

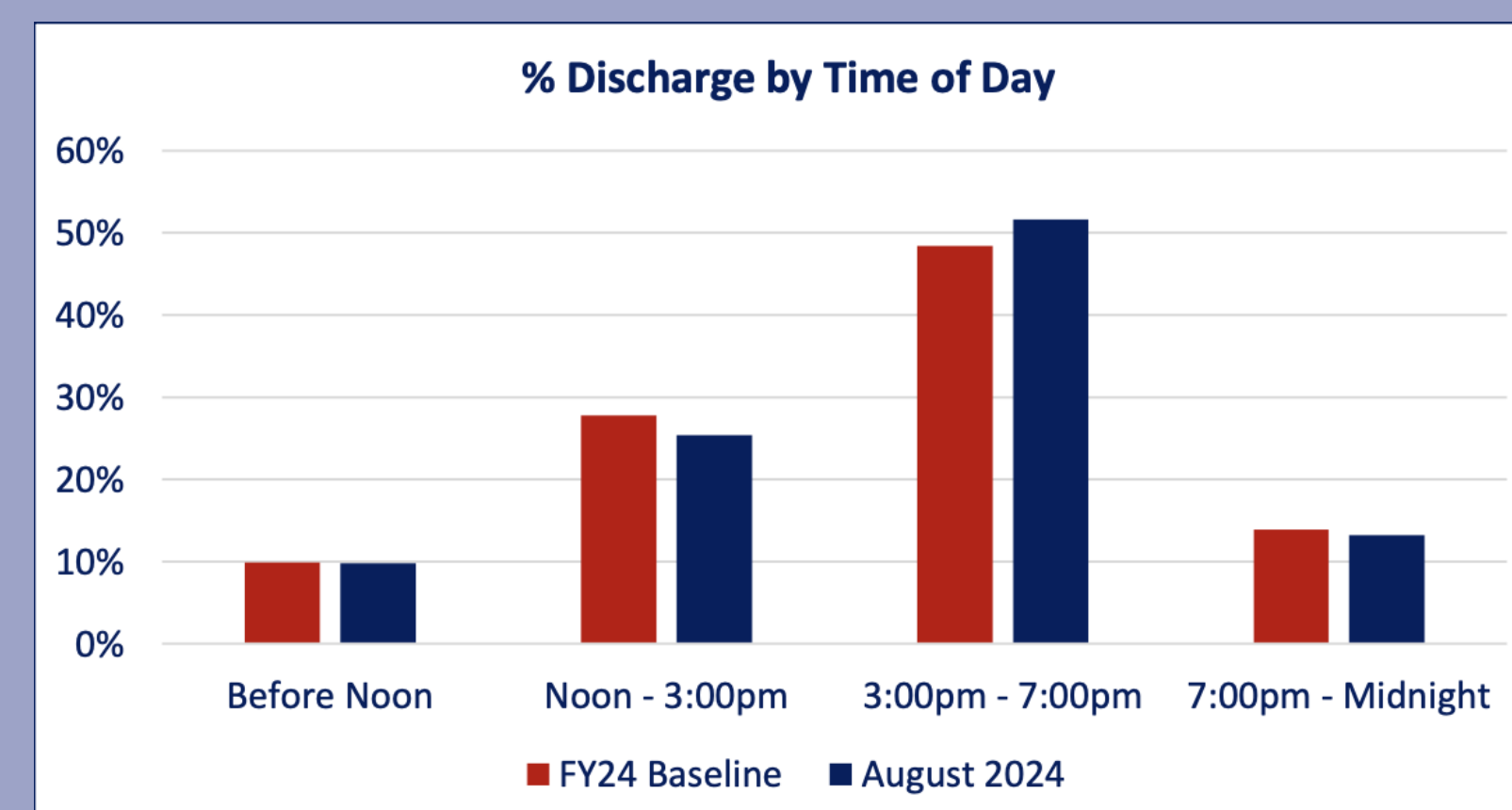
Optimizing Patient Discharge Process to Minimize Discharge Delays

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Problem Statement

92% Patients

are discharged after the hospital's target time of noon



Factors

Patient	Patients refuse to leave due to lack of home care, dissatisfaction with treatment plan, change in vitals, etc.
Doctors	Doctors can't visit discharge patients early due to emergency, med reconciliation, geographical bed location, etc.
Transportation	Delays occur when ambulances are late, family members are unavailable due to work, or transportation services are limited on weekends.
Diagnostics	It can take hours to check test result due to full beds and unclear medication response time.
Nurses	With heavy workload, nurses can't check new discharge orders on EPIC frequently.
Pharmacy	Only 2 staff filling with hundreds of prescriptions in outpatient pharmacy.

3 Step Solution and AI Model

3 Step Solution



Discharge List

After daily Multi-D meetings, develop a discharge patient list to streamline morning doctor visits. This process could accelerate issuing discharge notes, potentially saving 1 hour and 36 minutes per patient discharge.

Notification on Epic

Implement nurse-oriented real-time notifications in EPIC, alerting nurses when doctors place discharge orders. This ensures prompt awareness of discharge-ready patients, potentially saving 1 hour and 30 minutes per discharge process.

Pre-Order Drugs

Submit prescription orders to the outpatient pharmacy a day before discharge to ensure medications are ready for pickup. Any changes on discharge day can be adjusted, saving an estimated of 1 hour and 30 minutes.



Using AI



AI-Enhanced Medication Reconciliation

We propose integrating predictive analytics and AI-driven clinical decision support systems (CDSS) with Epic EHR to streamline medication reconciliation at discharge. This solution prioritizes high-risk medications and provides real-time alerts, reducing reconciliation time from 75 minutes to approximately 15-30 minutes, enhancing efficiency and patient safety.

AI-Powered Patient Transportation Coordination

Transportation from the hospital to homes or secondary facilities often presents challenges. Leveraging existing AI models that predict treatment needs, we can also estimate the patient's length of stay. This prediction can notify families of the pickup date and schedule ambulance services, ensuring a smooth discharge process and minimal delays.

Methodology

Literature Review

Analyze related web pages and papers

Stakeholders Interview

Observe and ask in various hospital departments

Time Study Analysis

Record time for each discharge link

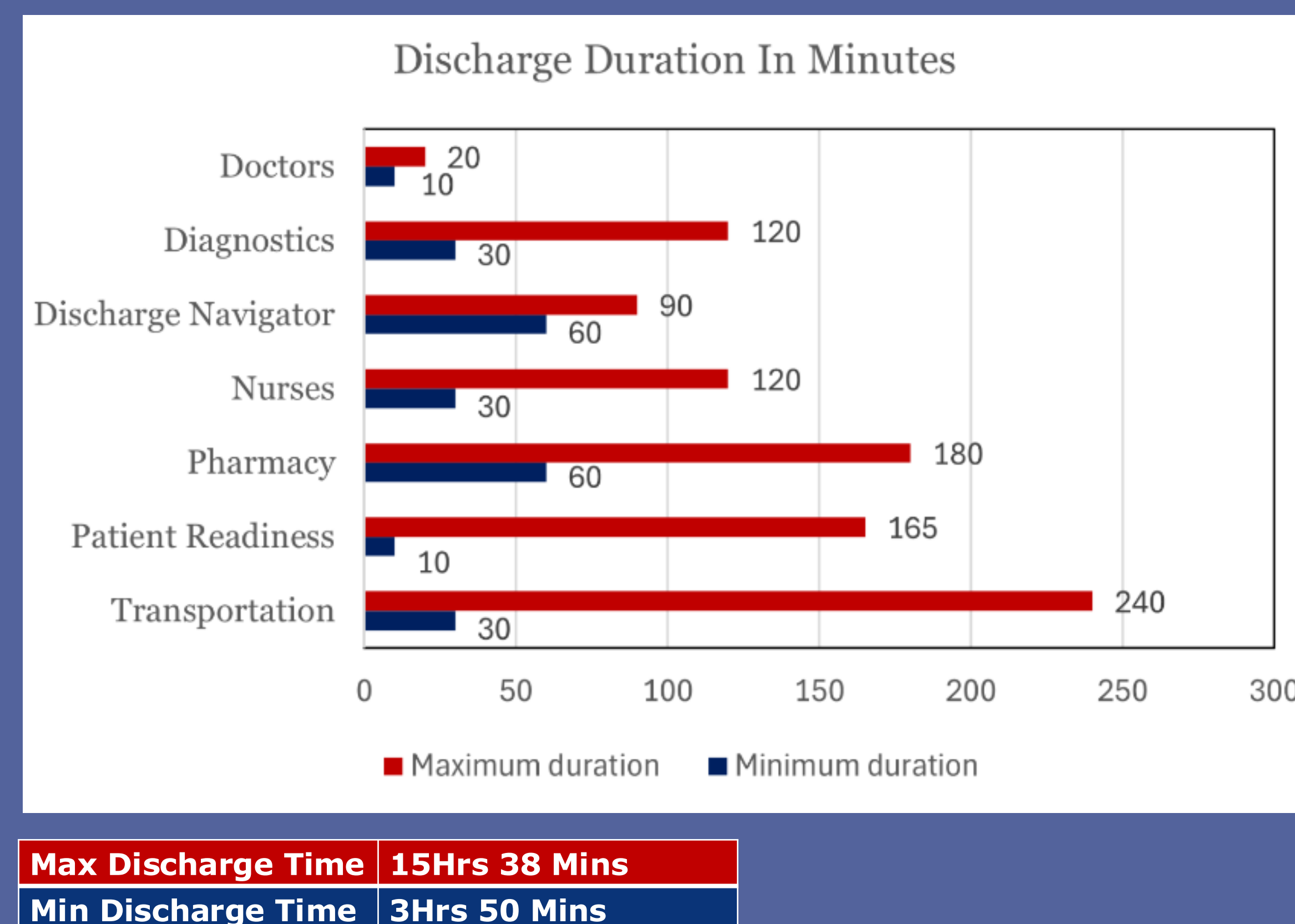
Limitations

- Staff, including nurses and doctors, may resist new features due to familiarity with existing processes and concerns about increased workload. Ensuring proper training and understanding of new protocols is essential for successful adoption.
- Incomplete or inaccurate historical data used to train the AI model can lead to flawed predictions about patient discharge times. Missing patient histories or poorly recorded outcomes can result in unreliable forecasts.

Key Takeaways

The discharge process is crucial to hospital efficiency, but delays remain due to four main factors: late doctor visits, nurses not checking orders on EPIC promptly, overloaded pharmacy staff, and transportation delays. We recommend discharge lists, enabling EPIC notifications for nurses, pre-ordering medications, using AI to assist med reconciliation and transportation. These changes are expected to reduce discharge times by 29%, improving hospital workflow and patient satisfaction.

Time Study Analysis



Impact – Time Saved

Save up to

29%

Time

Discharge List - 96 mins

Notification on EPIC - 90 mins

Pre-order drugs - 90 mins

AI Model - 60 mins