
Medical Laboratory Leadership: ISO 15189 Quality, Test Demand and Turnaround Course

13 – 17 December 2026
Muscat





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Programme Summary

Medical laboratory leadership, covering ISO 15189 quality, test demand and turnaround, is the subject of this one-week training course for laboratory directors, hospital executives and health officials at a managerial level, ending in a laboratory performance plan for one service. Laboratories lose credibility and money when results arrive late, tests are requested without need and quality records are kept only for inspection. The programme moves from principles and the standard, through diagnosis of quality, demand and delay, to design of controls and measures, then to application in one laboratory service. Mars Training Centre UK delivers this programme in medical laboratory leadership.

The Business Case

Laboratory results shape most clinical decisions, yet leaders often see the service only through cost lines and complaints. Executives who read quality records, test requests and delay data together can direct improvement where it matters, protect patients from error and explain laboratory spending to a board or a ministry with evidence.

- Result Delay: Falls as turnaround is measured stage by stage and bottlenecks are removed.
- Test Spend: Declines as requests are reviewed against clinical need and duplicate orders are stopped.
- Quality Failures: Reduce as control results and corrective actions are followed through to closure.

Principles and Evidence Base

- ISO 15189 on quality and competence of medical laboratories: It frames the quality system review and the management responsibilities worked through in Sessions 1 and 3.
- WHO Laboratory Quality Stepwise Implementation tool: It structures the gap review and the staged improvement plan built in Sessions 2 and 5.
- The total testing process, from pre-examination through examination to post-examination: It organises the delay and error mapping in Session 2.
- Internal quality control and external quality assessment: They shape the control review and the performance indicators developed in Session 4.

Intended Participants

- Laboratory directors who are accountable for quality, safety and turnaround of results.
- Hospital executives who fund, staff and oversee laboratory services.
- Quality and accreditation leads who maintain the laboratory management system.
- Health authority officials who plan and monitor laboratory networks.



The programme serves hospital laboratories, reference laboratories, public health laboratories and health authorities.

Learning Outcomes

1. Participants will be able to evaluate a laboratory quality system against the requirements of ISO 15189.
2. Participants will be able to diagnose causes of delay, error and duplicate testing along the total testing process.
3. Participants will be able to construct a test request review and demand control routine.
4. Participants will be able to prioritise quality gaps for staged correction using a stepwise improvement approach.
5. Participants will be able to appraise internal quality control and external quality assessment results for corrective action.
6. Participants will be able to justify a laboratory performance plan and its indicators to a hospital executive board.

Programme Structure

Day 1: Medical Laboratory Leadership Principles and ISO 15189

What does a medical laboratory owe its patients and its hospital, and which standard defines it?

- ISO 15189 Requirements Overview
- Management Responsibility Map
- Laboratory Service Scope Statement
- Quality Policy and Objectives Sheet
- Stakeholder and Demand Profile

Day 2: Diagnosing Quality, Demand and Delay

Where along the testing process do errors, delays and wasted tests arise?

- Total Testing Process Map
- Turnaround Time Stage Analysis
- Test Request Pattern Review
- Error and Complaint Log Analysis
- Stepwise Gap Assessment Sheet

Day 3: Designing Controls for Demand, Flow and Risk

How are test requests, sample flow and laboratory risk brought under control?



- Test Utilisation Review Protocol
- Request Form and Ordering Rule Design
- Sample Transport and Receipt Standard
- Laboratory Risk Register
- Point-of-Care Testing Oversight Plan

Day 4: Quality Control, Measures and Reporting

How is laboratory quality shown with data that executives can read?

- Internal Quality Control Chart Review
- External Quality Assessment Result Review
- Corrective Action Tracker
- Laboratory Indicator Scorecard
- Cost per Test Analysis

Day 5: Applying Medical Laboratory Leadership to One Service

Is the performance plan ready for an executive board to adopt?

- Applying the Session 2 Gap Assessment to the Chosen Laboratory
- Testing the Session 3 Demand Control Routine on Real Requests
- Checking the Session 4 Scorecard Against Laboratory Data
- Setting Staged Improvement Priorities
- Completing the Laboratory Performance Plan

Methodology

The programme uses data workshops built on anonymised quality records, test request samples and turnaround timelines from hospital and public health laboratories. Participants work in small teams as laboratory director, hospital executive and quality lead, and carry one service from first gap review to a board recommendation.

- Suggested activity: Mapping a delayed result back through each stage of the testing process.
- Suggested activity: Reviewing a sample of test requests and stating which would be stopped and why.
- Suggested activity: Reading a quality control record and deciding what corrective action to demand.

Capstone Output

Each participant completes a laboratory performance plan for one service. It holds a gap assessment against the standard, a turnaround map, a demand control routine, a control review method and an indicator scorecard. The plan is used to brief an executive board and to review the laboratory each quarter.



Frequently Asked Questions

Is medical laboratory leadership suitable for executives who are not laboratory scientists?

Yes. Medical laboratory leadership is set at managerial level and assumes you oversee laboratory services, not that you perform tests or hold bench skills.

Which standard does medical laboratory leadership rest on in this training?

Medical laboratory leadership rests on ISO 15189 on quality and competence of medical laboratories, supported by the WHO Laboratory Quality Stepwise Implementation tool and the total testing process.

How is the plan from medical laboratory leadership used at work?

You use the medical laboratory performance plan to brief an executive board, set demand and quality targets and review the service on a regular cycle.

How does medical laboratory leadership differ from a laboratory technician skills course?

Medical laboratory leadership centres on quality systems, test demand, turnaround and cost, while a technician skills course centres on performing tests at the bench.