



Australian Government

MSL975063 Perform haematological tests

Release: 1

MSL975063 Perform haematological tests

Modification History

Release 1. Supersedes and equivalent to MSL975036 Perform haematological tests. Minor change to Performance Criteria. Oral communication removed from Foundation Skills as this is not a focus of the unit. Additional test items added to Knowledge Evidence.

Application

This unit of competency describes the skills and knowledge to determine levels, function, activity and interactions of cellular and plasma components of blood, using tests and procedures identified with the discipline of laboratory haematology.

This unit applies to laboratory technicians and technical officers working in the biomedical industry sector. While this unit focuses on the laboratory investigation of human physiology and pathology, it reasonably describes aspects of work performed in veterinary settings. The unit of competency assumes that technical personnel would perform tests and procedures under close supervision. The results of their work would also normally be integrated, interpreted and reported on by supervising scientists and medical pathologists. Although a supervisor may not always be present, the technician will follow workplace procedures that will clearly describe the scope of permitted practice in modifying testing procedures, interpreting data and for communicating test results to people outside the laboratory. People performing haematology tests will meet the requirements of the laboratory that they are working in regarding the education and training they must have to perform the tests.

No licensing or certification requirements exist at the time of publication. However, regulations and/or external accreditation requirements for laboratory operations exist, so local requirements should be checked. Relevant legislation, industry standards and codes of practice within Australia must also be applied.

Pre-requisite Unit

MSL973028 Perform microscopic examination

Competency Field

Testing

Elements and Performance Criteria

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1. Process samples and associated request	1.1 Identify specimens and request forms that do not comply with

Elements	Performance Criteria
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
details	workplace requirements 1.2 Record any discrepancies or sample quality issues and indicate action required 1.3 Register samples, in accordance with workplace procedures, recording details that allow accurate tracking and chain of custody traceable to employee
2. Perform tests	2.1 Conduct individual tests according to workplace procedures, applying required quality control 2.2 Prepare blood films in accordance with workplace procedures 2.3 Use appropriate manual haematological techniques 2.4 Identify normal and abnormal morphological characteristics of red blood cells, white blood cells and platelets 2.5 Classify and count cell populations 2.6 Calculate red cell indices and white blood cells absolute counts 2.7 Interpret automated analyser results and correlate with blood film morphology 2.8 Record results in accordance with workplace procedures using correct terminology
3. Maintain laboratory records	3.1 Record and/or check results in accordance with workplace procedures 3.2 Follow procedures to ensure traceability of sample from receipt to reporting of results

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

- Planning and organising skills to manage own work and ensure the timely completion of tasks.

Other foundation skills essential to performance are explicit in the performance criteria of this unit.

Unit Mapping Information

Supersedes and is equivalent to MSL975036 Perform haematological tests.

Links

MSL Laboratory Operations Companion Volume Implementation Guide is available from VETNet – -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=5c63a03b-4a6b-4ae5-9560-1e3c5f462baa>

Assessment Requirements for MSL975063 Perform haematological tests

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Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- safely and accurately performed and interpreted at least 3 haematological tests or procedures from the list below:
 - packed cell volume (PCV) or Haematocrit (HCT)
 - erythrocyte sedimentation rate (ESR)
 - manual platelet estimation
 - manual reticulocyte count
 - haemoglobin (Hb) measurement
 - coagulation tests including prothrombin time
- accurately performed and interpreted the following tests, recording results for at least 3 samples, including 1 normal and 2 abnormal, for each of the following:
 - calculate red cell indices including mean cell volume (MCV), mean cell haemoglobin (MCH), and mean cell haemoglobin concentration (MCHC)
 - white blood cell (WBC) differential
 - red blood cell (RBC), WBC and platelet morphology
- used accurate terminology
- visually differentiate a variety of sample conditions including clotted, lipemic, haemolysed and inadequate samples.
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Knowledge Evidence

There must be evidence the candidate has knowledge of:

- medical terminology relevant to normal and abnormal haematology
- basic structure and function of red blood cells, white blood cells and platelets
- structure, function and metabolic variants of Hb
- basic principles of haemostasis and the effects of therapeutic drugs on coagulation mechanisms
- routine tests performed in haematology laboratories and their purpose, including:
 - full blood count

- routine haematological stains
- blood film examination
- coagulation tests including prothrombin time
- haemoglobin measurement
- packed cell volume (PCV) /Haematocrit
- erythrocyte sedimentation rate (ESR)
- manual platelet estimation
- reticulocyte count
- morphological variation of red blood cells, white blood cells and platelets and their significance as a diagnostic indicator and their relationship to physiological and pathological conditions
- key diagnostic laboratory findings used to identify common haematological disorders including:
 - anaemias and the common subtypes including macrocytic, microcytic and normocytic
 - acute leukaemias
 - mature lymphoproliferative disorders
 - myeloproliferative disorders
 - myelodysplastic syndromes
 - microbiological infections including malaria
 - coagulopathies
- importance of identifying immature cells including nucleated red blood cells (NRBC) and blasts
- Importance of early detection of acute promyelocytic leukaemia
- actions required when abnormal parameters are identified
- causes and impact of haemolysis of result values
- types of further testing and their importance to confirm diagnosis
- technological advances in haematology including automation of full blood counts, coagulation assays and point of care testing:
 - basic principle and purpose of flow cytometry
 - advantages and limitation of automation
 - importance of equipment maintenance and use of controls
- relationships that exist between the sample and the test result, including:
 - sample collection
 - the preservation and timely testing of samples
 - sample transport and storage conditions and issues of fixation/staining artefact
- trouble shooting of common sample quality issues
- awareness of environmental sustainability issues as they relate to the work task
- legal, ethical and work health and safety (WHS) requirements specific to the work task including traceability, confidentiality and security requirements of all clinical information, and laboratory data and records.
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Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - a standard haematology laboratory with relevant equipment, samples and reagents, information management system, databases and record/filing system
 - instruments for the semi-automated or automated electronic counting and partial characterisation of blood cells, the measurement of haemoglobin and the computation of red cell indices
 - workplace procedures, test methods and equipment manuals.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

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