



Australian Government

HLTENN027 Apply nursing practice in the hyperbaric environment

Release: 1

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Modification History

Release	Comments
Release 1	This version was released in <i>HLT Health Training Package release 3.0</i> and meets the requirements of the 2012 Standards for Training Packages. Significant changes to the elements and performance criteria. New evidence requirements for assessment, including volume and frequency requirements. Minimal change to knowledge evidence. Supersedes HLTEN613B

Application

This unit describes the skills and knowledge required to provide nursing care to a person undergoing hyperbaric treatment in a hospital or specialised facility with a hyperbaric chamber or unit.

Enrolled nurses working in hyperbaric nursing need to hold and apply specialised in-depth knowledge, effectively integrate theory and practice, and make reliable clinical assessments and judgements

This unit applies to enrolled nurses, registered with the Nursing and Midwifery Board of Australia, seeking specialisation in enrolled nurse work that is carried out in consultation and collaboration with registered nurses, and under direct or indirect supervisory arrangements aligned to the Nursing and Midwifery Board of Australia regulatory authority legislative requirements.

The skills in this unit must be applied in accordance with Commonwealth and State/Territory legislation, Australian/New Zealand standards and industry codes of practice.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

Elements define the essential outcomes

Performance criteria describe the performance needed to demonstrate achievement of the element.

1. Work in the hyperbaric environment

1.1 Identify roles and responsibilities of members of the interdisciplinary health care team in the hyperbaric

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environment

1.2 Identify potential and actual hazards involved with working in the hyperbaric environment and observe workplace health and safety requirements in own practice

1.3 Identify rationale for pre-hyperbaric treatment safety checklists and participate pre-hyperbaric treatment safety processes

1.4 Identify potential causes of emergencies associated with the hyperbaric chamber and hyperbaric treatment and use appropriate methods to prevent emergencies

1.5 Apply knowledge of the hyperbaric chamber and locate main oxygen valve for situations or emergencies where the valve will need to be shut off

1.6 Set up the specific hyperbaric chamber equipment for treatments correctly and use problem-solving skills during hyperbaric treatments.

1.7 Identify actual and potential contraindications to hyperbaric therapy both for the person undergoing hyperbaric treatment and for the health care team members

1.8 Undertake annual hyperbaric medical and promote this requirement with colleagues

2. Contribute to holistic and specific assessment for hyperbaric treatment

2.1 Perform holistic assessment of the person in conjunction with the interdisciplinary health care team using resources and tools specific to the hyperbaric unit in line with organisation policies and procedures

2.2 Identify possible psychological and physical complications of hyperbaric treatment for the person including contraindications, based on findings of the person's assessment

2.3 Discuss physical, psychological and social impacts of hyperbaric treatment with the person, family or carer to ensure their knowledge is sufficient for them to make informed consent

2.4 Identify when the acuity of a person is beyond own skills and knowledge and promptly consult with registered nurse and relevant interdisciplinary health care

ELEMENT**PERFORMANCE CRITERIA**

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team members

3. Perform nursing interventions in the hyperbaric environment

3.1 Apply strategies for managing a person's anxiety during hyperbaric therapy

3.2 Monitor and manage a person's drainage tubes including any interventions that relate to the use of suction in the hyperbaric chamber at depth and at surface

3.3 Apply principles related to hyperbaric oxygen therapy when setting up and managing a range of breathing system in the hyperbaric chamber

3.4 Perform wound management and record wound response to hyperbaric therapy and report to the interdisciplinary health care team

3.5 Respond appropriately to hyperbaric emergencies or toxicity in line with organisation policies and procedures

3.6 Use critical thinking and problem-solving approaches to propose and implement nursing interventions to reflect changes in the person's condition, in consultation with registered nurse

3.7 Evaluate nursing interventions provided and consider identified outcomes against evidence-based best practice in hyperbaric nursing care

Foundation Skills

The Foundation Skills describe those required skills (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.

Unit Mapping Information

No equivalent unit.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=ced1390f-48d9-4ab0-bd50-b015e5485705>

Assessment Requirements for HLTENN027 Apply nursing practice in the hyperbaric environment

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Performance Evidence

The candidate must show evidence of the ability to complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the job role. There must be evidence that the candidate has:

- undertaken nursing work in accordance with Nursing and Midwifery Board of Australia professional practice standards, codes and guidelines
- performed nursing interventions for 3 different people undergoing a session of hyperbaric therapy in the workplace.

Knowledge Evidence

The candidate must be able to demonstrate essential knowledge required to effectively complete tasks outlined in elements and performance criteria of this unit, manage tasks and manage contingencies in the context of the work role. This includes knowledge of:

- applicable Australian Standards for work in compressed air and hyperbaric oxygen facilities
- basic structure and internal 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 and contraindicated for hyperbaric therapy treatment and the mechanisms of therapeutic benefit for each
- educational resources and professional organisations associated with hyperbaric therapy
- emergencies associated with the hyperbaric chamber and treatment including:
 - fire inside the chamber

- fire outside the chamber
- emergency decompression
- explosive decompression
- uncontrolled compression
- power failure
- communication failure
- chamber atmospheric contamination
- isolation emergency including actual or potential violence
- pneumothorax
- cardiac arrest and airway management
- hypoglycaemia
- oxygen toxicity (central nervous system and pulmonary)
- hyperbaric chamber treatment including:
 - the chamber and sequence of events that occur during a treatment
 - how to observe air equalisation techniques
 - strategies for managing an anxious patient during hyperbaric treatment
 - prohibited items in the chamber
 - appropriate clothing for treatments
 - potential complications
 - location of main oxygen valve and how to shut it off when required
 - how to maintain hyperbaric chamber cleanliness
 - emergency procedures for fire and medical emergencies
- symptoms of hyperbaric CNS toxicity and appropriate actions in response to the symptoms
- indications for hyperbaric therapy including:
 - 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

- legislative requirements for practice
- potential complications of hyperbaric therapy including:
 - cardiac arrest and airway management
 - hypoglycaemia
 - oxygen toxicity (central nervous system and pulmonary)
 - isolation emergency including actual or potential violence
 - pneumothorax
 - claustrophobia
 - sinus or dental barotrauma
 - lung barotrauma
- physiological effects of increased atmospheric pressure on the human body and of breathing 100 per cent oxygen (hyper oxygenation), helium or mixed gases under hyperbaric conditions
- rationale for annual staff hyperbaric medicals
- contraindications for hyperbaric therapy including:
 - pulmonary function tests
 - tissue perfusion tests
 - excessive alcohol intake
 - dehydration
 - asthma
 - anxiety states or claustrophobia
 - dental work in the previous 24 hours
 - strenuous exercise before (and after) therapy
 - flying within 24 hours of treatment (staff and water divers only)
- anatomy, physiology and pathophysiology related to hyperbaric issues, sufficiently in-depth and specialised to make considered judgements and to make professional contributions to hyperbaric nursing care
- specific procedures for identifying people with diabetes and others who have a pre-procedure blood sugar outside normal range
- special considerations for children, infants and babies
- theories of physics as they relate to hyperbaric treatments including:
 - Boyle's law
 - Charles's law
 - Henry's law
 - Dalton's law.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources in line with the Australian Nursing and Midwifery Accreditation Council's Standards
- modelling of industry operating conditions including access to real people for simulations and scenarios in enrolled nursing work.

Assessors must satisfy the Standards for Registered Training Organisations (RTOs) 2015/AQTF mandatory competency requirements for assessors.

In addition, assessors must hold current registration as a Registered Nurse with Nursing and Midwifery Board of Australia.

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