



Pharmaceutical Inventory Management Demand Planning

Client

Hospital Pharmacy Chain in Phoenix, Arizona

Industry

Healthcare Pharmaceutical Inventory Management

Solution

Intelligent Inventory Optimization Demand Forecasting Platform

Challenge

Phoenix hospital pharmacy chain with 28 locations experienced 18% stockout rates for critical medications, \$4.6M annual costs from expedited orders and inventory carrying expenses, manual demand planning taking weeks to adjust for seasonal variations, difficulty coordinating inventory across multiple hospital locations, and challenges managing medications with varying shelf lives and storage requirements.

AI Consulting Approach

- **Inventory Flow Analysis:** Supply chain consultants analyzed medication usage patterns, ordering processes, and inventory turns to identify optimization opportunities using demand forecasting and inventory management techniques.
- **Comprehensive Planning Platform:** Analytics system processing historical usage data, seasonal patterns, and supplier information to optimize inventory levels and reduce stockouts.

AI Solution

- **Usage Pattern Analysis:** Data analytics examining historical medication consumption, patient census trends, and seasonal factors to improve demand forecasting accuracy
- **Automated Reordering:** System generating purchase recommendations based on usage forecasts, lead times, and safety stock requirements for each medication category
- **Multi-Location Coordination:** Platform optimizing inventory distribution across hospital locations based on individual facility needs and transfer capabilities



- Expiration Management: Inventory tracking system monitoring medication shelf lives and recommending usage priorities to minimize pharmaceutical waste

Implementation (22 weeks total)

- Inventory Analysis (5 weeks)
- Platform Development (8 weeks)
- System Integration (7 weeks)
- Testing Training (2 weeks)

Key Results

Inventory Performance:

- 6% stockout rates (vs. 18%), \$2.8M reduction in expedited ordering and carrying costs, improved medication availability for patient care

Operational Efficiency:

- 70% reduction in manual demand planning time, enhanced coordination across hospital locations, better pharmaceutical waste management

Business Impact:

- \$3.4M annual value creation, improved patient care through better medication availability, 175% consulting ROI, strengthened inventory management capabilities

Technologies:

- Demand forecasting software
- inventory management platform
- automated ordering systems
- expiration tracking tools