



Australian Government

Department of Education, Employment and Workplace Relations

HLTEN613B Practise in a hyperbaric environment

Release: 1

HLTEN613B Practise in a hyperbaric environment

Modification History

Not Applicable

Unit Descriptor

Descriptor

This competency unit describes the skills and knowledge required by the advanced level Enrolled/Division 2 nurse to deliver a high standard of care to clients receiving treatment in a hyperbaric environment

Application of the Unit

Application

The knowledge and skills described in this competency unit are to be applied within jurisdictional nursing and midwifery regulatory authority legislative requirements

Enrolled/Division 2 nursing work is to be carried out in consultation/collaboration with registered nurses and under direct or indirect supervisory arrangements in line with jurisdictional regulatory requirements

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.

Elements and Performance Criteria

ELEMENT

1. Work in a hyperbaric environment

PERFORMANCE CRITERIA

- 1.1 Work with an understanding of the roles and responsibilities of *members of the hyperbaric unit health team*
- 1.2 Identify potential causes of emergencies associated with a hyperbaric chamber and hyperbaric treatment and respond appropriately
- 1.3 Use appropriate methods to prevent emergencies in the chamber where applicable
- 1.4 Recognise and report contraindications to hyperbaric conditions for self where applicable
- 1.5 Apply procedures for infection control before, during and after treatments
- 1.6 Work with an understanding of the reason for pre-hyperbaric treatment safety checklists and participates in this process
- 1.7 Work with an awareness of rationale for staff undertaking annual hyperbaric medicals and participate in this process
- 1.8 Recognise the specific occupational health, safety and welfare conditions related to working in a hyperbaric environment
- 1.9 Recognise the potential impact of hyperbaric therapy on clients and their significant other/s

ELEMENT**PERFORMANCE CRITERIA**

2. Contribute to holistic and specific assessment for hyperbaric treatment
 - 2.1 Perform a holistic assessment of the client in conjunction with the multi-disciplinary health care team, utilising resources and tools specific to the hyperbaric unit/organisation
 - 2.2 Identify possible psychological and physical *complications* of hyperbaric treatment and associated client education requirements
 - 2.3 Discuss the physical, psychological and social impacts of hyperbaric treatment with the client and identified significant other/s (with client consent)
 - 2.4 Recognise and report *contraindications for hyperbaric conditions* for clients

3. Plan care for clients requiring hyperbaric treatment
 - 3.1 Document an individual plan of care for the client in conjunction with the health care team
 - 3.2 Incorporate health teaching and discharge planning into practice in consultation/collaboration with the health care team

4. Implement appropriate care for the client
 - 4.1 Perform contemporary nursing interventions for the client undergoing hyperbaric therapy
 - 4.2 Correctly use specific hyperbaric chamber equipment for treatments
 - 4.3 Provide *client information and education* regarding hyperbaric therapy
 - 4.4 Demonstrate trouble shooting skills during hyperbaric treatments
 - 4.5 Monitor condition of the client undergoing hyperbaric treatment and communicate throughout the treatment to the registered nurse, technician and medical officer as appropriate
 - 4.6 Document outcomes of treatments according to hyperbaric procedures and organisation policy

ELEMENT

5. Document and evaluate outcomes of *nursing interventions*

PERFORMANCE CRITERIA

- 5.1 Monitor and evaluate client response to interventions and progress toward planned goals and document according to organisation policy
- 5.2 Report outcomes of nursing interventions to the appropriate member of the healthcare team
- 5.3 Change care plans and modify nursing interventions in conjunction with the registered nurse or other member of the hyperbaric team

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:

- Awareness of the Australian Standard for Work in Compressed Air and Hyperbaric Oxygen Facilities
- Basic structure and layout of a hyperbaric chamber
- Common dive tables for hyperbaric treatment and their indications
- Common treatment profiles for hyperbaric therapy and their indications
- Conditions indicated for hyperbaric therapy treatment and the mechanisms of therapeutic benefit for each
- Critical thinking and problem solving
- Cultural and spiritual beliefs and practices
- Culturally appropriate health promotion activities
- Educational resources and professional organisations associated with hyperbaric therapy
- Legislative requirements for practice
- Medical terminology
- Organisation policy and procedure
- Participating as a member of the health care team
- Physiological effects of increased atmospheric pressure on the human body and of breathing 100% oxygen (hyper oxygenation), helium or mixed gases under hyperbaric conditions
- Principles of health assessment
- Rationale for staff undertaking annual hyperbaric medicals
- Reflective practice
- Specialised in-depth knowledge of anatomy, physiology and pathophysiology related to hyperbaric issues
- Specialised knowledge and execution relating to emergency care
- Specific considerations for paediatric clients
- Workplace health and safety legislation

REQUIRED SKILLS AND KNOWLEDGE

Essential skills:

It is critical that the candidate demonstrate the ability 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:

- Apply relevant admission and discharge tools according to organisation policy
- Apply relevant health unit assessment tools according to organisation policy
- Apply cognitive processes to reflect problem solving and analysis in the planning implementation and evaluation of care to clients
- Apply organisation policy and procedure relating to hyperbaric management
- Apply professional standards of practice:
 - ANMC code of conduct
 - ANMC code of ethics
 - ANMC national Enrolled/Division 2 nurse competency standards
 - State/territory Nurse Regulatory Nurses Act
 - State/territory Nursing and Midwifery Regulatory Authority standards of practice
 - Scope of nursing practice decision making framework
- Demonstrate accountability for personal outputs and broad client group outcomes
- Use language, literacy and numeracy competence required to communicate effectively with client, group, colleagues and to record or report client outcomes
- Use advanced communication skills
- Use education and teaching strategies relating to health promotion and practical task applications for hyperbaric clients
- Use information technology systems
- Undertake nursing interventions which may include:
 - administration of nebulisers in the chamber
 - assessment, observation and documentation of clinical skills relating to the nursing management of hyperbaric interventions and emergencies
 - chest tube drainage in the chamber
 - client preparation for treatment
 - monitoring of intravenous infusions in the chamber
 - oral medication administration
 - pain management
 - setting up and management of breathing circuits (hood and BIBS / Scott mask)
 - setting up the chamber for treatments
 - suction in the chamber at depth and at surface
 - urinary drainage in the chamber

REQUIRED SKILLS AND KNOWLEDGE

- wound care and asepsis
- wound management

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 performance in a work context is essential for assessment of this unit
- Consistency of performance should be demonstrated over the required range of workplace situations and should occur on more than one occasion and be assessed by a registered nurse

Context of and specific resources for assessment:

- This unit is most appropriately assessed in the clinical workplace or in a simulated clinical work environment and under the normal range of clinical environment conditions
- Where, for reasons of safety, access to equipment and resources and space, assessment takes place away from the workplace, simulations should be used to represent workplace conditions as closely as possible

Method of assessment

- Observation in the work place
- Written assignments/projects
- Case study and scenario as a basis for discussion of issues and strategies to contribute to best practice
- Questioning - verbal or written
- Role play/simulation

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

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.

- Clients may include:*
- Adults
 - Child
 - Adolescent

- Members of the multi-disciplinary hyperbaric health care team include:*
- Hyperbaric nurses (inside and outside attendant)
 - Hyperbaric technicians
 - Medical staff
 - Experts in fire safety, wound management and otolaryngology
 - Allied health staff

RANGE STATEMENT

Theories of physics include:

- Boyle's law
- Charle's law
- Henry's law
- Dalton's law

Emergencies associated with the hyperbaric chamber and treatment may include:

- Fire inside the chamber
- Fire outside the chamber
- Emergency decompression
- Explosive decompression
- Uncontrolled compression
- Power failure
- Communication failure
- Chamber atmospheric contamination
- Isolation emergency eg: violence / potential violence
- Pneumathorax
- Cardiac arrest and airway management
- Hypoglycaemia
- Oxygen toxicity (CNS and pulmonary)

Complications of hyperbaric therapy may include:

- Client medical emergency conditions as listed in emergencies above plus
- Claustrophobia
- Sinus / dental barotrauma
- Lung barotrauma

RANGE STATEMENT

Indications for hyperbaric therapy may include:

- Decompression sickness
- Carbon Monoxide poisoning
- Smoke inhalation
- Osteoradionecrosis
- Selected wound healing
- Mixed non aerobic and aerobic infections
- Air or gas embolism
- Osteomyelitis (refractory)
- Gas gangrene (Clostridial Myonecrosis)
- Soft tissue radionecrosis
- Crush injuries / compartment syndromes
- Compromised skin grafts / flaps
- Thermal burns
- Blood loss
- Some spider bites
- Exceptional blood loss

Specific assessment tools and resources for hyperbaric assessment may include:

- Auroscope
- Blood glucose monitoring
- Oxygen perfusion
- Cardiac monitoring and ECG
- Pulmonary function tests
- Tissue perfusion tests

Relative contraindications for hyperbaric therapy include:

- Pulmonary function tests
- Tissue perfusion tests
- Excessive alcohol intake
- Dehydration
- Asthma
- Anxiety states or claustrophobia
- Recent dental work in the previous 24 hours
- Strenuous exercise previous and after therapy
- Preparing to fly within 24 hours (staff and water divers only)

RANGE STATEMENT

Client education requirements must include:

- The ability of the client to comprehend the education
- What is hyperbaric therapy
- The reason for hyperbaric therapy
- The chamber and sequence of events that occur during a treatment
- Demonstration and observation of air equalisation techniques
- Prohibited items in the chamber and appropriate clothing for treatments
- Complications of hyperbaric treatments

Nursing interventions include but are not limited to:

- Setting up the chamber for treatments
- Setting up and management of breathing circuits (hood and BIBS / Scott mask)
- Client preparation for treatment
- Wound management
- Pain management
- Oral medication administration
- Monitoring of intravenous infusions in the chamber
- Wound care and asepsis
- Suction in the chamber at depth and at surface
- Chest tube drainage in the chamber
- Urinary drainage in the chamber
- Administration of nebulisers in the chamber

Hyperbaric specific equipment may include but is not limited to:

- Suction
- Scrubber
- Oxygen flow meters
- Marquette monitor
- Communication headphones
- Medical lock
- Manual overboard dump
- Monitor panel and ECGS
- Stretcher loading equipment for Drager chamber
- Hand ventilator
- Fire hose

Unit Sector(s)

Not Applicable