CONCEPT

AI in Healthcare Delivery: Clinical Decision Support, Patient Flow and Governance

17 – 28 May 2027
Dubai - Five-star CBD venue



AI in Healthcare Delivery: Clinical Decision Support, Patient Flow and Governance

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Introduction:

AI in healthcare delivery is spreading across wards, clinics and bed management faster than hospitals can judge it: deterioration alerts that nobody owns, documentation assistants adopted without accuracy checks, and forecasting tools bought before data is ready. This Core Concept course gives hospital leaders, clinical informatics, quality and operations teams a no-code method to select, evaluate, adopt and govern AI across care and operations, from clinical decision support and ambient scribes to remote monitoring and patient-flow forecasting. Participants build a Prioritised Hospital AI Use-Case Portfolio and Governance Plan.

Course Objectives:

- Build an inventory of AI opportunities across clinical care and hospital operations, each with a decision owner, data source and benefit hypothesis
- Appraise vendor and published evidence for clinical prediction and decision support tools using TRIPOD+AI and CONSORT-AI reporting items
- Configure clinical decision support, documentation assistant, digital triage and remote monitoring workflows with clear alert routing and human sign-off
- Apply demand, bed occupancy and discharge forecasts to capacity and patient-flow decisions
- Assess AI tools for bias, safety, explainability and data readiness, and run vendor due diligence before contract
- Set up AI governance, change control and post-deployment monitoring, and assemble a Prioritised Hospital AI Use-Case Portfolio and Governance Plan

Target Audience:

- Hospital and clinical service managers accountable for adopting new technology in wards, clinics and departments
- Clinical informatics and digital health managers who configure clinical systems and lead digital projects
- Quality, patient safety and clinical governance managers responsible for incident review and safe adoption
- Operations, bed management and capacity planning managers responsible for patient flow and scheduling
- Nursing and medical managers who lead clinician engagement, training and practice change
- Procurement and contract managers who source clinical software and negotiate service terms

Course Outline:

Day 1: AI in Healthcare Delivery Foundations and Value Map

- Machine Learning, Deep Learning and Generative AI Vocabulary for Clinical and Operational Leaders
- Predictive, Prescriptive and Generative Model Types Mapped to Care Delivery Decisions
- Healthcare AI Value Chain: From Bedside Data Capture to Decision and Action
- Care and Operations Use-Case Inventory Across Inpatient, Outpatient and Community Settings
- Hospital AI Opportunity Canvas: Problem Statement, Decision Owner and Benefit Hypothesis

Day 2: Ethics, Evidence and Reporting Frameworks for Health AI

- WHO Ethics and Governance of AI for Health: Consensus Principles Applied to Hospital Use
- Bioethics Principles of Autonomy, Beneficence, Non-Maleficence and Justice in Algorithm Selection
- TRIPOD+AI Reporting Items for Reading Clinical Prediction Model Studies
- CONSORT-AI Extension for Appraising Randomised Trials of AI Interventions
- Evidence Ladder for Vendor Claims: Retrospective, Silent-Mode, Prospective and Randomised Studies

Day 3: Clinical Decision Support and Clinical Language AI

- Early Warning and Deterioration Prediction: Sepsis and Ward Escalation Scoring Tools
- Medication Safety Alerts, Alert Fatigue and Override Pattern Analysis
- Clinical Natural Language Processing: Problem List Extraction and Coding Assistance
- Ambient Clinical Documentation Scribes: Note Drafting, Clinician Review and Error Types
- Large Language Model Hallucination Checks and Human-in-the-Loop Sign-Off Rules

Day 4: Data Readiness, EHR Integration and Patient-Facing AI

- Data Readiness Assessment: Completeness, Timeliness, Label Quality and Representativeness
- EHR Integration Patterns at Overview: FHIR APIs, Embedded Apps and Event-Driven Alerts
- Virtual Health Assistants and Symptom Checkers for Digital Triage and Care Navigation
- Remote Patient Monitoring With Wearables: Signal Thresholds, Alert Routing and Nurse Response Models
- Patient Messaging Assistants: Appointment Reminders, Education Content and Escalation Rules

Day 5: Week-One Case Study: Deterioration Alert and Documentation Assistant Review

- Case Brief: Medical Ward Deterioration Alert Pilot With Rising Rapid Response Calls
- Performance Review: Calibration Plots, Positive Predictive Value and Lead Time Before Escalation
- Alert Workflow Walkthrough: Recipient, Response Time and Expected Clinical Action
- Documentation Assistant Case: Note Accuracy Sampling and Clinician Edit Rate Review
- Week-One Findings Memo: Keep, Modify or Stop Decisions With Supporting Evidence

Day 6: Hospital Operations AI: Capacity, Patient Flow and Demand Forecasting

- Emergency Department Arrival Forecasting With Time-Series Methods and Seasonal Patterns
- Bed Occupancy and Discharge Prediction for Daily Capacity Huddles
- Operating Theatre Case Duration Prediction and Session Scheduling Optimisation
- Outpatient No-Show Prediction and Overbooking Policy Trade-Offs
- Nurse Rostering Demand Models Linked to Acuity and Census Forecasts

Day 7: Health AI Risk, Safety and Governance Structures

- Algorithmic Bias Audit: Subgroup Performance Across Age, Sex and Ethnicity
- Explainability Methods for Clinicians: Feature Attribution, Example-Based and Counterfactual Explanations
- Clinical Safety Case and Hazard Log for an AI-Enabled Care Pathway
- AI Governance Committee Charter: Membership, Decision Rights and Approval Gates
- Model Change Control and Management of Post-Deployment Modifications

Day 8: Clinician Adoption, Procurement and Vendor Assessment

- Clinician Engagement Plan: Clinical Champions, Co-Design Sessions and Feedback Channels
- Automation Bias and Deskilling Risks: Training and Supervision Countermeasures
- Patient Transparency Notices and Consent Conversations for AI-Supported Care
- AI Vendor Due Diligence Questionnaire: Training Data, Validation Evidence and Update Policy
- Health AI Contract Terms: Service Levels, Data Use Rights and Exit Provisions

Day 9: Post-Deployment Monitoring, KPIs and Benefits Realisation

- Model Drift Detection: Input Distribution, Calibration and Outcome Monitoring Dashboards
- AI-Related Safety Incident Reporting and Root Cause Review
- Clinical Outcome KPIs: Mortality, Length of Stay, Readmission and Time to Treatment
- Operational KPIs: Throughput, Clinician Documentation Time and Patient Waiting Times
- Benefits Realisation Tracker and Model Retirement Criteria

Day 10: Capstone: Hospital AI Use-Case Portfolio and Governance Plan

- Use-Case Prioritisation Matrix: Clinical Value, Feasibility, Data Readiness and Risk Scoring
- Portfolio Sequencing Roadmap: Quick Wins, Pilots and Scale-Up Candidates
- Governance Plan Drafting: Policies, Approval Gates, Monitoring Owners and Review Cycle
- Executive Board Briefing Rehearsal With Peer Challenge Panel
- Final Presentation: Prioritised Hospital AI Use-Case Portfolio and Governance Plan

Skills You Will Gain:

- Healthcare AI Opportunity Scoping
- Clinical Prediction Evidence Appraisal
- Decision Support Workflow Design
- Patient-Flow Forecast Interpretation
- Algorithmic Bias Review
- Health AI Vendor Due Diligence
- Clinician Change Leadership
- AI Performance Surveillance

Why Attend This Course:

- Return with a Prioritised Hospital AI Use-Case Portfolio and Governance Plan built around the services your organisation runs
- Separate AI tools with sound evidence from those that only look good in a demonstration before budget is committed
- Agree who owns each alert, forecast and AI-drafted note before a tool reaches wards and clinics
- Compare adoption experience with peers from public, private and academic hospitals, clinic networks and home care providers

Conclusion:

AI in healthcare delivery adds value only when use cases, evidence, workflow, people and oversight are managed together. The first week moves from AI concepts and evidence frameworks through clinical decision support, clinical language tools, data readiness, digital triage and remote monitoring to a guided case. The second week adds hospital operations forecasting, bias and safety governance, clinician adoption and procurement, then post-deployment monitoring and KPIs, and closes with each participant presenting a prioritised use-case portfolio and governance plan.