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COURSE BROCHURE

# AI for Health Informatics Training Course

7 – 11 November 2027
Sharm El-Sheikh

# AI for Health Informatics Training Course

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AI for Health Informatics is a 1-week training course for health informatics managers, clinical data analysts and hospital IT leads, built around one work product: a clinical prediction validation dossier. Health networks now hold years of electronic health record data, and pressure to turn it into safe, explainable predictions for bed flow and readmission risk keeps rising. Jupiter Prime Training delivers this AI for Health Informatics course.

## Why AI for Health Informatics Matters Now

Three forces meet in clinical data today. Health systems are linking records across hospitals, clinics and laboratories through open interoperability standards. Clinicians and patients expect predictions that are explainable and fair across age, sex and ethnic groups. Boards and auditors want evidence that every algorithm touching care is validated and monitored. A provider that handles this well shortens waiting lists and avoids readmissions; one that handles it badly ships biased scores into wards. The course rests on ISO/IEC 42001 Artificial Intelligence Management System and the NIST AI Risk Management Framework AI RMF.

## Who Gains Most from AI for Health Informatics

- Owners of record extracts, clinical data warehouses and reporting feeds
- Builders and testers of admission, discharge and readmission scores
- Operators of integration engines linking clinical systems
- Guardians of patient confidentiality, consent and secondary record use
- Translators of clinical questions into analytics requests

Informatics departments gain most when an analyst, an integration lead and a clinical safety officer attend together.

## AI for Health Informatics Capabilities

These outcomes carry a clinical prediction from raw extract to a validated, monitored score.

- Assess record completeness, coding consistency and timeliness in clinical extracts — the decision to accept a dataset for modelling
- Design a clinical data pipeline from source systems to feature store — integration leads and data engineers
- Build and compare readmission and patient flow models — bed managers and discharge teams
- Test calibration, discrimination and subgroup fairness of a clinical score — clinical safety committees
- Specify de-identification and access controls for secondary record use — the information governance lead
- Communicate model limits and monitoring triggers in plain clinical language — ward clinicians and executives

## Key AI for Health Informatics Terms

- Electronic health record EHR — the digital record of a patient's encounters, diagnoses, medications and results held by a care provider.
- Interoperability — the ability of separate clinical systems to exchange records and interpret them with the same meaning.
- Clinical terminology coding — mapping diagnoses and procedures to controlled code sets so records can be counted and compared.
- Readmission risk score — a model output estimating the probability that a discharged patient returns to hospital within a defined window.
- Calibration — the agreement between predicted probabilities and observed outcome rates across groups of patients.
- Dataset shift — a change in patient mix or coding practice that makes a trained model less accurate.

## AI for Health Informatics Day by Day

### Day 1: The Clinical Data Landscape

- EHR Data Model Mapping — Which Clinical Questions the Record Can Answer
- Interoperability Message and Resource Standards — Choosing Exchange Formats Between Systems
- Clinical Terminology Coding Audit — Trusting Diagnosis and Procedure Counts
- Care Pathway Event Logs — Locating Delays in Patient Journeys
- AI Use Case Triage Matrix — Ranking Informatics Problems by Patient Impact

### Day 2: Building Clinical Data Pipelines

- Extract, Transform and Load Design — Refresh Frequency for Clinical Feeds
- Record Linkage and Patient Matching — Merging Encounters Across Sites
- Data Quality Scorecard — Accepting or Rejecting a Modelling Extract
- Feature Engineering From Vitals and Results — Signals Worth Modelling
- De-identification and Pseudonymisation Techniques — Secondary Use Approval

### Day 3: Predicting Patient Flow and Readmission

- Admission and Discharge Forecasting Models — Bed Capacity Planning
- Readmission Risk Classifiers — Targeting Post-Discharge Follow-Up Calls
- Natural Language Processing of Clinical Notes — Capturing Unstructured Risk Factors
- Imbalanced Outcome Handling — Setting Alert Thresholds for Rare Events
- Explainability With Feature Attribution — Clinician Acceptance of Scores

### Day 4: Validating and Governing Clinical Models

- Temporal and External Validation Splits — Proving Performance on New Patients
- Calibration Plots and Decision Curves — Clinical Usefulness of a Score
- Subgroup Fairness Testing — Equity Across Patient Populations
- ISO/IEC 42001 Controls for Clinical AI — Management Accountability
- NIST AI RMF Map, Measure, Manage — Risk Treatment for Care Algorithms

## Day 5: Practising the Clinical Prediction Validation Dossier

- Pipeline and Quality Evidence Pack — Applying Day 2 Scorecards to a Case
- Readmission Model Selection Memo — Applying Day 3 Comparisons
- Fairness and Calibration Findings — Applying Day 4 Validation Results
- Dataset Shift Monitoring Plan — Retraining Triggers After Go-Live
- Clinical Prediction Validation Dossier — Sign-Off by the Safety Committee

## Applying AI for Health Informatics After the Course

- Run a data quality scorecard on one live EHR extract and share the findings with the reporting team
- Re-test an existing readmission score for calibration and subgroup fairness with the clinical safety group

## AI for Health Informatics Questions FAQ

### What is AI for Health Informatics and why does it matter now?

AI for Health Informatics is the use of machine learning on clinical records to predict patient flow, risk and demand. It matters now because linked records are available at scale and every care score must be validated and fair.

### Which roles gain most from AI for Health Informatics?

Health informatics managers, clinical data analysts and hospital IT leads gain most. You benefit if you own record extracts, interfaces or predictive scores, or answer for confidentiality.

### How does AI for Health Informatics differ from a general healthcare AI course?

AI for Health Informatics focuses on the data behind clinical AI rather than bedside use of AI tools. A general healthcare AI course addresses clinicians adopting products; this one covers pipelines, coding quality and model validation.

### What do you bring back from AI for Health Informatics?

You bring back a clinical prediction validation dossier for one real use case. It holds data quality evidence, the chosen model, fairness findings and a monitoring plan.

## AI for Health Informatics: The Way Forward

The clinical prediction validation dossier first informs whether a readmission or patient flow score is safe to switch on in a live ward. Informatics managers, analysts and clinical safety officers use it to agree thresholds and owners. After the first months in service, revisit its dataset shift triggers, because coding habits and patient mix change faster than most models expect.