

## **BMI548 Term Project Report**

### **Description**

The application we are trying to develop looks at MyChart and its lack of a referral option in its menu offerings. Especially as many people who use the MyChart system may receive referrals from their physicians to see a specialist, in many instances, these referrals are left ignored or forgotten. Patients usually have to call into the physician's office in order to get an update on their referral but by implementing this system into MyChart directly, it takes away the hassle of a patient not knowing where their referral is. This application would allow patients to understand and see what step of a process their referral is such as "just sent out", "being reviewed by specialist physician", "approved", etc. In this case, it would be easier for the patients to know what their referral status is.

### **User Persona and Use Case**

User Persona:

Emily Turner

#### **Demographics**

Age: 36

Occupation: Marketing Manager

Location: Suburban Area

Tech Savviness: Moderate

Health Status: Recently diagnosed with a chronic condition requiring specialist care

#### **Goals**

Stay informed about her referral status without needing to call multiple offices.

Understand what each status means and what she needs to do next.

Quickly access contact information for the clinic or specialist when issues arise.

#### **Frustrations**

Has previously experienced confusion with lost or delayed referrals.

Finds it time-consuming to repeatedly call her primary care provider or the specialist's office for updates.

Wishes MyChart was more transparent about referral details.

#### **Needs**

Clear, up-to-date referral information with status updates and explanations.

Notifications about changes or actions needed.

Contact information to resolve issues directly, without being redirected multiple times.

#### **Use Case:**

Display each referral with the following information:

1. Referral details
2. Current status and estimated time to completion
3. Remaining steps
4. Referral completed (post-visit) and info sent to referring MD

Update in real time to reflect changes or actions on the referral and timeline

Provide appropriate contact info to referring or receiving office based on stage

1. Display insurance contact info if pending insurance authorization

Report referral issues

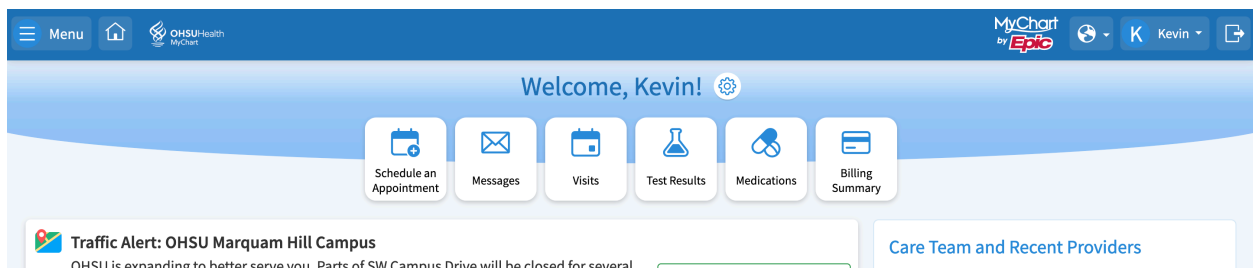
Indicate any required patient actions

### Current Implementation

- MyChart does not currently have a referral tracking interface.
- Patients must rely on phone calls to clinics for updates, causing frustration and inefficiency.
- No centralized location for referral status updates, historical actions, or estimated completion times.

### Shortcomings

- Lack of Transparency: Patients are unaware of referral progress, leading to unnecessary inquiries.
- Increased Administrative Burden: Clinics receive frequent calls from patients seeking referral updates.
- Confusion and Delays: No system for tracking lost referrals or providing reasons for delays.
- No Direct Communication Links: Patients lack an easy way to reach referring and receiving providers.



Menu

Search the menu

Find Care

Schedule an Appointment

E-Visit

View Care Team

Immediate Care Virtual Visit

Communication

Messages

Ask a Question

Letters

My Record

COVID-19

Visits

Test Results

Medications

Manage My Pharmacies

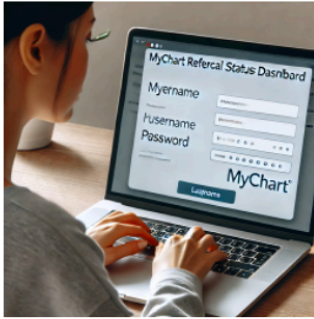
Health Summary

Plan of Care

Preventive Care

Questionnaires

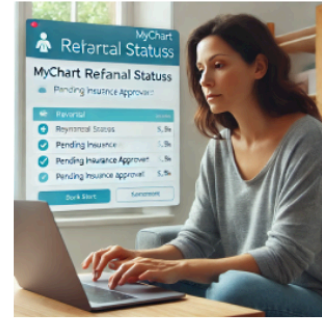
Storyboard



Emily receives a cardiology referral from her primary care physician and logs into MyChart to view more details.



She uses the referral navigator dashboard to confirm that the referral has been received by the cardiology clinic.



Three weeks later, Emily logs back into MyChart to see that the referral has been processed but is pending cardiologist approval.



She uses the referral dashboard to view contact information for the cardiology clinic.



She calls the cardiology clinic and provides information needed to expedite the approval. She successfully schedules an appointment.



Emily attends her cardiology appointment and receives timely care.

## Prototype Overview

With the created prototype, patients are able to navigate to the MyChart menu or click on the “View referral” button on the home page to navigate to the referral page. On this page, the users are able to click on the individual referrals to open up some more information about the referral such as status details and referral/physician contact information. The users are able to also sort the referrals by referral status, date ordered, ordering clinician last name, and receiving clinician last name.

mychartweb.ohsu.edu

Menu

OHSA Health  
Patient

McOscar  
MyChart

Taylor

Welcome, Taylor!

Schedule an Appointment

Messages

Visits

Test Results

Medications

Billing Summary

Referral Ordered

Referral to Cardiology

Ordered by Mark Scout, MD PhD on February 13, 2025

View referral

Traffic Alert: OHSU Marquam Hill Campus

OHSU is expanding to better serve you. Parts of SW Campus Drive will be closed for several months. Please allow for extra travel time if you use this route.

Dismiss

After Visit Summary

Feb 13 Thu

OHSU South Waterfront Primary Care

with Mark Scout, MD PhD

View summary

View notes

You can now view details for a requested CK from your visit with Ajay Wanchu. Learn how to prepare for this visit, including what documents you might need to bring.

View instructions

View all (20)

You have 2 prescriptions with refills due soon.

Request refills

Dismiss

Explore More

For non-emergency illness or injury needing care today or tomorrow

OHSU Health has options to get care now, in person or virtually. Choose which option is right for you.

Learn More

Price Transparency

Wondering how much a cost? Get an estimate fr

Care Team and Recent Providers

Mark Scout, MD PhD

Primary Care Provider





























Family Medicine

Stanley Milchick

Nurse Practitioner

Family

See provider details and manage

| Menu  |                               |
|---|-------------------------------|
|    | Search the menu               |
| <b>Find Care</b>  |                               |
|    | Schedule an Appointment       |
|    | E-Visit                       |
|    | View Care Team                |
|    | Immediate Care Virtual Visit  |
| <b>Communication</b>  |                               |
|    | Messages                      |
|    | Ask a Question                |
|    | Letters                       |
| <b>Eyecare Center</b>   |                               |
|    | Eyeglass Prescription         |
| <b>My Record</b>  |                               |
|    | COVID-19                      |
|    | Visits                        |
|    | Test Results                  |
|    | Medications                   |
|    | Referrals                     |
|    | Health Summary                |
|    | Plan of Care                  |
|    | Preventive Care               |
|    | Questionnaires                |
|    | Upcoming Tests and Procedures |
|    | Medical and Family History    |
|    | Health Reports                |
|    | Growth Charts                 |
|    | Document Center               |
|   | Seizure Tracker Dashboard     |
| <b>Billing</b>  |                               |
|  | Billing Summary               |
|  | Estimates                     |
| <b>Insurance</b>  |                               |
|  | Insurance Summary             |
| <b>Sharing</b>  |                               |
|  | Sharing Hub/Record Request    |
| Display a menu anywhere   |                               |

mychartweb.ohsu.edu

FCJustAskEveSmart WebFreedomNotebookLMResearchPersonalOHSUMaster'sFastMesh

MenuOHSU HealthMyChartTaylor

Referrals

Schedule an appointment

SortStatus - In Process first (Default)

In Process

Referral to OHSU Cardiology

Referral Status

Awaiting referral acceptance by destination provider

Learn more

Completed

Referral to OHSU Hematology

Referral Status

Referral complete

Learn more

Your completed appointment

Apr 08 Mon

OHSU Hematology Clinic at CHH1

Jim Smith, MD

View visit details

Referral to OHSU Dermatology

Referral Status

Referral complete

Learn more

Your completed appointment

Aug 30 Tue

OHSU Dermatology Clinic at CHH1

Linda Chang, MD

View visit details

Referral to OHSU Gastroenterology

Referral Status

Referral complete

Learn more

Your completed appointment

Jun 09 Wed

OHSU Gastroenterology Clinic at CHH1

Matt Lublick, MD

View visit details

Related Links

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MenuOHSU HealthMyChartTaylor

Referrals

Schedule an appointment

SortStatus – In Process first (Default)

In Process

Referral to OHSU Cardiology

Referral Status

Awaiting referral acceptance by destination provider

Learn more

Your referral is not yet ready to schedule online. For questions, contact the clinic to which you are being referred below.

Status Details

Ordered February 13, 2025

Last updated February 17, 2025

Updated by Referral Coordinator

Referred To

OHSU Cardiology Clinic at CHH1

3303 S Bond Ave 7th Floor

Portland, OR 97239

503-494-1775

Referring Provider

Mark Scout, MD PhD

OHSU South Waterfront Primary Care at CHH1

Portland, OR 97239

503-494-8573

Request phone call follow up from referral coordinator

Request to modify or cancel referral

Completed

Referral to OHSU Hematology

Referral Status

Referral complete

Learn more

Your completed appointment

Apr 08 Mon

OHSU Hematology Clinic at CHH1

Jim Smith, MD

View visit details

Referral to OHSU Dermatology

Referral Status

Referral complete

Learn more

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Referral to OHSU Gastroenterology

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MenuOHSU HealthMyChart

MyChart by EpicTaylor

Referrals


Schedule an appointment

Sort  
Status – In Process first (Default)

In Process

Referral to OHSU Cardiology


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Awaiting referral acceptance by destination provider  
[Learn more](#)

Completed

Referral to OHSU Hematology


Referral Status

Referral complete  
[Learn more](#)

Your completed appointment  
Apr 08 Mon  
OHSU Hematology Clinic at CHH1  
Jim Smith, MD  
[View visit details](#)

Referral to OHSU Dermatology


Referral Status

Referral complete  
[Learn more](#)

Your completed appointment  
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Referral to OHSU Gastroenterology

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Jun 09 Wed  
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MenuOHSHSMyChartMyChart Taylor

Referrals

Schedule an appointment

SortStatus – In Process first (Default)Status – In Process first (Default)Status – Completed firstDate OrderedOrdering Clinician (last name)Receiving Clinician (last name)Learn more

Related LinksDocument Center

Completed

Referral to OHSU Hematology

Referral Status

Referral complete

Learn more

Your completed appointment

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Your completed appointment

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mychartweb.ohsu.edu

FC JustAskEve Smart Web Freedom NotebookLM Research Personal OHSU Master's FastMesh

Menu OHSU Health MyChart Taylor

## Referrals

Schedule an appointment

Sort

Status – Completed first

Status – In Process first (Default)

✓ Status – Completed first

Date Ordered

Ordering Clinician (last name)

Receiving Clinician (last name)

Learn more

Your completed appointment

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In Process

Referral to OHSU Cardiology

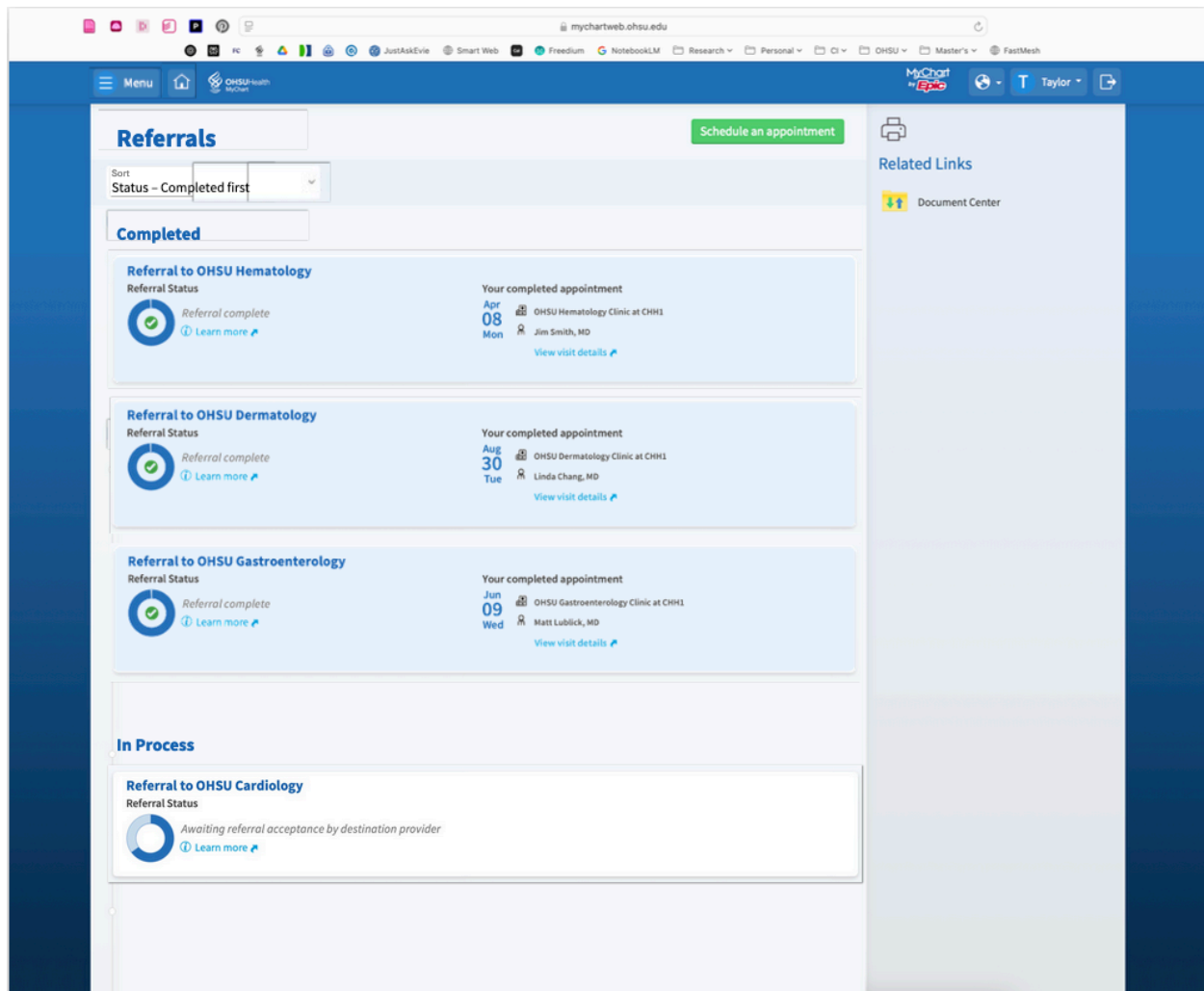
Referral Status

Awaiting referral acceptance by destination provider

Learn more

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The Referral Navigator is a MyChart-integrated feature that allows patients to:

- View new referrals directly from the homepage.
- Access referral details including status updates.
- Sort and filter referrals based on status, date, and provider.

### Prototype Evolution

- The initial storyboard proposed a simplified tracking system, but the prototype evolved to include:
  - Sorting options for better organization.
  - Clickable expanded views for in-depth referral details.
  - Direct contact links for improved communication.
- Changes were based on feedback emphasizing usability and clarity.

## **Design Decisions**

- Integration with MyChart: Ensures seamless adoption.
- Expandable Referral Cards: Balances simplicity and detail.
- Sorting and Filtering Options: Enhances usability for users with multiple referrals.

## **Influencing Design Principles**

- Consistency: Mirrors existing MyChart functionalities.
- User Control & Freedom: Provides navigation flexibility.
- Minimalist Design: Ensures clarity for tech-limited users.
- Accessibility: Supports high contrast, large fonts, and language options for diverse users

## **Evaluation Process**

The prototype was evaluated by another team for usability and heuristic violations. Three members from a different team went through the prototype and tried to use it as though they were a patient using the Referral navigator on MyChart themselves. Some feedback from the evaluations that changed the prototype including adjusting the modify/cancel referral button to one that says “request to modify/cancel referral” so that the individual could get in contact with the prescribing physician to discuss their concerns. Another example of a feedback that changed the prototype included specifying who the “Request a phone call” button was referring to and keeping the referral statuses consistent when collapsing and expanding a referral (error on our end). Some other feedback were out of scope and were not implemented into the updated prototype.

## **Uncertainty in Design**

### **Potential Issues**

- Sorting Options Complexity: Users may struggle with filtering choices.
- Referral Status Descriptions: Some terminology may still be unclear.
- Adoption by Older Users: Low-tech patients may need guidance.

### **Addressing Uncertainties**

- Additional user testing to refine unclear areas.
- Incorporating tooltips for status descriptions.
- Offering training materials for less tech-savvy users

## **Evaluation Plan**

- Goal:
  - Assess usability, clarity, and effectiveness of the Referral Navigator.
- Evaluation Type:
  - Usability testing and surveys to gather user experience insights.
- Target Users:
  - Patients with recent referrals.
  - Caregivers managing multiple referrals.
  - Healthcare providers interacting with the system.

- Limitations:
  - Limited sample size.
  - Feedback may be subjective.
  - Need for additional iterations based on real-world use.
- Analysis and Usage:
  - Collect quantitative and qualitative feedback.
  - Identify common pain points and refine interface elements

## **Future Directions and Conclusion**

### Future Enhancements

- AI-based referral prediction for estimated completion times.
- Integration with insurance for real-time coverage status.
- Mobile app notifications for real-time updates.

### Conclusion

The Referral Navigator addresses a critical gap in MyChart, improving transparency, efficiency, and user experience. While refinements are ongoing, early feedback suggests a strong potential for reducing patient frustration and clinic workload.