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# AI in Healthcare Supply Chain Optimisation Course

23 – 27 August 2027
Madrid

# AI in Healthcare Supply Chain Optimisation Course

**Ref:** 94_2368 **Date:** 23 – 27 August 2027 **Location:** Madrid **Fees:** 6200 GBP

AI in Healthcare Supply Chain Optimisation is a 1-week training course for hospital supply chain managers, pharmacy procurement leads, logistics planners and operations directors, ending with an AI-enabled medical supply optimisation plan. Medicine shortages, expiring stock and broken cold chains reach the bedside quickly, so hospitals need forecasts and alerts that see trouble before a ward runs out. Jupiter Prime Training runs this AI in Healthcare Supply Chain Optimisation course.

## Why AI in Healthcare Supply Chain Optimisation Matters Now

Manufacturers concentrate production of critical medicines in few plants, so a single quality failure triggers shortages. Clinical demand swings with seasonal infections, elective surgery backlogs and new treatment protocols. Finance directors press to cut stock holdings while clinicians refuse substitutions that affect patient safety. A hospital that manages this well keeps essential medicines on the shelf with less waste; one that manages it badly cancels procedures, discards expired vaccines and pays emergency prices. The course draws on ISO/IEC 42001 for AI management systems and the NIST AI Risk Management Framework NIST AI RMF for trusting forecasting models.

## Who Gains Most from AI in Healthcare Supply Chain Optimisation

- Supply chain leads who own hospital stores, replenishment and distribution to wards
- Pharmacy procurement leads who buy medicines and manage formulary substitutions
- Logistics planners who schedule deliveries, cold chain transport and theatre kits
- Operations directors who balance stock investment against service continuity
- Biomedical and laboratory leads who order reagents and device consumables

A hospital group or central medical supply organisation gains most when its pharmacy, stores and finance leads attend together and agree one shortage escalation route.

## AI in Healthcare Supply Chain Optimisation Capabilities

Participants use dispensing histories, expiry reports and temperature logs to judge where a model forecasts and where a pharmacist decides.

- Assess machine learning forecasts for medicines and consumables against dispensing history — pharmacy leads
- Calculate par levels and reorder points that cut expiry without raising stock-outs — stores managers
- Design cold chain monitoring rules for vaccines, biologics and blood products — quality pharmacists
- Specify supplier risk scores that flag likely shortages before orders fail — procurement committees
- Build shortage early warning alerts with substitution options for clinicians — drug and therapeutics committees
- Communicate stock investment and service levels to finance and clinical boards — operations directors

## Key AI in Healthcare Supply Chain Optimisation Terms

- Demand forecasting — predicting use of each medicine or consumable from dispensing records and seasonal patterns.
- Par level — the target quantity kept on a ward or in a store, topped up on a fixed replenishment cycle.
- Cold chain — the unbroken temperature-controlled storage and transport that vaccines, insulin and biologics need to stay effective.
- Shortage early warning — signals from suppliers, regulators and consumption that predict a product will become unavailable.
- First expiry, first out — issuing the stock that expires soonest first, so fewer items are discarded unused.
- Supplier risk score — a rating combining delivery history, single-source exposure and financial signals.

## AI in Healthcare Supply Chain Optimisation Day by Day

## Day 1: The Medical Supply Landscape

- Hospital Supply Flow Mapping — From Manufacturer to Bedside
- Medicine Shortage Case Studies — Hospitals and Community Pharmacies
- Critical Item Classification — Life-Saving Versus Routine Stock
- Supply Records Readiness — Dispensing, Stores and Expiry Logs
- Supply Maturity Check — Systems, Skills and Escalation Routes

## Day 2: Forecasting Medicines and Consumables

- Machine Learning Demand Forecasting — Seasonal and Case Mix Signals
- Theatre and Procedure Demand Models — Kits and Implants
- Forecast Error Measures — Choosing Accuracy Targets per Item
- New Product and Protocol Changes — Forecasting Without History
- Clinician Input to Forecasts — Formulary and Pathway Updates

## Day 3: Inventory and Cold Chain Optimisation

- Par Level and Reorder Point Optimisation — Stock-Out Versus Expiry
- Multi-Echelon Stock Positioning — Central Store and Ward Cupboards
- Cold Chain Sensor Monitoring — Temperature Excursion Alerts
- Expiry Prediction and Redistribution — Moving Stock Before Waste
- Automated Dispensing Cabinet Records — Consumption Signals for Replenishment

## Day 4: Supplier Risk and Shortage Early Warning

- Supplier Risk Scoring Models — Single-Source and Delivery Signals
- Shortage Early Warning Dashboards — Lead Indicators and Thresholds
- Therapeutic Substitution Rules — Clinician Approval Paths
- NIST AI RMF Measure Function — Testing Forecast Reliability
- ISO/IEC 42001 Controls — Model Ownership and Override Rights

## Day 5: Practising the AI-Enabled Medical Supply Optimisation Plan

- Supply Flow and Critical Items From Day 1 — Baseline Exposure
- Forecast Models and Targets From Day 2 — Demand Assumptions
- Stock and Cold Chain Rules From Day 3 — Inventory Settings
- Shortage Alerts and Substitutions From Day 4 — Escalation Design
- AI-Enabled Medical Supply Optimisation Plan — Costed Version for Approval

## Applying AI in Healthcare Supply Chain Optimisation After the Course

- Run a machine learning forecast for the fifty highest-use medicines and compare its error with the current reorder method.
- Set temperature excursion alerts on one vaccine fridge network and review alerts with the quality pharmacist.

## AI in Healthcare Supply Chain Optimisation Questions FAQ

### What is AI in healthcare supply chain optimisation and why does it matter now?

AI in healthcare supply chain optimisation is the use of machine learning to forecast medicine demand, set stock levels, watch cold chains and predict shortages. It matters now because shortages and waste reach patients quickly.

### Which roles gain most from AI in healthcare supply chain optimisation training?

Hospital supply chain managers, pharmacy procurement leads, logistics planners and operations directors gain most. Laboratory and biomedical leads who order reagents and consumables also benefit.

## How does AI in healthcare supply chain optimisation differ from a general AI in procurement course?

It is a shorter, hospital-specific course centred on medicines, consumables, cold chains and clinical substitution rather than spend analytics or contracts. Every method is tested against patient safety as well as cost.

## What do you bring back from AI in healthcare supply chain optimisation training?

You bring back an AI-enabled medical supply optimisation plan. It sets forecast models, stock levels, cold chain alerts and shortage escalation rules.

## AI in Healthcare Supply Chain Optimisation: The Way Forward

The AI-enabled medical supply optimisation plan informs the first decision: which critical medicines move to model-based replenishment and which shortage alerts reach clinicians. Pharmacy, stores and operations leads use it in weekly supply meetings. After the first quarter, revisit forecast error by item and the substitution rules, because protocols and supplier markets keep shifting.