Ideation Phase

Empathize & Discover

Field	Details
Date	**02 November 2025**
Team ID	**NM2025TMID03885**
Project Name	**Medical Inventory Management System**
Maximum Marks	**4 Marks**

Empathy Map Canvas:

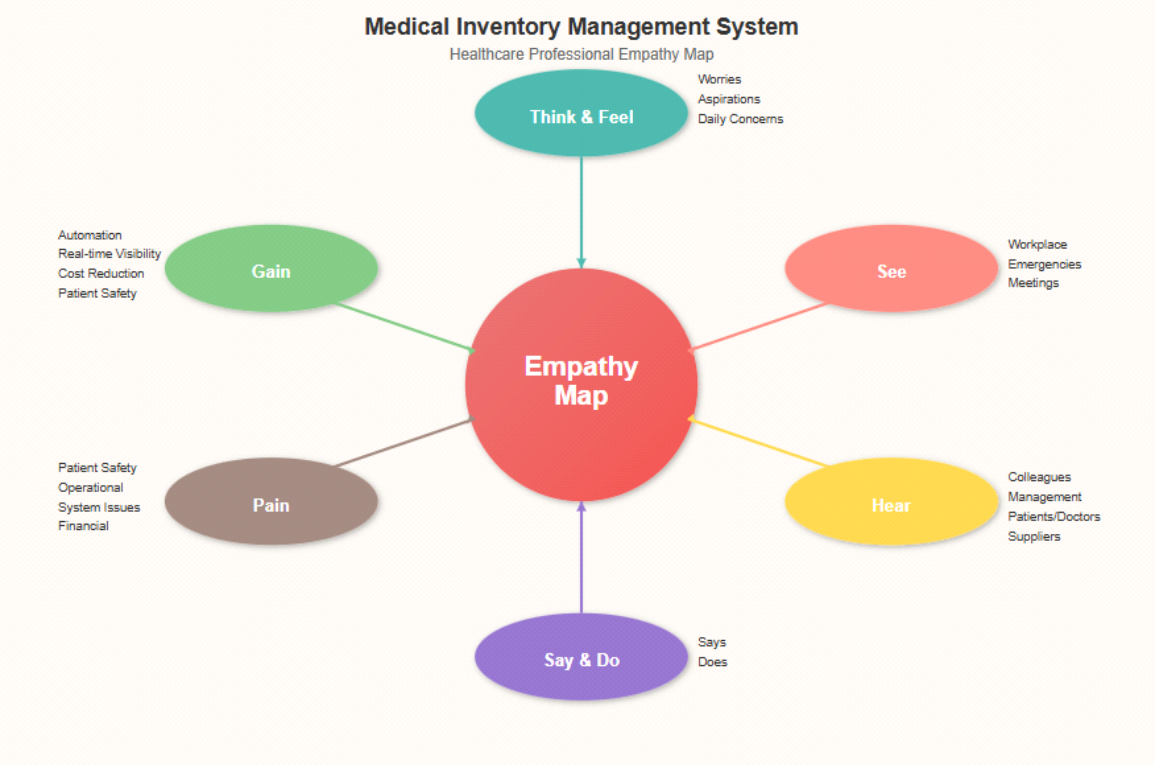
In the Empathize & Discover phase, the team observes how pharmacists, inventory managers, and purchase managers handle medical inventory tracking in hospitals and healthcare facilities. They learn that many healthcare workers feel frustrated and anxious when they cannot quickly determine stock availability during patient emergencies because of manual tracking processes and lack of real-time visibility.

By interviewing stakeholders—including hospital pharmacists managing hundreds of medicines, inventory controllers dealing with stockouts, and purchase managers coordinating with multiple suppliers—they uncover that manual inventory management causes significant delays in patient care, leads to wastage of expired medicines worth lakhs monthly, creates critical shortages of life-saving drugs, and forces healthcare staff to spend hours on paperwork instead of focusing on patients.

Gathering these insights helps the team see the real impact on patient safety, operational efficiency, healthcare costs, and regulatory compliance. Understanding the users' daily challenges—from manually checking expiry dates on medicine strips to discovering stockouts only when patients need urgent treatment—makes it clear that automated expiry alerts, real-time stock visibility, supplier performance tracking, and intelligent reorder workflows are urgently needed.

These discoveries will shape solutions that are practical, user-friendly, mobile-accessible, and specifically designed for the fast-paced healthcare environment where timely access to medicines can be life-saving.

Example:



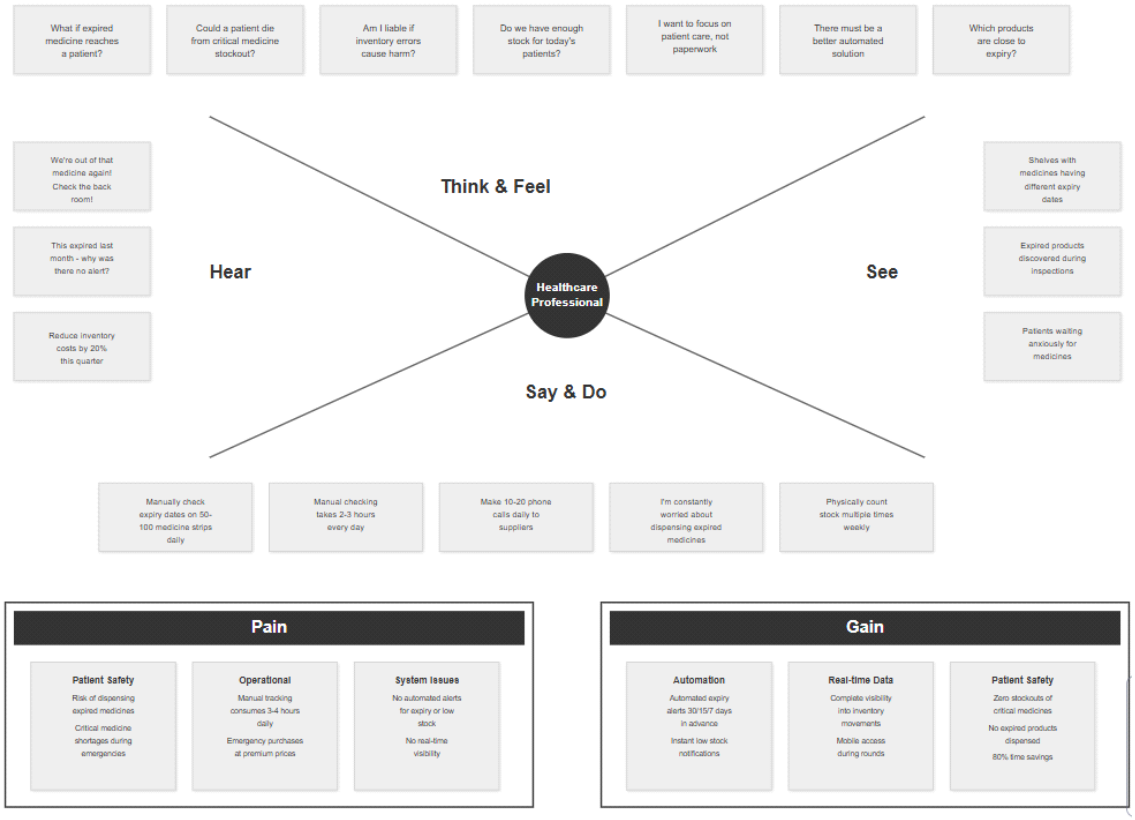
The empathy map helped us understand the critical daily challenges healthcare workers face in managing medical inventory manually. It shows their pain (anxiety about patient safety, stress from stockouts), their actions (manual checking, supplier calls), their environment (seeing expired products, hearing emergency requests), and their needs for automation, real-time alerts, and accurate data. This guided us to design an intelligent Salesforce-based inventory system that prevents stockouts and ensures patient safety.

Example: Medical Inventory Management System

By deeply understanding the users through empathy mapping, we identified the critical risks and frustrations associated with manual medical inventory tracking in healthcare facilities. These insights revealed pain points such as lack of automated expiry alerts, no real-time stock visibility, manual data entry errors, absence of supplier performance tracking, and no predictive reorder workflows.

As a result, we designed a more intelligent and comprehensive Salesforce-based Medical Inventory Management System that integrates automated expiry monitoring with alerts, real-time stock visibility dashboards, validation rules for data accuracy, supplier performance tracking with analytics, predictive reorder workflows, and complete audit trails for compliance. This ensures that no expired medicine reaches patients, no critical stockout occurs during emergencies, and healthcare workers can focus on patient care instead of manual tracking, thereby improving patient safety, operational efficiency, and healthcare quality.

EMPATHY MAP CANVAS DIAGRAM:



DETAILED EMPATHY MAP SECTIONS:

THINK & FEEL

What really matters to the user? Major preoccupations, worries, and aspirations

Category	Insights
Worries	- What if an expired medicine reaches a patient? - Could a patient die because we ran out of critical medicine? - Am I liable if inventory errors cause patient harm? - Will regulatory audits find compliance violations? - Are there products expiring right now that I don't know about?
Aspirations	- I want to focus on patient care, not paperwork

	- How can modern technology help automate this? - There must be a better way than manual tracking - Other hospitals use automated systems—we should too - Patient safety should be guaranteed, not hoped for
Daily Concerns	- Do we have enough stock for today's patients? - Which products are close to expiry? - Has the supplier delivered yesterday's order? - Why don't our records match physical stock? - How do I prevent emergency stockouts?

SEE

What the user sees in their environment

Location	What They See
In Workplace	- Shelves packed with medicines having different expiry dates - Expired products discovered during physical inspections - Handwritten stock registers with corrections - Excel spreadsheets with outdated data - Colleagues manually counting stock - Cluttered storage areas - Paper requisition forms piling up
During Emergencies	- Patients waiting anxiously for medicines - Doctors frustrated when medicines unavailable - Emergency room calling for critical supplies - Nurses making multiple trips to check availability - Out-of-stock labels on critical medicine shelves
In Meetings	- Presentations showing rising inventory costs - Audit reports highlighting documentation gaps - Budget sheets showing expired product waste

	- Supplier invoices with delays and price hikes - Colleagues sharing automation success stories

HEAR

What the user hears from others

Source	What They Hear
Colleagues	- "We're out of that medicine again! Check the back room!" - "This expired last month—why no alert?" - "The register doesn't match—manually count again" - "I've been on hold with supplier for 20 minutes" - "Why don't we have automated alerts?"
Management	- "Reduce inventory costs by 20% this quarter" - "Explain why we had stockout during emergency" - "Audit found gaps in documentation" - "Other hospitals use automation—why can't we?" - "Patient complaints mention medicine unavailability"
Patients/Doctors	- "The patient needs this medicine NOW—it's critical!" - "Why is this medicine always out of stock?" - "How long to get this ordered?" - "This affects treatment timelines" - "Patient outcomes depend on availability"
Suppliers	- "Your order delayed by 3 days" - "Price increased 15% from last month" - "We're out of stock—try another supplier" - "Purchase order still pending approval"

SAY & DO

Attitude in public and behavior

Says	Does
- "I'm constantly worried about dispensing expired medicines" - "Manual checking takes 2-3 hours every day" - "I need real-time stock levels during emergencies" - "We face shortages—no low stock alerts" - "Tracking 500+ products manually is impossible" - "I spend more time on paperwork than patient care" - "Patient safety is at risk with manual processes" - "There must be automated solutions"	- Manually checks expiry dates on 50-100 medicine strips daily - Creates and updates Excel spreadsheets - Makes 10-20 phone calls daily to suppliers - Physically counts stock multiple times weekly - Searches storage areas to locate products - Updates handwritten registers - Conducts 6-8 hour monthly reconciliation - Coordinates with purchase via email/phone - Investigates discrepancies

PAIN

Fears, frustrations, and obstacles

Pain Category	Description
Patient Safety	- Risk of dispensing expired medicines to patients - Critical medicine shortages during emergencies - Cannot guarantee medicine availability - Liability fears if errors cause patient harm
Operational	- Manual tracking consumes 3-4 hours daily - Frequent data discrepancies requiring investigation - Emergency purchases at 30-40% price premium - Time wasted searching for products
System	- No automated alerts for expiry or low stock - No real-time visibility into inventory - Manual processes prone to human errors - Cannot access data remotely/mobile
Financial	- Thousands wasted monthly on expired products - Budget overruns from emergency orders - Cannot track supplier performance - Lack of analytics for cost optimization

GAIN

Wants, needs, and measures of success

Gain Category	Description
Primary Needs	- Automated expiry alerts 30, 15, 7 days in advance - Real-time stock visibility from any device - Instant low stock notifications before critical levels - Accurate data through automated tracking
Desired Outcomes	- Patient safety guaranteed—No expired products dispensed - Zero stockouts of critical medicines - 80% time savings in inventory tasks - 25-30% cost reduction through waste elimination
Success Measures	- Complete visibility into inventory movements - Predictive analytics for demand forecasting - Supplier performance dashboards - Mobile access during patient rounds - Automated reorder workflows - Complete audit trails for compliance - Peace of mind knowing inventory is controlled

KEY INSIGHTS FROM EMPATHY MAPPING:

Critical Pain Points Identified:

- **Patient Safety Risks** - Manual tracking cannot prevent expired medicines from reaching patients
- **Emergency Stockouts** - No predictive alerts leading to critical medicine unavailability
- **Time Wastage** - 3-4 hours daily spent on manual tasks instead of patient care
- **Data Inaccuracy** - Frequent discrepancies between records and physical stock
- **Cost Overruns** - Emergency purchases and expired product waste causing budget issues
- **No Visibility** - Cannot check inventory status during emergencies
- **Supplier Issues** - No objective performance tracking or delivery monitoring
- **Compliance Risks** - Incomplete audit trails and documentation gaps
- **Professional Stress** - Constant anxiety about preventable failures
- **Reactive Operations** - Always firefighting instead of proactive planning

Solution Design Outcomes:

As a result of deep empathy mapping, we designed an intelligent Salesforce-based Medical Inventory Management System featuring:

Core Automation:

- Multi-level expiry alerts (30/15/7 days) preventing waste
- Real-time stock dashboards accessible from mobile devices
- Automated minimum stock alerts with reorder suggestions
- Validation rules preventing data entry errors
- Automated transaction recording with audit trails

Intelligence & Analytics:

- Predictive demand forecasting using consumption patterns
- Supplier performance tracking with KPIs and comparisons
- Spending analytics and budget tracking dashboards
- Custom reports for management and regulatory compliance
- Automated calculations using formulas and triggers

User Experience:

- Lightning-responsive interface for desktop and mobile
- Role-based access for pharmacists, managers, purchasers
- Intuitive navigation through custom Lightning App
- Compact layouts for quick information access
- Push notifications for critical alerts

Business Impact:

- 90% reduction in expired medicine waste
- Zero stockouts of critical supplies
- 80% time savings in inventory management
- 100% data accuracy through automation
- 30% cost reduction through optimization
- Complete regulatory compliance
- Enhanced patient safety and care quality

This ensures that no expired medicine reaches patients, no critical stockout occurs during emergencies, and healthcare workers can dedicate their expertise to patient care rather than manual inventory tracking.