



End-point assessment plan for Therapeutic Radiographer (Integrated Degree) apprenticeship standard

Apprenticeship standard number	Level of this end point assessment (EPA)	Integrated
ST0620	6	Integrated degree apprenticeship

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Introduction and overview

This document sets out the requirements for end-point assessment (EPA) for the Therapeutic Radiographer (Integrated Degree) apprenticeship standard. It is for end-point assessment organisations (EPAOs) who need to know how EPA for this apprenticeship must operate. It will also be of interest to Therapeutic Radiographer (Integrated Degree) apprentices, their employers and training providers.

Full time apprentices will typically spend 36 months on-programme (before the gateway) working towards the occupational standard, with a minimum of 20% off-the-job training. All apprentices will spend a minimum of 12 months on-programme.

The EPA period should only start, and the EPA be arranged, once the employer is satisfied that the apprentice is consistently working at or above the level set out in the occupational standard, all of the pre-requisite gateway requirements for EPA have been met and that they can be evidenced to an EPAO.

All pre-requisites for EPA assessment methods must also be complete and available for the assessor as necessary.

As a gateway requirement and prior to taking the EPA, apprentices must complete all approved qualifications mandated in the Therapeutic Radiographer (Integrated Degree) apprenticeship standard.

For level 3 apprenticeships and above apprentices without English and mathematics at level 2 must achieve level 2 prior to taking their EPA.

The EPA must be completed within an EPA period lasting a maximum of 4 month(s), beginning when the apprentice has passed the EPA gateway.

The EPA consists of 2 discrete assessment methods.

The individual assessment methods will have the following grades:

Assessment method 1: Demonstration of Professional Practice.

This assessment method has four components, all of which must be passed.

- Fail
- Pass

Assessment method 2: Professional Discussion

- Fail
- Pass
- Distinction

Performance in the EPA will determine the overall apprenticeship standard and grade of:

- Fail
- Pass
- Distinction

EPA summary table

On-programme (typically 36 months)	Training to develop the occupation standard's knowledge, skills and behaviours.
End-point Assessment Gateway	<ul style="list-style-type: none"> • Employer is satisfied the apprentice is consistently working at, or above, the level of the occupational standard. • English/mathematics Level 2 Apprentices must complete: <ul style="list-style-type: none"> • Achievement of 340 credits of the BSc (Hons) integrated degree or 160 credits of the Masters in Therapeutic Radiography from the on-programme apprenticeship formally confirmed prior to the gateway progression. (The final 20 credits of the degree will be attributed to end-point assessment) • Achievement of the knowledge, skills and behaviours in the Therapeutic Radiography (integrated degree) apprenticeship standard • A case study and reference list in preparation for the Professional Discussion (Assessment Method 2). The format and structure of which is agreed between the employer and the apprentice prior to submission and must conform to the description within the EPA plan.
End Point Assessment (which would typically take 4 months)	Assessment Method 1: Demonstration of Professional Practice. This assessment method has four components, all of which must be passed. With the following grades: <ul style="list-style-type: none"> • Fail • Pass Assessment Method 2: Professional Discussion With the following grades: <ul style="list-style-type: none"> • Fail • Pass • Distinction
Professional recognition	Aligns with recognition by: <ul style="list-style-type: none"> • Health and Care Professions Council • Society and College of Radiographers

Length of end-point assessment period:

The EPA must be completed within an EPA period lasting a maximum of 4 month(s), beginning when the apprentice has passed the EPA gateway.

Any supporting material required for the EPA should be submitted no later than 4 weeks after the start of the EPA period.

If an EPA assessment method is failed, it should be retaken within the EPA period and in-line with the requirements set out in this assessment plan.

Order of assessment methods

The assessment methods can be delivered in any order.

Gateway

The EPA period should only start once the employer is satisfied that the apprentice is consistently working at or above the level set out in the occupational standard, that is to say they have achieved occupational competence. In making this decision, the employer may take advice from the apprentice's training provider(s), but the decision must ultimately be made solely by the employer.

In addition to the employer's confirmation that the apprentice is working at or above the level in the occupational standard, the apprentice must have completed the following gateway requirements prior to beginning EPA:

A case study and reference list in preparation for the Professional Discussion (Assessment Method 2). The format and structure of which is agreed between the employer and the apprentice prior to submission and must conform to the description within the EPA plan.

Achievement of 340 credits of the BSc (Hons) integrated degree or 160 credits of the Masters in Therapeutic Radiography from the on-programme apprenticeship formally confirmed prior to the gateway progression. (The final 20 credits of the degree will be attributed to end-point assessment)

Achievement of the knowledge, skills and behaviours in the Therapeutic Radiography (integrated degree) apprenticeship standard English and mathematics at level 2.

For those with an education, health and care plan or a legacy statement the apprenticeships English and mathematics minimum requirement is Entry Level 3 and British Sign Language qualification are an alternative to English qualifications for whom this is their primary language.

For Demonstration of Professional Practice.

This assessment method has four components, all of which must be passed.

For Professional Discussion, the apprentice will be required to submit:

A case study and reference list in preparation for the Professional Discussion, no later than 4 weeks in advance of the professional discussion. The apprentice will provide, on one sheet of A4 paper, a case study, of between 400-500 words, summarising the treatment of a patient they have chosen and an additional reference list.

The case study must include:

An adult patient treatment using multi-fraction; mega-voltage; external beam radiotherapy, with radical treatment intent, of a commonly treated cancer site within radiotherapy including:

- cancer incidence and presentation
- patient preparation
- treatment delivery, including verification
- radiotherapy prescription
- patient management and holistic care

The case study and the reference list used to meet the gateway requirements will be submitted to the EPAO.

Assessment methods

Assessment Method 1: Demonstration of Professional Practice

Overview

Apprentices must be observed by an independent assessor completing 4 practical demonstrations in which they will demonstrate the KSBs assigned to this assessment method. The end-point assessment organisation will arrange for the observation to take place, in consultation with the employer. Practical demonstrations must be carried out over a total assessment time of 2 hours (+10% at the discretion of the independent assessor). The demonstrations may be split into discrete sections held on the same working day. The assessor has the discretion to increase the time of the practical demonstration by up to 10% to allow the apprentice to complete the last task that is part of this element of the EPA.

The independent assessor may conduct and observe only one apprentice at a time during this assessment method.

Demonstration of Practice

- The senior independent assessor will be in charge of the 4 stations and the station independent assessors during this assessment method
- The demonstration of practice is considered a single assessment method
- There will be four stations that assess KSBs mapped to this method
- All four demonstration stations must be passed
- The station independent assessor must ask a minimum of 10 questions across this assessment method and will ask follow-up questions to clarify points on the observation and/or ask questions on any gaps in the knowledge skills and/or behaviours for the station during the question and answer session
- The station independent assessors will record the pass/fail for the station they are observing
- The station independent assessors will pass their grade to the senior independent assessor
- The pass/fail grades for the demonstration of each practice station will be collated by the senior independent assessor at the end of the demonstration of practice
- Stations 1,2 and 4 will take a total of 30 minutes:
 - 5 minutes for reading/preparing for the scenario, which will be no more than 300 words
 - 20 minutes to carry out the activity
 - 5 minute question and answer session
- Station 3 will also take a total of 30 minutes:
 - 10 minutes to read/prepare for the scenario, which will be no more than 300 words
 - 10 minutes to interact with the 'patient'/expert by experience
 - 10 minute question and answer session

The senior independent assessor will:

- Be in charge of the 4 stations, the station independent assessors, and the people involved in the demonstration of practice, and will co-ordinate the assessment

- Check the controlled environment is suitable and has the required equipment for the apprentice to demonstrate the KSBs mapped to the demonstration of professional practice
- Check all the stations are set up properly
- Brief the station independent assessors and 'person' ('patient'/expert by experience) prior to the assessment commencing, using the brief provided by the EPAO, checking they have understood the brief provided
- Use the structured template provided by the EPAO to conduct the assessment
- Use the grading criteria provided by the EPAO to collate the grades provided by the station independent assessors
- Grade the apprentice for the demonstration of professional practice

The station independent assessors will:

- Adhere to confidentiality about all aspects of the assessment and the brief they have been provided with
- Observe the station assigned to them by the senior independent assessor
- Observe one apprentice at a time demonstrating the KSBs that are mapped to that station
- Grade the apprentice using the grading criteria provided by the EPAO
- Pass the grade recorded to the senior independent assessor
- Time the assessment ensuring the apprentice carries out all activities at the appointed times

The 'patient/expert by experience' will:

- Follow the brief to act as the individual at the station
- Be a person with whom the apprentice can interact with to demonstrate practical assessment techniques or interventions
- Be sufficiently briefed in advance
- Adhere to confidentiality about all aspects of the assessment and the brief they have been provided with

The rationale for this assessment method is:

A demonstration of professional practice ensures consistency of assessment through the use of a range of high-fidelity simulations, mirroring authentic radiotherapy scenarios. It will ensure consistency, reduce variables in situations for each apprentice, and is a cost-effective way to deliver a number of assessments. An observation of practice in a live setting was not selected, as this will not cover the breadth and depth of practice required. Instead a demonstration of practice avoids situations where individuals are not available on the day, do not give consent to being observed with the apprentice and other issues around confidentiality. A simulated demonstration of professional practice will provide evidence of the apprentices' knowledge, skills and behaviours.

Delivery

Apprentices must be provided with both written and verbal instructions on the tasks they must complete, including the timescales they are working to.

The practical demonstration should be conducted in the following way to take account of the occupational context in which the apprentice operates:

The EPAO will:

- Design 4 demonstration of practice stations to assess the KSBs mapped to this method:
 - **Station 1- Radiotherapy Image Analysis** – the apprentice will demonstrate how they review images and analyse them
 - 5 minutes to read/prepare for the scenario.
 - 20 minutes to complete the station
 - 5 minute question and answer session
 - **Station 2 -Challenging Radiation Situation** - the apprentice will demonstrate how they manage a fictitious radiation incident
 - 5 minutes to read/prepare for the chosen scenario.
 - 20 minutes to complete the station
 - 5 minute question and answer session
 - **Station 3 - Radiotherapy Patient Interaction-** the apprentice will demonstrate a personcentred, safe, effective and appropriate interaction with a patient
 - 10 minutes to read/prepare for the scenario
 - 10 minutes to interact with the 'patient'/expert by experience
 - 10 minute question and answer session
 - **Station 4 - Radiotherapy Plan Review** - the apprentice will demonstrate how they review and evaluate 1 external beam radiotherapy plan and associated Dose-Volume Histograms (DVHs)
 - 5 minutes to review the plan and DVHs
 - 20 minutes to complete the tasks associated with this station
 - 5 minute question and answer session
- Provide a specification of how the stations should be set up, including the equipment and resources required for each one
- Provide a brief for the senior independent assessor to use with the team of station independent assessors and the 'patient/expert by experience'
- Provide grading criteria for the station independent assessors to use at each station
- Provide grading criteria for the senior independent assessor to use to grade the whole demonstration of practice
- The stations can be completed in any order

The apprentice will:

- complete 4 stations, demonstrating that they can:
 - Deliver accurate and safe radiotherapy
 - Assess, care and support patients through their radiotherapy
 - Make evidence-based decisions
 - Apply their underpinning knowledge to respond to situations as they arise
 - Recognise a challenging radiation situation refer and escalate as appropriate
 - Keep accurate records
 - Communicate effectively
 - Adhere to exam conditions during the demonstration of practice

The following activities **MUST** be observed during the practical demonstration, that is a practical demonstration without these tasks would seriously hamper the opportunity for the apprentice to demonstrate occupational competence in the KSBs assigned to this assessment method.

Overview of individual stations

Station 1

Title: Radiotherapy Image Analysis

Description: The apprentice will review and evaluate 4 radiotherapy images

At this station the apprentice will:

- be presented with 4 radiotherapy images
- analyse the images
- identify how the images have been acquired
- identify the anatomy within the images and describe any organs at risk and associated tissue tolerances
- identify the intended treatment site
- decide whether to treat the patient
- justify their decision and identify any appropriate actions
- record their observations and decisions on the proforma provided by the EPAO

For this station the EPAO will:

- provide the independent assessor with 4 sets of radiotherapy images, each set comprising of reference images and verification images. Images must be a range of good and poor quality and cover a range of treatment fractions and a range of anatomical sites of both radical and palliative intent.
- provide a proforma for the independent assessor to record their observations
- provide a proforma for the apprentice to use to record their observations and any decisions
- ensure the relevant equipment is available to conduct the assessment for this station
- provide dual computer monitors and/or light boxes
- provide an appropriate room for the assessment
- provide a 'bank of questions' for the station independent assessors

Station 2

Title: Challenging Radiation Scenario

Description - the apprentice will demonstrate how they would deal with a challenging radiation scenario

At this station the apprentice will:

- be presented with a scenario which describes a fictitious radiation incident
- describe how this incident could occur and the impact it could potentially have
- discuss the immediate action they would take and outline their responsibilities in relation to IR(ME)R
- explain who needs to be informed of the incident
- discuss what can be done to reduce the likelihood of a similar incident occurring again

For this station the EPAO will:

- develop a 'bank of written challenging radiation incidents' of no more than 250 words per scenario
- provide the apprentice with a written scenario of no more than 250 words
- provide a 'bank of questions' for the station independent assessors
- provide a room in which the discussion between the independent assessor and the apprentice can take place
- provide a suitable bank of questions to be used by the independent assessor which will cover the following aspects:
 - how radiation incidents could occur
 - immediate actions and responsibilities arising from current legislation, national and local policies
 - communication and dissemination of appropriate information
 - reduction of risk of similar incidents occurring

Station 3

Title: Radiotherapy Patient Interaction

Description: The apprentice will demonstrate how they interact with a patient to identify, review, and resolve the issue the 'patient'/expert by experience presents.

At this station the apprentice will:

- manage the appointment with the patient
- call the patient from the waiting area, correctly identify patient, assess patient mobility, introduce self and put patient at ease and establish a rapport
- establish the problem the patient is experiencing, take appropriate patient history, check for other treatment modalities where appropriate, ask the patient relevant questions to enable them to give appropriate advice/information, ensure the patient has understood the advice/information given
- explain how they would document the problem/situation on appropriate clinical IT/paper systems

- discuss how they would document any advice given to the patient and also any further referral/signposting where relevant

For this station the EPAO will:

- provide a specification of how the station should be set up, including the equipment and resources required
- provide grading criteria, a bank of questions and a proforma to record responses, for the independent assessor to use at station 3
- provide a written summary for the apprentice detailing date of birth, name, address and treatment site and a single statement indicating context
- provide a matching written scenario for the 'patient'/expert by experience of no more than 250 words, from a bank of scenarios
- provide a suitable bank of questions to be used by the independent assessor which may cover the following aspects:
 - patient identification and appropriate introductions
 - patient assessment and information gathering, including establishing rapport, recognising
 - verbal and non-verbal clues and active listening skills
 - documentation of patient interaction, follow-up advice and signposting

Station 4

Title: Radiotherapy Plan Review

Description: The apprentice will demonstrate how they review and evaluate 1 external beam radiotherapy plan and associated Dose Volume Histograms (DVHs).

At this station the apprentice will:

- define the treatment site, and discuss; treatment and target volumes, margins, and doses to Organs at Risk (OAR)
- explain the beam arrangements used and discuss other possible alternatives that could have been used
- discuss the effects of anatomical changes and potential organ motion on the plan dosimetry, and the subsequent impact on the patient's treatment
- decide if this is a clinically acceptable plan and justify their decision

For this station the EPAO will:

- provide 1 external beam radiotherapy plan and associated Dose Volume Histograms (DVHs) which should be multi fractional with radical intent, from a bank of plans
- provide suitable bank of questions for the independent assessor to cover the following aspects:
 - the treatment site, target volumes, margins, and doses to Organs at Risk (OAR)
 - the beam arrangements used and other possible alternatives that could have been used

- the effects of anatomical changes and potential organ motion on the plan dosimetry, and the subsequent impact on the patient plan dosimetry, and the subsequent impact on the patient
- ensure the relevant equipment is available to conduct the assessment for this station
- provide dual computer monitors or hard copies of the plan and associated DVHs
- provide a suitable room for the assessment
- provide a proforma to record responses for the independent assessor to use

EPAOs will create and set open questions to assess related underpinning knowledge, skills and behaviours. The questions can be asked during the practical demonstration. The independent assessor must ask a minimum of 10 questions across this assessment method. Questioning must be completed within the total time allowed for the practical demonstration.

There may be breaks during the practical demonstration to allow the apprentice to move from one location to another and for meal breaks.

KSBs observed and answers to questions must be documented by the independent assessor.

The independent assessor will make all grading decisions and will pass on grades to the senior independent assessor, for collation.

Grading the stations

Each station will be graded pass/fail by the station independent assessor in order to determine the overall grade for this method, using the grading matrix provided by the EPAO. See grading section for the mapped KSBs.

Questions and resources development

EPAOs will produce specifications to outline in detail how the demonstration of practice will operate, what it will cover and what should be looked for. It is recommended that this be done in consultation with representative employers. EPAOs should put measures and procedures in place to maintain the security and confidentiality of their specifications if employers are consulted. Specifications must be standardised by the EPAO.

EPAOs must develop a 'bank' of scenarios of sufficient size to prevent predictability and review them regularly (and at least once a year) to ensure they, and the specifications they contain, are fit for purpose. The specifications must be varied yet allow assessment of all the relevant KSBs.

Venue

Demonstrations of practice must be conducted in one of the following locations:

- a suitable venue selected by the EPAO (e.g. a training provider's premises or another employer's premises)

The venue must:

- offer a designated space, in a quiet room that is free from distractions that can facilitate the EPA

- allow for the stations to be placed at suitable intervals to minimise the chance of overhearing or seeing what is happening at other stations since more than one apprentice may be in the room at the same time
- offer a separate room so that apprentices waiting to do their demonstration of practice are not in contact with those who have finished to avoid conferring

Support material

EPAOs will produce the following material to support this assessment method:

- an outline of each station, how it should be set up and with what equipment
- a brief for the senior independent assessor to use with the station independent assessors and the 'patient'/expert by experience
- a structured template for the senior independent assessor to use for managing the assessment to ensure consistency
- grading criteria for the senior independent assessor to use to ensure consistency and allow for moderation
- grading criteria for the station independent assessors to use to ensure consistency
- suitable rooms and equipment for the stations

EPAOs will also

- ensure an appropriate controlled environment is provided for the assessment.

Other relevant information

Apprentices will enter the assessment stations on a rolling basis, moving from one to the other as directed by the senior independent assessors until they have completed all four stations. All stations will be in use simultaneously, each one managed by a station independent assessor who will time and grade the station, using a standardised grading matrix developed by the EPAO. The senior independent assessor will circulate freely between the 4 stations. Apprentices will be under exam conditions for the demonstration of practice so that they cannot discuss the stations and activities with each other. A 'patient'/expert by experience will be used on some of the stations to simulate real-life situations.

Assessment Method 2: Professional Discussion

Overview

This assessment will take the form of a professional discussion, which must be appropriately structured to draw out the best of the apprentice's competence and excellence and cover the KSBs assigned to this assessment method. It will involve questions that will focus on prior learning or activity.

The professional discussion can take place in any of the following:

- a suitable venue selected by the EPAO (e.g. a training provider's premises)

The rationale for this assessment method is:

A professional discussion is not simply a question and answer session but a two-way dialogue between the apprentice and independent assessor. It allows the apprentice to use standardised scenarios developed by the EPAO as a starting point to explore their own practice and experiences with the independent assessor. A professional discussion is a well-recognised method of checking knowledge, skills and behaviours and is widely used within the health sector.

Delivery

The professional discussion must last for 60 minutes (+10% at the independent assessor's discretion to allow an apprentice to finish the answer they are giving). The independent assessor must ask a minimum of 12 questions, at least two per area. Further time may be granted for apprentices with additional needs, for example where signing services are required.

The professional discussion will allow the apprentice to demonstrate the depth and breadth of the knowledge, skills and behaviours required to practice both safely and effectively, using the case study to provide underpinning evidence and drawing from examples from their experience. As a structured, in-depth two-way conversation between the independent assessor and apprentice, the professional discussion will provide an effective holistic assessment of complex understanding and knowledge.

The Professional Discussion will assess the KSBs mapped to the following discussion areas:

- Area 1 - cancer incidence and presentation
- Area 2 - patient preparation
- Area 3 - treatment delivery
- Area 4 - radiotherapy prescription
- Area 5 - patient management and holistic care
- Area 6 - personal and professional development

The apprentice must evidence how they have carried out the KSBs assigned to the professional discussion assessment. Please see grading section for the mapped KSBs.

During the professional discussion, the independent assessor will generate questions based on the case study to draw out the KSBs and as follow-up questions themselves, covering any gaps in the professional discussion using the discussion areas outlined by the EPAO.

The professional discussion will be conducted as set out here:

The professional discussion with the apprentice is led by the independent assessor on an individual basis. Video conferencing can be used to conduct the professional discussion, but the EPAO must have processes in place to verify the identity of the apprentice and ensure the apprentice is not being aided in any way.

The independent assessor must use the assessment tools and processes that are set by the EPAO to record the professional discussion.

The professional discussion is graded distinction/pass/fail. The independent assessor will make all grading decisions.

The independent assessor must use the assessment tools and processes that are set by the EPAO to record the professional discussion. The independent assessor will make all grading decisions.

Venue

The professional discussion should take place in a quiet room, free from distractions and influence.

Other relevant information

A structured specification and question bank must be developed by EPAOs. The question bank must be of sufficient size to prevent predictability and review it regularly (and at least once a year) to ensure that it, and its content, are fit for purpose. The specifications, including questions relating to the underpinning knowledge, skills and behaviours, must be varied yet allow assessment of the relevant KSBs.

EPAOs must ensure that apprentices have a different set of questions in the case of re-sits/re-takes. A new case study will also need to be submitted. Apprentices should be given 4 weeks to write and submit their new case study.

Independent assessors must be developed and trained by the EPAO in the conduct of professional discussion and reaching consistent judgement.

EPAOs will produce the following material to support this assessment method:

For the professional discussion the EPAO will provide the independent assessor with:

- a specification of how the professional discussion should be set up, including the equipment and resources required
- grading criteria, a bank of questions, and a proforma to record responses, for the independent assessor to use during the professional discussion

The professional discussion will cover the following areas:

- Area 1 – cancer incidence and presentation, including; patient case study disease presentation, epidemiology, aetiology, signs and symptoms, spread and investigations
- Area 2 – patient preparation, including; patient identification, consent, alternative treatment methods, intra/inter fraction variation, treatment protocols, and pre/on treatment imaging
- Area 3 – treatment delivery, including; patient identification, consent, immobilisation methods and patient positioning, patient alignment with radiation beam, beam arrangements, treatment tolerances, in-room collision avoidance, patient observation, treatment verification, and current legislation, national and local policies
- Area 4 – radiotherapy prescription, including; dose and alternative doses, fractionation and phases, energy, Organs at Risk (OAR), category 1 status (or not), target volumes, trials and research and concomitant exposures
- Area 5 – patient management and holistic care, including; information giving, health promotion, concomitant therapies, side effect management, psychosocial issues and signposting to appropriate support, patient support networks and follow-up

- Area 6 – personal and professional development, including; as a professional working with others, buddying students and other learners, maintaining fitness to practise once registered, keeping own knowledge and skills up to date, recognising any issues that may impact on own capability and capacity to practise, maintaining data protection and cyber security according to local policies and procedures.

Weighting of assessment methods

All assessment methods are weighted equally in their contribution to the overall EPA grade.

Grading

Assessment method 1: Demonstration of Professional Practice

This assessment method has four components, all of which must be passed.

KSBs	Fail	Pass
K1 K2 K6 K11 K12 K13 K17 K24 K25 K27 K28 S1 S2 S3 S8 S12 S13 S16 S17 S18 S19 S21 S24 S25 S26 S30 S31 S32 S34 S38 B1 B2 B3 B4 B6 B7	<p>The apprentice does not meet the pass criteria.</p>	<p>To achieve a pass the apprentice will;</p> <ol style="list-style-type: none"> 1. Demonstrate how they accurately review and evaluate a range of radiotherapy images to make reliable and valid judgements about the quality of images, the accuracy of intended treatment, and the decision to proceed to treatment delivery. (K11, K12, S16, S19, S38) 2. Demonstrate how they deal with and manage a challenging radiation scenario, and reduce likelihood of recurrence, in line with current legislation, national and local policies (K24, S2, S25, S26) 3. Demonstrate how they use a range of suitable and effective skills to assess, manage and respond to the patient interaction, apply their knowledge, skills and experience to make reliable and valid judgements, and respond appropriately to the presenting situation in line with professional regulatory standards and codes of conduct (K1, K6, K25, K27, K28, S1, S3, S8, S17, S24, S30, S31, S32, S34, B1, B2, B3, B4, B6, B7) 4. Demonstrate how they review and evaluate a radiotherapy treatment plan, applying their knowledge, skills, and experience to make reliable and valid judgements about the quality of the plan and its clinical acceptability. (K2, K13, K17, S12, S13, S18, S21)

Assessment method 2: Professional Discussion

KSBs	Fail	Pass	Distinction
K1 K2 K3 K4 K5 K7 K8 K9 K10 K14 K15 K16 K17 K18 K19 K20 K21 K22 K23 K26 K29 K30 K31 S1 S4 S5 S6 S7 S9 S10 S11 S12 S14 S15 S16 S20 S22 S23 S27 S28 S29 S32 S33	Does not meet the pass criteria	<p>To achieve a pass, the apprentice will:</p> <ol style="list-style-type: none"> Describe the cancer incidence of the patient including the epidemiology, aetiology, risk factors, and where a referral to a cancer specialist would be needed (K14) Describe and give an example of the pretreatment process for a patient and how this aligns with local and national treatment protocols and governance requirements. (K1, K2, K4, K7, K16, K17, K19, K30, K31, S1, S4, S20, S22, S37) Describe and evaluate the treatment process for a patient and how it meets governance and legislative requirements (K3, K5, K8, K20, K21, K26, K31, S4, S12, S5, S14, S15, S27, S28, S29, S36) Describe how to provide and manage holistic care for a patient who has an acute and/or late radiotherapy treatment side effects and give examples of the range of patient support services and therapies 	<p>To achieve a distinction, the apprentice will achieve the pass criteria and in addition will:</p> <ol style="list-style-type: none"> Critically evaluate variations in radiotherapy practice, evaluate and synthesise a wide range of evidence and demonstrate the application of these in practice within the framework of clinical accountability and responsibility (K21, S12, S14, S20) Evaluate a range of options and solutions and select for possible implementation, the one(s) that benefit their practice and provides the best patient outcome. (K20, S12, S16, S21) Evaluate and reflect on their own professional practice to assess, measure and improve it appropriately, using local and national standards and reflective frameworks that impact on patient outcomes (K9, S10, S11, S32) Critically evaluate an example of where they have contributed to a change process, such as a public health initiative, service improvement or clinical trial that results in either an improved patient outcome and/or improved service efficiency. (K20, K21, S6, S14) Critically explain emerging technologies and therapies that may affect radiotherapy practice in the future. (K9, K16, K21, S10, S12, S14)

S35 S36 S37 B5		<p>available to them. (K15, K18, S6, S7, S16, S33, S35)</p> <p>5. Describe and provide examples of how they have worked effectively as part of the wider health and social care team, delegating, supervising and signposting as required. (K10, K22, K23, K29, S9, S23)</p> <p>6. Describe how they have effectively developed themselves personally and professionally (K9, S10, S11, S32, B5)</p>	
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Overall EPA grading

All EPA methods must be passed for the EPA to be passed overall.

Both assessments must be passed to receive the grade of Pass.

Grades from individual assessment methods should be combined in the following way to determine the grade of the EPA as a whole:

Assessment method 1: Demonstration of Professional Practice	Assessment method 2: Professional Discussion	Overall grading
Fail	Fail	Fail
Fail	Pass	Fail
Fail	Distinction	Fail
Pass	Fail	Fail
Pass	Pass	Pass
Pass	Distinction	Distinction

Roles and Responsibilities

Role	Responsibility
Apprentice	<ul style="list-style-type: none"> • participate in development opportunities to improve their knowledge skills and behaviours as outlined in the standard • meet all gateway requirements when advised by the employer • understand the purpose and importance of EPA and undertake EPA
Employer	<ul style="list-style-type: none"> • support the apprentice to achieve the KSBs outlined in the standard to their best ability • determines when the apprentice is working at or above the level outlined in the standard and is ready for EPA • select the EPAO • confirm all EPA gateway requirements have been met • confirm arrangements with EPAO for the EPA (who, when, where) in a timely manner • ensure apprentice is well prepared for the EPA
EPAO	<p>As a minimum EPAOs should:</p> <ul style="list-style-type: none"> • understand the occupational role • appoint administrators/invigilators and markers to administer/invigilate and mark the EPA • provide training and CPD to the independent assessors they employ to undertake the EPA • provide adequate information, advice and guidance documentation to enable apprentices, employers and providers to prepare for the EPA • deliver the end-point assessment outlined in this EPA plan in a timely manner • prepare and provide all required material and resources required for delivery of the EPA in-line with best practices • use appropriate assessment recording documentation to ensure a clear and auditable mechanism for providing assessment decision feedback to the apprentice • have no direct connection with the apprentice, their employer or training provider i.e. there must be no conflict of interest • maintain robust internal quality assurance (IQA) procedures and processes, and conducts these on a regular basis

	<ul style="list-style-type: none"> • conform to the requirements of the nominated external quality assurance body • organise standardisation events and activities in accordance with this plan's IQA section • organise and conduct moderation of independent assessors' marking in accordance with this plan • have, and operate, an appeals process • arrange for certification with the relevant training provider
Senior independent assessor	<p>A senior independent assessor should:</p> <ul style="list-style-type: none"> • understand the standard and assessment plan • deliver the end-point assessment in-line with the EPA plan • comply to the IQA requirements of the EPAO • satisfy the criteria outlined in this EPA plan • have had verifiable training from the EPAO in terms of good assessment practice, operating the assessment tools and grading • be independent of the apprentice, their employer and training provider(s) i.e. there must be no conflict of interest • hold or be working towards an independent assessor qualification e.g. A1 and have had training from their EPAO in terms of good assessment practice, operating the assessment tools and grading • have the capability to assess the apprentice at this level i.e. meet the occupational requirements as set out in the IQA section of this assessment plan • attend the required number of EPAOs standardisation and training events per year • assess if the apprentice has met all the KSBs assigned to each method and make all grading decisions <p>For the demonstration of practice, the senior independent assessor will:</p> <ul style="list-style-type: none"> • be in charge of a team of independent assessors • be in charge of the 4 stations, the station independent assessors and the 'patient'/expert by experience involved in the demonstration of practice and will coordinate the assessment • check the controlled environment is suitable and has the required equipment for the apprentice to demonstrate the KSBs mapped to the demonstration of practice

	<ul style="list-style-type: none"> • check all the stations are set up properly • brief the station independent assessors and patient'/expert by experience prior to the assessment commencing, using the brief provided by the EPAO, checking they have understood the brief provided • use the structured template provided by the EPAO to conduct the assessment • use the grading matrix provided by the EPAO to collate the grades provided by the station independent
Station independent assessor	<p>As a minimum an Independent assessor should:</p> <ul style="list-style-type: none"> • Adhere to confidentiality about all aspects of the assessment and the brief they have been provided with • Observe the station assigned to them by the senior independent assessor • Ensure the apprentice has the opportunity to demonstrate the KSBs • Observe one apprentice at a time demonstrating the KSBs that are mapped to that station • Grade the apprentice using the grading criteria provided by the EPAO • Pass the grade recorded to the senior independent assessor • Time the assessment ensuring the apprentice carries out all activities at the appointed times
Training provider	<p>As a minimum the training provider should:</p> <ul style="list-style-type: none"> • work with the employer to ensure that the apprentice is given the opportunities to develop the KSBs outlined in the standard and monitor their progress during the on-programme period • advise the employer, upon request, on the apprentice's readiness for EPA prior to the gateway • Plays no part in the EPA itself
Patient/expert by experience	<p>The patient/expert by experience must:</p> <ul style="list-style-type: none"> • participate in required training • read, understand and follow their brief as provided by the EPAO • be available for the duration of the assessment • maintain confidentiality • have no direct connection with the apprentice, their employer or training provider i.e. there must be no conflict of interest • adhere to EPAO assessment conditions

Internal Quality Assurance (IQA)

Internal quality assurance refers to the requirements that EPA organisations must have in place to ensure consistent (reliable) and accurate (valid) assessment decisions. EPA organisations for this EPA must:

- appoint independent assessors who are independent of the apprentice and their employer(s). Where the training provider is the EPAO (i.e HEI) there must be procedures in place to mitigate any conflict of interest which will be monitored by EQA activity.
- appoint independent assessors who have knowledge of the following occupational areas: HCPC registered therapeutic radiographer
- appoint independent assessors who have recent relevant experience of the occupation/sector at least one level above the apprentice gained in the last two years or significant experience of the occupation/sector.
- provide training for independent assessors in terms of good assessment practice, operating the assessment tools and grading
- have robust quality assurance systems and procedures that support fair, reliable and consistent assessment across the organisation and over time.
- operate induction training and standardisation events for independent assessors when they begin working for the EPAO on this standard and before they deliver an updated assessment method for the first time
- All independent assessors must then attend annual standardisation events

External Quality Assurance (EQA)

The external quality assurance provider for this assessment plan is named on the Institute for Apprenticeships and Technical Education's website.

Re-sits and re-takes

Apprentices who fail one or more assessment method will be offered the opportunity to take a re-sit or a re-take. A re-sit does not require further learning, whereas a re-take does.

Apprentices should have a supportive action plan to prepare for the re-sit or a re-take. The apprentice's employer will need to agree that either a re-sit or re-take is an appropriate course of action.

An apprentice who fails an assessment method, and therefore the EPA in the first instance, will be required to re-sit or re-take any failed assessment methods only.

Any assessment method re-sit or re-take must be taken during the maximum EPA period, otherwise the entire EPA must be taken again, unless in the opinion of the EPAO exceptional circumstances apply outside the control of the apprentice or their employer.

Re-sits and re-takes are not offered to apprentices wishing to move from pass to distinction.

Where any assessment method has to be re-sat or re-taken, the apprentice will be awarded a maximum EPA grade of pass, unless the EPAO determines there are exceptional circumstances requiring a re-sit or re-take.

Affordability

Affordability of the EPA will be aided by using at least some of the following practice:

- using an employer's premises

Professional body recognition

This apprenticeship is designed to prepare successful apprentices to meet the requirements for registration as a Therapeutic Radiographer with the Health and Care Professions Council and Society and College of Radiographers

Reasonable adjustments

The EPAO must have in place clear and fair arrangements for making reasonable adjustments for this apprenticeship standard. This should include how an apprentice qualifies for Reasonable Adjustment and what Reasonable Adjustments will be made. The adjustments must maintain the validity, reliability and integrity of the assessment methods outlined in this assessment plan.

Mapping of knowledge, skills and behaviours (KSBs)

Assessment method 1: Demonstration of Professional Practice.

This assessment method has four components, all of which must be passed.

Knowledge
K1 The HCPC Standards of Proficiency for a therapeutic radiographer, the Society and College of Radiographers (SCoR) Code of Professional Conduct and legislation that informs ethical frameworks and guidance.
K2 Legislative and clinical governance frameworks in which radiotherapy is delivered and the political, social, and economic factors impacting on health and social care and radiotherapy service delivery.
K6 Communication strategies in a clinical setting in order to care for radiotherapy patients.
K11 How to read, interpret and accurately follow the treatment plan and associated imaging protocol.
K12 The structure and function of the human body in health and disease including, anatomy and physiology, cancer pathologies and mechanism of disease.
K13 The radiobiological principles on which the practice of radiotherapy is based.
K17 Radiotherapy physics, radiation beam interaction and image production. The principles of quality control and quality assurance related to the accurate delivery and verification of high dose radiation for the treatment of cancer.
K24 The need for prompt reporting of radiation incidents, national incident reporting systems and requirements, and what constitutes a reportable incident.
K25 The requirement to maintain patient confidentiality, keep accurate patient records and manage all other information in accordance with applicable legislation, protocols and guidelines.
K27 The limitations of own communication skills when communicating with patients, their families or advocates who may be dealing with life-limiting or life altering diagnoses. Recognise when to seek further support and advice.
K28 The holistic needs of the patient whilst undergoing their radiotherapy, including how to identify patients who may require additional psycho social support e.g. needle phobic or claustrophobic patients and how to refer them and process access to appropriate professional and support services.
Skills
S1 Interpret, apply and reflect on professional codes of practice and legislation in order to deliver radiotherapy and care, and take responsibility for own actions.
S2 Manage risk and report concerns about safety, implement lessons learned, and be open when things go wrong within own scope of practice.

S3 Keep accurate records of own work.
S8 Demonstrate effective and appropriate communication skills to build rapport with patients and colleagues.
S12 Apply critical thinking.
S13 Assess and interpret treatment planning data to inform decision making.
S16 Make reasoned decisions to continue or cease radiotherapy, and to escalate where necessary.
S17 Assess patients' clinical condition prior to the procedure, using effective communication with the patient to determine their suitability for the procedure, paying attention to patients' needs throughout.
S18 Accurately calculate and check patient radiotherapy prescriptions and associated data.
S19 Concentrate at a consistently high level in order to deliver safe and accurate radiotherapy.
S21 Justify decisions in the planning of radiotherapy and be able to recognise clinically acceptable radiotherapy plans.
S24 Report risks and incidents, keep accurate, comprehensive and comprehensible records and other information in accordance with applicable legislation, protocols and guidelines.
S25 Reflect on and learn from clinical incidents and complaints, and share learning with peers.
S26 Signpost patients and their families to the patient complaint process, supporting them and colleagues during incidents and the reporting process.
S30 Recognise verbal and non-verbal clues that indicate the patient may require emotional and psychological support.
S31 Recognise that not all services are appropriate to all patients in all situations and demonstrate an ability to evaluate patients' understanding.
S32 Reflect on and recognise own emotions and feelings and seek clinical supervision to ensure support, whilst dealing with possibly distressing and difficult circumstances associated with patients undergoing their treatment.
S34 Prioritise patients' needs and recognise when own knowledge and skills are no longer sufficient, referring on to the wider radiotherapy support network as appropriate.
S38 Apply data protection and patient confidentiality in daily clinical practice and complete relevant, concise, factual, treatment documentation.

Behaviours

B1 Act with honesty, integrity, openness, and respect at all times.
B2 Act with empathy and compassion by being considerate of others' feelings, especially when making decisions.
B3 Remain calm and resilient when dealing with distressing and emotionally challenging situations, and be able to manage own emotional responses.

B4 Behave respectfully and be non-judgemental by engaging with people in non-discriminatory ways.
B6 Be decisive and act with confidence when interacting with patients, staff and the public.
B7 Practise self-awareness by understanding own emotions, limitations, strengths, weaknesses, and recognising the impact of personal interactions on others.

Assessment method 2: Professional Discussion

Knowledge
K1 The HCPC Standards of Proficiency for a therapeutic radiographer, the Society and College of Radiographers (SCoR) Code of Professional Conduct and legislation that informs ethical frameworks and guidance.
K2 Legislative and clinical governance frameworks in which radiotherapy is delivered and the political, social, and economic factors impacting on health and social care and radiotherapy service delivery.
K3 Limits of own scope of practice, knowledge and skills.
K4 The appropriate radiation protection for self, patients, staff, students and learners, and public, including personal protective equipment.
K5 How to respect and uphold the rights, dignity, values and autonomy of radiotherapy patients their families and carer(s).
K7 How to identify risks to patients, staff, students and learners, and public safety, and uphold data security. Report any issues that may impact on your own capacity and capability to practise as a therapeutic radiographer.
K8 Employer's processes and procedures relating to consent, confidentiality, safeguarding and use of information and the impact of culture, equality and diversity in practice.
K9 How to keep own knowledge and skills up to date through Continuing Professional Development (CPD).
K10 How to support students and other professionals who are actively learning radiotherapy practices.
K14 The epidemiology, aetiology, risk factors and mechanisms of spread of cancer, and the signs, symptoms and investigations that instigate a referral to a cancer specialist.
K15 Local and national clinical protocols and patient care protocols, including medications and selfmanagement strategies.
K16 The impact of other cancer treatments such as, surgery and chemotherapy on the planning and delivery of radiotherapy. The impact of other factors including the radiation dose, the timing and type of radiotherapy, and post treatment complications of radiotherapy to the patient.

K17 Radiotherapy physics, radiation beam interaction and image production. The principles of quality control and quality assurance related to the accurate delivery and verification of high dose radiation for the treatment of cancer.
K18 Radiotherapy side effects relating to the area being treated and offers patients appropriate advice and guidance to manage these side effects, referring to other professionals where necessary.
K19 The importance of high quality checking processes in ensuring the highest standards of patient care and safety are maintained, and the radiation risks associated with ineffective or repetitive checking processes.
K20 How to systematically evaluate patients' treatment and ensure findings are used to improve patients' experience and clinical outcomes.
K21 The need for radiotherapy clinical trials and research to support the on-going development of the evidence-base for radiotherapy and the role of the therapeutic radiographer.
K22 How to build and sustain professional relationships both independently and collaboratively and understand the roles of wider team members such as physicists, doctors, specialist nurses, dietitians, etc. who work with radiotherapy patients.
K23 Conflict resolution strategies and when to apply them.
K26 The importance of maintaining own safety and that of colleagues and patients when moving and handling patients repeatedly throughout the working day.
K29 A therapeutic radiographer's responsibility within the interprofessional cancer support service.
K30 The procedure for obtaining valid consent, the implications of not obtaining consent, suspension of treatment on the basis of changed circumstances, the patient withholding consent, and the SCoR consent guidance documentation.
K31 Cyber security guidelines and local policies and procedures.

Skills
S1 Interpret, apply and reflect on professional codes of practice and legislation in order to deliver radiotherapy and care, and take responsibility for own actions.
S4 Promote and protect the interests of patients, staff, and public in a radiation environment and comply with local personal dose monitoring procedures.
S5 Recognise and respond appropriately to situations where it is necessary to share information to safeguard radiotherapy patients or the wider public.
S6 Promote health and wellbeing, advising on reducing the risk of side effects of radiotherapy.
S7 Recognise patient advocacy responsibilities, act as a patient advocate when appropriate and provide patients or their advocates with the information necessary to enable them to make informed decisions.
S9 Work within the limits of own knowledge and skills, and delegate appropriately.

S10 Demonstrate up to date CPD and lifelong learning related to contemporary radiotherapy practice.
S11 Support others and facilitate learning.
S12 Apply critical thinking.
S14 Take part in clinical audit, contribute to service improvement initiatives, use evidence-based research and clinical trial outcomes to inform own clinical practice.
S15 Deliver with a high level of skill and accuracy, radiotherapy using external beam radiation.
S16 Make reasoned decisions to continue or cease radiotherapy, and to escalate where necessary.
S20 Assess, and adapt patient setups, using images and scans acquired following local protocols.
S22 Correctly identify and prepare the patient appropriately for the specific procedure and select the correct equipment and a reproducible patient position for the course of treatment, including production of patient accessories.
S23 Apply conflict resolution strategies appropriately.
S27 Use spatial awareness and psychomotor skills to finely manipulate the radiotherapy equipment as well as finely manipulating the patient's body to align anatomy with the radiation beam.
S28 Adhere to any treatment setup tolerances as defined within local radiotherapy protocols.
S29 Use dexterity and highly developed coordination and sensory skills to safely manoeuvre patients and equipment, taking into account any postural constraints due to limitations in equipment design.
S32 Reflect on and recognise own emotions and feelings and seek clinical supervision to ensure support, whilst dealing with possibly distressing and difficult circumstances associated with patients undergoing their treatment.
S33 Recognise the differing support needs of cancer patients who may not be cured.
S35 Recognise verbal and non-verbal clues that indicate the patient may not have understood the consent process, be unwilling to give their consent, or not be able to consent for themselves, referring on as appropriate.
S36 Recognise when treatment needs to be suspended.
S37 Use radiotherapy information technology and computer equipment.

Behaviours

B5 Be willing to share knowledge, be self-motivated, proactive, adaptable and reliable in order to deliver the best possible patient care.