Connected Patient Records: FHIR Exchange, Quality Rules and Predictive Analytics Course

4 – 8 October 2027
Dubai - Marriott Hotel Al Jaddaf, Dubai

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Programme Summary

Connected patient records are the subject of this one-week training course for health information, analytics and digital leads, ending in an integration blueprint for one patient record use case. Clinical systems, operational databases and connected devices each hold part of the picture, and AI results are only as sound as the data joined beneath them. The programme builds a method for mapping sources, exchanging data through FHIR, applying quality rules, protecting privacy and choosing analytics, applied to a case the participant selects. Mars Training Centre UK delivers this programme on connected patient records to mixed-organisation cohorts.

The Business Case

Health organisations collect large volumes of data, yet records for one patient often sit in separate systems with different codes and identifiers. Analytics built on such data produce results that clinicians and managers doubt. A planned approach to health data integration lets leaders decide which sources to join first, how to exchange them safely and which analytical uses the joined data can support.

- Data Reuse: Rises as records follow shared formats and can feed several analytics uses.
- Reporting Effort: Falls as manual extracts are replaced by defined exchange routes.
- Analytical Trust: Rises as quality rules and validation steps are shown to users.

Principles and Evidence Base

- HL7 FHIR: This standard for exchanging healthcare data through resources and interfaces is applied in Session 2 to map sources and design exchange routes.
- Data quality dimensions: Session 3 uses completeness, accuracy and timeliness as the basis for quality rules on joined records.
- Minimum necessary access: Session 3 applies this principle to consent, access and de-identification choices.

Intended Participants

- Health information leaders who own record systems and data standards.
- Analytics leads who build reports and models from clinical and operational data.
- Digital and architecture leads who design platforms and interfaces.
- Data governance leads who set rules for access, consent and ownership.
- Programme leads who sponsor AI use cases that depend on joined data.

Typical settings include hospital groups, health insurers, public health agencies and health technology suppliers.

Learning Outcomes

1. Participants will be able to construct an inventory of clinical, operational and device sources for one use case.
2. Participants will be able to design a FHIR resource mapping and an exchange route between two systems.
3. Participants will be able to diagnose quality and identity problems in joined records.
4. Participants will be able to evaluate consent, access and de-identification choices against a stated purpose.
5. Participants will be able to prioritise predictive analytics uses by data readiness and value.
6. Participants will be able to justify an integration blueprint to a technical and a clinical audience.

Programme Structure

Day 1: Connected Patient Records and Their Sources

Which clinical, operational and device sources must be joined, and in what form?

- Source System Inventory
- Patient Identity Matching Rules
- Data Flow Diagram
- Device Data Feed Catalogue
- Integration Use Case Brief

Day 2: FHIR Exchange and Interoperability

How does data move between systems without losing its meaning?

- HL7 FHIR Resource Mapping
- Terminology Mapping Table
- Interface Exchange Pattern Sheet
- Legacy Messaging Bridge Review
- Interface Gap Register

Day 3: Quality Rules, Privacy and Governance

Can the joined data be trusted and protected?

- Data Quality Rule Set
- Completeness and Accuracy Profile
- Consent and Access Matrix
- De-identification Checklist
- Data Ownership Charter

Day 4: Predictive Analytics on Joined Data

Which analytics and AI uses does the joined data support, and how are they checked?

- Analytics Use Case Ranking
- Feature Readiness Review
- Model Validation Plan
- Bias and Drift Watchlist
- Dashboard Specification

Day 5: Applying the Tools to One Integration Case

Do the source, exchange, quality and analytics tools form one blueprint?

- Applying the Session 1 Source System Inventory
- Using the Session 2 Interface Gap Register
- Checking the Session 3 Data Quality Rule Set
- Running the Session 4 Model Validation Plan
- Completing the Integration Blueprint

Methodology

The programme uses a data workshop method built on anonymised extracts, interface specifications and quality reports drawn from hospital, insurance and public health settings. Participants work in small teams on one shared integration case, review each other's mappings and rules, and receive written facilitator feedback on every artefact they produce.

- Suggested activity: Matching patient records from three systems and listing the rules used.
- Suggested activity: Mapping a laboratory feed to FHIR resources and logging the gaps.
- Suggested activity: Writing five quality rules for a device data stream and testing them on a sample.

Capstone Output

Each participant completes an integration blueprint for one patient record use case. It holds a source inventory, an identity matching approach, a FHIR mapping, a quality rule set, a privacy and access note and a ranked analytics plan. The blueprint is used at work to brief technical teams, agree priorities with clinical sponsors and plan the first delivery phase.

Frequently Asked Questions

Is connected patient records training suitable for leaders who are not data engineers?

Yes. The connected patient records programme assumes familiarity with health information or analytics work but no engineering background, and it explains each technical step through worked artefacts.

Which standard do connected patient records rest on in this programme?

Connected patient records here rest on HL7 FHIR for data exchange, together with data quality dimensions and the minimum necessary access principle for governance.

How is the blueprint from connected patient records training used at work?

You use the integration blueprint to brief technical teams, agree priorities with clinical sponsors, set quality and access rules and plan the first delivery phase.

How do connected patient records differ from a general data engineering programme?

Connected patient records concern health sources, patient identity, FHIR exchange and privacy, while a general data engineering programme covers pipelines and storage for any sector.