



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **HLTAN401C Prepare the anaesthetic environment**

**Release: 1**

## **HLTAN401C Prepare the anaesthetic environment**

### **Modification History**

Not Applicable

### **Unit Descriptor**

#### **Descriptor**

This unit of competency describes the skills and knowledge required to maintain stocks of consumable items and anaesthetic equipment and to prepare the necessary anaesthetic equipment and materials to meet the preferences of the anaesthetist and the requirements of the clients and in accordance with clinical procedure

### **Application of the Unit**

#### **Application**

Work performed requires a broad knowledge, range of well developed skills and the ability to develop and apply solutions to a range of predictable and unpredictable problems. Individuals use discretion and judgement and take responsibility for their own outputs

Administration of anaesthesia may occur in various locations within the hospital environment e.g. operating theatres, emergency department, intensive care unit (ICU) or radiology department

All activities are carried out in accordance with relevant Australian and New Zealand College of Anaesthetists' Policy Documents, organisation policies and procedures, infection control guidelines and state/territory legislation

### **Licensing/Regulatory Information**

Not Applicable

## Pre-Requisites

Not Applicable

## Employability Skills Information

**Employability Skills**                      This unit contains Employability Skills

## Elements and Performance Criteria Pre-Content

Elements define the essential outcomes of a unit of competency.

The Performance Criteria specify the level of performance required to demonstrate achievement of the Element. Terms in italics are elaborated in the Range Statement.

## Elements and Performance Criteria

### ELEMENT

1. Organise, assemble and position anaesthetic equipment and materials

### PERFORMANCE CRITERIA

- 1.1 Ensure availability of minimum equipment requirements as per ANZCA policy guidelines
- 1.2 Select *equipment* and *materials* and prepare correctly in relation to sequence and *requirements of the clients and their clinical procedure*
- 1.3 Ensure all relevant anaesthetic equipment and materials are clean/disinfected/sterile, functioning correctly, prepared for use, and, if necessary, calibrated
- 1.4 Position equipment and materials for accessibility with reference to other health professionals to meet the requirements of the clinical procedure and according to the anaesthetist's preference
- 1.5 Confirm the *anaesthetist's requirements and preferences*

**ELEMENT****PERFORMANCE CRITERIA**

2. Prepare for intravascular infusion and transfusion in accordance with request from anaesthetist and organisation policies and procedures
  - 2.1 Ensure *intravascular solution*, blood or blood product is correctly selected in accordance with anaesthetist's instructions and client documentation
  - 2.2 Confirm selected solution, blood or blood as fit for use in accordance with organisation policies and procedures
  - 2.3 Correctly select *infusion* set, connectors and/ or filters
  - 2.4 Correctly assemble equipment and materials and prime in an aseptic manner and ready for use
  - 2.5 Store infusion equipment and solutions correctly
  
3. Maintain adequate stock levels of anaesthetic consumable items
  - 3.1 Check stock levels and take appropriate action to maintain supply
  - 3.2 Communicate unavailability of stock to relevant personnel
  - 3.3 Rotate stock where necessary
  - 3.4 Store materials according to manufacturer's recommendations and legal requirements
  - 3.5 Carry out ordering procedures to organisation's requirements
  - 3.6 Withdraw relevant stock and dispose of in compliance with health hazard notices
  - 3.7 Dispose of expired stock promptly and safely in accordance with legislative requirements
  - 3.8 Ensure relevant material safety data sheets are available and referenced as required
  
4. Prepare the environment for the administration of anaesthesia
  - 4.1 Check humidity and temperature levels and adjust in accordance with relevant industry standards and clinical procedure
  - 4.2 Check lighting for suitability for the administration of anaesthesia
  - 4.3 Keep noise levels to a minimum

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level required for this unit.

#### *Essential knowledge:*

The candidate must be able to demonstrate essential knowledge required to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role

This includes knowledge of:

- Anatomy and physiology relevant to providing assistance in anaesthesia
- Fluid balance relevant to providing assistance in anaesthesia maintenance
- Medical terminology relevant to providing assistance in anaesthesia
- Clinical/operative procedures and the interrelationship with anaesthesia relevant to providing assistance in anaesthesia
- General knowledge of pathophysiology of disease relevant to providing assistance during anaesthesia
- Anaesthetic procedures relevant to providing assistance during anaesthesia
- Use of pain management equipment relevant to providing assistance during anaesthesia
- Principles of function, usage, indications, limitations and care of equipment required for clinical and anaesthetic procedures
- Procedures for managing anaesthetic equipment faults
- Microbiology relevant to providing assistance in anaesthesia
- Occupational health and safety procedures in relation to anaesthetic equipment
- Infection control policies, including standard and additional precautions, in relation to anaesthetic equipment and clinical procedures
- Manual handling techniques
- Types of infusion solutions, their indication for use and hazards, including incompatibilities
- Clinical recognition of adverse client reaction to transfusions, infusions and drug therapy
- Medico-legal requirements relevant to providing assistance in anaesthesia
- Understanding of gas laws and physical properties of gas
- Gas cylinders and piped gas, including hazards and safe handling
- Methods and principles of stock control and rotation and storage in accordance with organisation policies and procedures and manufacturers' regulations

#### *Essential skills:*

## REQUIRED SKILLS AND KNOWLEDGE

It is critical that the candidate demonstrate the ability to:

- Comply with organisation policies and procedures including those of OHS, and infection control, and current standards
- Identify the anaesthetic equipment and material requirements for a range of clinical procedures
- Prepare anaesthetic equipment and materials for use in a broad range of clinical procedures
- Recognise hazards related to the use of each item of a range of anaesthetic equipment
- Apply knowledge of boundaries of responsibilities and refer problems to supervisor, anaesthetist or other appropriate health professional
- Correctly apply relevant Australian Standards and organisation policy and procedures for cleaning, disinfecting and/or sterilisation of anaesthetic equipment where applicable
- Identify and manage faults in anaesthetic and monitoring equipment and materials
- Assemble and prime infusion in an aseptic manner and prepare infusion equipment

In addition, the candidate must be able to effectively do the task outlined in elements and performance criteria of this unit, manage the task and manage contingencies in the context of the identified work role

This includes the ability to:

- Use basic computer skills
- Use reading and writing skills-literacy competence required to fulfil job roles in a safe manner and as specified by the organisation. The level of skill required involves reading and documenting clinical information and understanding complex policy and procedure manuals.
- Use oral communication skills-language competence required to fulfil job roles in a safe manner and as specified by the organisation. Assessors should look for skills in asking questions, providing clear information, listening to and understanding workplace instructions, and clarifying workplace instructions when necessary. Effective verbal and non verbal communication skills with a range of personnel, within and outside of the organisation, are essential.
- Use numeracy skills ranging from the ability to complete basic arithmetic calculations, recording stock levels and statistical information
- Use problem solving skills required, including an ability to use available resources
- Deal with conflict
- Work with others within a team
- Display empathy with client and relatives

## 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, the Range Statement and the Assessment Guidelines for this Training Package.

*Critical aspects for assessment and evidence required to demonstrate this competency unit:*

- The individual being assessed must provide evidence of specified essential knowledge as well as skills
- Observation of workplace performance is essential for assessment of this unit
- Consistency of performance should be demonstrated over the required range of situations relevant to the workplace
- Where, for reasons of safety, space, or access to equipment and resources, assessment takes place away from the workplace, the assessment environment should represent workplace conditions as closely as possible

*Context of and specific resources for assessment:*

- Access to appropriate workplace where assessment can take place
- Simulation of realistic workplace setting for assessment
- Relevant organisation policy, guidelines, procedures and protocols

## EVIDENCE GUIDE

- Access and equity considerations:*
- All workers in the health industry should be aware of access and equity issues in relation to their own area of work
  - All workers should develop their ability to work in a culturally diverse environment
  - In recognition of particular health issues facing Aboriginal and Torres Strait Islander communities, workers should be aware of cultural, historical and current issues impacting on health of Aboriginal and Torres Strait Islander people
  - Assessors and trainers must take into account relevant access and equity issues, in particular relating to factors impacting on health of Aboriginal and/or Torres Strait Islander clients and communities
- Method of assessment*
- Observation in the workplace
  - Evidence gathered from clinical work environment
  - Written assignments/projects or questioning should be used to assess knowledge
  - Case study and scenario as a basis for discussion of issues and strategies to contribute to best practice
  - Questioning - verbal and written
  - Role play/simulation
  - Clinical skills involving direct client care are to be assessed initially in a simulated clinical setting (laboratory). If successful, a second assessment is to be conducted during workplace application under direct supervision
- Related units:*
- This unit can be assessed independently, however holistic assessment practice with other health services units of competency is encouraged



## **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. Add any 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.

## RANGE STATEMENT

*Equipment made available for selection includes:*

- Anaesthetic machine and components, including alarms and scavenger
- Work station/trolley
- Ventilator and components
- Vaporisers or other systems designed for delivery of inhalation anaesthetic agents
- Breathing systems and attachments
- Bougies
- Oxygen masks
- Laryngoscopes
- Fibreoptic bronchoscopes
- Intubation aids, including difficult intubation equipment
- Artificial airways
- Suction equipment for oesophageal and tracheal suction

*Monitoring equipment includes:*

- Electrocardiography (ECG)
- Pulse oximetry
- Non-invasive and invasive blood pressure monitoring
- Temperature monitoring
- Central venous pressure (CVP) monitoring
- Intravascular monitoring
- Gas analysers, including oxygen, carbon dioxide and anaesthetic agent
- Expired/inspired volume/pressure
- Neuromuscular transmission
- Cardiac output monitoring
- Cerebral activity monitoring
- Stethoscopes, including oesophageal

*continued ...*

*Equipment made available for selection includes (contd):*

*Other equipment includes:*

- Defibrillators and cardioverters
- Infusion equipment, including oxygen, carbon dioxide and anaesthetic agent
- Warming/cooling equipment for client and intravenous fluids
- Equipment to minimise heat loss
- Tourniquets and exsanguinators

## RANGE STATEMENT

- Neuromuscular function monitor
- Calf stimulators/compression devices
- Operating table and attachments for positioning and pressure care
- Humidifiers
- Scissors, clamps and forceps

*Materials made available for selection includes:*

- Drugs, including anaesthetic, emergency, those associated with the administration of anaesthetics, and those necessary for the management of conditions which may complicate or co-exist with anaesthesia
- Materials for fiberoptic intubation
- Microbiologic filter
- Heat and moisture exchanger
- Needles
- Syringes
- Cannulas
- Antiseptic solutions
- Infusion sets and attachments
- Lubricant
- Gauze
- Throat packs
- Adhesive tapes
- Ties
- ECG dots
- Introducers
- Materials for subarachnoid, epidural or regional nerve blocks
- Intercostal drainage sets
- Materials for protection against biological contaminants, including sharps containers

*Requirements of client may include:*

- Relevant medical history
- Individual anaesthetist requests according to operative or clinical procedure
- Age

**RANGE STATEMENT**

*Clients requiring anaesthetic include:*

- Neonates
- Infants
- Children
- Adolescents
- Adults
- Elderly
- Male
- Female

*Clinical procedures covers the surgical procedure and the type of anaesthetic which must include:*

- General/regional/local anaesthetic and sedation
- Radiology/Radiotherapy anaesthesia
- General surgery
- Gastro-intestinal surgery
- Ear, nose and throat surgery
- Gynaecological surgery
- Obstetric surgery
- Orthopaedic surgery
- Vascular surgery
- Urological surgery
- Oral/dental/maxillofacial surgery
- Cardiothoracic surgery
- Neurosurgery
- Plastic surgery
- Trauma/emergency surgery
- Ophthalmic surgery

*Intravascular solutions may include:*

- Colloids
- Crystalloids

*Transfusion may include:*

- Blood
- Blood products

## **Unit Sector(s)**

Not Applicable