

HEALTHCARE SCIENCE ASSOCIATE LEVEL 4 PROGRAMME PLAN - CARDIO-RESPIRATORY PATHWAY

Total off the Job Hours: 578 over a 24 months duration

PROGRAMME STRUCTURE

The programme is designed to develop Healthcare Science Associates working within Cardio-Respiratory services, supporting the diagnosis, monitoring and management of cardiac, respiratory and sleep-related conditions.

This pathway reflects the increasingly integrated nature of healthcare science services, where cardiac, respiratory and sleep diagnostics combine to support patients with complex conditions. Healthcare Science Associates play a key role in performing diagnostic tests, supporting clinicians, and ensuring high standards of patient care and safety.

This programme develops the knowledge, skills and behaviours required to work across multiple physiological disciplines, building confidence to deliver safe, accurate diagnostic procedures in clinical environments.

The apprenticeship is delivered through:

- Monthly remote **core sessions** (shared across all pathways)
- **Specialist Cardio-Respiratory/Sleep teaching** aligned to workplace role
- **Workplace-based clinical practice and competency development**
- **Portfolio-based assessment** via e-portfolio
- **Regular coaching and progress reviews**
- **Gateway and End-Point Assessment** in the final months

Learning is applied directly within the workplace to support accurate diagnosis, effective treatment and high-quality patient care.

ASSESSMENT METHODS

Assessment is portfolio-based and includes a range of workplace evidence demonstrating clinical competence and applied knowledge.

Examples include:

- Direct observation of cardiac, respiratory and sleep diagnostic procedures
- Reflective accounts of patient interactions and testing activities
- Professional discussions
- Case studies and diagnostic reasoning activities
- Work products (ECG traces, sleep study reports and respiratory test data)
- Witness testimonies
- Competency assessments
- Knowledge assignments and written activities

All evidence is uploaded and reviewed through an e-portfolio system.

CORE SESSIONS (ALL PATHWAYS)

- Being a Successful Student & Scientist
- Effective Communication
- Legal & Ethical context of working in Healthcare Science
- Health, Safety & Security
- Quality, Audit Research & Development
- Working in A Technical Environment
- Teaching, Training & Assessing Others
- Leadership, Supervision, Mentoring & Teamwork

SPECIALIST PATHWAY DELIVERY – CARDIO-RESPIRATORY SLEEP

Delivered following the core units and aligned to workplace role.

Specialist areas include:

- Spirometry and reversibility testing
- Pulmonary function testing
- Gas transfer and lung volume measurement
- Electrocardiography (ECG)
- Sleep diagnostics and sleep study set-up
- Sleep disorder investigations
- Anatomy and physiology of the cardiac and respiratory systems
- Pathophysiology of cardiac, respiratory and sleep-related disorders

Learners develop the skills required to perform and support a broad range of cardiac, respiratory and sleep diagnostic procedures, helping clinicians identify, monitor and manage complex conditions.

Specialist teaching is delivered by industry experts and linked directly to clinical workplace practice.

FUNCTIONAL SKILLS

Functional Skills in English and maths are optional for apprentices aged 19+.

Where required, support is available throughout the programme.



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OFF-THE-JOB LEARNING ACTIVITIES

Learners complete a minimum of 578 hours of Off-the-Job Learning throughout the apprenticeship. Off-the-job learning takes place during paid working hours and supports the development of the knowledge, skills and behaviours required within the apprenticeship. (Based on a 24-month Level 4 Healthcare Science Associate programme.)

Activities include:

Core Learning

- Attending core sessions
- Completing assignments and research activities
- Independent study and professional reading

Workplace Clinical Practice

- Performing pulmonary function testing
- Undertaking ECG investigations
- Supporting sleep study set-up and monitoring
- Calibrating and quality checking equipment
- Participating in patient assessments and diagnostic procedures

Specialist Development

- Developing competency in cardiac, respiratory and sleep diagnostics
- Understanding integrated cardio-respiratory patient pathways
- Interpreting diagnostic information under supervision

Quality and Service Improvement

- Participating in audits
- Supporting quality assurance activities
- Reviewing diagnostic processes
- Contributing to service improvement initiatives

Research and Professional Learning

- Reviewing clinical guidelines and best practice
- Exploring emerging technologies and diagnostic techniques
- Developing scientific and physiological knowledge

Reflective Practice and Portfolio Development

- Writing reflective accounts
- Gathering workplace evidence
- Recording competencies and feedback
- Maintaining an e-portfolio

Coaching and Progress Reviews

- One-to-one coaching sessions
- Formal progress reviews
- Gateway and EPA preparation

Examples may include shadowing cardiac physiologists, respiratory physiologists, sleep physiologists, advanced practitioners and multidisciplinary clinics.

PROGRESSION OPPORTUNITIES

On successful completion, learners may progress to:

- Band 4 Healthcare Science Associate or Associate Practitioner roles
- Cardiac Physiology pathways
- Respiratory Physiology pathways
- Sleep Physiology pathways
- Level 6 Healthcare Science Degree Apprenticeships
- Registration as a Technician Scientist with the Science Council
- ARTP and SCST professional development routes

END-POINT ASSESSMENT (EPA)

The apprenticeship concludes with an independent End-Point Assessment.

Observation of Practice

Assessment of clinical competence across cardiac, respiratory and sleep diagnostic procedures.

Professional Discussion

Exploration of knowledge, skills and behaviours gained throughout the apprenticeship.

Portfolio Review

Review of evidence demonstrating competence and professional development.

Achievement:

Level 4 Healthcare Science Associate Apprenticeship

Grades Available:

Pass
Distinction

PROGRAMME OUTCOME

Apprentices will be able to:

- Perform cardiac, respiratory and sleep diagnostic investigations safely and accurately
- Support clinicians in diagnosis and patient management
- Apply physiological knowledge across multiple specialisms
- Maintain quality assurance and safety standards
- Use diagnostic equipment effectively
- Communicate effectively with patients and multidisciplinary teams
- Contribute to integrated patient care and improved outcomes
- Operate within governance and professional practice frameworks



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