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COURSE BROCHURE

# AI in Personalised Medicine Training Course

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Geneva

**jupiterprime.uk**

info@jupiterprime.uk

Registered in the United Kingdom and Saudi Arabia

# AI in Personalised Medicine Training Course

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AI in Personalised Medicine is a 1-week training course for physicians, clinical pharmacists, hospital medical directors and digital health managers, ending with a personalised treatment pathway proposal for one clinical service. Treatment that works for the average patient often fails or harms the individual, and models built on records, biomarkers and wearables now suggest who should receive which therapy and dose. Jupiter Prime Training runs this AI in Personalised Medicine course.

## Why AI in Personalised Medicine Matters Now

Electronic records, laboratory panels and remote monitoring give clinicians more about each patient than a guideline can use. Pharmacists see adverse drug reactions that a dose adjusted to the person might have prevented. Patients with diabetes, cancer or heart failure expect therapy matched to their profile, while payers ask for proof of better outcomes. A hospital that handles this well gives the right drug at the right dose sooner; one that handles it badly trusts unvalidated scores and widens gaps between patient groups. The course draws on ISO/IEC 42001 for AI management systems and the NIST AI Risk Management Framework NIST AI RMF for validating clinical models.

## Who Gains Most from AI in Personalised Medicine

- Medical leads who set treatment protocols for chronic and complex conditions
- Clinical pharmacists who manage dosing, interactions and medicine safety
- Medical directors who approve new clinical decision tools
- Digital health leads who integrate models into records and order sets
- Clinical quality leads who audit outcomes and adverse events

A hospital department, specialist centre or integrated care group gains most when its physicians, pharmacists and digital health leads attend together and agree one route for a model to reach the prescribing screen.

## AI in Personalised Medicine Capabilities

Participants use patient records, laboratory trends and medication histories from diabetes and oncology services to decide where a recommendation supports the prescriber.

- Assess patient stratification models that group people by likely response — physicians
- Weigh AI-guided treatment selection against guideline pathways for individual cases — drug and therapeutics committees
- Apply pharmacogenomic dosing alerts within prescribing workflows — clinical pharmacists
- Specify patient digital twins that simulate therapy options before prescribing — digital health managers
- Test personalised models for prospective validity and fairness across patient groups — medical directors
- Build a personalised treatment pathway with evidence thresholds and override rules — clinical governance boards

## Key AI in Personalised Medicine Terms

- Patient stratification — dividing patients into groups with similar risk or expected response so each group receives suited care.
- Treatment response prediction — estimating how likely a specific patient is to benefit from, or be harmed by, a therapy.
- Pharmacogenomic dosing — adjusting drug choice or dose using the patient's inherited variation in drug metabolism.
- Patient digital twin — a computational model of an individual patient used to simulate disease course and therapy effects.
- Prospective validation — testing a clinical model on new patients after deployment rather than only on historical records.
- Clinical decision support — software that presents patient-specific recommendations to clinicians at the point of care.

## AI in Personalised Medicine Day by Day

## Day 1: From Average Care to Individual Care

- Treatment Variability Mapping — Responders, Non-Responders and Harm
- Diabetes and Oncology Case Comparison — Contrasting Personalisation Uses
- Patient Data Sources — Records, Biomarkers and Wearables
- Clinician and Patient Expectations — Shared Decision Conversations
- Personalised Care Readiness Check — Systems, Skills and Leadership

## Day 2: Stratifying Patients and Predicting Response

- Patient Stratification Models — Clustering and Risk Tiers
- Treatment Response Prediction — Benefit and Harm Estimates
- Causal Inference From Records — Separating Effect From Confounding
- Multimorbidity and Polypharmacy Models — Older Patient Complexity
- Explainable Recommendations — Reason Codes for Prescribers

## Day 3: Dosing, Digital Twins and Decision Support

- Pharmacogenomic Dosing Support — Alerts at Prescribing
- Model-Informed Precision Dosing — Therapeutic Drug Monitoring
- Patient Digital Twins — Simulating Therapy Options
- Clinical Decision Support Integration — Order Sets and Alert Fatigue
- Shared Decision Aids — Explaining Personalised Options to Patients

## Day 4: Validation, Fairness and Assurance

- Retrospective and Prospective Validation — Evidence Thresholds for Use
- Subgroup Fairness Testing — Sex, Age and Ethnic Background
- Post-Deployment Monitoring — Outcome and Adverse Event Tracking
- NIST AI RMF Measure Function — Performance Drift in Clinical Models
- ISO/IEC 42001 Controls — Ownership, Change Approval and Override

## Day 5: Practising the Personalised Treatment Pathway Proposal

- Variability Map and Readiness From Day 1 — Clinical Starting Point
- Stratification and Response Models From Day 2 — Patient Groups
- Dosing and Twin Tools From Day 3 — Prescribing Support
- Validation and Fairness Checks From Day 4 — Safeguards
- Personalised Treatment Pathway Proposal — Version for Clinical Governance

## Applying AI in Personalised Medicine After the Course

- Review twenty recent prescriptions in one service against a response prediction and record where the model would have changed the choice.
- Run a fairness check on an existing clinical score across sex and age groups and present the gaps.

## AI in Personalised Medicine Questions FAQ

### What is AI in personalised medicine and why does it matter now?

AI in personalised medicine is the use of models to stratify patients, predict treatment response, tailor doses and simulate therapy options for each person. It matters now because patient data has grown faster than guidelines can use it.

### Which roles gain most from AI in personalised medicine training?

Physicians, clinical pharmacists, hospital medical directors and digital health managers gain most. Clinical quality leads also benefit, because they monitor outcomes and adverse events after models go live.

## How does AI in personalised medicine differ from a genomics or laboratory AI course?

It works at the bedside and prescribing screen: treatment selection, dosing, decision support and patient conversations rather than sequencing pipelines. You validate recommendations against outcomes in real clinical services.

## What do you bring back from AI in personalised medicine training?

You bring back a personalised treatment pathway proposal for one clinical service. It sets stratification rules, response models, dosing support, validation thresholds and override rules.

## AI in Personalised Medicine: The Way Forward

The personalised treatment pathway proposal informs the first decision: which patient group in one service receives model-guided therapy choices first. Physicians, pharmacists and medical directors use it to brief the clinical governance board. After the first months of use, revisit the prospective validation results and subgroup fairness, because patient populations and treatment options keep changing.