

CareEase × IU

A Companion App for Dementia Caregivers



Team 04

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The team



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Project Manager



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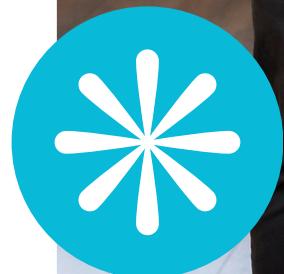
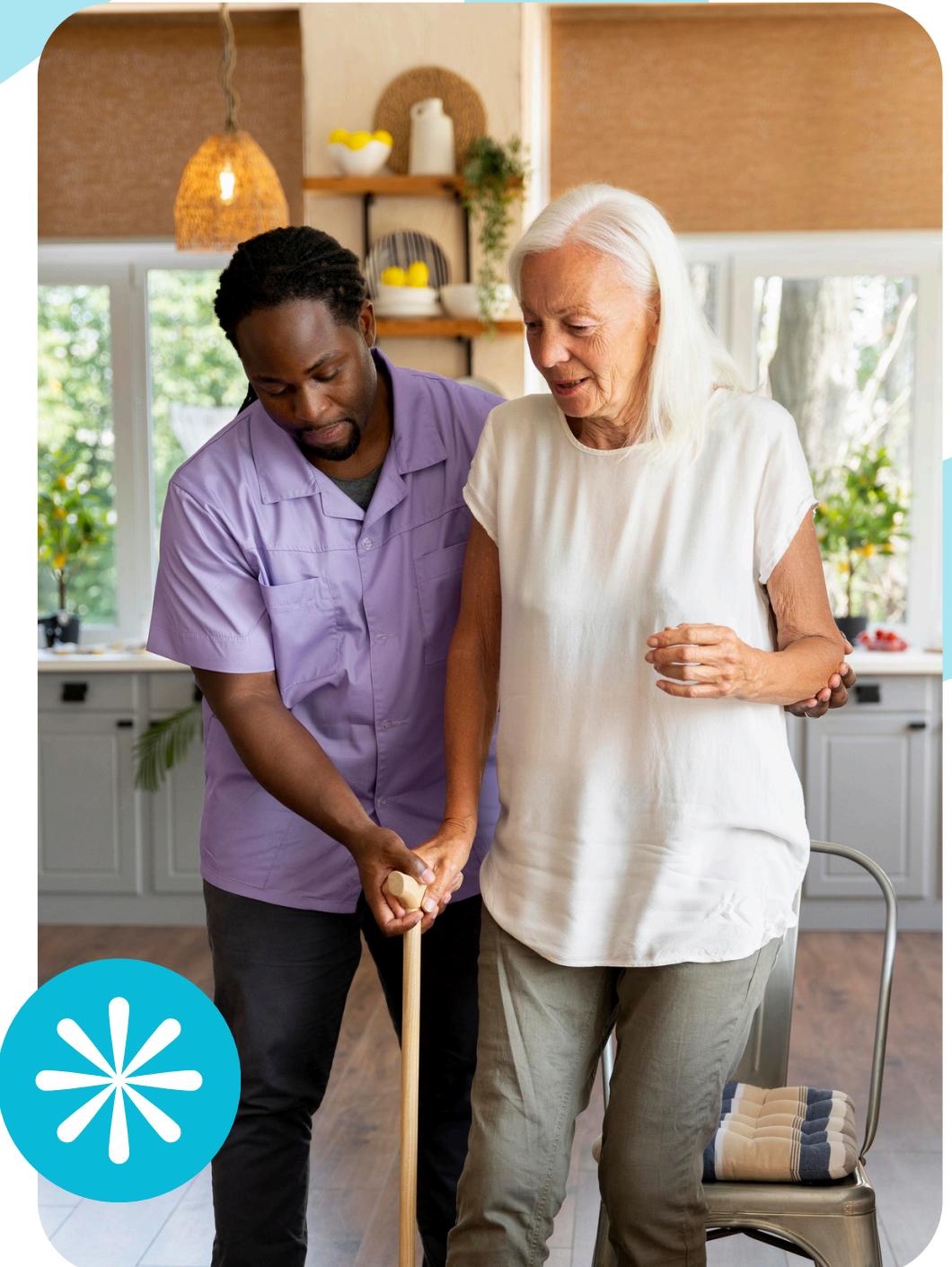
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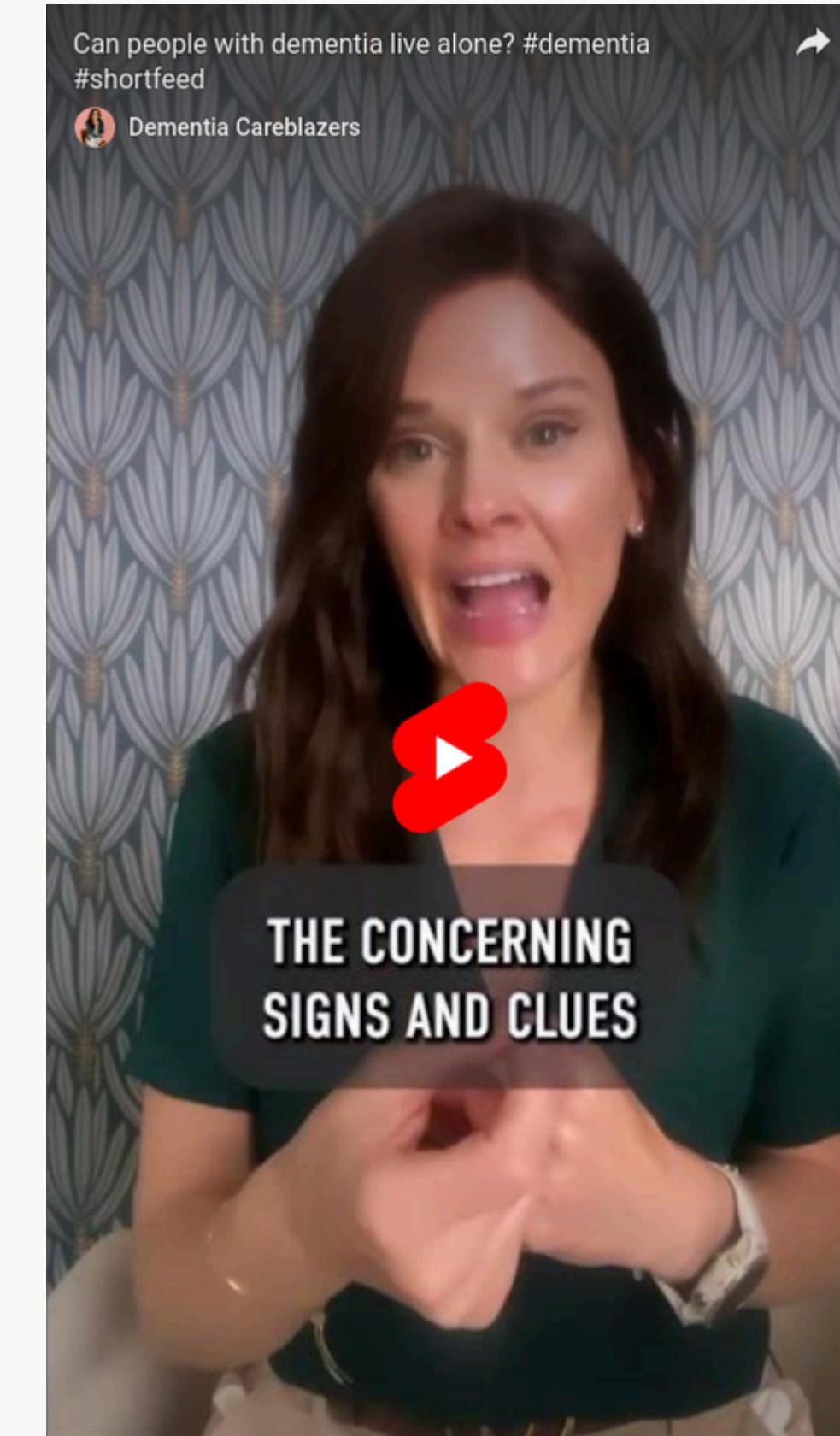
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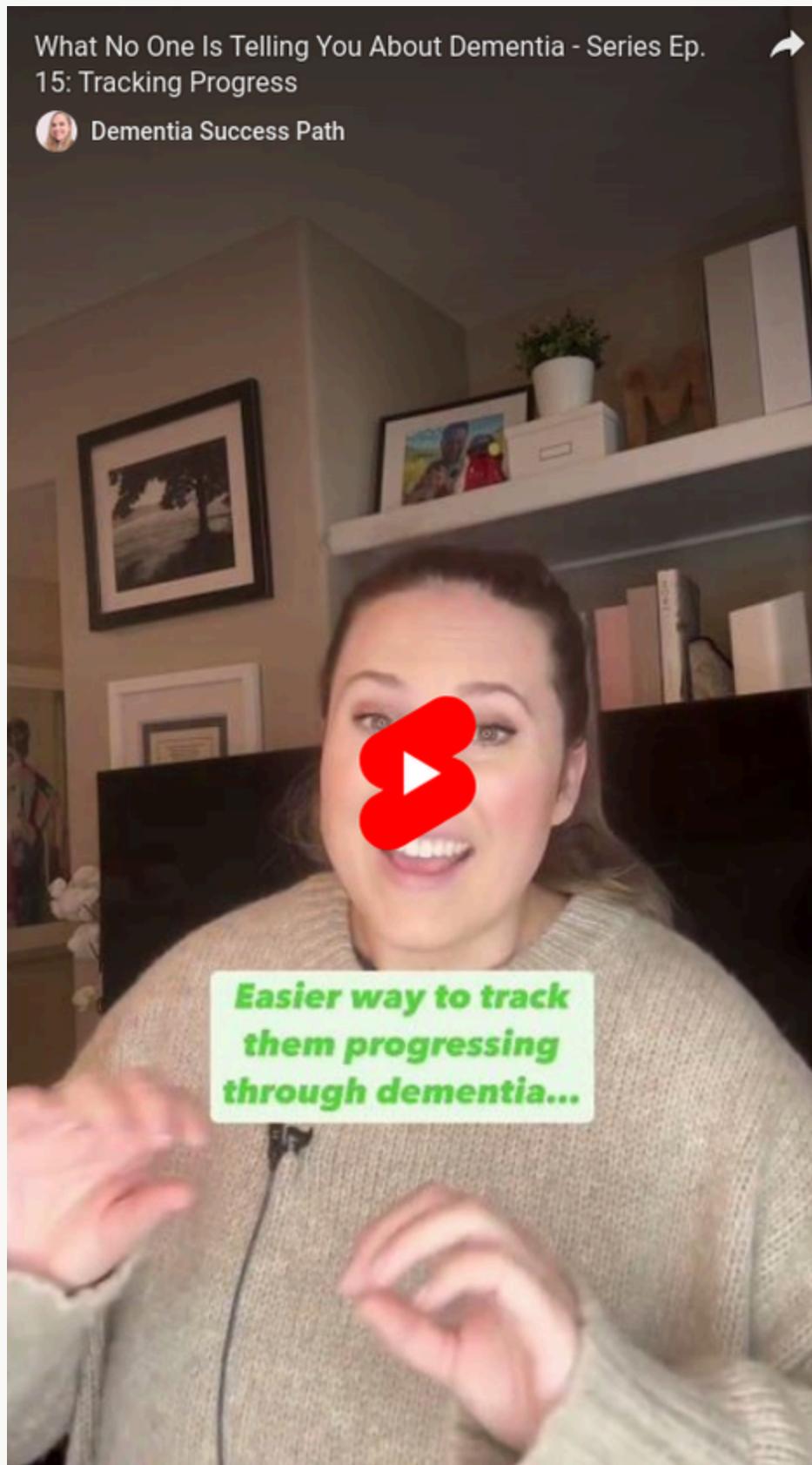


Project Overview



why this niche?

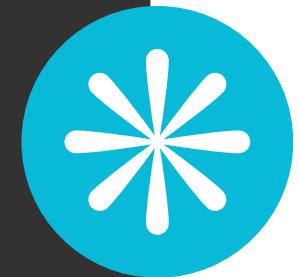




What is CareEase?



CareEase is a mobile application designed to support dementia caregivers by simplifying the management of patient care tasks such as medication schedules, doctor appointments, emergency contacts, and record-keeping.



The project includes;

- Research
- Design
- Development Planning
- Usability Testing
- Project Hand-off

Objectives

Build

a simple,
reliable app
for dementia
caregivers

Enable

easy tracking
of medications
and
appointments

Design

a secure
dashboard for
health records
and
emergencies

Validate

usability
through
caregiver
testing

Deliver

a polished
prototype and
full project
documentation

Acceptance Criteria



Completed core features: drug tracking, appointment booking, and record storage.

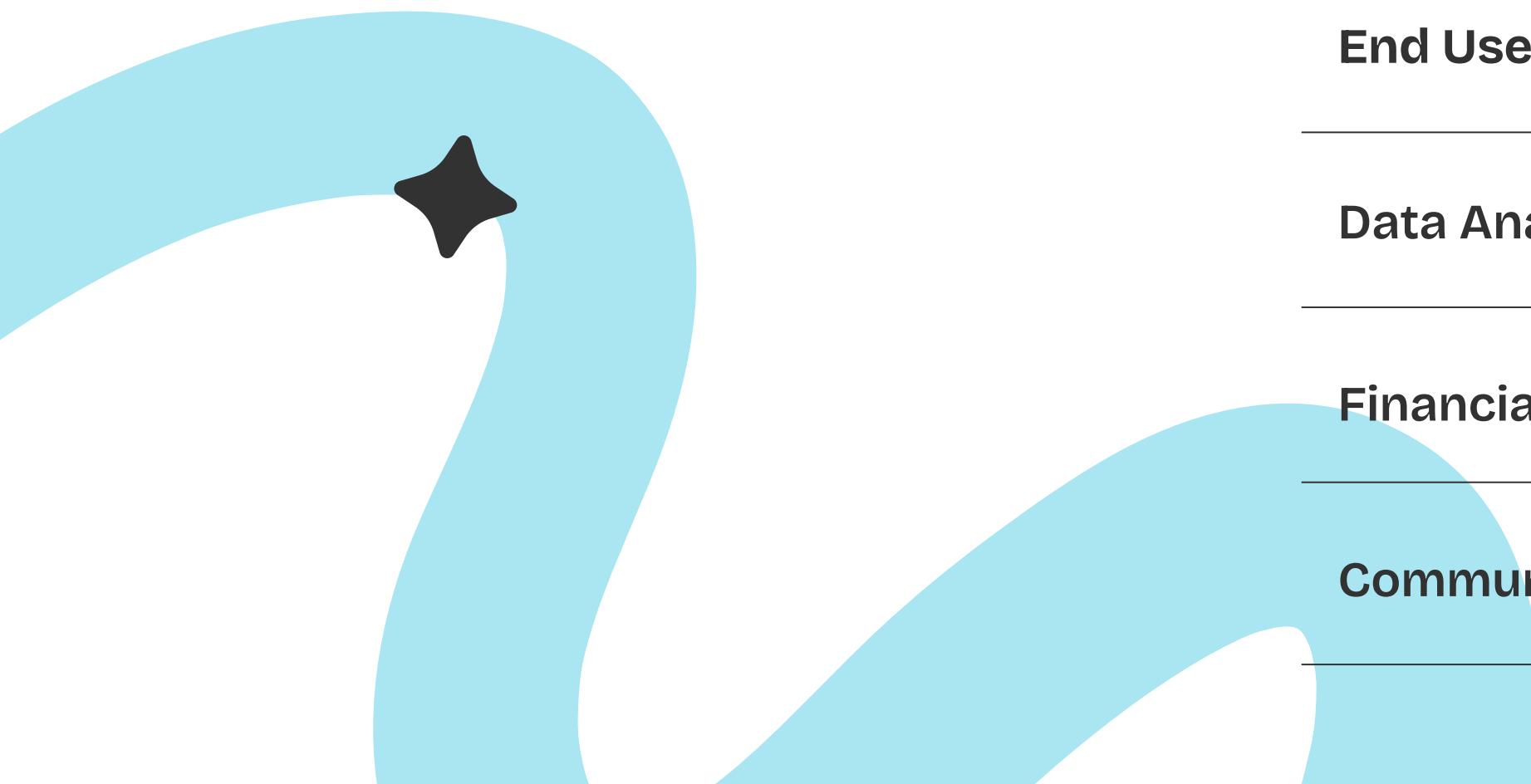
Achieved 85%+ usability feedback in user acceptance testing.

Resolved major bugs, leaving fewer than 10 core bugs.

Conducted beta testing with 20+ caregivers, achieving 80% usability success.

Validated with stakeholders to meet industry standards and customer needs.

Who was invested?



Client	Eskenazi Health
Sponsorer	Professor David Francis (Instructor)
Project manager	Geetika Palande
End Users	Caregivers
Data Analyst	Mahitha Gogu
Financial Analyst	Vidisha Uttamchandani
Communication Lead	Aditya Gurram

Competitive Analysis



Medisafe

 Medication management with reminders.

 Easy-to-use interface, widely used.

 Limited features beyond medication tracking, no appointment scheduling or health record storage.

CareZone

 Medication tracking, health records, and appointments.

 Comprehensive caregiving tool.

 Can be overwhelming, lacks emotional support resources.

Together (formerly BigWhiteWall)

 Emotional support and mental well-being for caregivers.

 Strong community and mental health resources.

 No medication or appointment management features.

How does CareEase stand out?



- ✓ Mobile app for dementia caregivers with medication tracking, scheduling, and support.
- ✓ Comprehensive, user-friendly app tailored for dementia caregivers, offering medication tracking, scheduling, and emotional support resources.
- 🚫 The app is mobile-only, lacks advanced AI features and EHR integration, and has a smaller user base compared to established solutions.

Key Features



- ✓ Medication tracking with reminders
- ✓ Appointment scheduling with reminders
- ✓ Digital health record storage
- ✓ Emergency contact integration
- ✓ Caregiver support resources

Personas & Scenarios



Emma Johnson

- Age: 45
- Occupation: Marketing Manager
- Caregiver: Caring for her mother with early-stage dementia.

Emma used sticky notes and her phone's calendar to manage her mother's medication and appointments, but often missed doses or forgot appointments. She felt stressed, especially during work, when she would remember her mother's medication late, leading to disorganization and anxiety.

Goals & Challenges:

- Ensure medication and doctor appointments are on track.
- Stay organized with her mother's health records.
- Balance caregiving with a busy professional life.



John Miller

- Age: 60
- Occupation: Retired
- Caregiver: Caring for his wife with advanced dementia.

John relied on handwritten notes and phone calls to track his wife's medications and doctor appointments. However, he frequently missed doses and appointments, feeling guilty and frustrated. Without an easy way to stay organized, he often felt overwhelmed and isolated in managing his wife's care.

Goals & Challenges:

- Track medications and appointments for his wife.
- Access caregiving resources for support.
- Manage his wife's health while feeling isolated.



Project Progress & Goals



Research & Wireframing

Development & Testing

Refinement & Final Review

Project Hand-off

February

February 1 - February 7

Market research, caregiver interviews, competitor analysis.

February 8- February 14

Define app features, create wireframes, initial design discussions.

February 15 - February 21

Prototype creation and internal review.

February 22 - February 28

User testing of wireframes, feedback gathering, revisions.

March

March 1 - March 7

Set up development environment & technical architecture.

March 8 - March 14

Develop initial features (medication tracking etc).

March 15 - March 21

Implement health record storage, integrate emergency contacts.

March 22 - March 31

Usability testing, feedback collection, bug fixing & prepare for beta testing.

April

April 1 - April 7

Conduct beta testing with 20+ caregivers, gather feedback.

April 8 - April 14

Finalize UI/UX design based on beta feedback.

April 15 - April 21

Bug fixing, security compliance testing, and optimizations.

April 22 - April 30

Conduct final usability testing and final review with stakeholders. Prepare for project handover.

May

May 1 - May 4

Prepare final documentation

May 5

Project Hand-off

Work Breakdown Structure



Phase 1: Feb 1 - Feb 28

Research & Wireframing



1. Market Research and Background Study
 - Focus on dementia caregivers and their needs.
 - Gather insights from caregivers about their pain points.
 - Review existing caregiving apps to identify strengths and gaps.

Phase 1: Feb 1 - Feb 28

Research & Wireframing



2. Market Research and Background Study
 - Identify Target Users: Focus on dementia caregivers and their needs.
 - Conduct Surveys/Interviews: Gather insights from caregivers about their pain points.
 - Analyze Competitors: Review existing caregiving apps to identify strengths and gaps.

Phase 1: Feb 1 - Feb 28

Research & Wireframing



3. Initial Prototyping

- Develop an early-stage clickable prototype.
- Conduct initial testing to get user reactions to the basic design and interaction flow.
- Implement revisions based on caregiver and internal team feedback.

Phase 1: Feb 1 - Feb 28

Research & Wireframing



4. Approval of Wireframes and Prototype
 - After feedback, make necessary changes to finalize the design.
 - Present wireframes to stakeholders (Eskenazi Health) for approval before proceeding to development.

Phase 2: Mar 1 - Mar 31

Development & Testing



1. App Development

- Prepare the tools, platform, and technologies for development.
- Develop core features like medication tracking, appointment scheduling, and health record storage.
- Design and implement UI elements based on the approved wireframes.
- Ensure that emergency contacts and caregiver support resources are functional.

Phase 2: Mar 1 - Mar 31

Development & Testing



2. Usability Testing

- Test the developed features internally within the project team.
- Recruit caregivers to test the app's core functionality and usability.
- Gather user feedback and analyze common issues or pain points.
- Make necessary fixes or enhancements based on testing feedback.

Phase 2: Mar 1 - Mar 31

Development & Testing



3. Bug Fixing and Debugging

- Detect major functionality issues or glitches.
- Fix identified bugs to ensure stability and usability.
- Test after bug fixes to ensure no new issues were introduced.

Phase 2: Mar 1 - Mar 31

Development & Testing



4. Beta Testing

- Choose a group of 20+ caregivers for beta testing.
- Track usage and collect feedback during the beta phase.
- Address any issues or improvements identified in the beta testing phase.

Phase 3: Apr 1 - Apr 30

Refinement & Final Review



1. Final Refinements

- Polish the interface and ensure ease of use for caregivers, focusing on simplicity and clarity.
- Make final tweaks based on the feedback received from beta testers.
- Ensure that the app runs smoothly on both Android and iOS devices.

Phase 3: Apr 1 - Apr 30

Refinement & Final Review



2. Final Testing

- Test the refined app for usability with a new group of users.
- Conduct a comprehensive QA check for all functionalities.
- Fix any last-minute bugs discovered during the final testing phase.

Phase 3: Apr 1 - Apr 30

Refinement & Final Review



3. Final Stakeholder Review

- Provide a comprehensive demo to stakeholders (Eskenazi Health and other relevant parties).
- Collect final feedback and ensure that all stakeholder requirements have been met.

Phase 3: Apr 1 - Apr 30

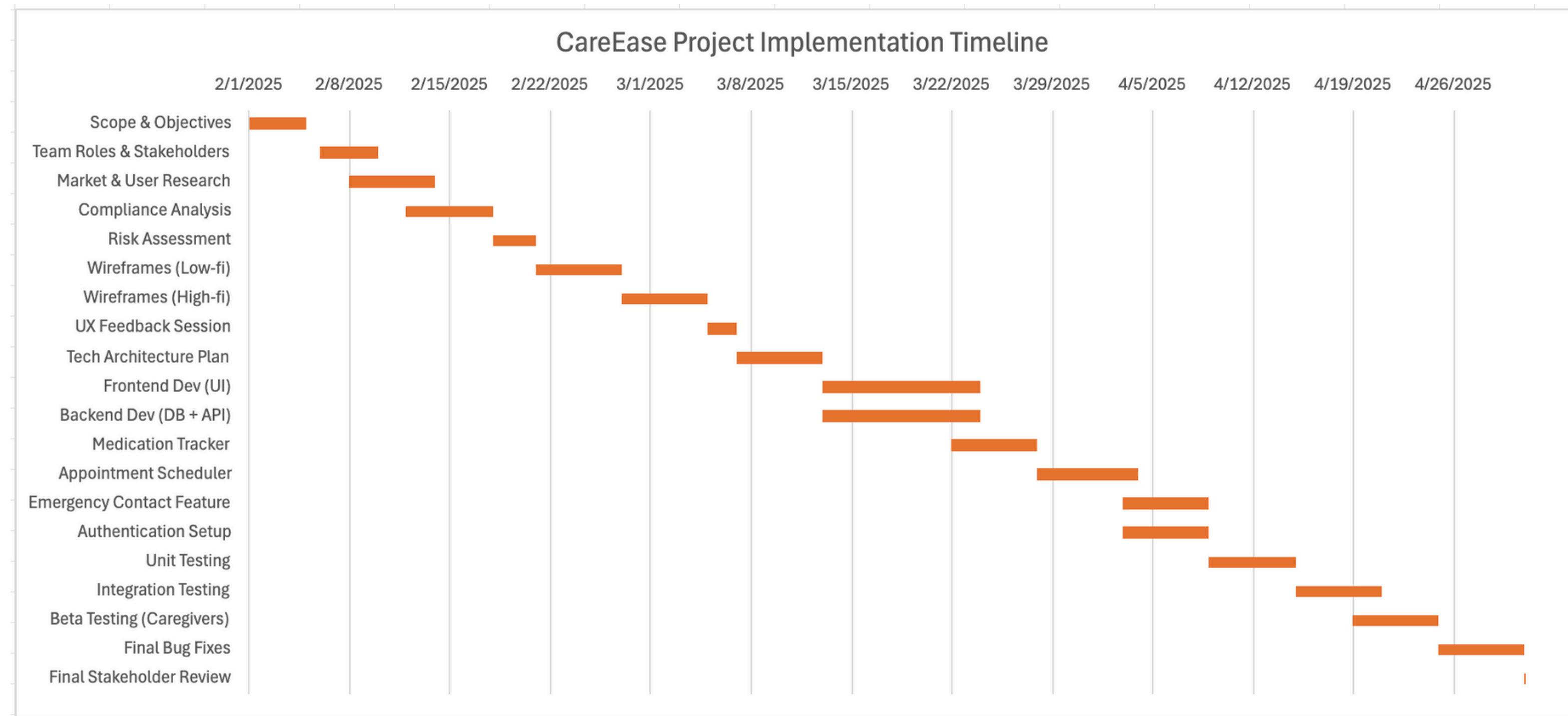
Refinement & Final Review



4. Project Documentation

- Create a comprehensive user guide for caregivers detailing how to use the app's features.
- Prepare a training manual for new caregivers on how to use the app effectively.
- Ensure all project documentation is finalized and ready for submission.

Gantt Chart



Project Budget



Total Budget: \$11,000

Actual Total Cost: \$12,100

Variance: +\$1,100

(10% over budget, covered by the contingency fund)



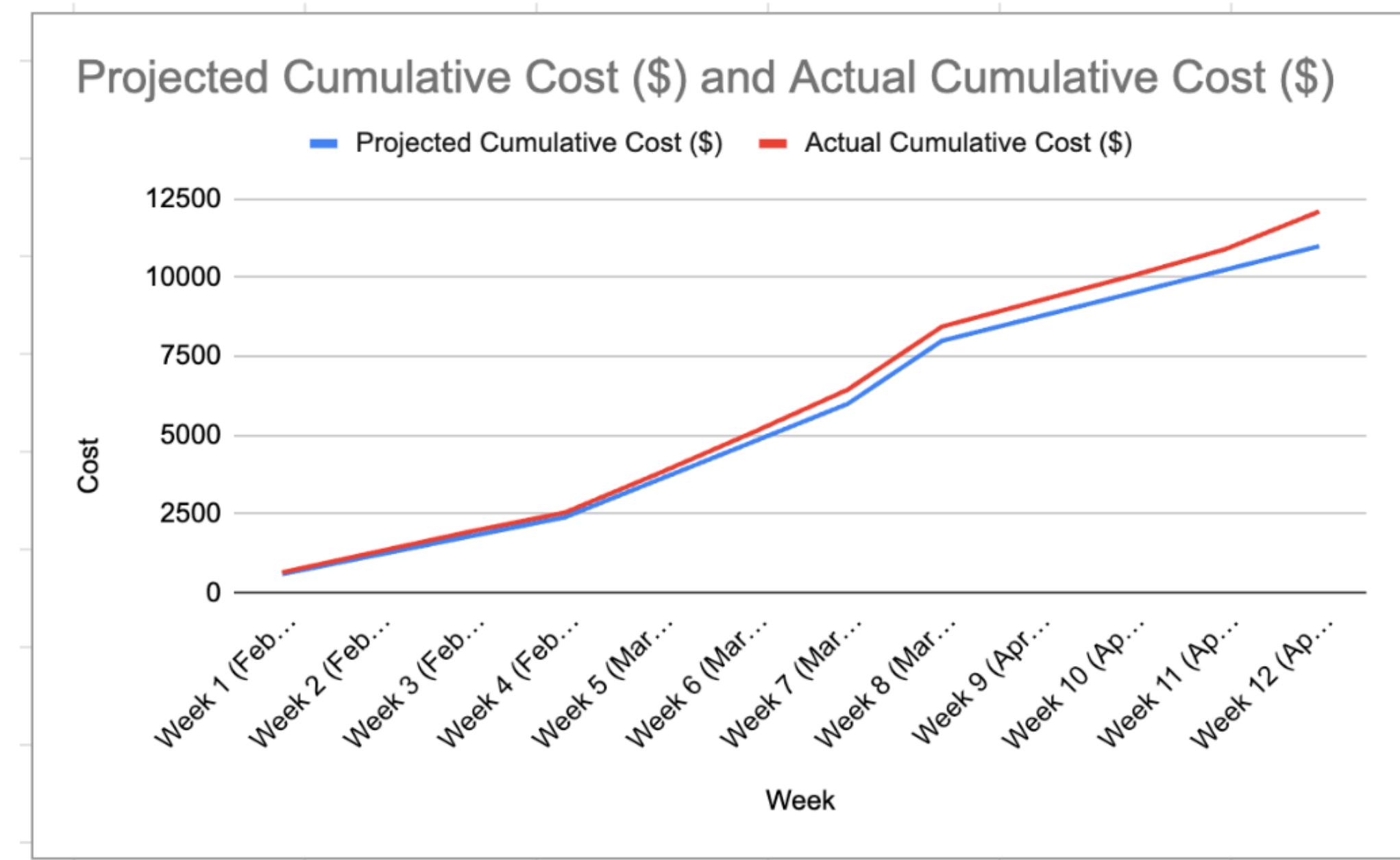
Estimated v Actual



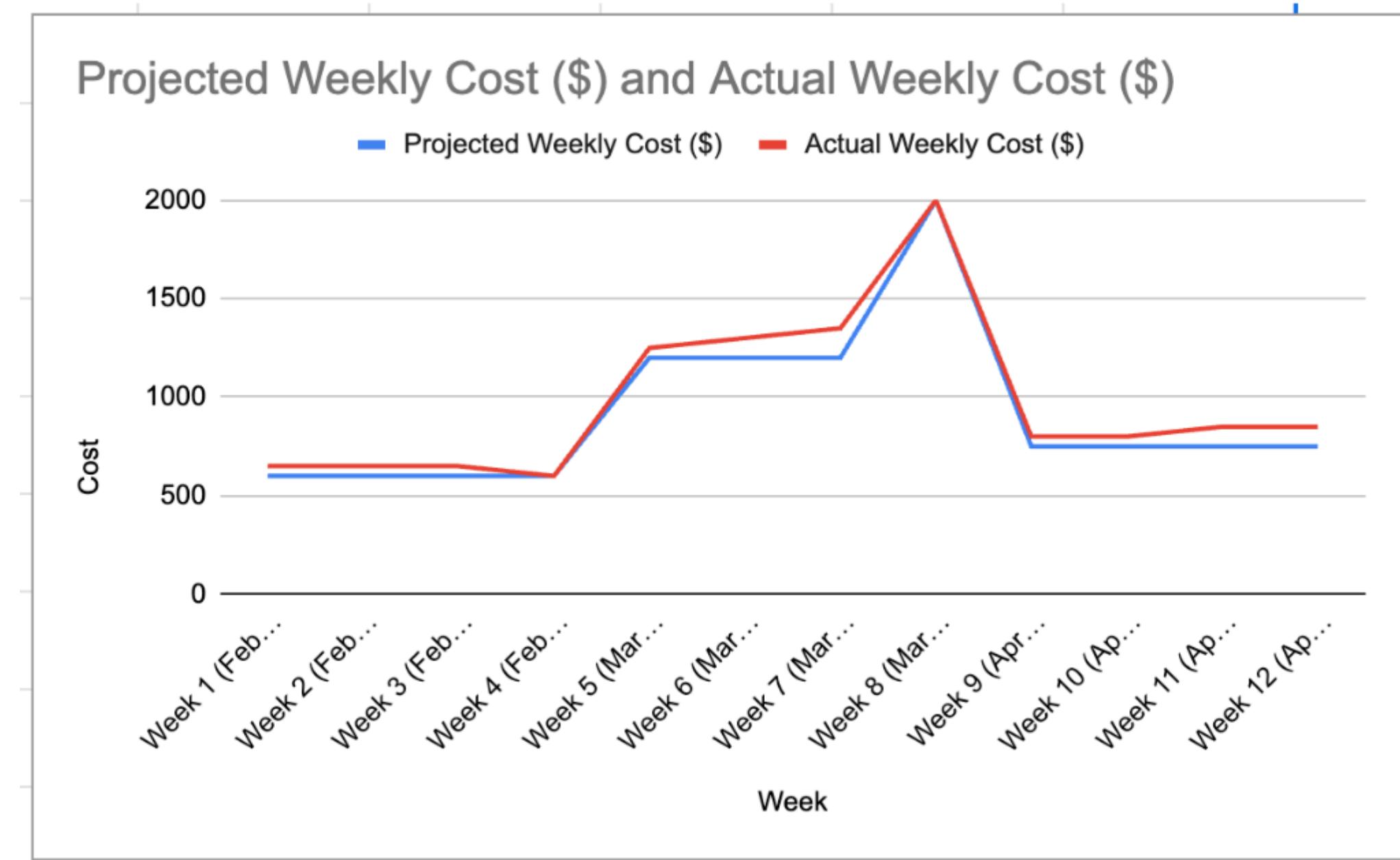
Phase	Estimated Cost (\$)	Actual Cost (\$)	Variance (\$)	Variance (%)
1. Research & Wireframing	2,400	2,550	+150	+6.3%
2. Development & Testing	5,600	6,200	+600	+10.7%
3. Refinement & Final Review	3,000	3,350	+350	+11.7%
Total	11,000	12,100	+1,100	+10.0%

Category	Estimated Cost (\$)	Actual Cost (\$)	Variance (\$)	Variance (%)
Development Labor	4,400	4,600	+200	+4.5%
Design	1,050	1,100	+50	+4.8%
Testing & Quality	2,100	2,300	+200	+9.5%
Project Management	800	800	0	0%
Research & Planning	1,200	1,250	+50	+4.2%
Security & Compliance	900	1,150	+250	+27.8%
Others (e.g., Training, Marketing)	1,650	1,750	+100	+6.1%

Projected Cumulative Cost Vs Actual Cumulative Cost



Projected Weekly Cost Vs Actual Weekly Cost



Risk Analysis



Identified Risks



- **Data Privacy Breach:** Unauthorized access to sensitive patient data due to security vulnerabilities.
- **Misdiagnosis Risk:** Inaccurate symptom analysis by AI, leading to misdiagnoses and patient harm.
- **Integration Issues:** Difficulty in integrating the app with existing healthcare systems like patient management systems.
- **Stakeholder Resistance:** Resistance from caregivers or healthcare providers to adopt or integrate the app into their routines.
- **Technical Failure:** System crashes or application malfunctions causing disruptions in caregiving tasks.

Identified Risks



- **Regulatory Non-Compliance:** Failure to comply with healthcare regulations such as HIPAA and data privacy laws.
- **Resource Constraints:** Insufficient financial or human resources allocated for the project, affecting timelines or deliverables.
- **Scope Creep:** Continuous expansion of project scope leading to delays and budget overruns.
- **Communication Breakdown:** Miscommunication between project stakeholders.
- **Legal Liability:** Legal risks from misdiagnoses or failures in the AI functionality, potentially leading to lawsuits.

Risk Analysis Charted

Project Risk Analysis					
Risk Number	Status	Risk Name	Risk Description	Likelihood of Occurrence (1-5)	Impact (1-5)
1	Open	Data Privacy Breach	Potential unauthorized access to sensitive patient data due to security vulnerabilities.	4	5
2	Open	Misdiagnosis Risk	Risk of AI providing inaccurate symptom analysis, leading to misdiagnoses and patient harm.	3	5
3	Open	Integration Issues	Difficulty in integrating the app with existing healthcare systems (e.g., patient management systems).	3	4
4	Open	Stakeholder Resistance	Resistance from caregivers or healthcare providers to adopt the app or integrate it into their routines.	3	4
5	Open	Technical Failure	System crashes or application malfunctions causing disruptions in caregiving tasks.	4	4
6	Open	Regulatory Non-Compliance	Failure to comply with healthcare regulations like HIPAA and data privacy laws.	3	5
7	Open	Resource Constraints	Insufficient financial or human resources allocated for the project, affecting timelines or deliverables.	4	4
8	Open	Scope Creep	Continuous expansion of project scope leading to delays and budget overruns.	3	4
9	Open	Communication Breakdown	Miscommunication between project stakeholders (developers, caregivers, project managers).	3	4
10	Open	Legal Liability	Legal risks arising from misdiagnoses or failures in the AI functionality, leading to lawsuits.	3	5

Risk Priorities



★

Risks	RPN	Impact
Data Privacy Breach	60	5
Misdiagnosis Risk	60	5
Integration Issues	24	4
Stakeholder Resistance	36	4
Technical Failure	48	4

Risk Priorities

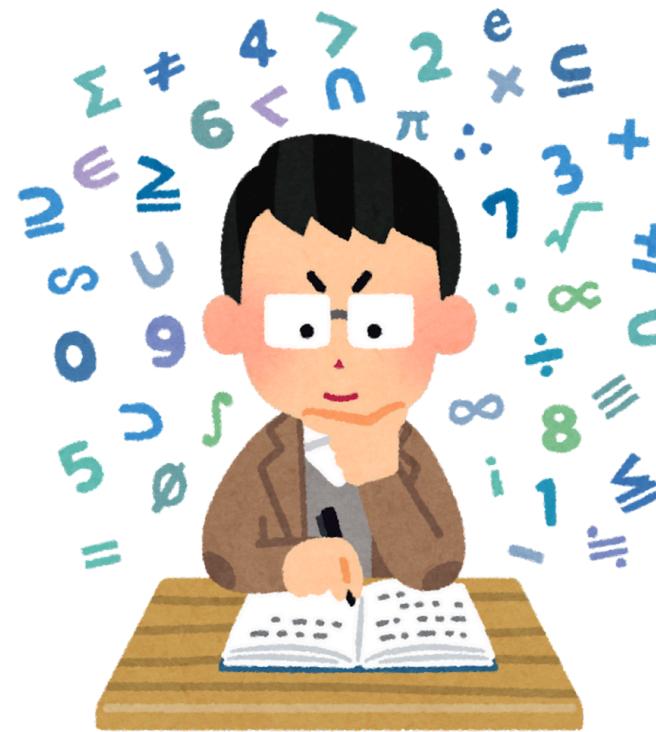


Risks	RPN	Impact
Regulatory Non-Compliance	45	5
Resource Constraints	32	4
Scope Creep	36	4
Communication Breakdown	36	4
Legal Liability	45	5

Risk Prioritization

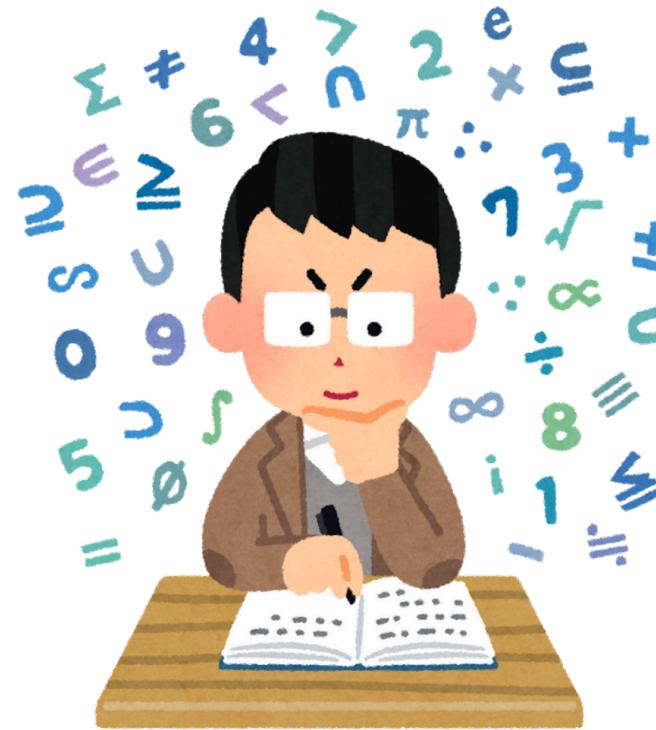
1. Prioritized Risks Based on RPN					
Risk Number	Risk Name	Risk Priority Number (RPN)	Likelihood of Occurrence (1-5)	Impact (1-5)	
1	Data Privacy Breach	60		4	5
2	Misdiagnosis Risk	60		3	5
5	Technical Failure	48		4	4
6	Regulatory Non-Compliance	45		3	5
10	Legal Liability	45		3	5
4	Stakeholder Resistance	36		3	4
8	Scope Creep	36		3	4
9	Communication Breakdown	36		3	4
3	Integration Issues	24		3	4
7	Resource Constraints	32		4	4

Mitigation Strategies



- **Data Privacy Breach:** Implement data encryption and HIPAA-compliant standards.
- **Misdiagnosis Risk:** Ensure AI testing and human oversight for accuracy.
- **Integration Issues:** Collaborate early with healthcare systems and test interoperability.
- **Stakeholder Resistance:** Provide training and run pilot programs.
- **Technical Failure:** Conduct stress testing and have failover systems in place.

Mitigation Strategies



- **Regulatory Non-Compliance:** Regularly review and ensure regulatory compliance.
- **Resource Constraints:** Allocate budget and ensure sufficient staffing.
- **Scope Creep:** Set clear milestones and control project scope.
- **Communication Breakdown:** Maintain clear communication and regular updates.
- **Legal Liability:** Consult legal experts and ensure proper disclaimers.

Risk Mitigation Strategies

2. Risk Mitigation Strategy for Each Risk			
Risk Number	Risk Name	Risk Mitigation Strategy	
1	Data Privacy Breach	Implement encryption protocols, conduct regular security audits, and restrict access to sensitive data.	
2	Misdiagnosis Risk	Validate AI outputs through clinical oversight, use diverse datasets, and ensure continuous training to avoid errors and misdiagnoses.	
5	Technical Failure	Implement redundancy measures, perform regular performance monitoring, and establish quick issue resolution processes to minimize system downtime.	
6	Regulatory Non-Compliance	Ensure the app complies with HIPAA and data privacy standards, and perform regular audits to guarantee all practices meet legal requirements.	
10	Legal Liability	Consult legal experts, document all AI-based diagnostics processes, and implement clinical oversight to minimize the risk of legal repercussions.	
4	Stakeholder Resistance	Educate stakeholders about the app's benefits, provide comprehensive training, and involve them in the testing process to foster a smooth transition to new technology.	
8	Scope Creep	Set clear project boundaries from the start, monitor the scope through regular meetings, and secure stakeholder approval before making any major changes.	
9	Communication Breakdown	Establish clear communication protocols, schedule regular meetings to align all team members, and maintain comprehensive documentation throughout the project.	
3	Integration Issues	Engage IT specialists to resolve compatibility issues, and conduct thorough integration and system testing to ensure smooth interfacing with healthcare systems.	
7	Resource Constraints	Allocate resources efficiently across phases, develop contingency plans for key resources, and adjust schedules as necessary to ensure timely completion of project milestones.	

Communication Plan





Internal Communication

- **Team Meetings:** Weekly meetings to discuss progress and issues.
- **Project Tools:** Use Trello or Asana for task tracking and Google Drive for documentation.

External Communication



- **Stakeholder Updates:** Bi-weekly email updates or calls to inform stakeholders of progress.
- **User Feedback:** Collect feedback via surveys or interviews with caregivers and testers.
- **Demo Sessions:** Bi-monthly app demos for stakeholder feedback.

Testing & Feedback



- **User Testing:** Maintain communication with testers via email and in-app notifications.
- **Feedback Collection:** Use surveys and in-app forms to gather user feedback.

Reporting

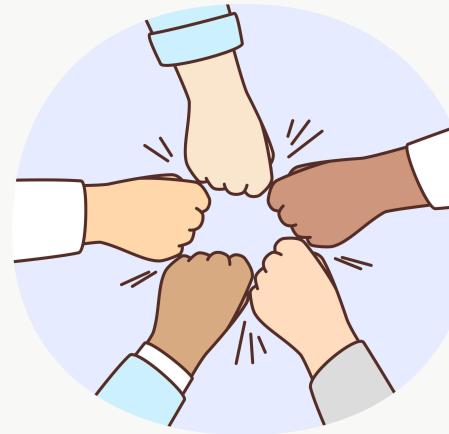


- **Milestone Reviews:** Regular reviews after each phase to gather input.
- **Final Report:** A comprehensive report at project completion with results and next steps.

Lessons Learned & Next Steps



what worked?



- Early definition of project scope helped stay aligned. Delivered a functional app prototype and feedback reports on time.
- Clearly defined roles (PM, Developer, Compliance, Communications) enabled smooth execution and mutual support.
- Caregiver interviews and usability testing drove meaningful features like medication tracking and emergency contact tools.
- Iterative design allowed the team to adapt quickly based on caregiver feedback, even when it was brutally honest.

what could be improved?



- Stakeholder communication wasn't continuous. Future versions will include structured and recurring check-ins.
- Limited testing led to missed edge cases. We will allocate more time and test for diverse caregiver profiles next time.
- Sensitive health data posed risks. We will prioritize compliance earlier in future planning to avoid last-minute fixes.
- No support roadmap post-MVP. We will create long-term adoption plans for sustained engagement.

Next Steps

- **Finalize User Testing:** Complete the final round of usability testing with caregivers.
- **Implement Feedback:** Integrate feedback from testing to refine features and address issues.
- **Prepare Documentation:** Finalize user guides, training manuals, and project documentation.
- **Stakeholder Review:** Present the final version to stakeholders for approval.
- **Launch Prep:** Begin preparations for the official app launch, including marketing and outreach.
- **Post-Launch Monitoring:** Track user feedback and app performance after launch.

Thank You

Team 04

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