

Higher National Unit Specification

General information for centres

Unit title: Radiotherapy: Foundations

Unit code: DW9C 34

Unit purpose: To describe the radiotherapy pathway from referral to follow-up and the processes and technology commonly employed within pre-treatment and treatment delivery areas.

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

- 1 Explain the patient pathway through radiotherapy from referral to follow up.
- 2 Discuss the pre-treatment and treatment delivery processes involved in radiotherapy.
- 3 Explain the structure and function of equipment commonly found within a radiotherapy department.
- 4 Discuss the health and safety features, external beam only, specific to a Radiotherapy department.

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 and Radiation Physics: Foundations prior to studying this Unit. It is further recommended that candidates should have completed the Unit Clinical Oncology: Introduction, or have equivalent prior knowledge from their work in this field.

Core Skills: There are opportunities to develop the Core Skills of Communication at level 6 and Working with Others 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.

General information for centres (cont)

Assessment: Outcomes 1 and 2 may be assessed by the use of a case study, based on a client, of approximately 2,000 words. This case study should clearly demonstrate the processes and procedures experienced by a patient during their Radiotherapy journey, highlighting the relationship and interdependencies of all stages.

Outcomes 3 and 4 may be assessed by short closed-book multiple choice examinations.

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

Explain the patient pathway through radiotherapy from referral to follow up

Knowledge and/or skills

- ◆ Radiotherapy referral processes
- ◆ Radiotherapy patient journey including:
 - Simulation
 - Mould room
 - CT planning
 - Treatment delivery
 - Treatment verification
 - Monitoring and review
 - Follow up
- ◆ Patient information and support mechanisms

Evidence Requirements

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

- ◆ demonstrate their understanding of the routine and non-routine aspects of the radiotherapy patient pathway.

Assessment guidelines

Outcomes 1 and 2 may be assessed by the use of a case study of approximately 2,000 words. This case study should clearly demonstrate the processes and procedures experienced by a patient during their Radiotherapy journey, highlighting the relationship and interdependencies of all stages.

Higher National Unit specification: statement of standards (cont)

Unit title: Radiotherapy: Foundations

Outcome 2

Discuss the pre-treatment and treatment delivery processes involved in radiotherapy

Knowledge and/or skills

- ◆ Principles of treatment localisation and verification
- ◆ Use of anatomical and other reference marks.
- ◆ Routine methods of patient immobilisation
- ◆ Treatment prescriptions, plans and documentation
- ◆ Image and data acquisition
- ◆ Overview of CT planning and dosimetry processes
- ◆ Treatment set up and reproducibility
- ◆ Tolerance levels
- ◆ Delivering megavoltage treatment

Evidence Requirements

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

- ◆ explain pre-treatment and treatment delivery processes including immobilisation, positioning, localisation, image acquisition, verification and data recording, treatment set up and exposure delivery

Assessment guidelines

Outcomes 1 and 2 may be assessed by the use of a case study of approximately 2,000 words. This case study should clearly demonstrate the processes and procedures experienced by a patient during their Radiotherapy journey, highlighting the relationship and interdependencies of all stages.

Outcome 3

Explain the structure and function of the equipment commonly used within a radiotherapy department

Knowledge and/or skills

- ◆ Structure and function of the radiotherapy simulator
- ◆ Structure and function of a megavoltage linear accelerator
- ◆ Structure and function of collimation systems
- ◆ Use of wall mounted positioning lasers, back-pointers and optical scale displays
- ◆ Control desks
- ◆ CCTV and audio facilities
- ◆ Accessory equipment (Include details in Support Notes)

Higher National Unit specification: statement of standards (cont)

Unit title: Radiotherapy: Foundations

Evidence Requirements

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

- ◆ explain the structure, functions and safe application of a range of radiotherapy diagnostic and/or treatment delivery equipment

Assessment guidelines

Outcome 3 may be assessed by a short, restricted response (eg 15 questions) closed-book multiple choice/diagrams to be labelled examination.

Outcome 4

Discuss the health and safety features, external beam only, specific to a Radiotherapy department

Knowledge and/or skills

- ◆ Health and safety features of a radiotherapy department
- ◆ Design and construction of a radiotherapy department, treatment room, maze corridor and remote delivery control area
- ◆ Radiotherapy safety protocols, local rules and work instructions
- ◆ Safety equipment specific to radiotherapy
- ◆ Radiotherapy equipment quality assurance procedures

Evidence Requirements

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

- ◆ work safely within a radiation environment and ensure the safety of themselves, patients and others

Assessment guidelines

Outcome 4 may be assessed by a short (eg 15 questions) closed-book multiple choice examination.

Administrative Information

Unit code: DW9C 34
Unit title: Radiotherapy: Foundations
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: Foundations

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' workplace experiences and drawing on the group's knowledge of a variety of clinical settings.

Discussion of case studies, candidate presentations and problem solving sessions will be useful in delivering the more theoretical aspects of the Unit. Professional training videos are available relating to patient pathways and the planning and process of treatment delivery. For Outcome 3, practice with the equipment in a laboratory or clinical training area will be required. Outcome 4, in particular, should be related to the candidate's clinical situation.

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

Outcome 1

The candidate should understand his/her role in patients' management/care with reference to:

- ◆ Radiotherapy referral processes
- ◆ Consultation and consent
- ◆ Simulation
- ◆ Mould room
- ◆ CT planning
- ◆ Treatment delivery
- ◆ Brachtherapy
- ◆ Treatment verification
- ◆ Monitoring and review

Communication in relation to providing patient information, support and follow up management are essential parts of this Unit.

Higher National Unit specification: support notes

Unit title: Radiotherapy: Foundations

Outcome 2

Candidates should be familiar with the following procedures and terminologies as used in the workplace and understand the extent of the assistant practitioner roles in the delivery of patient treatment within a therapy department.

- ◆ Principles of treatment localisation and verification
- ◆ Use of anatomical and other reference marks.
- ◆ Routine methods of patient immobilisation
- ◆ Treatment prescriptions, plans and documentation
- ◆ Image and data acquisition
- ◆ Overview of CT planning and dosimetry processes
- ◆ Treatment set up and reproducibility
- ◆ Tolerance levels
- ◆ Delivering megavoltage treatment

Outcome 3

Candidates should be familiar with the basic structure and function of the following equipment used in a therapy department:

- ◆ Radiotherapy simulator
- ◆ Megavoltage linear accelerator
- ◆ Collimation systems
- ◆ Wall mounted positioning lasers, back-pointers and optical scale displays
- ◆ Control desks
- ◆ CCTV and audio facilities
- ◆ Accessory equipment (including verification systems)

Outcome 4

Candidates should expand their knowledge of radiation safety to include the features specific to the radiotherapy department. Including:

- ◆ Health and safety features of a radiotherapy department
- ◆ Radiotherapy safety protocols, local rules and work instructions
- ◆ Safety equipment specific to radiotherapy
- ◆ Radiotherapy equipment quality assurance procedures

They should be familiar with the factors affecting the design and construction of a radiotherapy department, treatment room, maze corridor and remote delivery control area.

Higher National Unit specification: support notes (cont)

Unit title: Radiotherapy: Foundations

Guidance on the delivery and assessment of this Unit

Outcomes 1 and 2 may be assessed by the use of a case study of approximately 2,000 words. This case study should clearly demonstrate the processes and procedures experienced by a patient during their Radiotherapy journey, highlighting the relationship and interdependencies of all stages.

Outcomes 3 and 4 may be assessed by short closed-book multiple choice examinations.

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 Communication at level 6 and Working with Others 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: Foundations

This Unit provides a foundation of knowledge of the processes, procedures and equipment used within a Radiotherapy department. It allows you to follow the patient's pathway through radiotherapy treatment and gain an understanding of the relationships and interdependence between each step. It introduces the radiation safety legislation pertinent to delivery of medical radiation and the radiation safety features that can commonly be expected within a radiotherapy environment.

You will find 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