

Higher National Unit Specification

General information for centres

Unit title: Radiotherapy Procedures

Unit code: DW9D 34

Unit purpose: To explain and, where appropriate, demonstrate routine radiotherapy procedures.

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

- 1 Employ appropriate data to undertake simple treatment calculations.
- 2 Identify the source and content of data required to accurately set up and deliver a radiotherapy treatment exposure.
- 3 Explain the principles of commonly employed radiotherapy treatment techniques and describe the methods and equipment used to undertake these techniques.

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: It is recommended that candidates should have completed the Units Patient Care in Radiography, General Radiographic Anatomy, Radiation Physics: Foundations and Clinical Oncology: Introduction, prior to studying this Unit. Candidates are further recommended to have completed or be currently studying Radiotherapy: Foundations.

Core Skills: There are opportunities to develop the Core Skills of Numeracy and Problem Solving at level 5 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 forms part of the framework for HNC Allied Health Professions: Radiotherapy.

Assessment: Outcome 1 should be assessed using an “Objective Structured Radiography Examination” (OSRE) using oral and/or written questions under controlled conditions. A pass mark of 60% will apply.

Outcomes 2 and 3 may be assessed through closed-book short answer questions under controlled conditions.

Higher National Unit specification: statement of standards

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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

Employ appropriate data to undertake simple treatment calculations

Knowledge and/or skills

- ◆ Terminology, abbreviations and units of measurement used in treatment calculations.
- ◆ Treatment prescriptions
- ◆ Monitor units, dose and fractionation
- ◆ Effect of build-up, bolus and backscatter
- ◆ Output tables
- ◆ Calculation methods and checking procedures
- ◆ Calculation recording
- ◆ Isodose distributions

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing:

- ◆ accurate use of images, data and other reference materials to perform simple treatment calculations for single field and parallel-opposed field megavoltage x-ray treatments with no beam manipulation.

Assessment guidelines

Outcome 1 should be assessed using an 'Objective Structured Radiography Examination' (OSRE) using oral and/or written questions under controlled conditions. A pass mark of 60% will apply

Higher National Unit specification: statement of standards (cont)

Unit title: Radiotherapy Procedures

Outcome 2

Identify the source and content of data required to accurately set up and deliver a radiotherapy treatment exposure

Knowledge and/or skills

- ◆ Verification and Recording Systems
- ◆ Equipment set-up data
- ◆ Patient positioning
- ◆ Manual and mechanized methods to measure the separation of a treatment field
- ◆ Equipment manuals
- ◆ Local treatment protocols

Evidence Requirements

Candidates will need evidence to demonstrate their knowledge and/or skills by showing that:

- ◆ they can effectively interpret images, data and other reference materials to inform positioning of the patient and equipment for accurate treatment delivery in a range of routine techniques

Assessment guidelines

Outcomes 2 and 3 may be assessed through closed-book short answer questions under controlled conditions.

Outcome 3

Explain the principles of commonly employed radiotherapy treatment techniques and describe the methods and equipment used to undertake these techniques

Knowledge and/or skills

- ◆ Basic principles of the following techniques:
 - Fixed FSD
 - Isocentric
 - Single field
 - Parallel-opposed
 - Multiple field
- ◆ Purpose and use of beam collimation devices including:
 - Primary and secondary collimators
 - Multileaf collimators
 - Wedges and shielding blocks

Higher National Unit specification: statement of standards (cont)

Unit title: Radiotherapy Procedures

Evidence Requirements

Candidates will need evidence to demonstrate their knowledge and/or skills by showing that:

- ◆ they can effectively apply appropriate data and reference information to achieve accurate positioning of the patient and equipment for accurate treatment delivery in a range of routine techniques

Assessment guidelines

Outcomes 2 and 3 may be assessed through closed-book short answer questions under controlled conditions.

Administrative Information

Unit code: DW9D 34
Unit title: Radiotherapy Procedures
Superclass category: PB
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History of Changes:

Version	Description of change	Date

Source: SQA

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Higher National Unit specification: support notes

Unit title: Radiotherapy Procedures

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

It is expected that this Unit will be delivered making on-going reference to the candidates' work-place experience and drawing on the group's knowledge of a variety of clinical settings.

Discussion, problem-solving sessions and realistic practical sessions will be helpful using simulations and data which relate to the candidate's clinical experience. Professional training videos are available which would be useful.

Useful information to help with this Unit may be found at the following web-sites:

www.sor.org (Society and College of Radiographers)

www.BIR.ac.uk (British Institute of Radiology)

and in the following professional journals:

Synergy
Radiography
Journal of Radiotherapy in Practice
Clinical Oncology
Clinical Radiology
Outcomes 1 and 2

Candidates should be able to undertake simple treatment calculations using appropriate calculation recording methods and recognised checking procedures. They should realise the importance of using appropriate units and abbreviations. Calculations could relate to:

- ◆ Treatment prescriptions
- ◆ Monitor units, dose and fractionation
- ◆ Effect of build-up, bolus and backscatter
- ◆ Output tables
- ◆ Verification and Recording Systems
- ◆ Equipment set-up data
- ◆ Patient positioning
- ◆ Manual and mechanized methods to measure the separation of a treatment field
- ◆ Equipment manuals
- ◆ Local treatment protocols

Higher National Unit specification: support notes (cont)

Unit title: Radiotherapy Procedures

Outcome 3

Candidates should discuss the techniques and equipment used in their own and each other's therapy departments in relation to:

- ◆ Fixed FSD techniques
- ◆ Isocentric techniques
- ◆ Radiotherapy techniques — single field, parallel opposed, multiple field
- ◆ Beam modification — collimation, wedges, shielding blocks, compensators

Guidance on the delivery and assessment of this Unit

Outcome 1 should be assessed using an 'Objective Structured Radiography Examination' (OSRE) using oral and/or written questions under controlled conditions. A pass mark of 60% will apply.

Outcomes 2 and 3 may be assessed through short answer closed-book examinations (eg approximately ten questions).

The Unit will be delivered through a series of interactive lectures and seminar sessions. It is anticipated that a significant amount of learning and consolidation of knowledge will take place in the clinical workplace.

Opportunities for developing Core Skills

There are opportunities to develop the Core Skills of Numeracy and Problem Solving at level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Open learning

For information on normal open learning arrangements, please refer to the SQA guide *Assessment and Quality Assurance and Distance Learning* (SQA 2000).

Candidates with additional support needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative Outcomes for Units. For information on these, please refer to the SQA document *Guidance on Alternative Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs*, which is available on SQA's website: www.sqa.org.uk.

General information for candidates

Unit title: Radiotherapy Procedures

This Unit will provide you with sufficient knowledge and practical skills to undertake a range of routine clinical procedures. You will be able to use images, data and reference materials to undertake simple treatment calculations where appropriate. You will learn how to enter calculations, data and/or reference information into computer verification and recording systems and how to interpret that information effectively for accurate patient/ equipment positioning and treatment delivery.

The final Outcome of the Unit will require you to apply your consolidated knowledge in order to deliver, under supervision, prescribed radiotherapy treatments for a range of routine treatment techniques for patients with non complex management.

You will find useful information to help you with this Unit at the following web-sites:

www.sor.org (Society and College of Radiographers)

www.BIR.ac.uk (British Institute of Radiology)

and in the following professional journals:

Synergy
Radiography
Journal of Radiotherapy in Practice
Clinical Oncology
Clinical Radiology