
Chronic Disease Care Pathways: Machine Learning, Telehealth and Safety Oversight Executive Course

11 – 15 July 2027
Zoom





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Programme Summary

Chronic disease care pathways are the subject of this one-week training course for senior health service leaders and programme directors, ending in a pathway redesign pack for one long-term condition. Health systems carry growing numbers of patients with diabetes, heart failure and kidney disease, yet monitoring, risk scoring and clinical oversight often sit in separate teams. The programme moves from pathway mapping to machine learning risk models, telehealth and remote monitoring, safety oversight and applied redesign. Mars Training Centre UK delivers this programme on chronic disease care pathways to mixed-organisation cohorts.

The Business Case

Long-term conditions consume a growing share of clinical time and hospital capacity, and the cost is highest when deterioration is found late. Services that join risk scores, home monitoring data and clinical review into one pathway can act earlier and explain each decision. Without that discipline, models add alerts that clinicians learn to ignore, and patients receive uneven follow-up between hospital, clinic and home.

- Avoidable Admissions: Fall as rising risk is flagged and reviewed before a patient deteriorates.
- Clinician Workload: Falls as alert rules are tuned against false alarms and available review capacity.
- Care Consistency: Improves as every patient in a cohort follows a documented pathway with named owners.

Principles and Evidence Base

- WHO Ethics and Governance of Artificial Intelligence for Health: Its principles of autonomy, safety, transparency, accountability and inclusiveness frame the oversight plan built in Session 4.
- WHO Guidance on Large Multi-Modal Models: Informs the rules for generative tools in patient-facing and clinician-facing use set in Session 4.
- Risk Stratification: Grouping patients by likelihood of deterioration guides the cohort design and review rules in Session 2.

Intended Participants

- Health service directors who own outcomes for patients with long-term conditions.
- Chronic care programme managers who design pathways, caseloads and follow-up.
- Clinical leads who decide when a model output may change treatment.
- Digital health and data leaders who supply monitoring feeds and risk scores.
- Quality and patient safety managers who review incidents and set oversight rules.

Typical settings include hospital groups, primary care networks, health insurers and public health agencies.



Learning Outcomes

1. Participants will be able to construct a map of a chronic disease care pathway that marks each decision point where data can change an action.
2. Participants will be able to evaluate population risk stratification models for calibration, error and fit with review capacity.
3. Participants will be able to diagnose weaknesses in telehealth and remote monitoring signals before they trigger alerts.
4. Participants will be able to prioritise alert thresholds and escalation steps against clinician workload.
5. Participants will be able to justify an oversight plan covering consent, bias and patient safety to a clinical governance board.
6. Participants will be able to prepare a redesign pack that a clinical team can pilot.

Programme Structure

Day 1: Chronic Disease Care Pathways and Decision Points

Where in a chronic disease care pathway can data change a clinical or service decision?

- Pathway Mapping Template
- Condition Burden Profile
- Decision Point Register
- Data Source Inventory
- Value and Risk Screening Grid

Day 2: Risk Tiering and Cohort Design

How are patients grouped by likelihood of deterioration, and who reviews each group?

- Population Risk Stratification Model
- Cohort Definition Sheet
- Feature and Label Review
- Calibration and Error Check
- Review Capacity Calculator

Day 3: Telehealth and Remote Monitoring Data

Which signals from home devices and apps are reliable enough to trigger action?

- Device Signal Quality Checklist
- Alert Threshold Design
- False Alarm Analysis
- Self-Management App Review
- Escalation Protocol Draft



Day 4: Safety Oversight and Governance

How are model errors, bias and consent managed once a tool reaches patients?

- WHO Six-Principle Review
- Large Multi-Modal Model Use Rules
- Bias and Subgroup Audit
- Consent and Notice Wording
- Model Incident Log

Day 5: Pathway Redesign Pack for One Condition

Do the redesigned pathway, risk tiers, alerts and oversight rules work together for one condition?

- Applying the Session 1 Decision Point Register
- Testing the Session 2 Review Capacity Calculator
- Checking the Session 3 Escalation Protocol Draft
- Reviewing the Session 4 Model Incident Log
- Completing the Pathway Redesign Pack

Methodology

The programme uses a structured exercise method built on a shared case of a regional service caring for patients with diabetes and heart failure, with home monitoring feeds and an existing risk score. Participants build each artefact on the case, then on a condition from their own service, with written facilitator feedback in every session.

- Suggested activity: Marking decision points on a pathway map and naming the data each one needs.
- Suggested activity: Setting alert thresholds against a sample of monitoring readings and counting false alarms.
- Suggested activity: Presenting an oversight plan to a mock clinical governance board.

Capstone Output

Each participant completes a pathway redesign pack for one long-term condition. It holds a pathway map, a risk tier and review plan, an alert and escalation protocol, an oversight and consent statement and a pilot outline. The pack is used at work to open a pilot with clinical teams, brief a governance board and agree who owns each decision.



Frequently Asked Questions

Is chronic disease care pathways training suitable for leaders without a data science background?

Yes. Chronic disease care pathways training uses cases and templates, assuming experience in clinical services, programme management or health data, but no earlier work building models.

Which guidance does chronic disease care pathways training rest on?

Chronic disease care pathways training rests on the WHO guidance on ethics and governance of artificial intelligence for health, its guidance on large multi-modal models, and risk stratification principles.

How is the pack from chronic disease care pathways training used at work?

You use the redesign pack to open a pilot with clinical teams, brief a governance board and agree who owns each pathway decision.

How does chronic disease care pathways training differ from general digital health training?

Chronic disease care pathways training centres on long-term conditions, risk tiers and home monitoring, while general digital health training covers records, platforms and services across all care settings.