



## Higher National Unit specification

### General information for centres

**Unit title:** Dental Radiography

**Unit code:** F69A 34

**Unit purpose:** This Unit is designed to introduce candidates to current radiography legislation including the principles and techniques of handling and processing radiographs.

On completion of the Unit the candidate should be able to:

- 1 Identify the regulations and describe hazards associated with ionising radiation.
- 2 Distinguish between the different radiographic films and describe their uses.
- 3 Describe the imaging process and identify the different chemicals used.
- 4 Explain the need for effective quality control of radiographic films.

**Credit points and level:** 1 HN credit at SCQF level 7: (8 SCQF credit points at SCQF level 7\*)

*\*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

**Recommended prior knowledge and skills:** There are no prescribed entry requirements for this Unit. However, it would be beneficial if candidates had achieved a science-based subject at SCQF level 4 or above.

**Core Skills:** There are opportunities to develop the Core Skill(s) of *Problem Solving* in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

**Context for delivery:** If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

This Unit is specifically designed for delivery as part of the PDA Dental Nursing at SCQF level 7. It may also be delivered as a stand-alone Unit for Continuing Professional Development.

Where this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

**Assessment:** There is one instrument of assessment for this Unit. It could be assessed holistically using assessment paper containing multiple-choice, one word answer, and scenario questions.

## **Higher National Unit specification: statement of standards**

**Unit title:** Dental Radiography

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

### **Outcome 1**

Identify the regulations and describe hazards associated with ionising radiation

#### **Knowledge and/or Skills**

- ◆ The principles of the IRMER regulations
- ◆ The safe use of x-ray equipment
- ◆ The role of dental personnel when using ionising radiation in the dental environment
- ◆ The hazards associated with ionising radiation

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ identify ionising radiation regulations 1999
- ◆ identify ionising radiation (medical exposure) regulations 2000
- ◆ give reasons for taking dental radiographs
- ◆ outline guidelines for safe use of dental radiography in the dental environment
- ◆ define the ALARP (as low as reasonably practicable) concept
- ◆ describe hazards affecting general health

#### **Assessment Guidelines**

This Unit may be assessed holistically using a question paper containing a series of questions which could include multiple-choice, one word answer, and scenario questions.

## **Higher National Unit specification: statement of standards (cont)**

**Unit title:** Dental Radiography

### **Outcome 2**

Distinguish between the different radiographic films and describe their uses

#### **Knowledge and/or Skills**

- ◆ Different intra oral radiographs and their uses
- ◆ Different extra oral radiographs and their uses
- ◆ Reasons for using digital radiography

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can outline:

- ◆ the function and purpose of bitewing, periapical, occlusal radiographs
- ◆ the function and purpose of lateral oblique, cephalostats, orthopantomographs radiographs
- ◆ aids and adaptations that can be used
- ◆ techniques and equipment used in digital radiography
- ◆ function of intensifying screens

#### **Assessment Guidelines**

This Unit may be assessed holistically using a question paper containing a series of questions which could include multiple-choice, one word answer, and scenario questions.

## **Higher National Unit specification: statement of standards (cont)**

**Unit title:** Dental Radiography

### **Outcome 3**

Describe the imaging process and identify the different chemicals used

#### **Knowledge and/or Skills**

- ◆ The manual and automatic processing of radiographs
- ◆ The faults that may occur during the taking and processing of radiographs
- ◆ The chemicals used in radiography
- ◆ Safe handling and storage of chemicals

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can describe:

- ◆ layout of a darkroom
- ◆ maintenance of developing and fixing solutions
- ◆ reasons for and corrections of film faults
- ◆ safe handling and storage of chemicals

#### **Assessment Guidelines**

This Unit may be assessed holistically using a question paper containing a series of questions which could include multiple-choice, one word answer, and scenario questions.

## **Higher National Unit specification: statement of standards (cont)**

**Unit title:** Dental Radiography

### **Outcome 4**

Explain the need for effective quality control of radiographic films

#### **Knowledge and/or Skills**

- ◆ The importance of rotating film stock
- ◆ The methods of mounting radiographs correctly
- ◆ The storage of radiographs
- ◆ Suitable quality control recording systems

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can identify and describe:

- ◆ implementation of an effective quality control system, eg step wedge, coin test
- ◆ different methods of mounting and storing radiographs

#### **Assessment Guidelines**

This Unit may be assessed holistically using a question paper containing a series of questions which could include multiple-choice, one word answer, and scenario questions.

## Administrative Information

**Unit code:** F69A 34  
**Unit title:** Dental Radiography  
**Superclass category:** PF  
**Original date of publication:** August 2009  
**Version:** 02 (April 2010)

### History of changes:

Version	Description of change	Date
02	Amendment to code to reflect SCQF level change.	12/04/10

**Source:** SQA

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## Higher National Unit specification: support notes

### Unit title: Dental Radiography

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

### Guidance on the content and context for this Unit

The Unit may be undertaken and assessed as a stand-alone Unit to provide knowledge and understanding of the risks associated with ionising radiation.

This Unit has been developed primarily as part of the PDA in Dental Nursing and is a contextualised version of the corresponding Unit in the VRQ developed by City and Guilds and the National Examining Board for Dental Nursing (NEBDN). As part of the PDA Award, it is designed to provide underpinning knowledge for the SVQ in Dental Nursing at level 3 which can be independently assessed and certificated. As such, the PDA and its four component units are designed to meet in part the requirements for registration with the General Dental Council (GDC) where all four units are assessed holistically by a single question paper under exam conditions.

Under existing legislation, employers have a duty to provide a safe working environment. They also have a responsibility to ensure the tasks and activities carried out in the workplace are properly risk assessed and action taken to minimise risk to the health and safety of staff and others using the premises. In the dental context, the ultimate legal responsibility will rest with the General Medical or Dental Practitioner. While that legal responsibility cannot be delegated, General Medical and Dental Practitioners should ensure that they have a structure in place which promotes and develops health and safety with staff. That structure should include appropriate audit and monitoring arrangements to make sure that current health and safety practices and procedures are working effectively.

For Outcomes 1–4 the following should be covered:

- ◆ Dental radiography — exposure and risk prevention
- ◆ Exposure to and disposal of chemical waste
- ◆ How to select, use and store radiographic films
- ◆ The need for effective stock control of radiographic film

In dental radiography, the health and safety of patients and staff is of paramount importance and it is, therefore, essential that candidates understand the correct usage of equipment and the potential associated hazards. The most effective risk management procedure is the **elimination of the hazard** by using an alternative method (eg replacement of difficult to sterilize instruments with single use disposable items), followed in turn by **isolation of the hazard** using design and engineering controls (eg safety needle retraction devices). When engineering controls are unavailable or inappropriate then **work practice controls** (eg personal protective equipment) and **work behaviour controls** that result in safer practices can be introduced. **Administrative controls** can also be used to protect individuals, communities and the environment from hazards. This hierarchy of control and prevention strategies forms the foundation for all control of health and safety management in primary dental care.

## Higher National Unit specification: support notes (cont)

### Unit title: Dental Radiography

#### Health and Safety at Work Act

Primary care medical and dental practitioners have legal obligations under the Health and Safety at Work Act 1974 (HSWA). They have a duty to protect their employees and others that may be affected by their work activities such as contractors, agency staff, patients and visitors. Under HSWA employers must ensure their employees are appropriately trained and proficient in the procedures necessary for working safely. Employees have duties to comply with systems and procedures put in place by employers to ensure their health, safety and welfare; they also have a duty not to do anything that would put others at risk.

#### *Work with Ionising Radiation: Ionising Radiations Regulations 1999*

This can be accessed on the Health and Safety Executive website ([www.hse.gov.uk](http://www.hse.gov.uk)). Tutors could discuss the regulations in the context of dental surgeries/clinics. The Approved Code of Practice and guidance gives detailed advice on the Ionising Radiations Regulations 1999. It provides detailed advice about the scope and duties of the requirements imposed by IRR99. It is aimed at employers with duties under the Regulations but should also be useful to others working in environments where ionising radiation is in use. The Regulations cover: Interpretation and general introduction; General principles and procedures; Arrangements for the management of radiation protection; Designated areas; Classification and monitoring of persons; Arrangements for the control of radioactive substances, articles and equipment; Duties of employees and miscellaneous. It also includes General guidance; the use of personal protective equipment (PPE); dose limitation; dose assessment; dose recording; medical surveillance; radioactive substances; medical exposure; radionuclides

#### **The Ionising Radiation (Medical Exposure) Regulations 2000 and as amended 2006**

State that practitioners and operators should have successfully completed training, including theoretical knowledge and practical experience in:

- (i) Radiation production, radiation protection and statutory obligations relating to ionising radiations, as are relevant to their functions as practitioner or operator; and
- (ii) Diagnostic radiology as relevant to their specific area of practice.

#### **Duties of the Practitioner, Operator and Referrer — Regulation 5**

7.1 **Regulation 5** sets out the respective responsibilities of practitioner, operators and referrers and makes clear that where the employer also acts in one or more of these roles concurrently, he is responsible accordingly. Points to note are as follows:

##### 7.2 **Regulation 5(1).**

7.2.1 The practitioner and the operator must comply with the employer's procedures and where these include detailed standard operating procedures, they must be followed explicitly, eg patient identification and checking procedures. All those matters required by the Regulations to be in employers' procedures (Schedule 1) are binding.

## Higher National Unit specification: support notes (cont)

### Unit title: Dental Radiography

#### 7.3 Regulation 5(3).

7.3.1 This regulation deals with the allocation of responsibility for practical aspects of a medical exposure to specific individuals. The employer must set out in his procedures who will be entitled to act in this capacity. In doing so he should have due regard to professional roles and appropriate training. The person to whom a practical aspect has been allocated is responsible for that aspect (regulation 5(4)).

#### 7.4 Regulation 5(4)

7.4.1 Those persons undertaking practical aspects (operators) are responsible under the Regulations for their functions. No overarching responsibility is held by another person.

### Management of Health and Safety at Work Regulations

Under the Management of Health and Safety at Work Regulations 1999, employers must carry out a risk assessment and must have arrangements for the effective planning, organisation, control, monitoring and review of the preventive and protective measures. They must also provide their employees with adequate health and safety training. The Medical Devices Agency have recently published a helpful booklet on risk assessment related to devices for GPs and Dentists entitled *Devices in Practice: A Guide for Health and Social Care Professionals*.

### Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995

**RIDDOR** requires the reporting of work-related accidents, diseases and dangerous occurrences. It applies to all work activities, but not to all incidents. The information collected enables the enforcing authorities to identify where and how risks arise and investigate serious accidents. The enforcing authorities can then help and advise on prevention action to reduce injury, ill health and accidental loss. Accidents (including physical violence) connected with work and which result in an over three day injury to an employee or self-employed person must be reported to the enforcing authority. Reportable work-related diseases must be reported to the enforcing authority under RIDDOR as should incidents or accidents which do not result in a reportable injury, but which clearly could have done.

### Guidance on the delivery and assessment of this Unit

Delivery could include use of, recorded material (video or other audio-visual media), use of case studies, the internet for research, exploration of the various legal requirements including reporting procedures. It is important to stress the safe use of equipment in accordance with manufacturers and organisational procedures and to understand the legal requirements. Candidates would not be expected to demonstrate a detailed knowledge of the legislation but should have a good understanding of the main features of the relevant legislation and regulations. They should be able to identify and describe different types of radiographic film, how these are used and stored and the importance of and methods for effective stock control.

It is recommended that the Outcomes for this Unit be assessed holistically in a short assessment paper (30 minutes) containing multiple choice, one word answer, and scenario questions to cover all Outcomes.

## Higher National Unit specification: support notes (cont)

**Unit title:** Dental Radiography

**Articulation with other qualifications includes:**

SVQ level 3 Dental Nursing.

SVQ Occupational Health and Safety, particularly ENTO Unit A: Ensure your own actions reduce the risk to health and safety.

### Further information

There are a number of statutory and regulatory bodies which monitor aspects of NHS and/or private dentistry in Scotland. This includes monitoring quality of dental treatment, educational provision for newly-qualified dentists and quality of dental practices. Key regulatory bodies are listed below.

**The General Dental Council (GDC)** — regulates all dental care professionals  
(DCPs) **General Dental Council** — [www.gdc-uk.org](http://www.gdc-uk.org)

**Scottish Executive** — NHS practice inspections, compulsory audit. [www.scotland.gov.uk](http://www.scotland.gov.uk)

**Practitioner Services (PSD), on behalf of the Scottish Dental Practice Board** -authorises payments for NHS dentistry, patient examinations to check treatments and monitors quality  
[www.show.scot.nhs.uk/psd](http://www.show.scot.nhs.uk/psd)

**Scottish Dental Practice Board (SDPB)** — sets operational policy on authorising payments to dentists and monitoring NHS dentistry [www.show.scot.nhs.uk/psd/sdpb](http://www.show.scot.nhs.uk/psd/sdpb)

**NHS Education for Scotland** — inspects NHS dental practices for vocational training or general professional training. [www.nes.scot.nhs.uk](http://www.nes.scot.nhs.uk)

**Health and Safety Executive** — the HSE's key role is to prevent death, injury and ill health in Great Britain's workplaces through research, information and advice, promoting training, new or revised regulations and codes of practice, inspection, investigation and enforcement. [www.hse.org.uk](http://www.hse.org.uk)

### *Opportunities for developing Core Skills*

There is no automatic certification of Core Skills or Core Skill components in this Unit. However, there are opportunities to develop aspects of Written Communication and *Problem Solving*.

### Open learning

This content of this Unit may be suitable for delivery in a variety of modes including open and distance learning.

### Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website  
[www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements)

## **General information for candidates**

### **Unit title:** Dental Radiography

This Unit has been designed to introduce you to the purposes and processes of dental radiography. It is one of four Units which make up the Professional Development Award in Dental Nursing at SCQF level 7. Completion of the PDA and the SVQ in Dental Nursing at level 3 may allow successful candidates to apply for registration as a Dental Care Professional with the General Dental Council.

The Unit covers the following areas:

- ◆ Relevant health and safety legislation particularly in relation to ionising radiation
- ◆ Types of radiographic film and how they are used
- ◆ The imaging process and chemicals used
- ◆ Why stock control of film is important

Assessment of this Unit may take the form of a short question paper containing multiple-choice, one word answer, and scenario questions to cover all Outcomes.