Phase 1: Ideation Phase

Defining problem statement

Field	Details
Date	9 November 2025
Team ID	NM2025TMID02588
Project Name	Medical Inventory Management
Maximum Marks	5 Marks

The Challenge

Our current manual or fragmented medical inventory management processes suffer from low data visibility, high inaccuracy, and poor compliance control, leading to significant operational risks and unnecessary costs.

Key Points and Negative Impacts

1. High Risk of Critical Stockouts and Treatment Delays:

- **Pain Point**: We lack real-time, consolidated visibility into stock levels across all clinics, hospitals, and satellite warehouses. Relying on periodic, manual counts and siloed systems prevents accurate, centralized monitoring.
- **Impact**: This results in frequent, unpredicted stockouts of essential supplies (Tier A items), necessitating expensive, last-minute emergency procurement and potentially delaying critical patient treatments or procedures.

2. Excessive Waste and Financial Loss from Expiration:

- **Pain Point:** The manual tracking of lot numbers and expiration dates is error-prone, making it impossible to enforce a consistent First Expired, First Out (FEFO) rotation policy.
- **Impact:** This leads to a high percentage of medical supplies, especially pharmaceuticals and high-value surgical items, expiring on the shelf, resulting in significant, preventable financial write-offs and resource waste.

3. Regulatory Non-Compliance and Audit Vulnerability:

- **Pain Point:** We cannot quickly and accurately trace the usage history (who used it, on which patient, and when) of specific lot/batch numbers for recalled or expired medical devices.
- **Impact:** This exposes the organization to severe regulatory penalties (e.g., FDA/Health Authority fines), complicates audit responses, and poses a direct patient safety risk in the event of a product recall.

4. Inefficient Labor Utilization and High Carrying Costs:

- **Pain Point:** Staff spend excessive time on non-value-added activities, such as manually searching for stock, correcting inventory errors, and physically re-keying data into multiple disconnected systems (ERP, local spreadsheets).
- **Impact:** This drives up operational labour costs, inflates overall inventory carrying costs due to unnecessary safety stock buffers, and takes clinical staff away from direct patient care.