

# Project Title: Medical Inventory Management

**Date:** November 01, 2025

**Team ID:** NM2025TMID01196

**Maximum Marks:** 4 Marks

This phase involves ideation and strategic planning to build a comprehensive Medical Inventory Management system that streamlines inventory tracking, stock management, expiration date monitoring, and supply chain operations for healthcare facilities. The objective is to identify challenges in medical inventory management and brainstorm creative solutions that maximize operational efficiency, reduce waste, ensure compliance, and maintain optimal stock levels.

## Phase 1: Brainstorming, Idea Generation, and Prioritization

### Team Ideas

| Team Member   | Initial Idea  | Built-On Idea  |
|---------------|---|--|
| Team Member 1 | Create comprehensive inventory tracking with real-time stock levels and locations | Add barcode/QR code scanning and automated low-stock alerts with predictive reordering |
| Team Member 2 | Develop expiration date monitoring system with alerts                             | Integrate automated rotation schedules (FEFO/FIFO) and waste reduction analytics       |
| Team Member 3 | Build supplier management system with order tracking                              | Add automated purchase order generation and supplier performance metrics               |
| Team Member 4 | Implement compliance tracking for medical regulations                             | Create audit trails, batch tracking, and automated compliance reporting                |

### Purpose and Approach

### Team Collaboration & Problem Statement

The project team collaborated to identify key challenges in medical inventory management: tracking critical supplies and medications, managing expiration dates to minimize waste, maintaining optimal stock levels to prevent shortages, ensuring regulatory compliance and audit readiness, and coordinating with multiple suppliers and departments.

Each team member shared experiences from healthcare and inventory management domains and reviewed industry-specific solutions for medical facilities, hospitals, and pharmaceutical warehouses.

## **Brainstorming & Idea Listing**

Team members freely shared ideas for inventory tracking, expiration management, automated reordering, supplier coordination, and compliance monitoring. Ideas were compiled to ensure comprehensive coverage of all medical inventory operations.

## **Grouping, Prioritization, and Action Planning**

Ideas were organized into categories: inventory tracking and management, expiration date monitoring, automated procurement and reordering, supplier management, compliance and audit trails, and reporting and analytics.

Prioritized for maximum business impact: real-time inventory tracking with location management, expiration date alerts and FEFO/FIFO workflows, automated reorder point calculations, supplier performance tracking, and comprehensive compliance dashboards.

Visual workflow diagrams and data models were created to illustrate the system architecture and inventory flow processes.

## **Action Plan & Next Steps**

Chosen ideas were developed into actionable tasks:

- Design database schema for inventory items (with batch numbers and expiration tracking), suppliers, purchase orders, and transactions.
- Build barcode/QR code scanning module for quick inventory updates and stocktaking.
- Develop expiration monitoring system with automated alerts and rotation schedules.
- Create automated reordering workflows based on minimum stock levels and consumption patterns.
- Design supplier management portal for order placement and performance tracking.
- Implement audit trail system for regulatory compliance and reporting.
- Design dashboards for inventory valuation, expiration forecasts, and stock movement analytics.
- Schedule weekly sprints to iterate on features and gather stakeholder feedback.

## **Conclusion**

This brainstorming and prioritization phase established a clear roadmap for developing a comprehensive Medical Inventory Management system. By organizing ideas systematically and assigning actionable tasks, the team is positioned to create a scalable, efficient, and compliance-focused platform that addresses the unique challenges of medical inventory management in healthcare facilities.