IDEATION PHASE - DOCUMENT 2:

DEFINE PROBLEM STATEMENT

Date	06 November 2025
Team ID	7DDB99C3AFBFD678BC14B32342A420F8
Project name	Medical Inventory Management
Maximum Marks	4 Marks

Title: Brainstorming for "Medical Inventory Management"

1.Objectives :

The main objectives of defining a problem statement in **Medical Inventory Management** are to clearly identify and understand the key challenges affecting the efficiency and accuracy of managing medical supplies. It aims to outline issues such as overstocking, stockouts, expired medicines, poor tracking, and lack of real-time data visibility. By defining the problem precisely, organizations can focus on finding effective solutions that ensure the timely availability of essential medicines and equipment, reduce wastage, and optimize costs. A well-defined problem statement also helps in setting clear goals for improving inventory control systems, enhancing coordination among departments, and ensuring patient safety

---

2.Context and Background :

Medical inventory management is vital for ensuring patient safety, operational efficiency, and cost control in healthcare settings. Historically reliant on manual processes, it has evolved with technology—such as barcode scanning, RFID, and AI—to enable real-time tracking and predictive restocking. Key challenges include preventing stockouts and waste, managing expiration dates, and maintaining regulatory compliance. Recent disruptions like the pandemic have underscored the need for resilient, data-driven supply chains. Today, integrated systems and smart technologies support just-in-time inventory while aligning with clinical workflows and sustainability goals.

Problem Statement

Effective educational leadership in international expatriate schools is needed in order to implement research-based practices, particularly those that foster the development of empathetic and culturally competent graduates prepared to face an increasingly complex global society. A global, knowledge-based economy requires graduates who are knowledgeable and equipped to attend to complex problems in intercultural settings. In order to prepare these graduates for a global and culturally diverse economy, educators need to understand how to increase global-minded citizenry and how to use international expatriate educational leaders' strengths to guide schools toward preparing these graduates.

Research that does not include the integration of parents' and teachers' perceptions of their leadership teams becomes disjointed rather than inclusive, according to Neumerski (2013). There has remained a dearth of research regarding effective international expatriate educational leadership (Wong et al., 2010), particularly through the lens of stakeholders of diverse nationalities. Without the inclusion of stakeholders' perspectives, there will remain limits to school improvement, parent education and awareness, and partnered efforts toward lasting school reform, particularly reforms aimed at educating the next generation of global problem solvers (RAND Corporation, 2014).

Lewis, A. H. (2016). *Developing global citizens: Perceptions regarding educational leadership in an international expatriate school* (Doctoral dissertation). ProQuest Dissertations and Theses database. (Order No. 3745378)

3.Problem Observation :

- **Difficulty in Tracking Stock Levels**: Hospitals and pharmacies often struggle to keep real-time updates of medicines and medical supplies. This leads to either overstocking (wastage due to expiry) or stockouts (unavailability of critical medicines).

- **Manual Record Maintenance:** In many medical stores and clinics, inventory is recorded manually using registers or spreadsheets. This is time-consuming, error-prone, and may lead to incorrect data entries.

- **Expiry Date Mismanagement:** Medicines have strict expiry dates. Without proper tracking, expiredor near-expiry drugs may remain unnoticed, causing financial loss and risk to patient safety.

4.Core Problem Statement :

Medical inventory in hospitals and pharmacies is often managed manually, which leads to errors, delays, and confusion. There is difficulty in tracking available stock, checking expiry dates, and knowing when to reorder medicines. This can cause shortage of important medicines or wastage due to expiry, affecting patient care and increasing overall cost.

- To create a system that maintains accurate and up-to-date records of all medical stock.

- To provide quick access to information like quantity, expiry date, and storage location of medicines.

- To generate alerts for low stock and upcoming expiry.

---

5. Project Goals :

- To create a system that maintains accurate and up-to-date records of all medical stock.
- To provide quick access to information like quantity, expiry date, and storage location of medicines.
- To generate alerts for low stock and upcoming expiry.
- To reduce manual work and human errors in managing inventory.

5. Scope and Constraints :

- The system will store details of medicines, suppliers, stock quantity, and expiry dates.
- It will allow staff to add, update, and check inventory easily.
- It will provide automated notifications for restocking and expiry.

Constraints:

- Needs proper computer and stable power supply.
- Staff must be trained to use the system.
- Accuracy depends on correct data entry.

7.Technical Relevance :

This project uses basic software technologies such as database management, user interface design, and inventory tracking methods. By digitizing the record-keeping process, the system ensures faster data

access, improved accuracy, and better decision-making. It supports efficient hospital operations and enhances patient safety.

---

8. Success Criteria

- Inventory records are maintained correctly without frequent errors.
- Staff can easily check and update medicine stock.
- System successfully alerts low stock and expiry on time.
- Reduced wastage of expired medicines and minimized stock shortages.
- Overall improvement in efficiency of medical inventory management

---

8.Expected Impact :

- The implementation of an effective Medical Inventory Management system is expected to bring significant improvements in the healthcare supply chain.
- It ensures that essential medicines, equipment, and medical supplies are available at the right time and in the right quantity. This leads to reduced stockouts and overstock situations, thereby minimizing wastage and financial losses.
- Improved tracking and automation enhance accuracy in inventory records, streamline procurement, and promote better decision-making.
- Additionally, it increases operational efficiency, saves time for healthcare professionals, and enhances patient care by ensuring uninterrupted availability of medical resources.Overall, a well-managed inventory system contributes to cost efficiency, transparency, and improved healthcare delivery.