Australian Government

Department of Education, Employment and Workplace Relations

ACMATE502A Manage and maintain the health of research animals

Revision Number: 1

ACMATE502A Manage and maintain the health of research animals

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the processes of managing the health of animals in a research environment according to the institution's standard operating procedures and relevant codes of practice. No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.

Application of the Unit

Application of the unit	The unit is applicable to a senior or managerial level. It requires the ability to work independently and as part of a team including other staff, researchers and veterinarians. All work practices must be undertaken in accordance with the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes and the institution's standard operating procedures. In addition to legal and ethical responsibilities, all units of competency in the ACM10 Animal Care and Management Training Package have the requirement for animals to be handled gently and calmly. The individual is required to exhibit appropriate care for animals so that stress and discomfort is minimised.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Monitor the health status of laboratory animals	1.1. ***Standard operating procedures*** to monitor the health of laboratory ***animals*** for signs of disease are developed in conjunction with others. 1.2. The institution's standard operating procedures, including ***occupational health and safety*** (***OHS***), requirements are followed when monitoring the health of laboratory animals.
2. Investigate and recognise disease processes in research animals	2.1. Develop standard operating procedures to investigate and recognise ***diseases*** in laboratory animals. 2.2. Follow institution's standard operating procedures to investigate and recognise diseases in laboratory animals. 2.3. ***Signs*** of ill health, sickness behaviours and pain are recognised and reported to appropriate staff. 2.4. Lesions are recognised clinically and during post-mortem examinations, and are recorded against health status of animals. 2.5. Post-mortem changes due to deterioration in tissues and organs are recognised. 2.6. Organisms detected during testing procedures on biological samples taken from animals and their environments are ***classified*** as pathogenic or potentially pathogenic.
3. Treat, prevent and control disease in laboratory animals	3.1. Standard operating procedures to ***treat***, prevent and control disease in laboratory animals are developed in conjunction with others. 3.2. The institution's standard operating procedures are followed when treating, preventing and controlling a range of diseases in laboratory animals. 3.3. ***Strategies*** are developed and implemented to investigate, treat, prevent, control and monitor disease.
4. Identify the way in which disease processes may influence the design and outcome of experiments in laboratory animals	4.1. Effects of disease processes in laboratory animals are identified and documented. 4.2. Effects on laboratory animals of ***experimental techniques*** are identified and documented.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- apply Animal Ethics Committee (AEC) classification system to determine procedures that require approval
- collect and perform basic tests on urine, blood and faeces
- collect ante-mortem and post-mortem samples
- comply with animal welfare and ethical standards in the humane handling of animals, administration of substances, collection of samples and documenting of activities
- ensure correct usage of equipment, materials and machinery in accordance with manufacturers' specifications
- maintain the highest standards of hygiene and infection control at all times to reduce the risk of infection and cross-infection
- monitor compliance with animal welfare and ethics regulations and workplace safe operating procedures
- observe, document and report findings on animal health status and behaviour traits using workplace protocols and procedures
- organise and participate in regular team meetings with other staff, researchers and veterinarians
- prepare and maintain appropriate records, including animal care and ethics register using relevant institutional electronic and/or manual systems
- research, develop and communicate the institution's standard operating procedures to monitor the health of laboratory animals, recognise diseases, and implement treatment, prevention or control strategies
- use bibliographic databases to locate relevant scientific and technical material
- literacy skills to read, interpret and apply institutional policies and procedures, including OHS, infection control, containment and exclusion and waste management; follow sequenced written instructions; record accurately and legibly information collected; and select and apply procedures to a range of defined tasks
- oral communication skills/language to fulfil the job role as specified by the organisation, including questioning, active listening, asking for clarification and consulting with or seeking advice from research group team members, senior or more experienced staff or other relevant persons
- numeracy skills to estimate, calculate and record routine and more complex workplace measures
- interpersonal skills to work with others and relate to people from a range of cultural, social and religious backgrounds and with a range of physical and mental abilities
- problem-solving skills to use available information and resources and prioritise daily tasks

REQUIRED SKILLS AND KNOWLEDGE
• verify precautions in application or administration of treatments or services.
Required knowledge
• anatomical and physiological structures and functions related to the health and wellbeing of commonly held animals • ante-mortem and post-mortem changes in animals • biohazards in the workplace of significance to animals and humans • industry terminology used to describe administration of substances and sampling techniques and other animal technology workplace practices • industry terminology used to identify animals, describe their behaviour and diseases • methodology and format of the institution's standard operating procedures • microbiology • nutritional and behavioural disorders • organisational policies and safe work procedures, including OHS and emergency procedures • parameters of normal and abnormal behaviour in animals, including signs of a healthy animal, signs of an animal in pain or distress in commonly held species • protocols, legal and ethical considerations in establishing animal care procedures and policies and gaining ethics committee approval • relevant codes of practice, including the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes • relevant state or territory legislation and regulations relating to the practice of veterinary science, OHS and animal welfare and research • relevant state or territory legislation covering the use of therapeutic and controlled substances • safe animal handling techniques, including approved handling methods during the administration of substances and collection of samples • sources of relevant scientific and technical literature • tissue and fluid sample types and methods • types of disease vectors • types of infectious and non-infectious diseases • types of infectious agents (e.g. bacteria, virus, protozoa and parasites) and non-infectious agents (e.g. cancer, environmental, accident or diet) • workplace hygiene standards, disinfectants, cleaning agents, cleaning techniques and cleaning equipment and materials.

Evidence Guide

EVIDENCE GUIDE	
The Evidence Guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competency in this unit must be relevant to workplace operations and satisfy all of the requirements of the performance criteria, required skills and knowledge and the range statement of this unit. Assessors should ensure that candidates can: • develop and implement standard operating procedures to manage and maintain the health of research animals • work independently and as part of a team to observe animals, monitor their health, sickness behaviours and pain and to report abnormalities • assist in the investigation of disease processes and act to treat, prevent, control and monitor disease • identify and document the impact of disease processes on a research program. The skills and knowledge required to manage and maintain the health of research animals must be transferable to a range of work environments and contexts and include the ability to deal with unplanned events.
Context of and specific resources for assessment	Assessment of this unit is to be practical in nature and will be most appropriately assessed in an animal technology research facility or an environment that reproduces normal work conditions and has a scientific establishment licence and access to an approved AEC. There must be access to a range of research animals and the relevant information, materials and documentation to enable one to demonstrate competence.
Method of assessment	To ensure consistency in one's performance, competency should be demonstrated, to industry defined standards, on more than one occasion over a period of time in order to cover a variety of circumstances, cases and

EVIDENCE GUIDE	
	responsibilities, and over a number of assessment activities. The assessment strategies must include practical skills assessment. Suggested strategies for this unit are: • written and/or oral assessment of candidate's required knowledge • observed, documented and first-hand testimonial evidence of candidate's application of practical tasks • simulation exercises that reproduce normal work conditions • case study analysis • third-party evidence • workplace documentation. This unit may be assessed in a holistic way with other units of competency relevant to the industry sector, workplace and job role.
Guidance information for assessment	Assessment methods should reflect workplace demands (e.g. literacy and numeracy demands) and the needs of particular target groups (e.g. people with disabilities, Aboriginal and Torres Strait Islander people, women, people with a language background other than English, youth and people from low socioeconomic backgrounds).

Range Statement

RANGE STATEMENT	
The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.	
Standard operating procedures for monitoring research animal health may be developed:	• in conjunction with other staff, in particular veterinarians and staff involved in research programs • in some institutions the responsibly to develop safe operating procedures lies with the veterinarian with other staff assisting • as a team task with all involved being consulted.

Subject to facility requirements ***animals*** may include:	• on most occasions the animal species will be common laboratory animals:
	  • guinea pigs
	  • mice
	  • rabbits
	  • rats
	• on some occasions animal species may include:
	  • amphibians, fish and reptiles
	  • dogs and cats
	  • fish
	  • invertebrates
	  • livestock (e.g. sheep, cattle and pigs)
	  • native wildlife (e.g. marsupials and birds)
	  • primates
	  • poultry.

OHS risks associated with animal technician procedures include:	• animal bites, kicks, scratches and crush injuries • biological hazardous waste and sharps disposal • handling of chemicals and medicines • gas leakage • inhalation of aerosol particles • intraocular contamination • manual handling, including carrying, lifting and shifting • needle pricks and cuts from other sharps

RANGE STATEMENT	
	• release of infective agents (animal and human) • zoonoses.

Diseases that may occur in research animals include:	• common infectious diseases:
	  • bacterial
	  • fungal
	  • parasitic
	  • prions
	  • protozoa
	  • viral
	• common non-infectious diseases:
	  • congenital
	  • degenerative
	  • dietary
	  • genetic
	  • neoplastic
	  • toxic
	  • traumatic.

Signs that may indicate that an animal is unwell may include:	• clinical signs:
	  • aggression
	  • change in normal appearance
	  • changes in temperature
	  • changes to skin, fur or hair
	  • decreased fertility
	  • depression
	  • increased or decreased mobility
	  • isolation from others
	  • lack of grooming
	  • loss of appetite
	• signs of injury:
	  • blood
	  • diarrhoea
	  • pus
	  • vomitus.

Classifying organisms found in biological samples may require:	• investigation using:
	  • clinical advice
	  • the internet
	  • reference texts.

RANGE STATEMENT	

Requirements for ***treating*** animals may include:	• relevant medication:
	  • parasite treatment
	  • prescription drugs
	  • vaccinations
	• seeking veterinary assistance when developing a health-monitoring program.

Strategies might be developed:	• in consultation with other staff, including veterinarians and researchers • to include minimising the adverse effects that interactions of host and pathogenic agents and the environment may have on animal health • using scientific literature.
Experimental techniques may include:	• carcinogenic agents • radiation • radioisotopes • surgical procedures.

Unit Sector(s)

Unit sector	Animal technology

Competency field

Competency field	

Co-requisite units

Co-requisite units		