



Australian Government

HLTDEN021 Apply the principles of radiation biology and protection in dental practice

Release: 2

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Modification History

Release	Comments
Release 2	Release 2 HLTDEN021 Apply the principles of radiation biology and protection in dental practice supersedes and is equivalent to Release 1 HLTDEN021 Apply the principles of radiation biology and protection in dental practice. Updated: Mapping details and minor corrections.
Release 1	HLTDEN021 Apply the principles of radiation biology and protection in dental practice supersedes and is equivalent to HLTDEN007 Apply the principles of radiation biology and protection in dental practice.

Application

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

This unit applies to dental assisting work under the instruction and supervision of the dental practitioner.

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

No occupational licensing, certification or specific legislative requirements apply to this unit at the time of publication.

Dental radiography work must only be performed by a person with a radiation user licence granted by the relevant State/Territory regulatory authority under legislation.

Pre-requisite Unit

Nil

Competency Field

Dental Assisting

Unit Sector

Dental

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential outcomes

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, practitioner and others from ionising radiation. | 1.1. Implement safe work practices to minimise risks to practitioner, patient and others of immediate and long-term effects of radiation.
1.2. Correctly identify and select the exposure variables of dental X-ray generating equipment according to manufacturers' instructions and patient requirements.
1.3. Apply the correct units of radiation dose. |
| 2. Determine image characteristics of dental radiographic image. | 2.1. Ensure visual qualities of the radiograph are of a diagnostic standard to minimise the necessity for re-takes.
2.2. Ensure geometric qualities of the radiograph are of a diagnostic standard to minimise the necessity for re-takes. |
| 3. Minimise radiation by maintaining quality in processing. | 3.1. Ensure correct positioning of the radiation receptor.
3.2. Follow procedures for processing dental radiographic images to produce images of diagnostic standard.
3.3. Identify processing errors and implement corrective measures to produce a diagnostic radiograph.
3.4. Follow quality assurance and maintenance processes of all radiographic equipment in accordance with manufacturers' instructions. |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

HLTDEN021 Apply the principles of radiation biology and protection in dental practice supersedes and is equivalent to HLTDEN007 Apply the principles of radiation biology and protection in dental practice.

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 HLTDEN021 Apply the principles of radiation biology and protection in dental practice

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Performance Evidence

Evidence of the ability to complete tasks outlined in elements and performance criteria of this unit in the context of the job role, and:

- apply safe work practices during preparation of at least three patients for dental radiographic imaging procedures.
- apply appropriate quality assurance measures to the production of at least three radiographs to consistent diagnostic standard and apply techniques to minimise technical inaccuracies and errors.

Knowledge Evidence

Demonstrated knowledge required to complete the tasks outlined in elements and performance criteria of this unit:

- national and State or Territory legal and ethical requirements and considerations for dental assisting work and how these are applied in organisations and 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

- current Dental Board of Australia (DBA) and Australian Health Practitioner Regulation Agency (AHPRA) guidelines and practice standards
- privacy, confidentiality and disclosure
- radiation user licence
- records management
- work role boundaries, responsibilities and limitations
- work health and safety
- main components of an X-ray unit
- 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
- procedures for processing a dental radiographic image of diagnostic standard
- radiographic appearance of anatomic landmarks, normal dentition and associated bony structures
- quality assurance processes used in the production of dental radiographic images
- reasons for inaccuracies in radiographs and techniques for minimising errors.

Assessment Conditions

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

Assessment must ensure:

- access to suitable facilities, equipment and resources including:
 - barrier protection equipment or materials for patient, practitioner and assistant
 - dental chair and unit
 - radiographs or sensors
 - current Dental Board of Australia (DBA) and Australian Health Practitioner Regulation Agency (AHPRA) guidelines and practice standards
- modelling of industry operating conditions including access to 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' requirements for assessors, hold a minimum of 5 years clinical dental experience and a current radiation user licence.

Links

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