Unit 19: General Laboratory Practice

Level: 4

Unit type: Optional (Laboratory Science)

Credit value: 11

Guided learning hours: 88

Unit summary

In this unit, you will develop the knowledge, skills, experience and attitudes needed to work in a laboratory setting, often within life sciences. This unit will build on your learning from *Unit 2: Professional Practice and Person-centred Care,* and it will begin to integrate and embed many of the professional practice learning outcomes to support safe, quality-assured working practice in the workplace.

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 includes:

- control infection risks and hazards in accordance with departmental protocols.

AC1.3 includes, appropriate to own area of work:

- small volume (repeat pipetting of 0.5 microlitre samples and pipetting viscous fluids)
- maintenance
- calibration.

AC2.1 includes:

- use of both manual and automatic pipettes.

AC3.1 includes:

- temperature of storage facilities
- accurately recording conditions
- identifying if conditions are within required range
- reporting/responding to any errors/alarms
- seeking advice from senior staff when required.

AC3.2 includes:

- accurately recording conditions

- identifying if conditions are within required range
- reporting/responding to any errors/alarms
- seeking advice from senior staff when required.

AC3.3 includes:

- ensuring like lot numbers are stored together.

AC4.1 includes:

- known high-risk specimens
- paediatric specimens
- insufficient specimens
- unlabelled or inadequately labelled samples (including blood, cerebrospinal fluid (CSF), tissue samples).

AC4.2 includes:

- demonstrating correct handling according to health and safety, quality assurance and trust governance procedures.

AC4.6 includes:

- urgent specimens
- deteriorating specimens
- maintaining the confidentiality of individuals.

AC4.7 includes:

- labelling
- insufficient preservative/anticoagulant
- incorrect preservative/anticoagulant
- unfixed.

AC4.8 includes:

- other sections of the laboratory
- other departments.

AC5.1 includes:

- ensuring maintenance records are up to date.

AC5.3 includes (appropriate to own area of work):

- balances
- centrifugation devices
- fridges and freezers
- microscopes
- plasma thawers
- safety cabinets
- water baths and other heating devices
- weighing equipment.

AC7.2 includes:

- how to safely dispose of specimens, including sharps
- Standard Operating Procedures for the disposal of biological specimens
- health and safety issues and use of personal protective equipment (PPE).

AC12.1 includes:

- written
- electronic
- verbal
- non-verbal
- adapting communication style and language to meet the needs of the listener.

AC12.2 includes:

- assist in identifying problems accurately
- increase individual satisfaction
- enhance treatment adherence
- reduce individual distress and anxiety.

AC12.3 includes:

- signposting
- listening
- language
- non-verbal behaviour
- ideas, beliefs, concerns, expectations
- summarising.

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	Be able to perform laboratory techniques using a range of equipment in own work area	1.1	Demonstrate use of a range of laboratory/departmental apparatus in own work area			
		1.2	Explain the purpose of performing maintenance and calibration procedures on automatic pipettes			
		1.3	Use manual and automatic pipettes to prepare dilutions as appropriate to own work area			
2	Be able to prepare general laboratory/ departmental reagents, consumables or raw materials	2.1	Prepare dilutions and reagents appropriate to own area of work			
		2.2	Explain the importance of lot numbers and expiry dates for reagents, consumables or raw materials			
		2.3	Ensure storage and health and safety requirements are met in own area of work			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
3	Be able to store laboratory equipment and consumables correctly and correct stock rotation is maintained	3.1	Record conditions and identify if within required range for specific assays			
		3.2	Correctly store reagents, kits and consumables			
		3.3	Demonstrate the ability to complete the required laboratory equipment and consumables storage documentation			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
4	Be able to perform the safe and secure receipt, handling and storage of biological specimens Be able to perform the safe and secure receipt, handling and storage of biological specimens	4.1	Explain the correct procedures for dealing with biological specimens			
		4.2	Demonstrate the correct handling of specimens and request forms safely			
		4.3	Determine specimen processing requirements and prioritise according to specimen type and local standard operating procedures			
		4.4	Identify the specimen, container, anticoagulant, or preservative required			
		4.5	Perform procedures within own scope of practice for dealing with incorrect or inadequate samples and forms			
		4.6	Ensure other samples are sent to correct destination			
		4.7	Safely and correctly separate the sample if necessary			
		4.8	Place specimens in correct location and storage conditions before analysis or further processing			
		4.9	Access information management systems to enter patient and specimen data			
		4.10	File and archive data in accordance with data security and protection protocols			
		4.11	Explain the need to maintain confidentiality and data protection laws			
		4.12	Use specimen preparation equipment safely and correctly			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
5	Understand the purpose and processes required for equipment maintenance	5.1	Explain how to identify operational status of equipment			
		5.2	Explain how equipment is maintained by external agencies			
		5.3	Discuss the difference between planned preventative maintenance, breakdown and testing and validation of equipment			
		5.4	Explain the role of the user and their responsibilities			
6	Be able to perform regular monitoring, checks and maintenance	6.1	Perform regular monitoring checks			
		6.2	Perform planned preventative maintenance			
		6.3	Perform validation procedures			
		6.4	Respond to breakdowns of equipment and where appropriate take remedial action			
		6.5	Complete appropriate records relevant to work area			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
7	Be able to retrieve specimens from storage and correctly deal with add-on requests, completing appropriate documentation	7.1	Evaluate the SOPs for retrieving specimens/blood components from storage			
		7.2	Correctly deal with add-on requests			
		7.3	Complete appropriate documentation for the retrieval of stored specimens accurately			
		7.4	Evaluate the legislation and regulations covering the transport of specimens/blood components			
		7.5	Transport samples appropriately			
8	Be able to safely dispose of biological specimens	8.1	Explain the requirements of the Human Tissue Act 2004 with respect to the safe disposal of biological specimens			
		8.2	Explain the principles and application of laboratory/departmental SOPs for safe disposal of biological specimens			
		8.3	Select appropriate personal and protective equipment for handling biological specimens			
		8.4	Identify biological specimens for disposal and retrieve from storage			
		8.5	Correctly dispose of specimens and medical devices			
		8.6	Complete all required documentation for the disposal of biological specimens			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
9	Be able to evaluate the performance of one or more analysis methods	9.1	Justify the principles and practice of quality control, external quality assessment and quality management			
		9.2	Evaluate the performance of two analysis methods in own area of practice, including internal quality control and external quality assurance			
		9.3	Recommend corrective action where appropriate			
		9.4	Complete all required quality-control documentation			
10	Be able to draft routine reports for validation	10.1	Draft routine reports for validation			
		10.2	Prioritise reports in accordance with standard operating procedures (SOPs)			
		10.3	Identify cases for referral to senior colleagues			
11	Be able to validate results from a range of routine procedures to inform repeat analysis or processing	11.1	Explain the purpose of validation of results for routine analyses			
		11.2	Validate results from a range of routine procedures to inform repeat analysis or processing			

Learning outcomes		Assessment criteria		Evidence type	Portfolio reference	Date
12	Be able to perform a health and safety risk assessment of a defined area	12.1	Explain the reasons for performing risk assessment			
		12.2	Explain the key legislation, regulations and sources of advice relevant to the risk assessment			
		12.3	Explain the process of risk assessment			
		12.4	Justify the choice of area in which risk assessment is undertaken			
		12.5	Perform the health and safety risk assessment			
		12.6	Solve problems within scope of practice			
		12.7	Seek advice as required			
		12.8	Document the risk assessment in accordance with departmental guidelines			
13	Be able to use effective communication skills within the healthcare environment	13.1	Explain the principles of effective communication			
		13.2	Explain the positive impact of effective communication on patients and care			
		13.3	Explain the importance of key ideas underpinning effective communication			
		13.4	Communicate effectively within the healthcare environment			

Learner name: _____ Date: _____

Learner signature: _____ Date: _____

Assessor signature: _____ Date: _____

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