

JUNE KNOWLEDGE SHOWCASE

Presenter: Emoredo Aziakpono

3MTT Cohort 3 : FE/23/81051016

MediQueue

Problem Statement

Hospitals often struggle with long patient wait times, overcrowding, and inefficient staffing allocation. These inefficiencies reduce patient satisfaction, increase staff burnout, and limit operational effectiveness.

Product Solution

MediQueue is an AI-powered patient flow management solution designed to optimize hospital operations, reduce wait times, and improve the overall patient experience. It leverages predictive analytics, real-time tracking, staff analytics and smart communication tools to streamline patient movement and staffing.

Vision and Goal

Vision: To revolutionize hospital operations and patient care by providing a seamless, efficient, and patient-centric experience.

Goal: To reduce patient frustration and wait times by 30%, reveal gaps in staffing in health systems using data driven evidence, improve patient satisfaction by 25%, and increase operational efficiency by 20% within the first year of implementation.

User Personas

1. Chioma Okeke – Outpatient

Age: 34

Occupation: Teacher

Tech Comfort: Moderate

Pain Points: Long wait times, poor communication, unclear scheduling

Goals: Quick appointment updates, minimal wait, clear instructions

2. Dr. Ahmed Musa – Chief Medical Officer

Age: 50

Pain Points: Overwhelmed staff, inefficient flow, missed appointments

Goals: Real-time planning, reduced congestion, better decisions

3. Nurse Grace Johnson – Triage Nurse

Age: 29

Pain Points: Delays in updates, overwork

Goals: Accurate queue updates, better shift planning, effective communication

Roadmap

Phase 1: **MVP Development (1 - 2 months)**

1 **Predictive analytics:** Develop AI-powered predictive analytics to forecast patient flow and wait times.

2. **Real-time data analysis:** Implement real-time data analysis to track patient movement and wait times.

3. **Personalized communication:** Develop personalized communication features to keep patients informed about their wait times and appointment status.

4. **Automated workflow optimization:** Develop automated workflows to optimize resource allocation. Monitor staff utilization rates, including hours worked, patient load, and productivity.

and reduce administrative burden.

5. **Data Encryption and Role based access control** : Encrypt data to protect sensitive information and limit access depending on the role of the user .

Phase 2: Feature Enhancement (3--4 months)

1. **Integration with EHR** systems: Integrate MediQueue with electronic health record (EHR) systems to access patient data and medical history.

2. **Predictive modeling**: Develop predictive models that forecast staffing needs based on historical data, seasonal trends, and other factors.

Phase 3: Scaling and Refining (4-6 months)

1. **Scalability**: Ensure MediQueue can handle large volumes of data and traffic.

2. **Refining features**: Refine features based on user feedback and testing.

3. **Expanding integrations**: Expand integrations with other hospital systems, such as laboratory and radiology systems and also government health agencies so real time analytics can be related

MVP Prioritization

Must-have features:

1. Predictive analytics
2. Real-time data analysis

3. Personalized communication
- 4.Data Encryption and role based access

Should Have features:

1. Automated workflow optimization
2. Patient feedback mechanism
3. Integration with EHR systems

Could Have

Predictive Staffing

1. Demand forecasting: Forecast demand for healthcare services, including patient volume and acuity.
- 2.Staffing recommendations: Provide recommendations for staffing levels, including the number of healthcare professionals needed to meet demand.
- 3 Alert system: Develop an alert system that notifies administrators and appropriate government agencies when staffing levels are inadequate or when there is a high risk of work overload.

Won't Have Now

Integration with HR Systems

1. Integration with HR systems: Integrate MediQueue with HR systems to access staffing data, including employee schedules, time-off requests, and training records.
- 2 Automated reporting: Generate automated reports on staffing levels, workload, and productivity.

Machine Learning

- 1 Machine learning algorithms: Utilize machine learning algorithms to analyze data and identify patterns and trends that can inform staffing decisions.

2. Continuous improvement: Continuously update and refine predictive models based on new data and feedback.

Technical Team Required

1. Data scientist: Develop predictive analytics and real-time data analysis features.
2. Software engineer: Develop MediQueue's core features and integrate with hospital systems.
3. UX/UI designer: Design a user-friendly interface for patients and hospital staff.
4. Project manager: Oversee the development process and ensure timely delivery.

Product Strategy

1. Focus on patient-centricity: Design MediQueue with the patient experience in mind.
2. Data-driven decision-making: Use data analysis and insights to inform decision-making and optimize hospital operations.
3. Collaboration with hospitals and government health agencies: Work closely with hospitals to understand their needs and develop a solution that meets their requirements.


Go-to-Market Strategy

1. Target market identification: Identify target hospitals and healthcare systems.
2. Marketing and promotion: Develop marketing materials, such as brochures, videos, and website content to promote MediQueue.

3. Partnerships and collaborations: Establish partnerships with hospitals, healthcare systems, and medical associations to promote MediQueue.

4. Pilot programs: Conduct pilot programs to test MediQueue in real-world settings and gather feedback.

MediQueue Wireframe

MediQueue	Real-time Updates
<div><div>Patient Dashboard</div><div><div></div><div><div>APPOINTMENT</div><div>Today at 9:00 AM</div><div>STATUS</div><div>Checked In</div></div></div></div> <div><div>WAIT TIMES</div><div>Estimated Wait: 20 minutes</div></div> <div><div>Personalized Communication</div><div>Your appointment is scheduled for 9:00 AM. We will notify you when it is time to proceed.</div></div>	<div><div>Appointment Status</div><div><div></div></div><div>15 minutes remaining</div></div> <div><div>Personalized Communication</div><div><div>Rate your experience:</div><div>Enter your feedback</div></div></div>