



Australian Government

MSL975004 Perform chemical pathology tests

Release: 1

MSL975004 Perform chemical pathology tests

Modification History

Release 1. Supersedes and is equivalent to MSL975004A Perform chemical pathology tests

Application

This unit of competency covers the ability to perform tests and procedures associated with the detection and monitoring of tissue and bodily fluid responses to normal physiological processes and disease through the identification and quantifying of chemical components. It covers tests and procedures that are usually associated with the discipline of clinical biochemistry.

The unit of competency is applicable to laboratory technicians working in the biomedical industry sector. The unit principally refers to human pathology but many aspects are relevant to veterinary pathology. This unit of competency describes the testing of tissues, blood, bodily fluids (cerebrospinal fluid, peritoneal and wound aspirates, sweat and sputum), calculi, and excreta (urine and faeces) in laboratories. Tests examine and measure compounds that can give information about alterations in individual physiology and pathology, or compounds, such as therapeutic drugs or drugs of abuse, that will alter normal physiology. The tests are performed in a full or partial computerised and automated environment where large numbers of samples must be managed, analysed and their results recorded. This unit of competency assumes that the technical officer would perform tests and procedures under the close supervision of scientific and/or medical staff. Although a supervisor may not always be present, the technical worker will follow standard operating procedures (SOPs) that clearly describe the scope of permitted practice in modifying testing procedures, interpretation of data and for communicating test results to people outside the laboratory.

While no specific licensing or certification requirements apply to this unit at the time of publication, laboratory operations are governed by relevant legislation, regulations and/or external accreditation requirements. Local requirements should be checked.

Pre-requisite Unit

MSL974003 Perform chemical tests or procedures

OR

MSL974006 Perform biological procedures

Competency Field

Testing

Unit Sector

Elements and 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 forms	1.1	Ensure sample labels and request forms are correctly completed in accordance with workplace requirements
		1.2	Return samples and request forms that do not comply with requirements to their source with reasons for non-acceptance
		1.3	Log acceptable samples, applying required document tracking mechanisms
		1.4	Process samples as required by test procedure and request status
		1.5	Store sample components under optimal conditions until required for testing
2	Perform tests	2.1	Select authorised tests indicated for the requested investigations
		2.2	Conduct individual tests, or batches of tests, according to documented methodologies, applying required quality control procedures
		2.3	Manage tasks and organise work to ensure efficient use of time
		2.4	Flag test results that are outside accepted quality control limits
		2.5	Apply cognitive and technical processes to discriminate between significant data and artefact
		2.6	Confirm with supervisor any further testing requirements
		2.7	Record all test data, noting any phenomena that may be relevant to the treatment of data or the interpretation of results
		2.8	Store unused sample for possible future reference

3	Maintain a safe work area and environment	3.1	Use established safe work practices and personal protective equipment (PPE) to ensure personal safety and that of other laboratory personnel
		3.2	Clean up spills using appropriate techniques to protect personnel, work area and environment
		3.3	Identify instrument malfunction that may impact on safe operation
		3.4	Ensure the safe disposal of biohazardous materials and other laboratory waste in accordance with workplace procedures
4	Maintain laboratory records	4.1	Make entries on report forms or into computer systems, accurately calculating, recording or transcribing required data
		4.2	Maintain instrument logs as required by accreditation checklists
		4.3	Maintain security and confidentiality of all clinical information, laboratory data and records

Foundation Skills

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

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Standards, codes, procedures and/or workplace requirements

Standards, codes, procedures and/or workplace requirements include the latest version of one or more of:

- Australian and international standards, guidelines and codes covering: competence of testing and calibration laboratories,

laboratory safety, biological safety cabinets, occupational protective equipment, labelling of workplace substances, storage and handling of dangerous goods, physical containment levels and facility types, safety cabinets, work health and safety (WHS), quality and environmental management

- specific industry sector regulations, codes, guidelines and business rules
- workplace documents, such as SOPs; quality procedures; equipment manuals; calibration and maintenance schedules; material safety data sheets (MSDS) and safety procedures; laboratory schedules; workplace recording and reporting procedures; waste minimisation, containment, processing and safe disposal procedures; and cleaning, hygiene and personal hygiene requirements
- instructions to comply with new legislation, standards, guidelines and codes
- sampling procedures (labelling, preparation, storage, transport and disposal) and test procedures (validated and authorised)
- schematics, work flows, and laboratory stock records and inventory

Communication

Communication involves interactions with one or more of:

- supervisors and managers (laboratory, quality and customer service)
- other laboratory or clinical personnel
- patients and clients
- external auditors and accreditation agencies (e.g. National Association of Testing Authorities (NATA))

Safe work practices

Safe work practices include, but are not limited to, one or more of:

- ensuring access to service shut-off points
- recognising and observing hazard warnings and safety signs
- labelling of samples, reagents, aliquoted samples and hazardous materials
- handling and storage of hazardous materials and equipment in accordance with labelling, MSDS and manufacturer instructions
- identifying and reporting operating problems or equipment malfunctions
- cleaning and decontaminating equipment and work areas regularly using workplace procedures
- using PPE, such as gloves, safety glasses, coveralls and gowns
- using containment facilities (e.g. PCII, PCIII and PCIV physical containment laboratories), containment equipment

(e.g. biohazard containers, laminar flow cabinets, Class I, II and III biohazard cabinets) and containment procedures

WHS and environmental management requirements

WHS and environmental management requirements include:

- complying with WHS and environmental management requirements at all times, which may be imposed through state/territory or federal legislation. These requirements must not be compromised at any time
- applying standard precautions relating to the potentially hazardous nature of samples
- accessing and applying current industry understanding of infection control issued by the National Health and Medical Research Council (NHMRC) and State and Territory Departments of Health, where relevant

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSL975004A Perform chemical pathology tests

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MSL975004 Perform chemical pathology tests

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Performance Evidence

Evidence of competence in this unit must satisfy all of the requirements of the elements and performance criteria, and include demonstration of:

- safely performing at least five (5) tests or procedures associated with the detection and monitoring of tissue and bodily fluid responses to normal physiological processes and disease through the identification and quantifying of chemical components
- identifying and measuring chemical substances that are associated with organ dysfunction or indicators of success or failure of treatment
- detecting and measuring drugs and toxins
- testing for biological activity, such as assessment of enzyme activity indicative of organ/tissue damage
- testing for evidence of prior exposure to infective agents such as identifying plasma changes that are consequent to, or associated with, immune responses
- applying DNA techniques
- discriminating between significant data and artefact, and responding appropriately to an abnormal result
- preparing documentation that is accurate, concise and in accordance with workplace requirements
- using the workplace information system efficiently
- using samples, reagents and materials economically and disposing of wastes safely
- maintaining security and confidentiality of all clinical information, laboratory data and records
- maintaining equipment and recording and reporting malfunctions in accordance with workplace requirements.

Knowledge Evidence

Must provide evidence that demonstrates knowledge of:

- scientific, medical, clinical, technical and workplace terminology relevant to normal and abnormal anatomy, physiology, biochemistry and immunology to enable efficient communication with laboratory and clinical staff
- necessity for a patient or client focus when performing laboratory procedures and tests, including issues of confidentiality and security of clinical and laboratory information and data
- workplace procedures for selection and use of testing procedures, in terms of the supposed or defined clinical problem

- details of test methods relevant to job role
- range of test results that have meaningful clinical significance
- selection and use of quality control and quality assurance processes for the issuance of meaningful results
- sources of error in pre- and post-analyses of samples and corrective actions
- management of work flow for effective and efficient use of resources
- relevant hazards, work health safety (WHS) and environment requirements.

Assessment Conditions

- Judgment of competence must be based on holistic assessment of the evidence. Assessment methods must confirm consistency of performance over time, rather than a single assessment event.
- This unit of competency is to be assessed in the workplace or a simulated workplace environment. A simulated workplace environment must reflect realistic operational workplace conditions that cover all aspects of workplace performance, including the environment, task skills, task management skills, contingency management skills and job role environment skills.
- Foundation skills are integral to competent performance of the unit and should not be assessed separately.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.
- Knowledge evidence may be collected concurrently with performance evidence or through an independent process, such as workbooks, written assessments or interviews (provided a record is kept in each case).
- This unit of competency may be assessed with:
 - MSL9314002 Apply quality system and continuous improvement processes
- Holistic assessment methods include:
 - review of results/data/records generated by the candidate
 - feedback from peers and supervisors that the candidate follows workplace procedures consistently and that tasks are performed in accordance with workplace requirements
 - oral and/or written tests and paper problems associated with chemical pathology test methods and laboratory processes, such as equipment calibration and maintenance
 - observation of the candidate performing chemical pathology tests
 - integrated assessment with a case study focus, such as the measurement of single or multiple chemical substances and metabolites in serum or other bodily fluids.
- Access is required to instruments, equipment, materials, workplace documentation, procedures and specifications associated with this unit, including, but not limited to:
 - a standard chemical pathology laboratory with relevant equipment, samples and reagents, laboratory information system, databases and record/filing system
 - instruments, such as manual and automated spectrometers and other related measurement devices, and various discrete and multi-channel analysers for chemical analytes
 - workplace procedures, test methods and equipment manuals.

- Under duty of care requirements, off-the-job training providers should ensure that blood samples are known to be antibody free for hepatitis B and C, syphilis and human immunodeficiency virus (HIV), but this does not preclude the use of universal precaution in the use of blood samples.
- Assessors must satisfy the assessor competency requirements that are in place at the time of the assessment as set by the VET regulator.
- The assessor must demonstrate both technical competence and currency.
- Technical competence can be demonstrated through:
 - relevant VET or other qualification/Statement of Attainment AND/OR
 - relevant workplace experience.
- Currency can be demonstrated through:
 - performing the competency being assessed as part of current employment OR
 - having consulted with a laboratory about performing the competency being assessed within the last twelve months.

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