

EasyChart

Your Health, One Tap Away- Easychart, secure and simplify your medical data

Summary

EasyChart is a product that helps patients store and share their medical data to facilitate access to comprehensive health history and effective healthcare decision-making.

Problem statement: How might we consolidate and present medical data intuitively for patients to facilitate effective healthcare decision-making?

Problem Background

Easychart aims to serve a wide range of patients who regularly need to manage and share their medical data. The core problem is the complexity and fragmentation of medical data management. There is currently no widely adopted software solution that solves this problem. As a result, patients often struggle with keeping track of their medical history, test results, and ongoing treatments, especially when they see multiple healthcare providers. This leads to a disjointed understanding of their health and can result in inefficiencies or errors when information is transferred between different parties.

With the increasing mobility of patients and the rise in telemedicine, the need for a centralized and user-friendly platform for medical data has never been greater. The healthcare industry is ripe for digital solutions that can simplify the patient experience, reduce administrative burdens, and improve health outcomes. Addressing this need not only aligns with current technological trends but also meets the growing demand for patient-centred healthcare solutions.

We know that many patients feel overwhelmed by the paperwork and bureaucracy of healthcare systems. We understand that there is a gap in the market for a mobile app that simplifies the process of storing and sharing medical data. We know the privacy concerns and regulatory requirements associated with medical data, and we recognize the importance of user-friendly design in encouraging patient engagement.

Through the implementation of a user survey and user interviews, it was identified that patients often rely on legacy systems such as paper charting and fax and email to share medical data. A third of surveyed users also indicated that they rely on their

physicians for medical data storage and sharing. Reliance on third parties and use of legacy systems are inefficient and can lead to inaccurate medical history, medication errors, and repetitive assessments/tests. Furthermore, these findings were validated by healthcare providers who acknowledge the challenges in ensuring that patient data is complete, up-to-date, and readily accessible in a secure manner, which is paramount during a hospital or urgent care visit.

Just as individuals who view their goals as a process tend to achieve more success, patients who can see and understand their medical journey are better equipped to manage their health. Current systems are not tailored to support this perspective, often making patients passive recipients rather than active participants in their healthcare. Easychart is designed to bridge this gap, empowering patients to take control of their health data and, consequently, their health journey.

Competitive Background

1. Electronic Medical Records (EMR) Systems - TELUS Health EMR

Pro: TELUS Health EMR offers comprehensive healthcare record management for healthcare professionals, ensuring robust data accuracy and clinical capabilities.

Con: While it serves healthcare professionals effectively, its patient-facing features may be less user-friendly and engaging compared to EasyChart for individuals managing their own health data.

2. Healthcare Portals - MyChart by Epic Systems

Pro: MyChart by Epic Systems is often integrated into healthcare organizations, providing seamless access to medical records within institutional settings.

Con: It may lack the mobility and convenience of a dedicated patient-centric app like EasyChart, limiting accessibility and engagement outside of the healthcare facility.

3. Health and Wellness Apps - Medisafe

Pro: Medisafe excels in medication management, offering precise medication tracking and reminders, which is valuable for patients with complex medication regimens.

Con: It may not provide the comprehensive health data management capabilities that EasyChart offers, limiting its scope to medication-related information.

4. Telemedicine Platforms - Maple:

Pro: Maple offers on-demand telemedicine services, making it convenient for virtual healthcare consultations, including medical record access during telehealth appointments.

Con: While it facilitates remote healthcare, it may not provide the same level of holistic health data management and data sharing as EasyChart for patients managing their medical history.

6. Health Insurance Companies - Sun Life Financial

Pro: Health insurance company apps, such as Sun Life Financial, offer access to insurance-related health data and benefits, providing a streamlined experience for policyholders.

Con: These apps may lack the comprehensive health data aggregation and sharing capabilities of a dedicated health data management app like EasyChart.

7. Personal Health Record (PHR) Services - FollowMyHealth

Pro: PHR services like FollowMyHealth empowers users to manage their health records and engage with healthcare providers, similar to EasyChart.

Con: They may have varying degrees of functionality and user-friendliness compared to EasyChart, potentially offering a less comprehensive solution for health data management.

Goals

Easychart's mission is to enhance the management of personal health information through technology. The high-level goals of Easychart revolve around empowering patients to take charge of their medical data, thus fostering a more cohesive healthcare experience. Here's what we are striving to accomplish:

Streamline Health Data Management: By simplifying the process of storing, updating, and sharing medical records, Easychart reduces the cognitive load and administrative pressure on patients, allowing them to focus more on their health and less on paperwork.

Facilitate Better Health Outcomes: With all medical information in one place, patients and healthcare providers can make more informed decisions. Easychart aims to support a continuity of care that leads to better health outcomes and more personalized healthcare experiences.

Promote Patient Empowerment: Easychart encourages patients to participate actively in their healthcare journey. By giving them easy access to their medical data, they can make more informed health choices and advocate for themselves in medical settings.

Enhance Communication Between Patients and Providers: By creating an efficient data-sharing channel, Easychart ensures that medical professionals can

access the most current and comprehensive patient data, which is crucial for high-quality care.

Boost Compliance and Engagement: Positive reinforcement through an intuitive user interface and experience can increase patient engagement with their health data, leading to higher compliance with treatment plans and follow-ups.

Deliver a Seamless and Intuitive User Experience: Above all, Easychart is dedicated to providing a simple and accessible app experience that does not overwhelm the user, thereby encouraging consistent use.

User Stories

1. As a user who visits multiple healthcare providers, I want my medical storage and sharing solution to be interoperable with legacy systems and electronic medical record systems so that I can consolidate my medical data.
2. As a user with multiple comorbidities, I want to securely store my medical history, relevant medical tests and current medications in one place to quickly provide comprehensive information to any new healthcare professional I visit.
3. As a user who values privacy, I want to control who can view and access my medical data to maintain confidentiality while still sharing necessary information with my healthcare providers.
4. As a Non-medical user, I want to be able to understand how my medical data relates to my overall health so that I feel more informed when making decisions about my own health.
5. As a user, I want to be able to summarize my medical data depending on the recipient so that the recipient can only access data relevant to their medical domain.

Proposed Solution

Easychart is proposed as a comprehensive mobile application that centralizes and simplifies the management of personal medical data for patients. It provides a seamless platform for users to consolidate, store, track, and share their health information with healthcare providers. The app facilitates better health outcomes by enabling patients to actively engage with their medical history, medications, and treatment plans in a secure and user-friendly environment. By consolidating medical data in one accessible place, Easychart ensures that both patients and healthcare professionals have the most current information at their fingertips, whenever and wherever it's needed, promoting continuity of care and informed health decisions.

Scenarios

Scenario: Interoperability with Multiple Healthcare Systems

User Story: As a user who visits multiple healthcare providers, I want my medical storage and sharing solution to be interoperable with legacy systems and electronic medical record systems.

Definition of Done: The application can interface with various legacy systems and EMRs to import and consolidate user data. The interoperability is tested and confirmed with several major systems and complies with health data exchange standards.

Scenario: Comprehensive Medical Profile Management

User Story: As a user with multiple comorbidities, I want to securely store my medical history, relevant medical tests, and current medications in one place.

Definition of Done: Users are able to input, store, and manage detailed medical histories, test results, and medication information within the app. The app provides a secure and organized view that can be accessed and shared quickly with new healthcare providers.

Scenario: Privacy and Selective Data Sharing

User Story: As a user who values privacy, I want to control who can view and access my medical data.

Definition of Done: The app has robust privacy settings that allow users to specify access permissions on an individual level for healthcare providers. The app ensures that the user's data is shared only with consent and provides an audit trail of who accessed their data and when.

Scenario: User-Friendly Medical Data Interpretation

User Story: As a Non-medical user, I want to be able to understand how my medical data relates to my overall health.

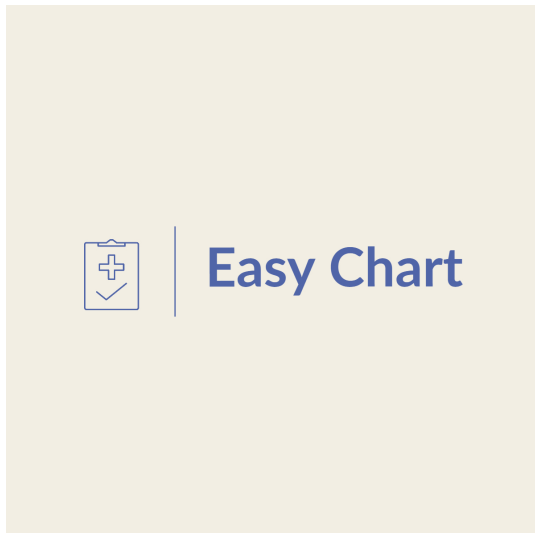
Definition of Done: The app translates medical data into layman's terms using natural language processing and provides educational resources that help users understand their health information. The app also visualizes data trends and highlights key information to aid in user comprehension.

Scenario: Customizable Medical Data Summaries

User Story: As a user, I want to be able to summarize my medical data depending on the recipient.

Definition of Done: Users can create summaries of their medical data that are tailored to the needs of different medical professionals. The app provides templates or options to include only the data relevant to particular specialties or purposes.

Design and Branding Considerations



Typography: Modern font that is clean and easily readable

Voice: Compassionate, knowledgeable, reassuring

Tone: Consistently warm with clear jargon-free language that is accessible to all users regardless of age and medical knowledge

User Experience Flows:

Signup: Option to sign up via email or via Google or Apple accounts

Onboarding: Set up an introductory guide built into the app that demonstrates to users how to set up the application and its most important features.

Health Data Dashboard: A clear and concise dashboard serving as the hub for uploading medical files and viewing health data. Users can customize the dashboard to show key health measures depending on their preferences (ex., Blood glucose). Users can also export their health data in a file or print-out format.

Notifications Dashboard: A dashboard allows the user to view notifications, such as a request to view medical data and informing the user that there are newly uploaded files from their healthcare provider.

Privacy and Access Dashboard: A dedicated section clearly outlining privacy settings and what they control with visual indicators. The privacy dashboard also includes the ability to view the privacy logs, which records who viewed the patient's medical data and when.

Technical Considerations for Developers

Scenario: Interoperability with Multiple Healthcare Systems

Frameworks:

- Use HL7 FHIR (Fast Healthcare Interoperability Resources) for standardized health data exchange.
- Consider SMART on FHIR for integrating with electronic medical record (EMR) systems.

Technical Suggestions:

- Develop API endpoints for data exchange using RESTful architecture.
- Utilize authentication mechanisms such as OAuth 2.0 for secure access to healthcare systems.
- Implement data mapping and transformation tools to harmonize data from various sources.

Scenario: Comprehensive Medical Profile Management

Frameworks:

- Choose Node.js or Python for server-side development.
- Use React or Angular for the user interface.

Technical Suggestions:

- Design a secure database using MongoDB or PostgreSQL for data storage.
- Implement secure file upload functionality with tools like Multer (Node.js) or Django File Upload (Python).
- Ensure data validation and sanitation to prevent security vulnerabilities.

Scenario: Privacy and Selective Data Sharing

Frameworks:

- Implement Identity and Access Management (IAM) with Keycloak or Auth0.
- Use JSON Web Tokens (JWT) for user authentication and authorization.

Technical Suggestions:

- Develop fine-grained access control mechanisms based on roles and permissions.
- Implement audit logging to track data access and sharing activities.
- Encrypt sensitive data at rest using tools like Cryptography (Python) or bcrypt (Node.js).

Scenario: User-Friendly Medical Data Interpretation

Frameworks:

- Leverage data visualization libraries such as D3.js or Chart.js for graphical representation.
- Implement a backend server using Node.js or Python.

Technical Suggestions:

- Translate medical terms using a dedicated medical terminology API or database.
- Create a user-friendly interface with a responsive design for different devices.
- Use Natural Language Processing (NLP) libraries like spaCy (Python) for text analysis.

Scenario: Customizable Medical Data Summaries

Frameworks:

- Employ Express.js (Node.js) or Django (Python) for server development.
- Use a frontend framework like Vue.js or React for dynamic user interfaces.

Technical Suggestions:

- Develop a template engine or form builder for user-customized summaries.
- Utilize Redux (React) or Vuex (Vue.js) for state management.
- Implement real-time preview and validation of summary templates.

Measuring Success

Initial North Star Metric: Monthly Active Users (MAU) of the platform who regularly update and share their comprehensive medical data with healthcare providers.

This metric reflects the core value proposition of EasyChart, which is to empower patients to actively manage and share their medical data. By focusing on MAUs who regularly update and share their data, EasyChart ensures that users are actively engaged in using the platform to streamline health data management, facilitate better health outcomes, promote patient empowerment, and enhance communication between patients and providers.

Quantitative Success Metrics:

- **Data Integration Points:** The number of different healthcare systems and EMRs that Easychart can successfully integrate with, demonstrating interoperability.
- **Bi-Weekly User Adoption Rate:** Have a goal of increasing the number of biweekly active users or downloads of the Easychart app, indicating market interest and initial trust in the product.
- **Engagement Metrics:** Metrics such as daily active users, session length, and frequency of data entries to gauge user engagement with the app.
- **Privacy Controls Usage:** The percentage of users customizing their privacy settings, which can indicate the app's effectiveness in providing perceived control over medical data.

Qualitative Success Metrics:

- User Satisfaction: Positive feedback from users regarding the app's usability, features, and impact on their healthcare management.
- Healthcare Provider Feedback: Endorsements or positive testimonials from healthcare providers interacting with patient data through Easychart.

Milestone-Based Success Metrics:

- Feature Completion: All key features outlined in the scenarios are fully developed, tested, and functioning as intended.
- Security and Compliance: Successful passing of security audits and compliance with health data regulations (such as HIPAA in the United States).
- User Education: The creation and availability of educational materials and resources to help non-medical users understand their health data.

Definition of Done by Demo Day:

- All core features are implemented and tested for functionality.
- The user interface is intuitive and accessible and has undergone usability testing with positive results.
- Security measures are in place, with no critical bugs or vulnerabilities.
- The app demonstrates successful integration with at least one healthcare institution and EMR.
- Initial user feedback is overwhelmingly positive, with any critical issues identified during the beta testing phase resolved.
- Marketing and launch plans are in place, with clear metrics for post-launch success measurement.

Milestones & Timeline

Timeline	Milestone
Week 1	Project Kickoff and Team Alignment: • Establish team roles and responsibilities. • Define project scope, goals, and success metrics. • Create a project timeline with key milestones.
Week 2	Product Design and Prototyping: • Design user flows and wireframes for the app • Develop a prototype that can be tested with users. • Collect feedback and iterate on the design. • Development and Testing
Week 4	Development and Testing • Begin coding the core features based on the validated prototype. • Perform unit testing, integration testing, and system testing. • Conduct user acceptance testing with a small group of beta testers. • Ensure data protection and privacy measures are in place.

	• Conduct security audits and address any vulnerabilities. • Verify compliance with healthcare regulations.
Week 7	Pre-Launch Preparations • Finalize marketing and launch strategy. • Prepare educational materials and support resources for users. • Set up monitoring and analytics tools to track app performance.
Week 8	Launch Phase • Officially release the app on iOS. • Implement marketing campaigns. • Monitor app performance and user feedback closely.
Week 8	Post-Launch Review and Iteration • Analyze user data and feedback for insights. • Make necessary improvements and fix any issues. • Plan for additional features based on user demand.

Open Questions

1. What is the legislation regarding the storage and sharing of medical data in the launch market (Ontario)?
2. What technologies are best for analyzing and summarizing medical data? What are the pros and cons? What are the tradeoffs given time and budget constraints?
3. How can EasyChart acquire patients and healthcare providers concurrently and leverage network effects?

User Research and Survey Data: [Click here to view the research!](#)