
Precision Treatment Selection Course for Health Leaders: Stratification, Validation and Oversight

8 – 12 February 2027
Cape town





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Programme Summary

Precision treatment selection is the subject of this one-week training course for health system, hospital and clinical programme leaders, ending in an adoption and oversight plan for one personalised medicine tool. Tools that stratify patients and predict treatment response are entering clinics faster than most organisations can judge them. The programme moves from the evidence behind personalised medicine to patient stratification, validation, equity checks and clinical oversight, using cases from oncology, cardiology and chronic disease care. Mars Training Centre UK delivers this programme on precision treatment selection to mixed-organisation cohorts.

The Business Case

A prediction tool that works in the vendor's data can fail in a different patient population, and a hospital that adopts it without testing carries the risk. Leaders who ask for evidence, check performance across patient groups and define who remains accountable adopt tools that help clinicians.

- Treatment Appropriateness: Improves as selection tools are validated on the local patient population.
- Patient Safety Events: Fall as clinical oversight and escalation rules are defined before use.
- Equity of Care: Improves as performance is reviewed across patient groups.

Principles and Evidence Base

- Patient Stratification Logic: Groups patients by likely benefit or risk from clinical and molecular data, and is applied in Sessions 1 and 2.
- Clinical Validation and Calibration of Prediction Models: Tests whether predicted and observed outcomes agree in the local population, and is applied in Session 3.
- Subgroup Performance and Bias Review: Compares model results across patient groups, and is applied in Session 4.
- WHO Ethics and Governance of Artificial Intelligence for Health: Sets six consensus principles, including transparency, accountability and equity, and is applied in Session 5.

Intended Participants

- Health system and hospital leaders who decide which clinical AI tools are adopted.
- Clinical programme leads who own oncology, cardiology or chronic disease pathways.
- Quality and patient safety leaders who monitor tools after adoption.
- Health informatics and data leaders who prepare and link patient data.
- Ethics and legal advisers who review patient consent and accountability.



Typical settings include hospital groups, academic medical centres, public health systems and diagnostic laboratories.

Learning Outcomes

1. Participants will be able to prioritise clinical use cases for personalised medicine tools by benefit, evidence and risk.
2. Participants will be able to diagnose weaknesses in patient data that limit stratification and prediction.
3. Participants will be able to evaluate a prediction tool for validity, calibration and explainability.
4. Participants will be able to construct a subgroup review that detects unequal performance.
5. Participants will be able to justify clinical oversight and accountability rules for tool use.

Programme Structure

Day 1: Precision Treatment Selection Foundations

Where does personalised medicine change a treatment decision, and where does it not?

- Treatment Decision Map
- Use Case Benefit and Risk Grid
- Evidence Level Checklist
- Clinical Question Framing Sheet
- Tool Landscape Overview

Day 2: Patient Data and Stratification

Which patient data support grouping by likely response?

- Clinical and Molecular Data Inventory
- Data Linkage and Quality Review
- Patient Group Definition Sheet
- Biomarker Use Cases
- Consent and Data Use Statement

Day 3: Prediction Models and Validation

How is a treatment response model tested before clinicians rely on it?

- Model Input and Output Brief
- Local Validation Plan
- Calibration Curve Reading
- Explanation Sheet for Clinicians
- Vendor Evidence Challenge List



Day 4: Equity, Bias and Subgroup Review

Does the tool perform equally well for every patient group?

- Subgroup Performance Table
- Bias Source Map
- Missing Data Review
- Equity Impact Statement
- Corrective Action Options

Day 5: Clinical Oversight and Adoption Plan for One Tool

Do the earlier records form one plan that clinicians can safely follow?

- Applying the Session 1 Use Case Benefit and Risk Grid
- Testing the Session 3 Local Validation Plan
- Reviewing the Session 4 Equity Impact Statement
- Setting Oversight and Accountability Rules Against the WHO Principles
- Completing the Tool Adoption and Oversight Plan

Methodology

The programme uses case analysis built on a shared case of a hospital group considering a tool that predicts response to treatment for a chronic condition. Participants work with prepared data summaries, validation tables and vendor claims, then adapt each artefact to a tool from their own organisation.

- Suggested activity: Challenging a vendor's evidence with five clinical questions.
- Suggested activity: Reading a subgroup table and naming the first corrective action.
- Suggested activity: Writing the escalation rule for a clinician who disagrees with a tool.

Capstone Output

Each participant completes an adoption and oversight plan for one personalised medicine tool. It holds a use case rationale, a data readiness summary, a validation plan, an equity review and oversight and accountability rules. The plan is used at work to brief clinical boards, question vendors and agree monitoring duties after launch.



Frequently Asked Questions

Is precision treatment selection training suitable for leaders without a clinical data background?

Yes. Precision treatment selection is taught through cases and templates. It assumes experience in health system, hospital or clinical programme leadership, but no programming and no statistics beyond averages and percentages.

Which standards does precision treatment selection training rest on?

Precision treatment selection training rests on patient stratification logic, clinical validation and calibration of prediction models, subgroup bias review and the WHO guidance on ethics and governance of artificial intelligence for health.

How is the plan from precision treatment selection training used at work?

You use the plan to brief clinical boards, challenge vendor evidence, set validation and monitoring duties and define who is accountable when a tool informs a treatment decision.

How does precision treatment selection differ from general healthcare analytics training?

Precision treatment selection concentrates on stratifying patients, validating treatment response tools and governing their clinical use, while general healthcare analytics training covers reporting and operational data broadly.