



Australian Government

HLTDEN007 Apply the principles of radiation biology and protection in dental practice

Release: 1

HLTDEN007 Apply the principles of radiation biology and protection in dental practice

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. Minimal changes to the elements and performance criteria. New evidence requirements for assessment including volume and frequency requirements. Removal of pre-requisites Supersedes HLTDA410D

Application

This unit of competency describes the skills and knowledge required to minimise the risk of radiation to the patient, the operator and others during the exposure of a prescribed dental radiographic image. It also describes the quality assurance measures necessary to ensure all radiographs are of consistent diagnostic standard.

This unit applies to dental assisting work.

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

Elements define the essential outcomes

PERFORMANCE CRITERIA

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

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1. Apply the principles of radiation biology to protect patient, operator and others from ionising radiation

- 1.1 Implement safe work practices to minimise risks to operator, patient and others of immediate and long-term effects of radiation
- 1.2 Identify correctly the main components of the X-ray unit to assist the operator taking a dental radiograph
- 1.3 Identify correctly and select the exposure variables of dental X-ray generating equipment according to manufacturers' instructions and patient requirements
- 1.4 Apply the correct units of radiation dose

2. Determine image characteristics of a dental radiographic image to minimise the necessity for re-takes

- 2.1 Ensure visual qualities of the radiograph are of a diagnostic standard
- 2.2 Ensure geometric qualities of the radiograph are of a diagnostic standard

3. Minimise radiation by maintaining quality in processing

- 3.1 Identify the contents of the film package and determine the use of each item
- 3.2 Maintain quality assurance for processing dental radiographic images
- 3.3 Follow quality assurance processes for the use of radiographic chemicals in accordance with manufacturers' instructions
- 3.4 Maintain appropriate conditions for manual and automatic processing in accordance with manufacturers' specifications
- 3.5 Identify a range of processing errors and implement corrective measures to produce a diagnostic radiograph

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 HLTDEN007 Apply the principles of radiation biology and protection in dental practice

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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:

- applied safe work practices during preparation of 3 patients for dental radiographic imaging procedures.
- demonstrated quality assurance to the production of 3 radiographs to consistent diagnostic standard, and applied techniques to minimise technical inaccuracies and errors.

Knowledge Evidence

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 work role. This includes knowledge of:

- national and State/Territory legal and ethical requirements and considerations for dental assisting work and how these are applied in organisations/in individual practice including:
 - codes of practice and safety guide:
 - radiation protection in dentistry
 - safe use of radiation
 - duty of care
 - informed consent and statutory requirements of consent
 - practice standards – Dental Board of Australia guidelines on infection control
 - privacy, confidentiality and disclosure

- radiation user licence
- records management
- work role boundaries – responsibilities and limitations
- work health and safety
- the production, properties and interactions of X-rays including:
 - a basic knowledge of the interactions between atoms and X-rays
 - the sequence of events that result in the production of X-rays
 - hazards associated with X-rays including the mechanisms by which X-rays cause damage to human tissues
- biological effects and risks associated with X-rays including:
 - units of radiation measurement
 - immediate or acute effects
 - long term or cumulative effects
- radiographic appearance of anatomic landmarks, normal dentition and associated bony structures
- reasons for processing and technique inaccuracies and methods to minimise errors

Assessment Conditions

Skills must have been demonstrated in the dental clinic workplace with the addition of simulations and scenarios where the full range of contexts and situations cannot be provided in the workplace.

The requirement in the performance evidence to have applied safe work practices during preparation of 3 patients for dental radiographic imaging procedures must have been demonstrated using simulation prior to demonstration in the workplace and with members of the general public.

The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources including:
 - barrier protection equipment/materials for patient, operator and assistant
 - dental chair and unit
 - radiographs and/or sensors
 - waste disposal equipment
 - Dental Board of Australia guidelines on infection control
- modelling of industry operating conditions including access to real people for simulations and scenarios in dental assisting work.

Assessment must involve demonstration of tasks under the direction of the dental practitioner.

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

In addition, assessors must hold a minimum of 5 years clinical experience in dental assisting work.

Links

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