Unit 33: Transfusion Science – Blood Transfusion in Practice

Level: 4

Unit type: Optional (Laboratory Science)

Credit value: 30

Guided learning hours: 240

Unit summary

In this unit, you will apply your knowledge and skills gained in *Unit 19: General Laboratory Practice* to work in a transfusion setting. You will also be required to demonstrate appropriate attitudes and behaviours and integrate your learning as you develop your professional practice.

Unit assessment requirements

There are no specific assessment requirements for this unit, however **learners completing this unit must also complete *Unit 19: General Laboratory Practice.*** Please refer to the assessment strategy in *Annexe B*.

Additional information

All procedures must be undertaken in accordance with the Standard Operating Procedure (SOP).

AC1.6 (Explain the principles of a group of procedures) and AC2.7 (Perform analyses from a group of procedures) must be completed for **one** of the groups of procedures listed below.

Group 1

Explain the principles of and perform the following:

- blood grouping and phenotyping
- antibody screening and identification
- microbiology screening of blood donations, including ELISA/chemiluminescence and nucleic acid amplification testing.

OR

Group 2

Explain the principles of and perform the following:

- blood grouping and phenotyping
- blood group genotyping
- pre-transfusion testing

- antenatal testing to monitor for haemolytic disease of the foetus and newborn (HDFN).

OR

Group 3

Explain the principles of and perform the following:

- manufacturing blood components from blood donations
- irradiation of blood components ensuring that components meet the required quality standards throughout the supply chain
- performing the processes relating to labelling, storage and issue of routine and non-routine products
- quality monitoring of blood components, including blood counts by flow cytometry.

OR

Group 4

Explain the use of panel cells and reagents in blood transfusion and perform the following:

- processing reagents and panel cells from blood donations
- performing the processes relating to labelling and storage and issue of panel cells and reagents
- perform validation and quality-control checks on panel cells and reagents.
- AC1.6 should include **one** group of procedures.
- AC2.1 should not include stem cell and tissue transplantation methods in healthcare.
- AC2.7 should include **one** group of procedures.
- AC3.1 should include **three** patient pathways.
- AC3.2 should include **three** patient pathways.
- AC3.3 should include **two** patient pathways.

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 **in own area of work and in accordance with Standard Operating Procedures (SOPs)** to achieve the learning outcomes and the unit.

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
1	Understand the principles and practice of transfusion science	1.1	Explain the range of services provided by NHS Blood and Transplant			
		1.2	Discuss the safe handling of samples and blood donations			
		1.3	Explain the range and uses of blood components processed from whole blood			
		1.4	Explain the main functions of the principal blood cells and tissues			
		1.5	Explain sources and uses of human stem cells and tissues			
		1.6	Explain the principles of a group of procedures within transfusion sciences			
		1.7	Explain the principles of quality control and quality management			
		1.8	Explain the role of audit and laboratory accreditation			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
		1.9	Explain the derivation and purpose of normal reference ranges in relation to routine transfusion science analyses			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
2	Be able to perform routine analysis on automated and/or manual equipment in transfusion science working to Good Manufacturing Practice	2.1	Discuss the application of transfusion science methods in healthcare			
		2.2	Explain the MHRA and Human Tissue Authority requirements for transfusion services			
		2.3	Perform quality control as required in departmental Standard Operating Procedures			
		2.4	Perform sample reception procedures for samples or donations received in your department			
		2.5	Demonstrate the ability to safely handle and prepare human blood			
		2.6	Perform sample/donation preparation following Standard Operating Procedures			
		2.7	Perform analyses from a group of procedures within transfusion sciences			
		2.8	Identify common laboratory errors and problems that may be encountered			
		2.9	Perform maintenance and troubleshooting following standard operational procedures			
		2.10	Perform final checks to ensure processes, results or products meet requirements for patient safety			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Understand the impact of transfusion science services on patients and the work of the multidisciplinary team	3.1	Describe patient pathways where transfusion science services contribute to diagnosis and/or long-term monitoring of diseases			
		3.2	Explain how transfusion science results are used in patient pathways			
		3.3	Explain the common symptoms experienced by a person in transfusion science patient pathways			
		3.4	Explain how multidisciplinary teams work in transfusion science settings as part of the delivery of high-quality, safe, patient-centred services			
		3.5	Discuss how personalised medicine is/could be used in the diagnosis and recommended treatment of conditions appropriate to this specialist area of healthcare science practice			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

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