

Radiotherapy moving forward: Delivering new radiography staffing models in response to the Cancer Reform Strategy

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Summary

This guidance from the SCoR is provided to support the development of local radiography staffing models for radiotherapy services and takes account of the recommendations made in the National Radiotherapy Advisory Group report, the Cancer Reform Strategy and within the National Radiotherapy Commissioning Guidance. Implementation of this guidance will enable timely, responsive and cost effective services to be developed and delivered and national targets to be met and sustained.

Foreword

This guidance from the Society and College of Radiographers is provided to support the development of local radiography staffing models for radiotherapy services and takes account of the recommendations made in the National Radiotherapy Advisory Group (NRAG) report(1), the Cancer Reform Strategy (CRS)(2) and within the National Radiotherapy Commissioning Guidance(3). Implementation of this guidance will enable timely, responsive and cost effective services to be developed and delivered and national targets to be met and sustained.

Recognising that workforce design cannot be undertaken in isolation from the other professional groups, this guidance sets out how the radiography workforce skills can be deployed most effectively across radiotherapy services for the benefit of patients.

To ensure integrated care for patients throughout the radiotherapy pathway, this guidance identifies the need for workforce models to be built on both the staffing needs for radiotherapy treatment and planning technologies together with the broader needs of provision of care along the whole radiotherapy pathway. Workforce models for the therapeutic radiography workforce must support the pathway from referral to provision of ongoing care and support and for each of the tumour site specific pathways in their entirety.

The guidance embraces the 'four tier' career progression framework as advocated by NRAG. Importantly, it builds on the commissioning guide principle that states "radiographers are the professional group responsible for delivering the radiotherapy service on a daily basis to patients and, with the support of medical physics, are able to manage patient pathways".

Therapeutic radiographers' skills are exclusively in cancer and radiation oncology and this, together with their experiential general oncology knowledge and the care of patients with cancer makes them

uniquely placed to deliver integrated care across the radiotherapy pathway(4),(5),(6). Development of their skills sets, through post registration education and training, will facilitate practice at advanced and consultant levels and will enable clinical oncologists' skills and time to be focused on delivering those complex, highly demanding parts of the service which require expert clinical oncology skills and medical knowledge.

This guidance should be used by those commissioning services, strategic health authorities with responsibility for development of local radiotherapy workforce plans, cancer network leads and both existing and new providers of radiotherapy services including independent sector providers. While focused on assisting the implementation of the Cancer Reform Strategy in England, the underpinning principles in this guidance are equally applicable in Scotland, Wales and Northern Ireland.

The UK is currently in a unprecedented position with no new satellites centres operational yet, but several planned. **This guidance will therefore be reviewed annually**, taking account of clinical evidence from the service.

Context overview

The expansion of radiotherapy services nationally offers opportunity for innovative service re-modelling to enhance care for patients in line with national specifications(1),(2),(3). To deliver high quality, streamlined and integrated care for patients in both a technologically challenging and dynamically changing environment, it is essential to optimise the use of all available skills. This will be achieved by local radiotherapy service managers developing assistant and support worker roles and designing and implementing advanced practice radiographer roles. It will be essential that some of these advanced practitioner roles evolve into consultant practice roles. Locally designed staffing structures following this model(4),(6),(7) will enable the delivery of world class radiotherapy services.

Service expansion will be in a variety of forms. Some expansion will be as satellite centres to existing cancer centres; others will be managerially independent and some will be through independent sector providers. Availability of more services will offer greater accessibility to patients, however the linkage of care across and between units and centres will demand care pathways to be carefully co-ordinated and defined for all patient groups across the network(2). The role of the radiography professionals responsible needs to be re-focused and developed to secure integrated care across these radiotherapy care pathways(4).

Radiography leaders, together with medical and physics colleagues, must work together to define the requirements of a high quality service, taking into account relevant commissioning guidance, professional body guidance and legislation(3).(8).(9).(10).(11). The profile of the radiotherapy workforce as a whole and the radiography staff within the service must be tailored to meet this challenging agenda and quality must be placed at the heart of this process. Early and ongoing engagement with local workforce leads will be essential to secure the continuing supply of appropriately trained professionals and investment in post registration education and training. Both are essential components in the development of the future radiotherapy workforce and to achieving cost effective responses to changing service need.

1. Principles of Radiotherapy Service Expansion

- A key principle for new (and existing) radiotherapy services described in the recently
 published Radiotherapy Contracting Framework Toolkit was the acknowledgement that a safe
 and effective organisation is essential to provide radiotherapy services. These services must
 meet all requirements in terms of national, regulatory and professional guidance whilst also
 being responsive and meeting local service needs(3).
- Re-configuration and expansion of radiotherapy services to improve accessibility to the

service for patients will take place through both existing NHS providers and new NHS independent sector providers (ISP) entering the market (12).

- New targets for radiotherapy and recommendations to offer the highest possible care will demand that new evidenced-based technologies are implemented rapidly across the UK(13). This will require a responsive, highly skilled workforce.
- The delivery of timely and high quality services will require the appropriate and effective use of the professionals' roles within the radiotherapy service to be re-examined. This will require detailed reviews of pathway processes throughout radiotherapy and development of wider ranging post registration education and training to support changing roles.
- The radiotherapy workforce is expanding. However, there will be challenges in meeting the demand arising from increased capacity if skills are not deployed appropriately. A fresh approach is required and change is essential.

2. Principles of Radiotherapy: radiographer staffing

To offer high quality, streamlined radiotherapy and timely care for patients, effective use of all the workforce skills is imperative. The Society and College of Radiographers (SCoR) together with the Royal College of Radiologists (RCR) and the Institute of Physics and Engineering in Medicine (IPEM) have endorsed a skills mix approach to workforce re-design for a number of years(14). This philosophy has been further endorsed by the three Colleges through the work of the National Radiotherapy Advisory Group. The publication of a pathway competence guideline further supports changes to skills mix based upon competence rather than initial professional qualification. The NRAG patient pathway tool supported the view that skills mix is vital to support efficient and effective service delivery. As a result, it endorsed the requirement for appropriate development of the non-medical workforce and published its patient pathway competency framework(15).

The Society and College of Radiographers has advocated progressive staffing models for a long time, promoting the need for the profession's skills to be utilised flexibly and efficiently for the benefit of patients through implementation of its career progression framework (4), (16) and Appendix A. Where new roles have been introduced, significant benefits have been shown (17), (18).

In 2006, the SCoR described three expert practitioner roles at advanced and consultant levels of practice; the site specialist, the technical specialist and the community liaison practitioner co-ordinating care across multiple agencies of care(5),(19).

The assistant practitioner role has freed radiographers' skills for the benefit of patients and this is an integral part of the career progression framework (7), (17), (20).

The learning and development framework for the radiography workforce defines educational outcomes for each level of practice and supports clinical development of education and training modules for practice development(4). The accreditation process for advanced and consultant level practitioners will be introduced by the Society and College of Radiographers during 2009/10.

3. Radiotherapy Workforce Models - Overview

New centres offer significant opportunities to challenge the traditional workforce model.

These models have focused on staffing the equipment within a radiotherapy centre only. It is now essential to implement a model where the workforce profile is developed and focused around the needs of patients across the care pathways and across radiotherapy services. Excellent leadership skills are required to implement and drive such change and to develop a workforce profile that ensures integrated services are provided for patients. Strategic planning for the delivery of radiotherapy services of the future requires expert practitioners with detailed knowledge of the cancer and radiotherapy patient pathways and the detailed processes underpinning each pathway. Radiographers as clinical service managers are well placed to lead this(<u>6),(21</u>) using their professional knowledge to advise, inform and lead development of new services in liaison with those commissioning new services across networks.

Models must embrace the following:

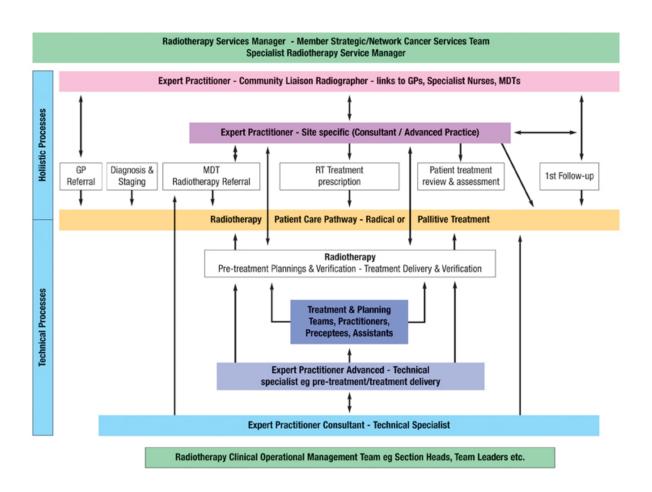
- "... the radiotherapy service will consist of the provision of radiotherapy to patients by radiographers using appropriate equipment in the right facilities, supported by medical physics staff"(3).
- The statement from NRAG reports that on average 80% of the case mix is routine, and can be managed on a daily basis by a non-medical consultant practitioner while the remaining 20% of complex cases require intervention across the pathway from the consultant clinical oncologist"(1). Appropriate use and development of core skills for all staff groups will be essential to meet this rapidly growing and changing environment and will need to be developed according to local case mix and pathway design across each radiotherapy centre.
- Clinical oncologists will retain overall responsibility for case management and consultant practitioners (ie non-medical practitioners) will provide the link between the radiotherapy centre and the multidisciplinary team 3.
- Full implementation of the career progression framework (4 tier model) of the Society and College of Radiographers.
- Appropriate and effective use of administration and clerical staff to support effective clinical service delivery at all levels with appropriate career progression.
- Appropriate use of the high level skills of clinical oncologists and expert medical physics practitioners.
- Services to be centred on patients' needs and patient pathways and, importantly, not on professional groups or solely around radiotherapy equipment.

The models described within this guidance accord with the national principles for radiotherapy service delivery outlined above. The guidance also recognises that workforce skills are the scarcest component in expanding radiotherapy services and therefore high level skills must be focused upon the elements of the pathway which require higher levels of expertise/knowledge(1). This is essential to minimise delays across the pathway and to deliver a timely, high quality, responsive and cost effective service.

The contribution that radiographers can make to the patient pathway has already been described in 2006 and is shown again in the Figure below 3.

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This model is helpful in that it shows the radiotherapy pathway and demonstrates the differing roles and levels of radiography practice required to deliver radiotherapy services into the future(5),(7). Across the radiotherapy care pathways, site specific, technical and community liaison expert practitioners are required to deliver a comprehensive service. Some departments have introduced these roles and have experienced the patient benefits in terms of efficient and effective, integrated, high quality patient care while also freeing clinical oncologist resources(20). NRAG recognised the benefits of these roles and has advocated implementation of the '4-tier' model across all centres to meet local service need.

4. Radiotherapy workforce models: radiography staffing

Radiography staffing numbers for a service

It is not possible to be totally prescriptive about local workforce requirements for an entire radiotherapy service as configurations will need to vary to meet local circumstances. However in order to help professional heads of service make informed decisions about radiography staffing models at the local level, the following two factors are essential :

1) The introduction of new non-medical radiography consultant and advanced practitioner roles designed to streamline and integrate care for patients across the service. These **must** be built into new workforce models; some indicative numbers are provided for each of the models.

2) The radiography staffing requirement **of practitioners and assistant practitioners** to deliver the core treatment takes account of the 2005 benchmark guidance figure(22).

The Society and College of Radiographers therefore recommends the following broad guidance for radiography staffing:

The Radiotherapy Service Leader/ Manager is a registered therapeutic radiographer.

1.33 WTE radiography staff are required per linac hour (benchmark figure) for radiotherapy service delivery of which a max of 10% are assistant practitioners plus 1 expert practitioner (consultant radiographer / advanced practitioner radiographer) per key speciality is required (can be site and/or technical specialty specific).

SCoR recommend that 20% of these expert practitioners be at consultant practitioner level.

Workforce profiles required in all services will be dependent upon a mixture of factors, including:

- geographical location
- available expertise and skills of the host site eg level of medical and nursing support
- case mix
- radiotherapy equipment, e.g. availability of dosimetric planning (on site or remote),
- technical ability of units eg conebeam versus tomotherapy
- the IT infrastructure within the centre and links across network
- links to existing centres and the extent of network-wide protocol standardisation, governance arrangements and staff cover arrangements.

Three workforce models are provided as examples:

i. expansion of service with an existing provider

- ii. a new satellite service provided from an existing centre
- iii. a new satellite service provided by a new provider

4i. Large Cancer Centre

The centre will be part of an NHS Trust or Foundation Trust delivering a wide range of services both cancer and non cancer specific in the majority of cases.

Facilities available on site:

- A range of treatment units, CT simulation and radiotherapy treatment planning facilities.
- A wide range of radiotherapy treatments will be available, ranging from simple to highly complex/specialised services. It is likely that the specialised services will be centralised at this centre for the entire network. Patients may travel more than the recommended 45 minutes to access these facilities and expertise.
- All other cancer specific services (and non cancer specific services).
- Full medical, nursing, medical physics and engineering support.
- Inpatient facilities will be available which will include high dependency, ITC and hospice facilities.

Managerial responsibilities

- The Centre/Trust will be responsible for its own governance control. It is desirable that network wide clinical protocols are developed and this could be the responsibility of this centre in collaboration with network leads and other providers across the network.
- The centre will be responsible for setting and initiating radiotherapy service standards through a recognised quality management system and in line with national service delivery recommendations (e.g. Radiotherapy Cancer Peer Review Measures in England(10)).

Radiotherapy radiographer staffing

• Radiotherapy Service Manager(21) with Deputy

 consideration must be given to ensure appropriate succession planning for the Radiotherapy Service Manager role.

• Consultant practitioners

Numbers of consultant practitioners will be depend on local circumstances; it is likely that larger centres will support around two - three consultant practitioners initially. Appropriate cover and succession planning for these roles will be essential to ensure continuity of care for patients. These non-medical consultants will:

- be responsible for site specific care pathways for example, gynaecological, palliative, neuro- oncology, breast, prostate(5)
- lead technical development of the services(5)
- lead radiography research(5)

• Advanced Practitioners

Numbers will be dependent upon local circumstance; it is likely that larger centres will support around four - six advanced practitioners initially. Appropriate cover and succession planning for these roles will also be essential to ensure continuity of care for patients. They will:

- be responsible for elements of site specific pathways and designated areas of the pathway, for treatment volume delineation , dosimetry and ongoing clinical assessment
- offer specific technical expertise over for example treatment processes.

• Practitioners and assistant practitioners

Practitioners will underpin the service, with supporting assistant practitioners and helpers required to deliver daily care for patients in radiotherapy pre-treatment and treatment sections.

- radiography staffing requirement for undertaking core treatment activities should be based on the 2005 benchmark figure: 1.33 WTE per linac hour(22). However, staffing should be such that account is taken of the technological changes to radiotherapy delivery and the impact this has upon changes to the traditional models of service delivery and according to patient load and complexity.
- career progression framework (4 tier model) should be fully integrated to maximise use of assistant practitioners and support staff in line with professional body guidance(<u>6</u>).

• Other staffing requirements

- health care assistants may also be employed in larger centres to support radiotherapy services by providing basic nursing tasks such as dressings, blood tests and patient care
- administrative and clerical staff will provide support to all levels of practitioner throughout the pathway. These staff are likely to cover a range of activities such as appointment scheduling, active monitoring of the service activity and cancer tracking

4ii. Protocol setting Cancer Centre and Small Satellite Centre

Possibly on site of small NHS Trust or in partnership with Independent Sector Provider and would treat the majority of patients as outpatients.

Facilities available on site:

- Two treatment units, CT simulator and radiotherapy treatment planning (which could be provided at the main cancer centre, or remotely from the satellite centre,).
- Routine radical treatments (breast, lung and prostate patients) with Intensity Modulated

Radiation Therapy (IMRT) / Image Guided Radiation Therapy (IGRT) capability but could be complex depending upon specialities of host Trust site and palliative treatments.

- Most complex and specialist radiotherapy would be referred to main cancer centre unless host site is a specialist oncological centre of expertise for specific cancers.
- Medical support: clinical oncologist cover at designated clinics only, with input from specialist registrar. Day to day medical care across designated pathways from consultant practitioner with pathway support from advanced practitioner radiographers (including non-medical prescribing and radiotherapy planning). Treatment planning by dosimetrists with medical physics support (could be provided remotely from main cancer centre). Some local engineering support although full service from the main cancer centre.

Managerial responsibilities

- Network wide / main cancer centre will have agreed and set the cancer and radiotherapy clinical pathways, protocols and management procedures which will be as for the main centre.
- Incident reporting procedures via host Trust and main cancer centre depending upon governance arrangement.
- Video teleconferencing links to main centre for CPD, clinical meetings etc.

Radiotherapy radiographer staffing

• Radiotherapy Clinical Professional Lead on site(21)

• responsible for day to day leadership with responsibility for staff and managerially accountable to main cancer centre radiotherapy manager.

• Consultant practitioners

These non-medical consultants can take referrals from the Multi Disciplinary Team via the clinical oncologist and manage agreed pathways of care. Numbers of consultant practitioners are likely to be a minimum of two initially; appropriate service cover and succession planning must also be taken into account when determining workforce and skills requirements. Consultant practitioners will

- be responsible for specific site specific pathways across the core patient groups treated at the centre.
- deputise for radiotherapy clinical professional lead when required.

Advanced practitioners

It is likely that two - three advanced practitioners will be required initially but this number will be dependent upon the number of consultant practitioners in post. Local service cover and succession planning will be essential for all posts and must be considered within the workforce models. They will

 manage specific elements of pathways integrating care through the treatment process from treatment planning, treatment, clinical assessment of patients and ongoing support for patients.

• Practitioners and assistant practitioners

- each working area will be staffed with practitioners, supported by assistant practitioners according to treatment technologies, patient load and complexity
- the staffing requirement for undertaking core pre-treatment and treatment activities, practitioners, with support from assistants, should be based on the 2005 benchmark figure: 1.33 WTE per linac hour(22).
- many of these posts may be rotational with the main centre. It is possible that placements are rostered between the main centre and the satellite centre at particularly the practitioner and assistant levels but this will vary upon local circumstances. Rotation will develop skills, enhance knowledge and enable provision of trust wide opportunities for these developing practitioners.
- career progression framework (4 tier model) should be fully integrated to maximise

use of assistant practitioners and support staff in line with professional body guidance(4).

• Other staffing requirements

• administrative and support staff, such as health care assistants will be required to support all levels of practise along the pathway.

4iii. Small stand alone centre

Possibly on small NHS Trust site or stand alone.

Facilities available on site:

- Likely one two treatment units, CT simulator and radiotherapy planning on or off site (NB if one linac, the requirements of the radiotherapy commissioning guidance must be met in terms of arrangements to meet service continuity requirements for patients(3).
- Patients will be ambulatory and require palliative treatments and routine radical treatments (breast, lung and prostate patients). The site will have full IMRT and IGRT capability but treatments may be complex or specialist cases depending on the centre being located on a host site with a specific speciality.
- Most patients requiring complex radiotherapy would be referred to neighbouring main cancer centre and managed within Network wide protocols.
- Limited clinical oncologist cover (the day to day medical care will be provided by the relevant site specific consultant radiographers and advanced practitioners working to clinical protocols. This will include the need for non-medical prescribing.
- Treatment planning by dosimetrists with medical physics on site support; more complex radiotherapy planning could be out sourced.

Managerial responsibilities

- Set own oncology pathways, clinical protocols, management procedures etc.
- Incident reporting procedures via own NHS Trust
- IT support (in house or out sourced)
- Equipment servicing (in house or out sourced)
- Education and training /CPD/ Links across the network

Radiotherapy radiographer staffing

• Radiotherapy Service Leader and Manager(21)

- responsible for strategic/professional lead and day to day management
- Consultant Practitioners

There will be at least two consultant practitioners. Appropriate service cover and succession planning must be taken into account within the staffing model when determining workforce and skills requirements. These non-medical consultants will

 manage defined pathways of care for each of the main treatment sites within the centre such as breast, prostate and palliative cases.

Advanced practitioners

There will be at least two-three advanced practitioners. Appropriate service cover and succession planning must be taken into account when determining workforce and skills requirements. They will be

- radiotherapy planning and treatment technical experts,
- responsible for integrating care throughout the pathway;
- responsible for patient assessment along the pathway within protocol.

• Practitioners and assistant practitioners Other staffing requirements

- staffed according to patient load and complexity
- the staffing requirement for these staff undertaking core activities to be based on the 2005 benchmark figure: 1.33 WTE per linac hour(22).
- career progression framework (4 tier model) should be fully integrated to maximise use of Assistant Practitioners and support staff in line with professional body guidance(4).
- administrative and support staff such as health care assistants will be required to support all levels of practise along the pathway.

Summary

Professional heads of radiotherapy services will be instrumental as drivers for change towards implementing high quality services in a timely manner for patients. To achieve this, a highly skilled, effective and efficient workforce is required. New roles at both advanced and consultant levels of practice will be required to deliver integrated care for patients.

New centres offer an opportunity to start the workforce planning from first principles and will enable managers to truly focus the skills around the patient and their journey. Leadership skills and investment in development of these skills is critical at all levels of practice. This development must be supported by those commissioning education and training.

This guidance is therefore cognisant of the changing environment of radiotherapy services and offers staffing models to support commissioners and providers in developing an appropriate workforce, fulfilling local requirements whilst encompassing the career progression framework.

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Acknowledgements

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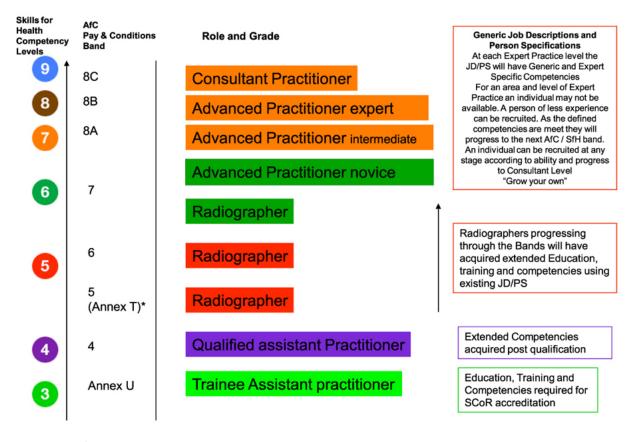
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Appendix A

Click the images below to enlarge.

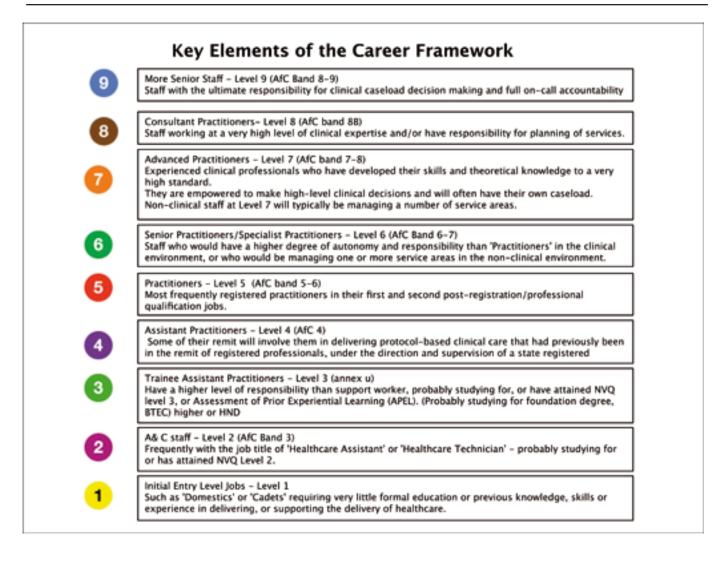
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