Unit 18: The Science Behind the Cure

Level:	**4**
Unit type:	**Optional (General Healthcare Science)**
Credit value:	**20**
Guided learning hours:	**160**

Unit summary

In this unit, you will develop an understanding of how the life sciences are organised into scientific and clinical specialities, and how they interrelate. You will also gain an understanding of the nature of work performed in these specialities and the basics of good laboratory and/or departmental practice as applied to life sciences; spanning blood sciences; cellular sciences, including reproductive sciences; infection science, including decontamination science; genetic science and transfusion, and transplantation science. You will be expected to apply and contextualise your knowledge and skills, performing routine technical skills and developing and building your professional practice in accordance with Good Scientific Practice.

Unit assessment requirements

There are no specific assessment requirements for this unit. Please refer to the assessment strategy in *Annexe B*.

Additional information

AC1.1 should include:

knowledge of the specialist areas of life sciences:

- anatomical pathology
- blood sciences (clinical biochemistry; haematology; clinical immunology; histocompatibility and immunogenetics)
- cellular sciences (cytology; histology)
- reproductive sciences (embryology and andrology)
- infection science (clinical microbiology, virology, serology, decontamination science)
- genetic and genomics science
- transfusion and transplantation science

and:

- scope and core practice

- equipment and systems used, including automation, robotics, analytical platforms, modular systems
- data generation, processing, and reporting
- point-of-care testing systems or individuals using medical devices in their home e.g. renal dialysis, infusion devices) or hospital-based practice, e.g. in endoscopy
- provision of 24/7 services
- causes and investigation of common diseases where specimens are sent to life science departments, or decontamination of reusable medical devices as appropriate to the life science setting
- scope and core practice of molecular science in each healthcare science life science specialism.

Learning outcome 2

This should be contextualised to either a laboratory or decontamination science department, depending on own area of life science practice.

AC2.1 learners should make reference to good laboratory practice, specific standards of accreditation and standard operating procedures.

AC2.1 includes:

- quality standards
- quality management
- quality assurance
- Standard Operating Procedures
- audit
- accreditation.

AC2.1 – accreditation for blood, cellular, infection (microbiology, virology) and genetic science includes:

- United Kingdom Accreditation Service (UKAS) – Clinical Pathology Accreditation (CPA)
- Medicines and Healthcare products Regulatory Agency (MHRA)

Standards and accreditation for decontamination science includes:

- Medical Devices Regulations 2002
- Medical Devices Directive 93/42/EEC as amended by Directive 2007/47 EC (CE Marking Accreditation)
- BS EN ISO 13485:2016 Medical Device: Quality Management
- Health and Social Care Act 2008
- Joint Advisory Group on Gastrointestinal Endoscopy (JAG)

AC3.2 – the centre will need to provide case studies.

Learning outcomes and assessment criteria

To pass this unit, learners need to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria outline the requirements that the learner is expected to meet to achieve the learning outcomes and the unit.

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Understand the role of life science services in healthcare	1.1	Discuss the different roles of life science services in the diagnosis, treatment and management of disease			
		1.2	Discuss the contribution of life science specialisms to screening programmes			
		1.3	Explain the equipment and methods used for decontaminating reusable medical devices			
2	Understand the basis of good laboratory/departmental practice, including the handling of biological specimens	2.1	Explain the mechanisms that underpin the delivery of a quality-assured laboratory or departmental service			
		2.2	Explain the Standard Operating Procedures for handling biological specimens			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Understand the impact of pathology services on patients and the patient care pathway	3.1	Explain the benefits and limitations of pathology services for patients and the patient care pathway			
		3.2	Discuss the improvements made to patient care following a critical incident			
		3.3	Explain how effective patient-practitioner partnerships operate in life sciences			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

Internal verifier signature: _____ Date: _____
(*if sampled*)