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COURSE BROCHURE

# AI Healthcare Challenges and Future Directions Course

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Madrid

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Registered in the United Kingdom and Saudi Arabia

# AI Healthcare Challenges and Future Directions Course

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AI Healthcare Challenges and Future Directions is a 1-week training course for healthcare managers, clinical leaders and health IT staff, ending with one work product: a clinical AI readiness and horizon scan for their own service. Hospitals and clinics now receive more algorithm offers than they can evaluate, while staff shortages push them to try. Jupiter Prime Training runs this course.

## Why AI Healthcare Challenges and Future Directions Matter Now

Three forces meet at the ward and the clinic: workforce shortages that make automation attractive, vendors offering imaging, triage and documentation tools at pace, and clinicians who will not act on a score they cannot check. A provider that tests data quality, local accuracy and workflow fit before buying gains capacity; one that skips those steps buys software nobody opens, or a model that fails quietly on its patients. The course uses the NIST AI Risk Management Framework AI RMF to structure validation and monitoring, and ISO/IEC 42001 to assign responsibility for each deployed model.

## Who Gains Most from AI Healthcare Challenges and Future Directions

- Service managers who decide which departments trial a new clinical algorithm
- Clinical leads who judge whether model outputs are safe to act on at the bedside
- Health informatics staff who manage electronic health record data and interfaces
- Quality and patient safety officers who track incidents linked to digital tools
- Transformation leads who compare vendor products and build investment cases

A hospital that sends a clinical lead, an informatics specialist and a service manager together gains most, because each barrier sits across their three areas.

## AI Healthcare Challenges and Future Directions Capabilities

Every outcome turns a known barrier or an emerging tool into a decision a health service can defend.

- Assess health record data for completeness and coding — the informatics lead preparing a trial
- Test vendor accuracy claims against local patient populations — the clinical lead approving use
- Weigh alert burden against detection benefit — nursing and medical staff receiving notifications
- Design a clinician feedback loop for model outputs — the safety committee reviewing performance
- Calculate staff time released by ambient documentation tools — the service manager planning rotas
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Build a horizon scan of imaging, remote monitoring and generative tools — the board setting digital priorities

## Key AI Healthcare Challenges and Future Directions Terms

- External validation — testing a model on patients from a different site or period than those it was trained on.
- Dataset shift — a change in patient mix, equipment or coding that makes a model's past accuracy unreliable.
- Alert fatigue — clinicians ignoring warnings because too many are false or low value.
- Ambient clinical documentation — software that drafts the clinical note from a consultation for review.
- Remote patient monitoring — home vital-sign collection through connected devices, with algorithms flagging deterioration.
- Interoperability — the ability of systems to exchange and use clinical data, usually through shared data exchange standards.

## AI Healthcare Challenges and Future Directions Day by Day

### Day 1: Why Clinical AI Stalls

- Clinical AI Adoption Barrier Map — Technical, Workforce and Organisational Causes
- Electronic Health Record Data Quality Audit — Completeness and Coding Gaps
- Interoperability and Data Exchange Interfaces — Getting Data to the Model
- Workforce Pressure and Automation Demand — Choosing Where Help Is Needed
- Vendor Landscape Scan — Separating Evidence from Marketing Claims

### Day 2: Bias, Validation and Local Accuracy

- Population Bias Checks Across Age, Sex and Ethnicity — Equitable Performance
- External Validation Study Design — Local Evidence Before Go-Live
- Sensitivity, Specificity and Calibration Metrics — Interpreting Vendor Results
- Dataset Shift Detection — Equipment Changes and New Patient Groups
- NIST AI RMF Measure Function — Structuring Validation Evidence

### Day 3: Clinician Trust and Patient Safety

- Explainability Displays at the Point of Care — What Clinicians Need to See
- Alert Burden Modelling — Thresholds That Avoid Alert Fatigue
- Clinical Safety Case and Hazard Log — Failure Modes Before Deployment
- Incident Reporting for Algorithm-Linked Events — Learning from Near Misses
- Clinician Feedback Loops and Override Recording — Continuous Performance Review

### Day 4: Emerging Directions in Care

- AI-Assisted Diagnostic Imaging Triage — Radiology Worklist Prioritisation
- Remote Patient Monitoring with Deterioration Scores — Home Care and Virtual Wards
- Ambient Clinical Documentation and Generative Note Drafting — Clinician Time
- Patient-Facing Symptom Checkers and Chat Assistants — Primary Care Demand
- ISO/IEC 42001 Ownership of Deployed Models — Lifecycle Responsibility

## Day 5: Practising the Clinical AI Readiness and Horizon Scan

- Applying the Data Quality Audit to an Emergency Department Dataset — Trial Readiness
- Applying External Validation to a Sepsis Alert Proposal — Go or No-Go
- Applying Alert Burden Modelling to a Medical Ward — Nursing Workload
- Investment Case for an Imaging or Documentation Tool — Board Priority
- Clinical AI Readiness and Horizon Scan — Next Steps for the Service

## Applying AI Healthcare Challenges and Future Directions After the Course

- Audit the dataset behind one proposed clinical algorithm and share the gaps with the vendor.
- Start an override log for an existing alert and review it with clinicians after a month.

## AI Healthcare Challenges and Future Directions Questions FAQ

### What are AI Healthcare Challenges and Future Directions and why do they matter now?

They are the barriers that stop clinical AI working safely, such as poor data, bias and low clinician trust, and the tools coming next. They matter now because workforce pressure is pushing services to adopt faster than they can evaluate.

### Which roles gain most from AI Healthcare Challenges and Future Directions?

Service managers, clinical leads, informatics staff and patient safety officers gain most. Each holds part of the decision to trial, validate or stop a clinical algorithm.

### How does AI Healthcare Challenges and Future Directions differ from a healthcare AI ethics course?

It is about making clinical AI work, not only about principles. The one week focus on data quality, local validation, alert burden, safety cases and the next wave of imaging, monitoring and documentation tools.

### What do you bring back from AI Healthcare Challenges and Future Directions?

You bring back a readiness and horizon scan for your service: a data quality view, a validation plan for one proposal and a ranked list of emerging tools worth trialling.

## AI Healthcare Challenges and Future Directions: The Way Forward

The clinical AI readiness and horizon scan comes first. Its first use is deciding which proposed tool goes to a local validation trial, and the clinical lead and service manager present it to the digital board. After the first trial, revisit the barrier map: real data usually shows which obstacle mattered most.