



Australian Government

Department of Education, Employment and Workplace Relations

ACMATE303A Prepare for and monitor anaesthesia in animals

Revision Number: 1

ACMATE303A Prepare for and monitor anaesthesia in animals

Modification History

Not applicable.

Unit Descriptor

Unit descriptor	This unit of competency covers the process of preparing for and monitoring anaesthesia in animals for non-surgical and tissue collection procedures under supervision and would aim to minimise the pain of an animal during the procedure and/or to minimise the risk to the operator during the procedure. Licensing, legislative, regulatory or certification requirements may apply to this unit. Therefore, it will be necessary to check with the relevant state or territory regulators for current licensing, legislative or regulatory requirements before undertaking this unit.
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Application of the Unit

Application of the unit	This unit is applicable to junior or assistant level animal technicians working under the supervision of a senior or more experienced staff member. Animal technicians administering anaesthesia operate under and must comply with legislative requirements and the Australian Code of Practice for the Care and Use of Animals for Scientific Purposes as well as protocols, policies and procedures set down by the institution's Animal Ethics Committee (AEC). 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.
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Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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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.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for anaesthesia	1.1. Facility and personnel are prepared for animal anaesthesia. 1.2. Equipment is prepared and calibrated as required. 1.3. Anaesthetic and monitoring equipment are prepared as directed by the supervisor.
2. Prepare animals for anaesthesia procedures	2.1. Animals' health and condition are assessed. 2.2. Animals are handled and restrained safely and humanely in accordance with institutional policies and procedures. 2.3. Pre-anaesthetic evaluations are performed on animals. 2.4. Animals are prepared for anaesthesia. 2.5. Safe work practices, including occupational health and safety (OHS), are followed in accordance with institutional policies and procedures.
3. Assist in administering anaesthesia and monitoring animals	3.1. Animals are induced in anaesthesia as directed by the supervisor. 3.2. Animals are monitored during anaesthetic and/or non-surgical or tissue collection procedures. 3.3. Variations in the physiological parameters and signs of anaesthesia in animals are recorded. 3.4. Institution protocols for anaesthetic procedures on animals are complied with. 3.5. Anaesthetic emergency assistance is provided in accordance with institutional policies and procedure.
4. Provide post-anaesthetic care for animals	4.1. Analgesics and other supportive therapies are used to manage animals post-anaesthesia as directed. 4.2. Fluid therapy and oxygen are applied to animals as required. 4.3. Post-anaesthetic emergencies are recognised and responded to immediately. 4.4. Animals are monitored post-anaesthetically. 4.5. Post-anaesthetic monitoring records are maintained in accordance with research and AEC requirements.
5. Maintain anaesthetic facilities and equipment	5.1. Facilities and equipment are cleaned and stored in accordance with institutional policies and procedures. 5.2. Routine maintenance is carried out on anaesthetic equipment as required.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

- apply first aid techniques and provide basic animal care
- complete relevant work-related documents
- calculate dose rates of anaesthetic and other medications and verify with supervisor
- comply with project protocols or report problems or concerns to workplace supervisor or project manager in accordance with workplace protocols and procedures
- confirm the identity of animals and procedures to be undertaken
- employ safe, humane and environmentally responsible organisational systems and procedures when handling and working with animals
- evaluate behaviour, vital signs, symptoms and other objective measures that may indicate animal health is at risk
- identify and locate animal structures, tissues and organs relevant to administration and monitoring of induction of anaesthesia
- maintain the highest standards of hygiene and infection control at all times to reduce the risk of infection and cross-infection
- use equipment and materials correctly and in accordance with manufacturers' specifications
- literacy skills to read, interpret and follow institutional policies and procedures, including OHS, infection control and waste management; follow sequenced written instructions; record accurately and legible information collected; and select and apply procedures for a range of tasks
- oral communication skills/language to fulfill the job role as specified by the organisation, including questioning, active listening, asking for clarification and seeking advice from supervisor
- numeracy skills to estimate, calculate and record routine workplace measures
- interpersonal skills to work with 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 address emergency situations or other issues within scope of responsibilities
- use safe manual handling techniques and/or equipment
- use safe waste handling and disposal procedures
- verify dose rates and identify precautions in application or administration of anaesthetic and other medications.

Required knowledge

- anatomical terminology
- anatomical structures, tissues and organs relevant to the induction and monitoring of animals under anaesthetic

REQUIRED SKILLS AND KNOWLEDGE

- animal anaesthetic emergencies and appropriate responses
- animal first aid techniques
- biohazards in the workplace of significance to animals and humans
- characteristics of healthy, sick or distressed animals
- communication procedures and systems, and technology relevant to the organisation and the individual's work responsibilities
- indicators of normal and undesirable responses to anaesthetic and related medications
- information that should be documented for the administration of anaesthetic and related substances
- methods and equipment used to monitor animals during anaesthesia
- methods used to anaesthetise animals in animal technology workplaces
- methods used to measure, interpret and record objective measure of animal health
- organisational policies and safe work procedures, including OHS and emergency procedures
- physiological features of animals related to the application of anaesthesia and related medications
- 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, animal welfare, research and waste disposal
- safe animal handling techniques and procedures
- terminology used to describe anaesthetic processes, equipment, materials and physiological responses
- types of non-surgical or tissue collection procedures used in animal technology facilities that require the use of anaesthetics and related medications
- 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:

- prepare facilities, personnel and equipment including anaesthetic equipment and anaesthetic agents in accordance with institutional policies and procedures and OHS requirements
- prepare animals and carry out pre-anaesthetic evaluations
- monitor and maintain animals in anaesthesia and provide post-anaesthetic care
- recognise and respond to anaesthetic and post-anaesthetic emergencies
- maintain facilities and record treatments.

The skills and knowledge required to prepare for and monitor anaesthesia in 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

All activities and procedures must be performed in accordance with animal welfare legislation, ethical and approved project protocols under supervision of a senior or more experienced staff member.

Assessment of this unit is to be practical in nature and will be most appropriately assessed in an animal technology research facility.

There must be access to a range of research animals as well as relevant information, equipment and/or resources to enable one to demonstrate competence.

EVIDENCE GUIDE	
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 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 • 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.

<i>Anaesthesia</i> refers to:	the use of a drug administered for medical or surgical purposes that induces total loss of sensation.
<i>Equipment</i> may include:	- anaesthetic machines - masks and gloves - needles - oxygen cylinders - syringes.
<i>Anaesthetic and monitoring equipment</i> may include:	- anaesthetic equipment and supplies: - anaesthetic trolleys - filters - gas cylinders - incubators - masks - re-breathing bags - scavenging systems - soda lime and canisters - tubes - vaporisers - anaesthetic monitoring equipment: - intubation and carbon dioxide.
<i>Pre-anaesthetic evaluation</i> may involve:	- health checks: - general health and condition - heart rate - respiration - temperature - weight.
<i>Preparing</i> animals for anaesthesia will involve:	- applying restraining devices: - halters - head collars - hobbles

RANGE STATEMENT	
	• muzzles • rearing bits • aseptic preparation of injection sites • clipping • pre-operative scrubbing routines • shaving • further preparation under veterinary supervision may extend to: • administration of necessary premedication • intubation and the insertion of intravenous or urinary catheters • preparation of equipment and materials for intravenous infusions.
OHS risks associated with administering anaesthesia and monitoring animals may include:	• allergic reaction of animal to substances • animal bites, kicks, scratches, crush injuries • biological hazardous waste and sharps disposal • contamination of samples • cross-contamination between project classified clean and dirty animals • escape of animals and subsequent threat to safety of humans and other animals • haemorrhage, oedema and other tissue damage • handling of chemicals and medicines • inhalation of aerosol particles • intraocular contamination • manual handling, including carrying, lifting and shifting • maintaining body temperature and other vitals for life • needle pricks and cuts from other sharps • not being able to reach target tissue • potential injuries to humans during capture, handling and transport processes • release of infective agents (animal and human) • reaction to collection leading to shock • slippery or uneven work surfaces • transmission of zoonotic diseases.
Methods used to induce an animal in anaesthesia may include:	• gaseous and injectable preparations: • intermittent positive pressure ventilation.

RANGE STATEMENT	
<i>Institute protocols</i> may include:	• AEC and safety committee procedures • industry recognised standards • institutional policies and standard operating procedures • OHS procedures.
Possible <i>anaesthetic emergencies</i> may include:	• an animal going into: • hypothermia or hyperthermia • respiratory distress • shock.
<i>Post-anaesthetic monitoring</i> of animals may include:	• measurement of temperature, pulse and respiration manually or via monitors attached to animals • observations of behaviour: • allergic reaction • bleeding • loss of nervous system control • loss/regaining consciousness depending on procedures used • symptoms of shock.

Unit Sector(s)

Unit sector	Animal technology
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Competency field

Competency field	
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Co-requisite units

Co-requisite units		

Co-requisite units		