and **categorizes** patient and physician requests, ensuring nurses address the most clinically urgent matters first while maintaining complete oversight of all patient needs.



During a patient call, the **context-aware system** retrieves relevant clinical info precisely when needed, **eliminating time-consuming search** to allow nurses to provide immediate, informed responses.



System provides **real-time clinical recommendations** based on symptom patterns, medical history, and best practices. **Evidence-based** recommendations appear in the nurse's view only.



After the call ends, comprehensive clinical **documentation** is automatically **generated** from the conversation, reducing documentation time while ensuring thorough, accurate records.



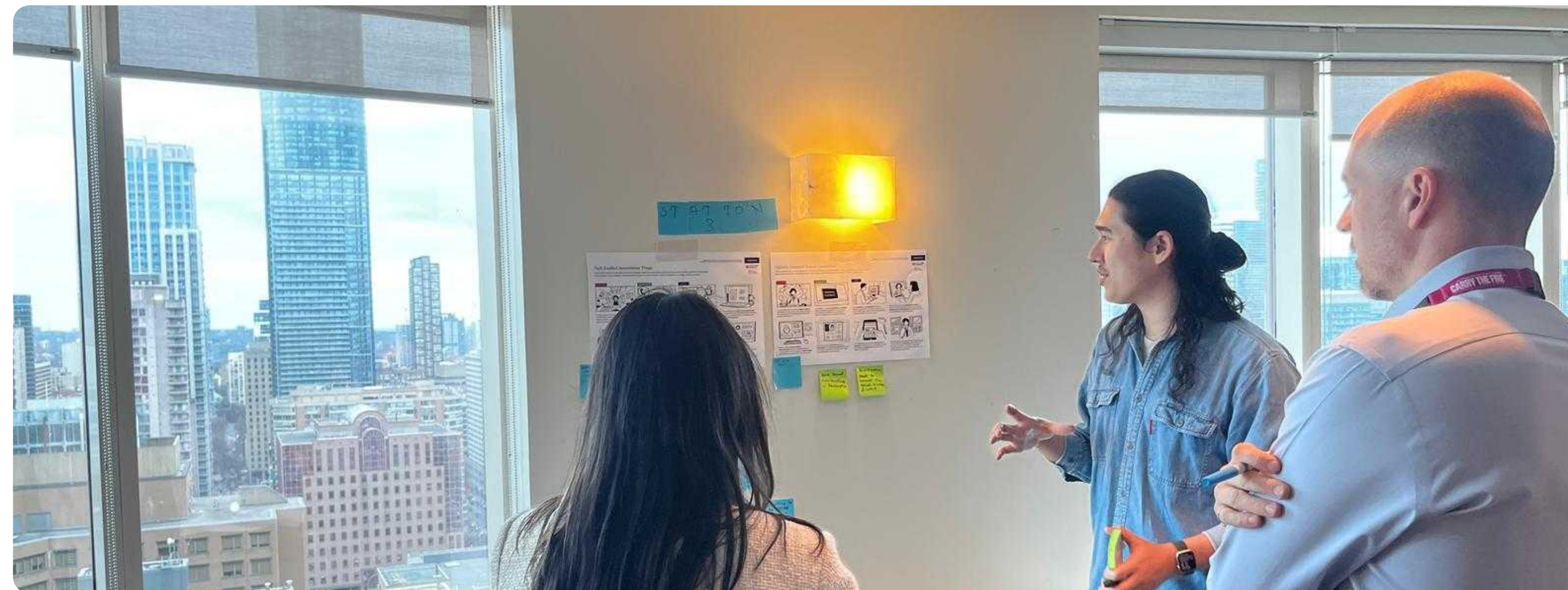
The intelligent assistant creates **tailored** patient **education** materials based on conversation content, delivering highly **personalized** guidance without additional nurse effort.



By handling admin and documentation tasks invisibly in the background, **AI transforms** the triage nurse role, with more **time** to dedicate to meaningful patient interactions.

3.5 Phase 3: Co-design with working group

We facilitated a co-design session with the working group to explore and build alignment around key tensions in the triage role.



3.6 Phase 3: Co-design with the Nurses

We held a similar co-design session with triage nurses to see if the same tensions resonated in practice and to gather input on what felt accurate, missing, or needed change.



3.7 Phase 3: What We Heard from Nurses

Key challenges shared by nurses during co-design sessions, highlighting the pain points shaping their day-to-day triage experience.

1.0

Carepath Burden and Documentation Overload

Carepath reports aren’t integrated with EPIC, forcing triage nurses to manually manage them, often during unpaid overtime.

2.0

Escalation Delays and Physician Availability

Nurses face inconsistent escalation pathways and often don’t know if a physician is away, in clinic, or in surgery.

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Walk-ins Disrupting Workflow

Unscheduled patient walk-ins cause major disruptions, especially when physicians aren’t aligned on whether or not to see them

4.0

Role Misalignment

There’s no shared understanding of what triage is meant to do. Many nurses feel pulled into admin work, coordination, and physician-initiated tasks, with little time for symptom management

5.0

Misdirected & Ineligible Requests

Nurses often receive calls or messages that fall outside the triage role—like from admitted patients, those out of country, or requests meant for other teams.



Sketching the Future of Triage

Our designs brought together what we heard, imagined, and prioritized throughout the research and co-design process.

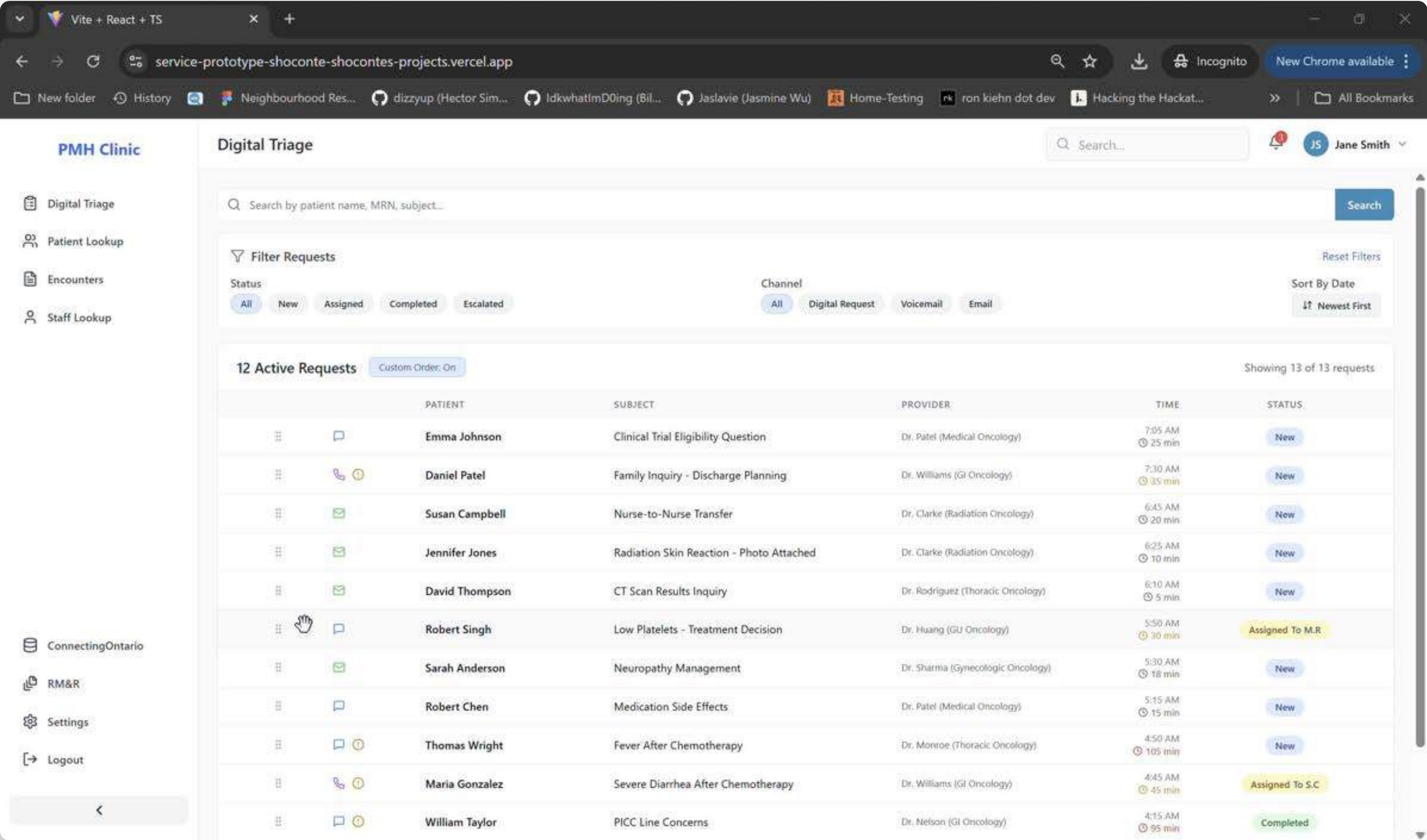
4.1 Phase 4: Nurse Dashboard

01. Voice Transcription

02. Smart Documentation

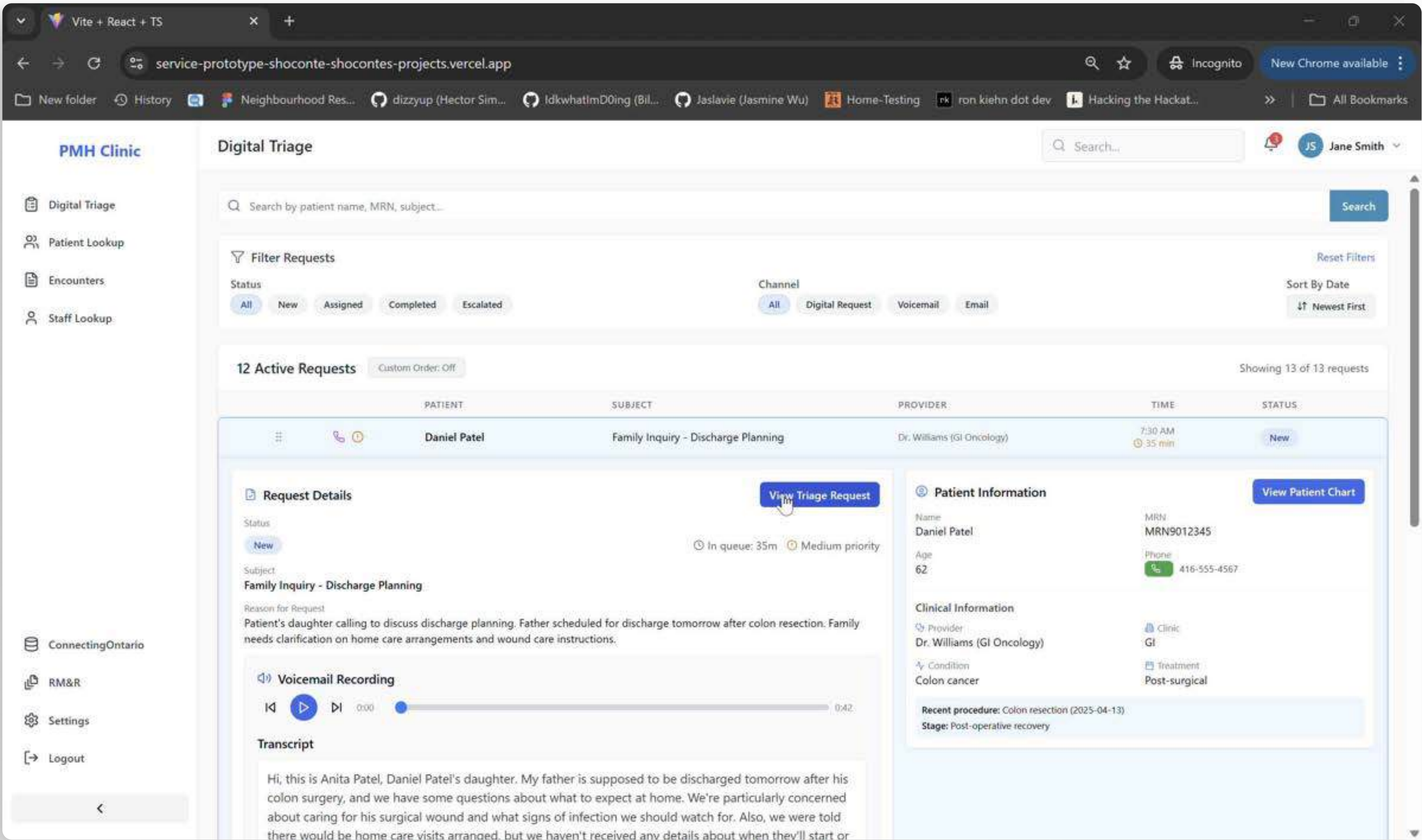
03. AI Recommendations

04. Request Management



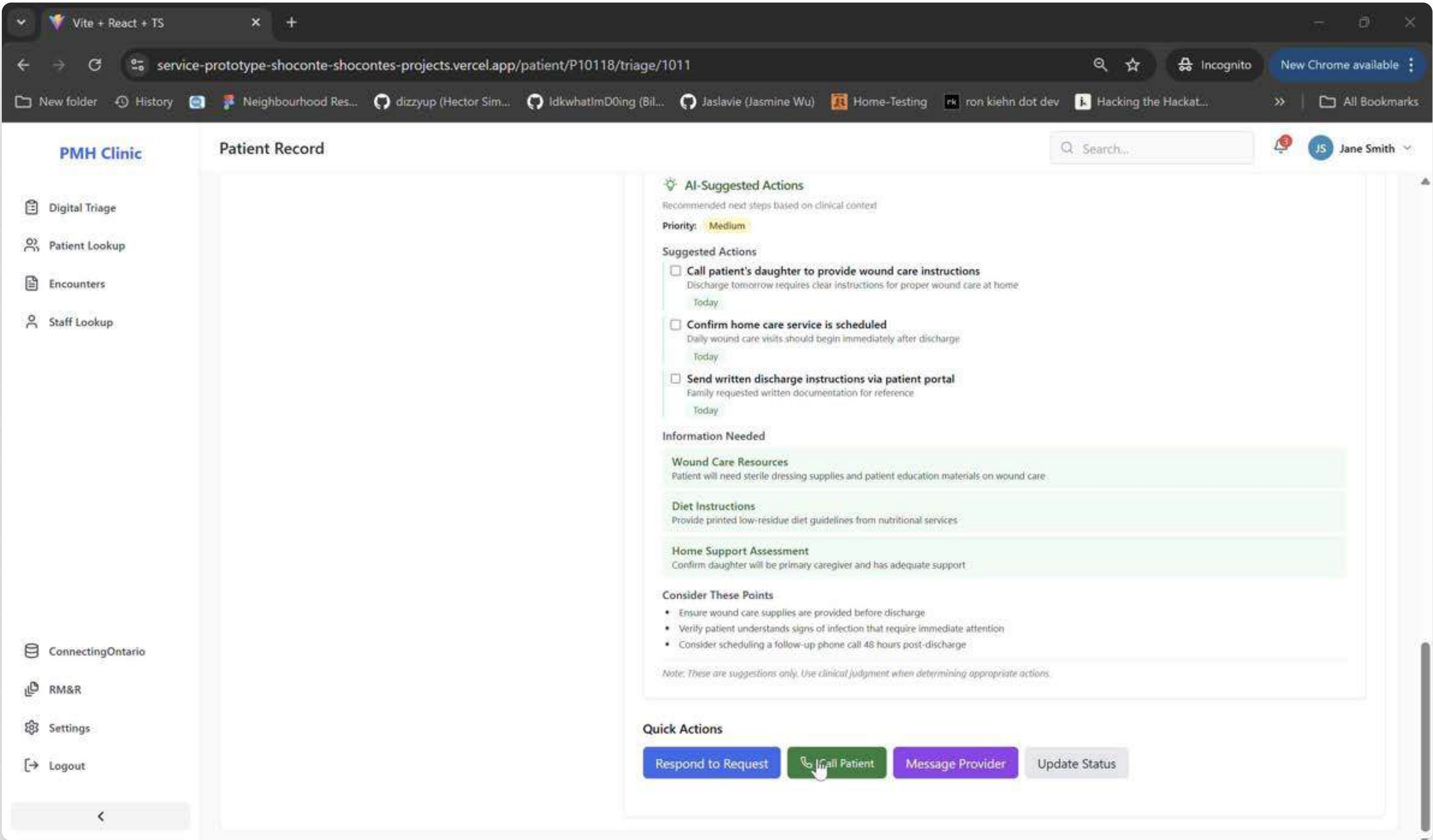
4.2 Phase 4: Nurse Dashboard

- 01. Voice Transcription
- 02. Smart Documentation
- 03. AI Recommendations
- 04. Request Management



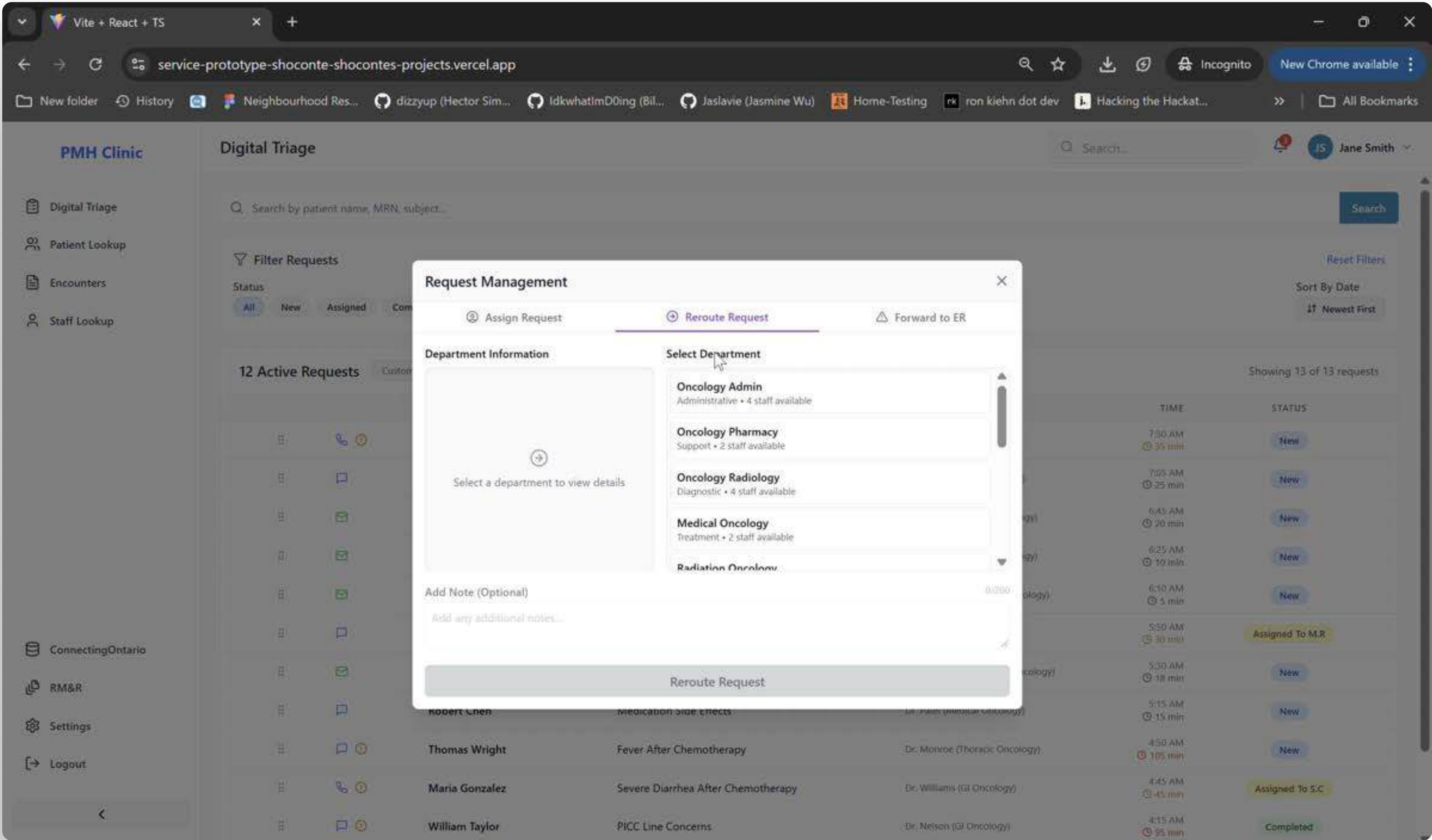
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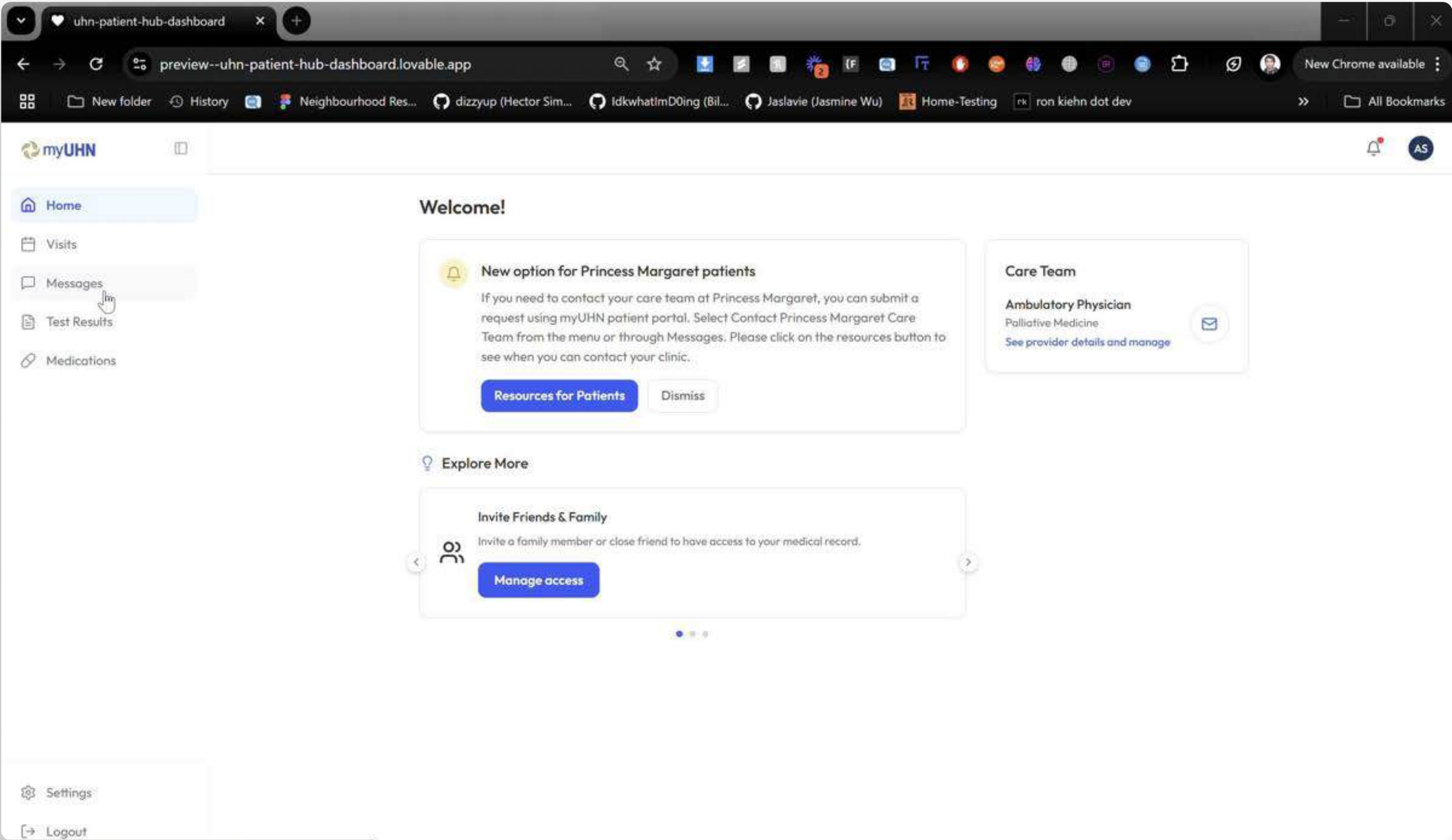
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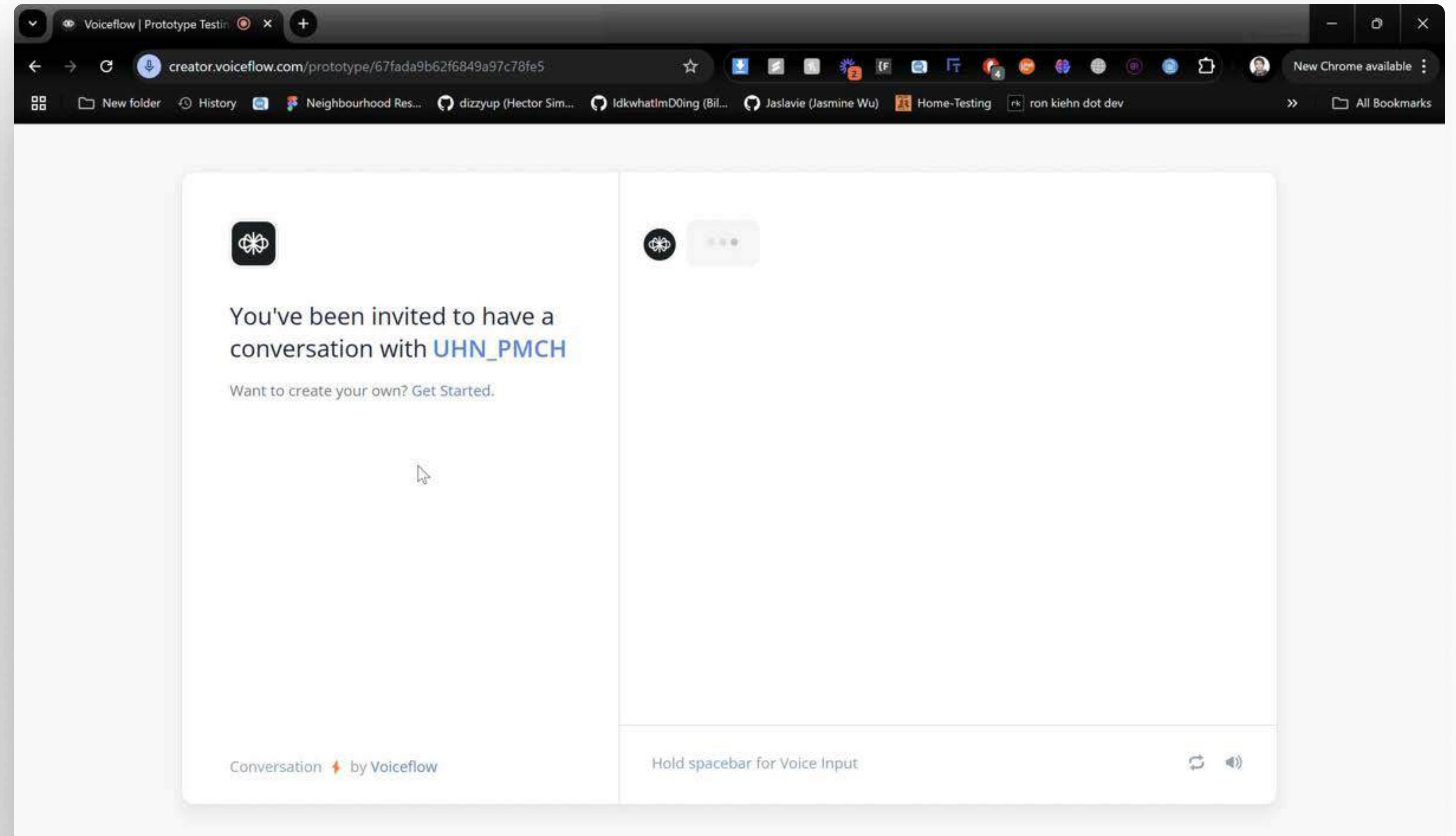
4.5 Phase 4: Patient Facing Portal

01. Request Status



4.6 Phase 4: Conversational Agent

01. Voice Agent



Key Learnings: Real moments, real tension, real learning—here's what stuck with us along the way.

1.0 *Co-Design Builds Buy-In and Better Ideas*

Designing with nurses, not for them, helped validate key tensions, sparked new directions, and ensured that the proposed features actually resonate with frontline needs.

2.0 *“Good Enough” Research > “Perfect” Research*

We prioritized capturing real, actionable insights from nurses over following a rigid research framework. Shadowing, informal conversations, and co-design gave us a deeper understanding of the triage role than a purely traditional approach would have.

3.0 *Tensions Are a Better Starting Point Than Solutions*

Instead of jumping straight into fixes, framing our work around tensions—like flexibility vs. accountability—helped us uncover deeper system dynamics. It opened up richer conversations, encouraged reflection, and led to more grounded, sustainable design directions.