CONCEPT

# Hospitals of the Future: Smart Hospital Design, Care Models and Transformation Roadmap

30 May – 10 June 2027
Riyadh - KAFD district five-star



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**Ref:** 824_20316 **Date:** 30 May – 10 June 2027 **Location:** Riyadh - KAFD district five-star **Fees:** 35100 SAR

## Introduction:

Hospitals of the future are being decided now, in capital plans and service redesigns that often treat new buildings, robots and digital tools as separate projects while demand, workforce shortages and cost pressure keep rising. This Core Concept programme gives hospital executives, planners and digital and operations leaders a structured way to judge future care models, smart hospital infrastructure, command centres, automation and resilient design as one transformation. Working on a case hospital across two weeks, participants build a Future Hospital Transformation Roadmap with phased investments, governance and measures.

## Course Objectives:

- Assess demand, workforce, cost and technology drivers and translate them into a future hospital vision and design principles
- Evaluate hospital-at-home, ambulatory, day-case and integrated network models and reprofile the acute bed base accordingly
- Redesign workforce roles, skill mix and job design for automated and digitally enabled hospital services
- Judge smart hospital infrastructure, command centre, robotics and digital front door proposals against operational and patient benefits
- Oversee cybersecurity, clinical safety of digital systems and transformation governance with stage gates and maturity measures
- Build a phased Future Hospital Transformation Roadmap with a business case, dependencies and executive sponsorship

## Target Audience:

- Executives accountable for the long-term direction, investment and performance of hospitals or hospital groups
- Leaders responsible for capital planning, estates redevelopment and new hospital commissioning
- Leaders who set digital health direction and approve technology investments for acute care
- Leaders accountable for hospital-wide operations, capacity and service redesign programmes
- Clinical executives who sponsor new care models and workforce change across divisions

## Course Outline:

### Day 1: Drivers of Change and the Future Hospital Vision

- Demand Shift Analysis: Ageing, Multimorbidity and Chronic Care Load
- Workforce Supply Gap Modelling for Nursing, Medical and Allied Roles
- Cost Curve and Productivity Pressure Assessment for Acute Beds
- Technology Horizon Scan: Sensors, Robotics, Automation and Analytics
- Future Hospital Vision Statement and Design Principles Canvas

### Day 2: Future Care Models and the Shape of the Acute Estate

- Hospital-at-Home Eligibility Screening and Daily Visit Model
- Virtual Ward Step-Up and Step-Down Criteria at Overview
- Ambulatory Emergency Care and Day-Case Surgery Shift Analysis
- Integrated Network Roles: Hub Hospital, Elective Centre and Community Sites
- Bed Base Reprofiling Model for Acute, Elective and Home-Based Capacity

### Day 3: Workforce Redesign and New Roles

- Task Redistribution Matrix Across Clinical, Support and Digital Roles
- Emerging Roles: Command Centre Coordinators, Clinical Informaticians and Robotics Technicians
- Digital Literacy Competency Map for Frontline Teams
- Human-Robot Teaming and Automation Effects on Job Design
- Workforce Transition Plan with Reskilling and Redeployment Pathways

### Day 4: Sustainable and Resilient Hospital Design

- Flexible Floor Plates, Universal Rooms and Adaptable Ward Concepts
- Net-Zero Hospital Pathway: Energy, Water, Anaesthetic Gases and Waste
- Surge Capacity and Infection-Ready Zoning with Convertible Spaces
- Climate Risk and Utility Resilience Assessment for Critical Services
- Healing Environment Design: Daylight, Acoustics, Wayfinding and Single Rooms

### Day 5: Week-One Case: Future Hospital Strategic Options and Business Case

- Case Hospital Baseline: Activity, Bed Days, Workforce and Estate Condition
- Care Model Scenario Comparison for the Case Hospital
- Investment Appraisal: Capital, Operating Cost, Benefits and Net Present Value
- Benefits Realisation Map Linking Care Models to Outcomes
- Strategic Options Paper and Executive Peer Challenge

## Day 6: Smart Hospital Infrastructure and Connected Assets

- Smart Hospital Reference Architecture: Network, Devices, Platforms and Applications
- Real-Time Location Systems for Equipment, Patient and Staff Tracking
- Connected Medical Device Integration and Clinical Alarm Management
- Smart Patient Room: Bedside Terminals, Room Controls and Fall Sensors
- Hospital Network Choices: Wired, Wi-Fi, Private Cellular and Segmentation

## Day 7: Command Centres, Real-Time Patient Flow and Automation

- Hospital Command Centre Operating Model: Display Tiles, Roles and Huddles
- Real-Time Capacity Views and Predictive Discharge Signals
- Pharmacy Automation: Robotic Dispensing, Unit-Dose Packaging and Smart Cabinets
- Laboratory Total Automation and Pneumatic Tube Sample Logistics
- Autonomous Mobile Robots for Linen, Meals, Waste and Supplies

## Day 8: Digital Front Door, Data Platforms and AI-Enabled Operations

- Digital Front Door Journey: Online Booking, Self Check-In, Wayfinding and Billing
- Patient Engagement App Feature Prioritisation Matrix
- Hospital Data Platform Layers: Integration Engine, Data Lake and Analytics
- Interoperability Principles for Devices, Systems and Partners at Overview
- AI-Enabled Operations Use Cases: Demand Forecasting, Rostering and Theatre Utilisation

## Day 9: Cybersecurity, Clinical Safety and Transformation Governance

- Smart Hospital Threat Landscape: Connected Devices, Ransomware and Supplier Access
- Medical Device Security Controls: Inventory, Segmentation and Patch Cycles
- Clinical Safety Case and Hazard Log for Digital Systems
- Transformation Board, Design Authority and Stage-Gate Reviews
- Future Hospital Maturity Scorecard and Benefits Tracking KPIs

## Day 10: Capstone: Future Hospital Transformation Roadmap

- Case Brief: Ageing Acute Site Choosing Between Rebuild and Retrofit
- Phased Roadmap Build: Foundation, Scale-Up and Optimisation Waves
- Stakeholder Engagement and Clinical Adoption Plan for the Roadmap
- Risk and Dependency Register for Transformation Waves
- Future Hospital Transformation Roadmap Presentation to an Executive Panel

## Skills You Will Gain:

- Future Hospital Visioning
- Care Model Portfolio Evaluation
- Bed Base Reprofiling
- Workforce Skill-Mix Redesign
- Resilient Hospital Design Review
- Hospital Automation Appraisal
- Digital Clinical Safety Oversight
- Transformation Roadmap Sequencing

## Why Attend This Course:

- Return with a Future Hospital Transformation Roadmap for a case hospital that can be adapted to your own site or network
- Challenge architects, technology suppliers and consultants on smart hospital proposals with clear benefit and risk questions
- Link capital, workforce and digital decisions into one sequence instead of competing projects
- Compare transformation choices with executives from public, private and academic hospitals in several health systems

## Conclusion:

Future hospitals succeed when care models, people, buildings and technology are planned together and delivered in sequenced waves. Week one moves from drivers of change and future care models to workforce redesign, sustainable and resilient design and a strategic business case. Week two adds smart hospital infrastructure, command centres, automation, the digital front door, data platforms and AI-enabled operations, then cybersecurity, clinical safety and governance. The capstone produces a Future Hospital Transformation Roadmap ready for executive review.