



**Australian Government**

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

# **HLTDA304C Assist with dental radiography**

**Release: 1**

## **HLTDA304C Assist with dental radiography**

### **Modification History**

Not Applicable

## Unit Descriptor

### Descriptor

This unit of competency describes the skills and knowledge required for a dental assistant to assist the operator by preparing clients, equipment and materials for dental radiography, to protect themselves, the client, other members of the dental team and the public from the hazards associated with ionising radiation and to process and mount dental radiographs to diagnostic and quality assurance standards

All procedures are carried out in accordance with occupational health and safety policies and procedures, current infection control guidelines, Australian and New Zealand Standards, state/territory legislative requirements and organisation policy

## Application of the Unit

### Application

This unit applies to dental assistants who process and assist with the production of dental radiographs for diagnostic and quality assurance purposes

It is a pre-requisite for the units:

- HLTDA410C Apply the principles of radiation biology and protection in dental practice
- HLTDA411C Prepare to expose a prescribed dental radiographic image
- HLTDA412C Produce a dental radiographic image

## Licensing/Regulatory Information

Not Applicable

## Pre-Requisites

### Pre-requisite units

This unit must be assessed after successful achievement of pre-requisites:

- HLTIN301C Comply with infection control policies and procedures
- HLTIN302B Process reusable instruments and equipment in health work
- HLTOHS200B Participate in OHS processes

## 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

### PERFORMANCE CRITERIA

- |                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Prepare clients for dental radiography                 | <ul style="list-style-type: none"><li>1.1 Position the client comfortably</li><li>1.2 Reassure the client and explain the procedure in language that is easily understood</li><li>1.3 Ask the client to remove items which may interfere with the radiographic examination and offer appropriate explanation</li><li>1.4 Ensure client, other members of the dental team and the public are <i>protected from ionising radiations</i></li><li>1.5 Assist the operator in the implementation of <i>safe work practices</i> to minimise radiation risks to workers and to clients</li><li>1.6 Select and prepare the correct <i>radiographic film</i> and film packet holders for the radiographic examination and make it available to the operator</li><li>1.7 Label exposed films accurately and legibly before the client leaves the surgery</li></ul> |
| 2. Prepare equipment and materials for dental radiography | <ul style="list-style-type: none"><li>2.1 Maintain clean and dry working surfaces</li><li>2.2 Clean and maintain <i>processing equipment</i> in good working order</li><li>2.3 Maintain <i>processing solutions</i> at the correct strength and temperature</li><li>2.4 Record the date of preparation of solutions accurately</li><li>2.5 Arrange for servicing of equipment at the intervals specified by the manufacturer and Radiation Health</li><li>2.6 File equipment service records in a location within the surgery that can be readily accessed</li></ul>                                                                                                                                                                                                                                                                                     |

**ELEMENT****PERFORMANCE CRITERIA****3. Process and mount dental radiographs**

- 3.1 Protect processing facility/equipment against accidental intrusion of light
- 3.2 Wear *personal protective equipment*
- 3.3 Handle radiographic film packages carefully so that their quality is maintained
- 3.4 Carry out *processing stages* in the correct sequence and for appropriate duration in accordance with manufacturer specifications
- 3.5 Identify *common faults caused by incorrect processing* and notify the operator
- 3.6 Rectify processing faults in accordance with operator's instructions
- 3.7 Notify the operator of any processing faults which cannot be rectified prior to further radiographs being processed
- 3.8 Label and date the radiograph mounting accurately and legibly
- 3.9 Mount and secure radiographs in correct anatomical position for viewing
- 3.10 File radiographs correctly

**4. Maintain stock of unexposed radiographic film and chemicals**

- 4.1 Store films and chemicals separately and in accordance with manufacturer specifications
- 4.2 Maintain sufficient *stock*
- 4.3 Rotate film stock so that film is used before its expiry date

**ELEMENT****PERFORMANCE CRITERIA****5. Assure the quality of dental radiographic processing**

- 5.1 Participate effectively in *radiographic quality assurance programs*
- 5.2 Monitor processing solutions for deterioration
- 5.3 Notify the operator when radiographs do not meet the quality criteria of the reference radiograph produced under *optimum conditions*
- 5.4 Collect and *record all unacceptable radiographs* that do not meet diagnostic standards due to processing error and identify how processing can be improved
- 5.5 Dispose of waste chemicals safely in accordance with manufacturer specifications and legislative requirements

## **Required Skills and Knowledge**

### **REQUIRED SKILLS AND KNOWLEDGE**

In order for a safe inference of competence to be made on this unit, the candidate must provide evidence of the following areas of skills and knowledge.

#### *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:

- Equipment and materials for dental radiography:
  - equipment for automatic processing
  - equipment for manual processing
  - reasons for rotating film stock and using film before its expiry date
  - reasons for storing films away from ionising radiation
  - safe methods of storage and disposal of processing solutions
  - the nature and purpose of processing solutions
- Fundamental knowledge of the production and biological effects of ionising radiation:
  - biological risks associated with X-rays

## REQUIRED SKILLS AND KNOWLEDGE

- hazards associated with X-rays including the mechanisms by which X-rays cause damage to human tissues.
- nature and uses of X-rays
- production of X-rays
- Mounting films:
  - fundamental knowledge of dental anatomy
  - methods of mounting radiographs
- Processing films:
  - procedures required for automatic film processing
  - procedures required for manual film processing
  - processing solutions and appropriate methods of handling and preparation
  - reasons for light-tightness, use of safelights, clean working space and adequate ventilation
  - the automatic processing cycle
  - the stages of the manual processing cycle
- Quality assurance of processing:
  - the criteria for determining whether a radiograph is of an acceptable quality
  - the causes of common processing errors and the remedy for correction

*continued ...*

### *Essential knowledge (contd):*

- The code of practice for radiation protection in dentistry:
  - methods for monitoring the adequacy of radiation protection
  - procedures for minimising radiation risks to clients, self, the oral healthcare team and the public
  - the organisation's quality assurance policy for processing radiographs to consistent diagnostic quality
  - the purpose of quality assuring dental radiographs and its relationship to radiation protection
- The role of radiographs in dentistry:
  - benefits and risks of dental radiography
  - digital radiography, what is it and how it is used, its advantages and disadvantages over conventional film-based radiography
  - extraoral films and applications
  - intraoral film sizes and applications
  - use of radiographs in the diagnosis and monitoring of dental disease

### *Essential skills:*

## REQUIRED SKILLS AND KNOWLEDGE

It is critical that the candidate demonstrate the ability to

- Apply radiation occupational health and safety policies and procedures
- Correctly handle and store radiographic films and processing solutions
- Correctly prepare clients for dental radiographic imaging procedures
- Correctly process, mount and file of radiographic films

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:

- Assist the operator during dental radiography safely and effectively
- Consistently able to handle and dispose of radiographic solutions safely
- Consistently able to handle dental radiographs carefully and attach accurate, legible and complete records to them
- Consistently able to implement remedies for common processing faults
- Consistently able to recognise causes of common processing errors
- Consistently apply the correct procedures for mounting and storing dental radiographs
- Consistently apply the correct processing procedure
- Consistently use safe work practices to minimise the risk of transmission of infection
- Consistently use the correct processing equipment
- Take into account opportunities to address waste minimisation, environmental responsibility and sustainable practice issues
- Use literacy skills to read and follow directions, policies and procedures including:
  - infection control policies and procedures
  - manufacturer specifications for the preparation of materials and medicaments
  - occupational health and safety policies and procedures
  - practice policies and procedures
  - sequenced written instructions for manual and/or automatic processing methods

## 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.

## EVIDENCE GUIDE

### *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 desirable for assessment of this unit
- Consistent compliance with current infection control guidelines, Australian Standards and legislative requirements as they relate to the dental assistant's specific job role
- Consistency of performance should be demonstrated over the required range of workplace situations

### *Context of and specific resources for assessment:*

- Assessment must replicate workplace conditions as far as possible

### *Method of assessment*

- Observation in the workplace is desirable
- Evidence of essential knowledge and understanding may be provided by:
  - traditional or online (computer-based) assessment
  - written assignments/projects
- Case study and scenario as a basis for discussion of issues and strategies to contribute to best practice
- Questioning
- Staff and/or client feedback
- Supporting statement of supervisor
- Authenticated evidence of relevant work experience and/or formal/informal learning
- Roleplay/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

*Related units:*

This unit should be assessed in conjunction with the following related unit:

- HLTDA303C Prepare for and assist with oral health care procedures

## 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.

*Protection from ionising radiations may include but is not limited to:*

- Controlled and designated area around the X-ray machine
- Lead protection - protective drapes and thyroid collar
- Lead screens or barriers
- Safe distance from the source of radiation

**RANGE STATEMENT**

*Safe work practices include:*

- Current code of practice for radiation protection in dentistry
- Dental practice/organisation policy and procedures
- Legislative requirements
- Radiographer's Licensing Board requirements

*Radiographic film may include:*

- Extraoral films
- Intraoral films

*Processing equipment may include but is not limited to:*

- Automatic processor
- Manual processing equipment:
  - tanks containing the various solutions
  - thermometer
  - an accurate timer
  - immersion heater
  - film hangers
- Safelights

*Processing solutions may include:*

- Developer solution
- Fixer solution
- Replenisher solution

*Personal protective equipment may include:*

- Film badge
- Gloves including rubber gloves
- Gown
- Mask

*Processing stages include:*

- Development
- Drying
- Fixation
- Washing
- Washing

## RANGE STATEMENT

*Common faults caused by incorrect processing may include film that is:*

- Inadequate or low in contrast
- Marked
- Too dark
- Too light

*Stock may include:*

- Digital radiography sensors and holders
- Extraoral films
- Film packet holders
- Intraoral films
- Processing solutions

*Radiographic quality assurance programs may include but are not limited to:*

- Darkroom and image receptors including X-ray film and cassettes
- Image quality assessment
- Processing
- Working procedures
- X-ray equipment and appropriate maintenance

*Optimum conditions may include but are not limited to*

- Correct exposure under conditions recommended by the manufacturer.
- The use of fresh film that has been stored in cool, dry conditions away from radiation.
- The use of freshly mixed chemicals.
- The use of processing chemicals at the temperature recommended by the manufacturer

*Record of unacceptable radiographs may include but is not limited to:*

- Date
- Known or suspected cause of the processing error
- Nature of the film fault or error
- Number of repeat radiographs (if taken)

## Unit Sector(s)

Not Applicable