



# Education and Career Framework for the Radiography Workforce

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## Summary

This third version of the Education and Career Framework is intended for the guidance and support of the whole imaging and radiotherapy workforce. It is an interactive web-based tool, which members can use to support their individual professional development in what is, for many, likely to be a portfolio career pathway. In this way, a degree of future-proofing has been built in. This tool enables individuals to navigate a range of learning and development opportunities starting from where they are and includes example pathways, outcomes, indicative curricula where relevant, case studies and a wealth of hyperlinks to relevant websites and resources. The Framework is intentionally non-prescriptive, reflecting the changing service context.

## 1. Introduction

1.1 This third version of the Education and Career Framework, published by the College of Radiographers, is intended for the guidance and support of the whole imaging and radiotherapy workforce. Although primarily for a United Kingdom (UK) audience, it is anticipated that the Framework will be of international relevance in a globalised health care system.

1.2 It is an interactive web-based tool, which members can use to support their individual professional development in what is, for many, likely to be a portfolio career pathway. In this way, a degree of future-proofing has been built in. This tool enables individuals to navigate a range of learning and development opportunities starting from where they are and includes example pathways, outcomes, indicative curricula where relevant, case studies and a wealth of hyperlinks to relevant websites and resources.

1.3 The Framework is intentionally non-prescriptive, reflecting the changing service context. Health and Social Care services are in a state of flux not experienced since the formation of the National Health Service (NHS) in 1948, a situation that offers opportunities for the workforce to continue to innovate and develop within the already wide scope of practice.

1.4 In England, The Health and Social Care Act (2012)<sup>1</sup> enacts the transfer of most service commissioning to local Clinical Commissioning Groups and the setting up of Public Health England. Simultaneously, new service providers are being encouraged to enter the market to increase competition and drive up quality. The direction of travel across the remainder of the UK is for more independent and not-for-profit primary and community-based services. There is a greater focus on prevention and early diagnosis which inevitably increases the role and scope of imaging and radiotherapy practice.

## References

1. Department of Health - Health and Social Care Act 2012 - London: TSO 2012\_  
<http://www.legislation.gov.uk/ukpga/2012/7/contents/enacted>

(all links accessed Nov 2012)

## 2. Purpose and Scope

2.1 Although the primary emphasis is on you as individual members, of equal importance is the need for education providers and service managers to provide access to the tool for use in programme development and to support staff in setting and monitoring personal, professional development goals.

2.2 The Framework architecture reflects the four levels of practice: assistant, practitioner, advanced and consultant and includes the other dimensions of professional practice: education, management and research.

2.3 Outcomes have been developed for all levels and dimensions of practice in such a way as to ensure that the Framework is relevant and responsive to the diverse settings where the imaging and oncology workforce find themselves working both now and in the future. It is consistent with the Scope of Practice (2009)<sup>2</sup> and the Code of Conduct and Ethics (2008)<sup>3</sup> as well as the changing nature and environment of Health and Social Care.

2.4 Pre-registration education for professional practice remains at the heart of the Framework and has been radically reviewed. Practitioner outcomes, together with a revised indicative curriculum, have been developed. These will ensure that student radiographers can achieve the HCPC Standards of Proficiency (2009)<sup>4</sup> and be well prepared for their on-going career development. There is a renewed emphasis on the core disciplines; biological, physical and social sciences and a clearer focus on professional development and collaborative practice.

2.5 The indicative curriculum for Practitioners reflects the requirement for a highly professionalised workforce with a clear identity and set of values. It is these values that, together with the appropriate knowledge and skills, ensure that radiographers are able to operate professionally in uncertain environments. The values of integrity, person-centredness, personal responsibility, respect, trustworthiness, collegiality and reflective practice are embedded. This will ensure that the curriculum prepares newly qualified radiographers to enter the workplace as novice professionals able to develop themselves and acquire the level of professional maturity needed to be full members and leaders of the interprofessional workforce.

2.6 An indicative curriculum for Assistant Practitioners has been developed and the tool also enables access to opportunities for continuing development besides HCPC registration. A page of links and resources for support workers is also included.

2.7 Beyond registration, the Framework offers a comprehensive raft of potential opportunities consistent with the scope of practice and the College of Radiographers' vision of the strategic importance of the workforce.

## References

2. Society and College of Radiographers - Scope of Practice 2009 - London: SCoR  
2009 <http://www.sor.org/learning/document-library/scope-practice-2009>

3. Society and College of Radiographers - Code of Conduct and Ethics - London: SCoR  
2008 <http://www.sor.org/learning/document-library/code-conduct-and-ethics>

4. Health and Care Professions Council - Standards of Proficiency – Radiographers - London: HCPC  
2009 <http://www.hpc-uk.org/publications/standards/index.asp?id=51>

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(all links accessed Nov 2012)

## 3. Using the Framework

**3.1** The Framework has been designed as an accessible and interactive tool using the usual members' log in. You can enter it at any point to reflect your present position and development needs and interrogate its databases of information and hyperlinks to relevant websites in order to assist your personal, professional development.

**3.2** When you access the Framework, you will be directed to click on the button that most closely mirrors your present role and asked what your career development aspirations are. For example, you may be a practitioner radiographer who is interested in becoming an advanced practitioner or a support worker who wants to know how to go about becoming an assistant practitioner. In each case you will be directed to the outcomes associated with the desired role and a range of links to documents to help you to decide the best way forward with advice on how to proceed. Some of these links are to internal College of Radiographers' policies and publications while others are to relevant external sources.

**3.3** Case studies illustrating some of the diverse roles of imaging and radiotherapy professionals are included to bring the Framework to life. These demonstrate how individuals approached the development of their careers and the routes they took to achieve their desired roles.

**3.4** Education providers and managers will find the tool invaluable. When developing or reviewing programmes of study, educators can access the outcomes, indicative curricula and other resources needed to support educational activities. Similarly, managers will find the Framework useful when undertaking personal development reviews with staff.

## Your role

Are you looking for information on ...

[Career planning](#)

[Education planning](#)

## 4. Career planning

Which of the following options best describes your current role?

[Support worker](#)

[Assistant practitioner](#)

[Practitioner](#)

[Advanced practitioner](#)

[Consultant practitioner](#)

[Educator](#)

[Manager](#)

[Researcher](#)

## 5. Education planning

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**Are you designing a programme for a ...?**

[Assistant Practitioner](#)

[Practitioner](#)

[Advanced practitioner](#)

[Consultant practitioner](#)

[Educator](#)

[Manager](#)

[Researcher](#)

## **6. Current role**

### **6.1. Current role: Support worker**

**Which of the following options best describes your desired role?**

[Continuing professional development in current role](#)

[Assistant practitioner](#)

[Practitioner](#)

### **6.2. Current role: Assistant practitioner**

**Which of the following options best describes your desired role?**

[Seek accreditation](#)

[Continuing professional development in current role](#)

[Practitioner](#)

### **6.3. Current role: Student radiographer**

**Which of the following options best describes your desired role?**

[Practitioner](#)

### **6.4. Current role: Practitioner**

**Which of the following options best describes your desired role?**

[Continued professional development in current role](#)

[Advanced practitioner](#)

[Educator](#)

[Researcher](#)

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[Manager](#)

### **6.5. Current role: Advanced practitioner**

**Which of the following options best describes your desired role?**

[Continued professional development in current role](#)

[Consultant practitioner](#)

[Educator](#)

[Manager](#)

[Researcher](#)

### **6.6. Current role: Consultant practitioner**

**Which of the following options best describes your desired role?**

[Educator](#)

[Manager](#)

[Researcher](#)

### **6.7. Current role: Educator**

**Which of the following options best describes your desired role?**

[Continued professional development in current role](#)

[Advanced practitioner](#)

[Consultant practitioner](#)

[Manager](#)

[Researcher](#)

### **6.8. Current role: Manager**

**Which of the following options best describes your desired role?**

[Continued professional development in current role](#)

[Advanced practitioner](#)

[Consultant practitioner](#)

[Educator](#)

[Researcher](#)

### **6.9 Current role: Researcher**

**Which of the following options best describes your desired role?**

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[Continued professional development in current role](#)

[Advanced practitioner](#)

[Consultant practitioner](#)

[Educator](#)

[Manager](#)

## 7. Support workers

### 7.1. Links and Resources for Support Workers

Support workers are valued members of the imaging and radiotherapy workforce, working alongside qualified staff performing vital roles. Their work is generally determined by local service needs and therefore their education and training is normally specific to their role.

In 2010 the SCoR published its Education and Professional Development Strategy: New Directions <https://www.sor.org/learning/document-library/education-and-professional-development-strategy-new-directions/>. It states that, as a minimum, support staff in clinical imaging and radiotherapy departments should hold or gain an S/NVQ level 2 in Health, or an equivalent, and ideally should hold or be enabled to obtain an S/NVQ level 3 in Health. However, since January 2011, National Vocational Qualifications have been phased out and replaced by new qualifications and Apprenticeships. The new qualifications in Health and Social Care are offered by Awarding Organisations (AO) such as City& Guilds and Edexcel. Unlike previous qualifications, they do not include units that are specific to imaging or radiotherapy.

In Wales, Level 2 and Level 3 Qualifications have been developed for Imaging Department support workers and these are awaiting ratification by Ofqual. Ofqual is the office for the regulation of qualifications and examinations and lists of regulated qualifications can be found at the Ofqual website <https://www.gov.uk/government/organisations/ofqual>.

In Scotland, the following document has been published to identify standards of education and training for support workers: Up to standard: a code of practice for employers of healthcare support workers in Scotland (2009) <http://www.scotland.gov.uk/Publications/2009/10/22092739/1>.

#### **The Qualifications and Credit Framework (QCF)**

The QCF is a national credit recognition and transfer system. It is a learning outcomes-based framework of units of study at designated levels from 1 - 8 with associated credit values. Units of study to achieve occupational competence may be found within the health and social care strand of the QCF.

#### **National Occupational Standards (NOS)**

These describe the skills, knowledge and understanding needed to undertake a task or job at nationally recognised levels of competence. They are a minimum standard, forming the basis of vocational qualifications in the Qualifications and Credit Framework (QCF) and Scottish Vocational Qualifications (SVQ). For Health and Social Care, NOS are mapped against, and indicatively linked to, the NHS Knowledge and Skills Framework (KSF) Dimensions.

More information can be found at [www.skillsforhealth.org.uk](http://www.skillsforhealth.org.uk) and [www.ukstandards.co.uk/](http://www.ukstandards.co.uk/)

#### **Apprenticeships**

Apprenticeships and Higher Apprenticeships may be used as a basis for development of staff in Career Bands 1-4 of the NHS. They may require a qualification to be undertaken as part of the programme.

## Knowledge and Skills Framework - NHS KSF

The NHS Staff Council produced a Simplified KSF in November 2011, in response to the view that it was over-complicated. It is focused on the six core dimensions and has examples of behaviours and actions to indicate whether the dimension has been met. It is intended to reduce the need for evidence gathering.

Simplified

KSF:

<http://nhsemployers.org/PayAndContracts/AgendaForChange/KSF/Simplified-KSF/Pages/SimplifiedKSF.aspx>

## NHS Employers

<http://www.nhsemployers.org/Pages/home.aspx>

## The Skills Passport

This is a portable online record of career history, current skills and training, covering NHS, independent sector, clinical and non-clinical across all 4 UK countries. It is designed to ensure the transferability of skills and qualifications across the health sector. More details can be found at [www.skillsforhealth.org.uk](http://www.skillsforhealth.org.uk)

## Other links

NHS Education for Scotland Support Workers Toolkit including information about the Scottish Government's Mandatory Induction Standards and Code of Conduct for Healthcare Support Workers <http://www.hcswtoolkit.nes.scot.nhs.uk/>

(All links accessed Nov 2012)

## 8. Assistant practitioners

### 8.1. Outcomes for Assistant Practitioner

The following statements identify the outcomes to be demonstrated by an accredited assistant practitioner in a defined area of practice (from Scope of Practice of Assistant Practitioners 2012). [https://www.sor.org/learning/document-library/scope-practice-assistant-pr?sort\\_by=field\\_date\\_published\\_value&title=scope+practice+assistant&taxonomy\\_topics\\_tid=All](https://www.sor.org/learning/document-library/scope-practice-assistant-pr?sort_by=field_date_published_value&title=scope+practice+assistant&taxonomy_topics_tid=All)

1. Practise safely within relevant legal, ethical, professional and managerial frameworks and protocols.
  2. Demonstrate accountability, recognising and responding appropriately to strengths and limitations in own knowledge, skills and attributes.
  3. Understand the importance of evidence for safe, effective professional practice.
  4. Engage in continuing professional development.
  5. Manage self and work effectively.
  6. Use information management systems effectively.
  7. Demonstrate effective interpersonal communication skills.
  8. Ensure the radiation safety of all individuals in the working environment when it is their responsibility to do so.
  9. Practise within a risk-benefit framework, having regard to the biological effects of radiation.
  10. If entitled to do so by the employer, adhere to the role of operator in accordance with IR(ME)R 2000 and its subsequent amendments.
  11. Participate in quality assurance and undertake equipment testing within protocol.
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12. Demonstrate understanding of the significance of the relationship between anatomy, pathophysiology and the imaging and/or radiotherapy process.
13. Employ effective positioning and immobilisation.
14. Manipulate exposure factors and image recording parameters within protocol.
15. Operate equipment safely and effectively within protocol.
16. Carry out identified delegated procedures within protocol.
17. Assess the technical quality of images produced.
18. Record imaging examinations/radiotherapy interventions and their outcomes accurately.
19. Supply and administer medicines under Patient Specific Directions (PSDs).
20. Demonstrate awareness of the role of other imaging and treatment modalities.
21. Work individually, collaboratively and/or in partnership to deliver person-centred care.
22. Meet the care needs of individuals and their significant others sensitively and respectfully having regard to the impact of illness and trauma, and to socio-cultural differences.
23. Demonstrate proficiency in basic life-support techniques, infection control and moving and handling.
24. Ensure informed consent has been given prior to undertaking imaging examinations or radiotherapy.

## 8.2. Indicative Curriculum for Assistant Practitioner

Assistant practitioners should have the opportunity to gain appropriate knowledge, understanding and skills to enable them to achieve the outcomes within their scope of practice:

### Behavioural and Social Science

Caring for patients undergoing imaging and /or radiotherapy

Patient centred practice, models of partnership working, enablers and barriers to working collaboratively

The importance of self, self-awareness in developing and managing relationships

Emotional intelligence and resilience

Communication in context; patients, carers, other Health and Social Care professionals

Information and support for patients, carers and significant others

Legislative, policy and ethical frameworks that underpin, inform and influence radiographic practice

The role of the assistant practitioner, the role of the professional body and the code of professional conduct

Healthcare regulation and voluntary registration

Evidence for imaging and/or radiotherapy practice

Reflective practice, models of reflection

### Physical Science and Technology

X-ray production and interactions of photons with matter, related to image quality and radiation dose

Scatter properties related to image quality and radiation dose

Processing and imaging systems

Image acquisition, storage and retrieval

Imaging exposure factors related to image quality and radiation dose

Principles of radiobiology; stochastic and non-stochastic, genetic and somatic effects of radiation

Principles and application of radiation protection and the measurement of radiation dose

Principles of radiation dose minimisation and the ALARP ideal

Current European and UK legislation and regulations pertaining to the medical use of radiations

The roles of operator, practitioner and referrer as identified in IR(ME)R 2000 and its subsequent amendments

Applications of technological equipment used for imaging and/or radiotherapy

Principles of information and digital technologies

Quality assurance and control

### Clinical Context and Applications (Radiotherapy)

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Normal and abnormal anatomy and pathophysiology with particular emphasis on the development of cancer

Cell structure and cell division

Common types of cancer, histology, staging and grading

Methods of spread and their significance for treatment choice

The incidence and prevalence of cancer in the UK and worldwide

Causes of cancer; genetic, viral, lifestyle factors

Imaging for cancer; diagnostic, pre-treatment and treatment monitoring

Treatments for cancer; the relative roles of surgery, radiotherapy and chemotherapy

Pathways of care and the role of the Multidisciplinary Team Meeting

Radical and palliative treatment

Treatment modalities; external beam radiotherapy (EBRT), intensity modulated radiation therapy (IMRT), image guided radiation therapy (IGRT), brachytherapy, radionuclides, particle beams; electron, neutron and proton therapies

Side effects of radiotherapy and their management

Use of drugs commonly encountered within radiotherapy and chemotherapy

Supply and administration of medicines; Patient Specific Directions

Principles of treatment simulation and planning

Outlining and voluming; clinical target volume (CTV), planning target volume (PTV), organs at risk

Dose calculations

Principles of immobilisation, immobilisation devices

On line / off line imaging for monitoring and verification

Mandatory Training

## **Clinical Context and Applications (Imaging)**

Normal and abnormal anatomy and pathophysiology from fetal life to old age with a particular emphasis on its demonstration on diagnostic images

Surface anatomy, radiographic terminology

Factors affecting the quality and acceptability of diagnostic images

Structure and terminology in diagnostic image reports

Mandatory training

Manipulation of exposure and image recording parameters

Use of drugs commonly encountered within imaging settings

Supply and administration of medicines; Patient Specific Directions

Plain film examinations to include, where appropriate and authorised:

- ♦ appendicular skeleton
- ♦ axial skeleton; excluding the skull and cervical spine in trauma
- ♦ chest
- ♦ abdomen
- ♦ mammography
- ♦ dental radiography excluding cone beam CT
- ♦ DEXA

Additionally, where appropriate, assisting in fluoroscopic procedures

Computed Tomography:

- ♦ basic principles of Computed Tomography
- ♦ positioning of the patient for a range of CT procedures; standard head CT and CT examinations of the spine, chest and abdomen

## **Clinical Context and Applications (Ultrasound)**

Sound; characteristics and properties

Principles of ultrasound imaging

The activity of the assistant practitioner in ultrasound should be restricted to undertaking limited, single condition and simple screening ultrasound examinations performed to an agreed protocol and under the supervision of a registered sonographer. The assistant practitioner may undertake other duties such as supporting other sonographers, undertaking examinations and the routine quality control of equipment. Any limitations of the role of the assistant practitioner must be made

absolutely clear. It is not appropriate for assistant practitioners to discuss clinical matters with patients or clients and, if unexpected findings arise during any examination the assistant practitioner is authorised to carry out, they must seek immediate advice from the sonographer supervising their practice. (Scope of Practice of Assistant Practitioners (2012))

<http://www.sor.org/learning/document-library/scope-practice-assistant-practitioners> (accessed Nov 2012)

## Clinical Context and Applications (Nuclear Medicine)

Physical properties of radionuclides and radiopharmaceuticals  
Principles of radionuclide imaging: gamma camera; collimator design, display units  
Principles of radiation protection for unsealed sources  
Techniques for radionuclide imaging  
The supply and administration of medicines

## Clinical Context and Applications (Magnetic Resonance Imaging)

Basic principles of magnetic resonance imaging  
Positioning of the patient and ancillary equipment for standard examinations

## 8.3. Links and Resources for Assistant Practitioner

### Introduction

The Society and College of Radiographers' policy regarding the practice of assistant practitioners was published in the document "Educational and Professional Development: New Directions" and defined in "Scope of Practice of Assistant Practitioners".

Assistant practitioners, like general support staff, are likely to be from diverse backgrounds but they will differ from the general support workforce in that, as part of their duties, they will perform limited clinical imaging examinations or treatment procedures in concert with, and under the supervision of, registered radiographers. The range of such examinations or treatments will vary in accordance with locally identified need but is likely to be confined to standard examinations or treatments carried out on adult patients who are conscious, co-operative and communicative, and conducted in accordance with locally agreed protocols.

### SCoR links:

Website for Assistant Practitioners including information about becoming an accredited assistant practitioner

<http://www.sor.org/career-progression/assistant-practitioners>

Policy and Guidance Document Library <https://www.sor.org/learning/document-library> contains a variety of relevant documents, the most relevant of which are:

Scope of Practice of Assistant Practitioners

<http://www.sor.org/learning/document-library/scope-practice-assistant-practitioners>

Education and Professional Development Strategy: New Directions

<http://www.sor.org/learning/document-library/education-and-professional-development-strategy-new-directions/assistant-practitioners>

Code of Conduct and Ethics

<https://www.sor.org/learning/document-library/code-conduct-and-ethics>

Student radiographers and trainee assistant practitioners: verifying patient identification and seeking consent

<https://www.sor.org/learning/document-library/student-radiographers-and-trainee-assistant-practitioners>

[ers-verifying-patient-identification-and](#)

Assistant Practitioners and the supply, administration and prescribing of medicines

<https://www.sor.org/learning/document-library/assistant-practitioners-and-supply-administration-and-prescribing-medicines>

**Education and training opportunities:** Directory of Courses for contact details of all universities in UK offering pre-registration programmes

<https://www.sor.org/about-radiography/career-radiography/directory-courses>

CPD Now

<https://www.sor.org/learning/cpd/cpd-now>

Short courses and study days

<https://www.sor.org/short-courses-study-days>

e-learning including CORE-learning and e-learning for healthcare.

<https://www.sor.org/learning/e-learning>

Information on clinical specialisms can be found on the following website:

<https://www.sor.org/practice>

Pages exist for radiotherapy, x-ray, radiation protection, ultrasound, cross-sectional imaging, nuclear medicine and reporting. Hot topics include clinical specialisms that are currently undergoing considerable change; information management and technology, and children.

There are various groups and networks in specialist areas and information is given here:

<https://www.sor.org/practice/other-groups>

## Other links:

Knowledge and Skills Framework

The NHS Knowledge and Skills Framework (NHS KSF) and the Development Review Process (October 2004).

[http://web.archive.org/web/20120217221848/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4090843](http://web.archive.org/web/20120217221848/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4090843)

Simplified NHS KSF <http://www.nhsemployers.org/PayAndContracts/AgendaForChange/KSF/Simplified-KSF/Pages/SimplifiedKSF.aspx>

NHS Employers

<http://www.nhsemployers.org/Pages/home.aspx>

Skills for Health

<http://www.skillsforhealth.org.uk/>

NHS Education for Scotland Support Workers Toolkit including information about the Scottish Government's Mandatory Induction Standards and Code of Conduct for Healthcare Support Workers

<http://www.hcswtoolkit.nes.scot.nhs.uk/>

(All links accessed Nov 2012)

Scottish Qualifications Authority (SQA) website: PDA Radiographic Imaging

<http://www.sqa.org.uk/sqa/47666.html>

Arrangements for: PDA in Radiographic Imaging at SCQF level

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## 9. Autonomous practice (practitioners)

## 9.1 Outcomes for Autonomous Practice (Practitioner)

The following statements identify the outcomes to be demonstrated by a radiographer following a period of preceptorship.

1. Practise safely within relevant legal, ethical, professional and managerial frameworks.
2. Demonstrate accountability, recognising and responding appropriately to strengths and limitations in own knowledge, skills and attributes and to those of others.
3. Select and justify evidence for safe, effective, professional practice
4. Engage in audit, research and continuing professional development.
5. Contribute to the development of radiographic practice for the benefit of patients.
6. Manage self and workload effectively and in a timely way.
7. Use information management systems effectively.
8. Demonstrate highly-developed interpersonal and communication skills.
9. Use and give professional supervision.
10. Mentor and teach learners, support staff and other professionals.
11. Ensure the radiation safety of all individuals in the working environment.
12. Practise within a risk-benefit framework, having regard to the biological effects of radiation.
13. When entitled to do so by the employer, undertake practitioner, operator and referrer roles within IR(ME)R 2000 and its subsequent amendments as appropriate to professional practice.
14. Participate in quality assurance and undertake equipment testing, responding appropriately.
15. Identify, evaluate and interpret normal and abnormal anatomy and pathophysiology relevant to clinical practice.
16. Assess patients and make reasoned decisions to initiate, continue, modify, suspend or cease imaging examinations or radiotherapy.
17. Employ effective positioning and immobilisation, customising devices as appropriate.
18. Manipulate exposure factors and image recording parameters to optimal effect.
19. Monitor and assess the adequacy of images.
20. Interpret results and, where necessary, carry out additional image manipulation, imaging or adaptation of treatment delivery.
21. Record imaging examinations/radiotherapy interventions and their outcomes accurately.
22. Evaluate the range of imaging or radiotherapy modalities to make informed professional judgements about their application.
23. Supply, administer and prescribe medicines within the legal framework.
24. Generate an optimal treatment plan and interpret radiotherapy prescriptions accurately, modifying these during treatment when necessary. (T)
25. Select and justify imaging and treatment modalities and operate equipment safely and effectively. (T)
26. Select and justify imaging examinations and operate equipment safely and effectively. (D)
27. Produce written preliminary evaluation of imaging examinations undertaken. (D)
28. Work individually, collaboratively and/or in partnership to deliver person-centred care and interventions.
29. Meet the care needs of individuals and their significant others sensitively and respectfully having regard to the impact of illness and trauma and to socio-cultural differences.
30. Have due regard to patients' health status and co-morbidities, promoting healthy living.
31. Demonstrate proficiency in basic life-support techniques, infection control and moving and handling.
32. Obtain informed consent or ensure that it has been given.
33. Advise other Health and Social Care professionals about patients' needs, referring them where necessary.

## 9.2 Indicative Curriculum for Practitioners

Pre-registration students should have the opportunity to gain detailed knowledge, understanding and skills to enable them to achieve the practitioner outcomes for autonomous practice in the following areas:

### Behavioural and Social Science

Principles of psychology, sociology and social psychology

Psychological and sociological dimensions of caring for patients undergoing imaging and /or

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radiotherapy

The importance of self, self-awareness in developing and managing relationships

Emotional intelligence and resilience

Patient centred practice, models of partnership working, enablers and barriers to working collaboratively

Communication in context; patients, carers, other Health and Social Care professionals

Information and support for patients, carers and significant others

Theories and concepts of health and illness

The organisation and management of Health and Social Care services within the UK

Developments and trends in legislation and Health and Social Care policy

Ethical and legal principles and models

Legislative, policy and ethical frameworks that underpin, inform and influence the practice of radiographers including children and vulnerable adults

The role of the radiographer, professional values and attributes, the role of the professional body and the code of professional conduct

Development of professions in the UK, professional regulation and the role of the Health and Care Professions Council

Principles of management

Theories of judgement and decision making in radiographic practice

Accountability, responsibility and assessment of risk

Definitions of knowledge; scientific and constructivist approaches.

Hierarchies of evidence

Selection and interpretation of evidence for imaging and/or radiotherapy practice

Reflective practice, models of reflection, learning and clinical supervision

Research and audit methods in health and social care

## Physical Science and Technology

Physical principles of matter, atomic structure, radioactivity

Electricity and magnetism

The electromagnetic spectrum; heat, light, radio frequencies

X-ray production and interactions of photons with matter, related to image quality and radiation dose

Scatter properties related to image quality and radiation dose

Image acquisition, storage, retrieval and manipulation

Imaging exposure factors related to image quality and radiation dose

Sound; characteristics and properties

Principles of ultrasound imaging

Principles of magnetic resonance imaging

Principles of radionuclide imaging

Principles of radiobiology; stochastic and non-stochastic, genetic and somatic effects of radiation

Principles and application of radiation protection and the measurement of radiation dose

Principles of radiation dose minimisation and the ALARP ideal

Current European and UK legislation and regulations pertaining to the medical use of radiations

The roles of operator, practitioner and referrer as identified in IR(ME)R 2000 and its subsequent amendments

Capability, applications and range of technological equipment used for imaging and/or radiotherapy

Current developments and trends in technology and their applications

Principles of information and digital technologies

Quality assurance and control

## Clinical Context and Applications (Radiotherapy)

Normal and abnormal anatomy and pathophysiology across the lifespan with a particular emphasis on the development of cancer

Cell structure and cell division

Molecular biology related to tumour genesis

Common types of cancer, histology, staging and grading

Methods of spread and their significance for treatment choice

Diagnosis, differential diagnosis and prognosis

The incidence and prevalence of cancer in the UK and worldwide

Causes of cancer; genetic, viral, lifestyle factors

The organisation and delivery of cancer services in the UK; recent developments

Imaging for cancer; diagnostic, pre-treatment and treatment monitoring. The use of x-ray-based, ultrasound, MR and radionuclide imaging

Treatments for cancer; the relative roles of surgery, radiotherapy and chemotherapy

The use of complementary and alternative medicine (CAM)

Indications for the use of radiotherapy in cancer treatment

Radical and palliative treatment

Treatment modalities; external beam radiotherapy (EBRT), intensity modulated radiation therapy (IMRT), image guided radiation therapy (IGRT), brachytherapy, radionuclides, particle beams; electron, neutron and proton therapies

Principles of adaptive radiotherapy

Side effects of radiotherapy and their management

Factors affecting the severity of side effects, toxicities and their measurement

Pharmacology and uses of drugs commonly encountered within radiotherapy and chemotherapy

Supply and administration of medicines

Chemo-radiation

Principles of treatment simulation and planning

Outlining and voluming; clinical target volume (CTV), planning target volume (PTV), organs at risk

Principles of fractionation; biological effective dose (BED), Dose Volume Histograms

Conventional and inverse planning

Dose calculations

Principles of immobilisation, immobilisation devices

On line/off line imaging for monitoring and verification

Pathways of care and treatment for common cancer types by anatomical system

The role of the radiographer in the cancer pathway; prevention, pre-treatment, planning, delivery, after care

Other uses of radiotherapy

Mandatory Training

## Clinical Context and Applications (Imaging)

Normal and abnormal anatomy and pathophysiology from fetal life to old age with a particular emphasis on its demonstration on diagnostic images

Surface anatomy, radiographic terminology

Fracture classification, healing of fractures, pathology of musculo-skeletal system

Factors affecting the quality and acceptability of diagnostic images

Interpretation of diagnostic images

Structure and terminology in diagnostic image reports

The organisation and delivery of diagnostic imaging services in the UK; recent developments

Current trends and developments in applications and techniques applied in diagnostic imaging

Pharmacology of drugs commonly encountered within diagnostic imaging settings

The theory and practice of intra-venous administration

Supply and administration of medicines

Mandatory training

Assessment, monitoring and care of the patient before, during and after examination

Imaging of children and patients with specific needs

Processing and related technology supporting imaging systems

Manipulation of exposure and image recording parameters

## Conventional radiography:

Full range of plain radiographic examinations including trauma and non-standard imaging environments (eg theatre, ward based):

- ♦ appendicular and axial skeleton
- ♦ chest, abdomen and soft tissue structures (including mammography)

- standard contrast agent examinations
- ♦ mobile and fixed fluoroscopy including invasive or complex procedures that may include contrast agents
- ♦ dental imaging
- ♦ principles of forensic imaging

## Computed tomography:

Techniques for the range of mainstream CT procedures to include:

- ♦ standard head CT and examinations of the spine, chest and abdomen in acute trauma
- ♦ standard contrast agent examinations

## Magnetic Resonance Imaging:

Techniques for standard magnetic resonance imaging procedures

## Principles and concepts underpinning:

- ♦ specialised invasive and interventional procedures
- ♦ ultrasound imaging
- ♦ radio-nuclide imaging
- ♦ positron emission tomography
- ♦ lithotripsy
- ♦ bone densitometry
- ♦ complex image guided procedures, eg biopsy, aspiration, line placement

## 9.3. Links and Resources for Autonomous Practice (Practitioner)

### Introduction

All radiographers at the point of registration are competent to practise autonomously in their discipline at the first level. Clinical skills obtained during the pre-registration period need to be consolidated to provide the foundations for continuing development of this group of staff.

Newly qualified radiographers should have a period of formal preceptorship following registration. This is a period for consolidation and induction into the clinical environment as a staff member under the supervision of a named preceptor.

Accreditation at this level of practice is achieved as the individual will have completed a recognised programme that entitles them to apply for membership of the Society of Radiographers and registration with the Health and Care Professions Council (HCPC).

### SCoR links:

Website for Practitioners

<https://www.sor.org/career-progression/practitioners>

Policy and Guidance Document Library <https://www.sor.org/learning/document-library> contains a variety of relevant documents, the most relevant of which are:

Education and Professional Development Strategy: New Directions

<https://www.sor.org/learning/document-library/education-and-professional-development-strategy-new-directions/practitioner#top>

Code of Conduct and Ethics

<https://www.sor.org/learning/document-library/code-conduct-and-ethics>

The Scope of Practice 2009

<https://www.sor.org/learning/document-library/scope-practice-2009>

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Clinical Supervision Framework

[http://www.sor.org/learning/document-library/listtitles/title/supervision?sort by=field\\_date\\_published\\_value&title=%20supervision%20&taxonomy\\_topics\\_tid=All&field\\_archive\\_value=0&=Apply](http://www.sor.org/learning/document-library/listtitles/title/supervision?sort%20by=field_date_published_value&title=%20supervision%20&taxonomy_topics_tid=All&field_archive_value=0&=Apply)

## Education and training opportunities:

CPD Now

<https://www.sor.org/learning/cpd/cpd-now>

Post-registration courses

<https://www.sor.org/learning/post-registration-courses>

Short courses and study days

<https://www.sor.org/short-courses-study-days>

e-learning including CORE-learning and e-learning for healthcare.

<https://www.sor.org/learning/e-learning>

Information on clinical specialisms can be found on the following website:

<https://www.sor.org/practice>

Pages exist for radiotherapy, x-ray, radiation protection, ultrasound, cross-sectional imaging, nuclear medicine and reporting. Hot topics include clinical specialisms that are currently undergoing considerable change; information management and technology and paediatrics.

There are various groups and networks in specialist areas and information is given here:

<https://www.sor.org/practice/other-groups>

## Other links:

Health and Care Professions Council (HCPC)

<http://www.hcpc.org.uk/>

At initial registration with the HCPC, practitioners will meet the standards set by the HCPC; Standards of conduct, performance and ethics (2008)

<http://www.hcpc.org.uk/publications/index.asp?id=38#publicationSearchResults> and Standards of proficiency – Radiographers (2009)

<http://www.hcpc.org.uk/publications/index.asp?id=51#publicationSearchResults>

Department of Health (England)

<http://www.dh.gov.uk/en/index.htm>

Health in Wales

<http://www.wales.nhs.uk/>

NHSScotland

<http://www.show.scot.nhs.uk/>

NHS Education for Scotland (NES)

<http://www.nes.scot.nhs.uk/education-and-training/by-discipline/allied-health-professions.aspx>

Health and Social Care in Northern Ireland

<http://www.hscni.net/>

Knowledge and Skills Framework

The NHS Knowledge and Skills Framework (NHS KSF) and the Development Review Process (October 2004)

[http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4090843](http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4090843)

Simplified KSF

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<http://www.nhsemployers.org/PayAndContracts/AgendaForChange/KSF/Simplified-KSF/Pages/SimplifiedKSF.aspx>

NHS Employers

<http://www.nhsemployers.org/Pages/home.aspx>

Skills for Health

<http://www.skillsforhealth.org.uk/>

Section on Scottish Government website: AHP workforce making a difference

<http://www.scotland.gov.uk/Publications/2011/03/11104802/4>

(All links accessed Nov 2012)

## 10. Advanced practitioners

### 10.1. Outcomes for Advanced Practitioner

The following statements identify the outcomes to be demonstrated by an accredited advanced practitioner in a defined, specialist area of practice and where applicable.

1. Practise safely within relevant legal, ethical, professional and managerial frameworks and advise on these as appropriate.
2. Demonstrate accountability, recognising and responding appropriately to strengths and limitations in own knowledge, skills and attributes and to those of others.
3. Interpret and evaluate evidence for effective professional practice.
4. Engage in audit, peer review and research for best practice, disseminating the outcomes.
5. Establish and maintain expertise through engagement with continuing professional development.
6. Manage self and lead the team to ensure workload is delivered effectively.
7. Ensure information management systems are used to optimal effect.
8. Demonstrate excellent interpersonal and communication skills.
9. Use and give professional supervision.
10. Mentor and teach learners, support staff and other professionals, developing relevant learning materials.
11. Ensure the radiation safety of all individuals in the working environment.
12. Practise within a risk-benefit framework, having regard to the biological effects of radiation.
13. When entitled to do so by the employer, undertake practitioner, operator and referrer roles within IR(ME)R 2000 and its subsequent amendments as appropriate to professional practice.
14. Critically evaluate the effectiveness of quality assurance procedures and quality management systems and respond appropriately.
15. Contribute to the planning, selection and purchase of new technology and associated facilities.
16. Identify, evaluate and interpret normal and abnormal anatomy and pathophysiology relevant to clinical practice.
17. Assess patients and make reasoned decisions to initiate, continue, modify, suspend or cease imaging examinations or radiotherapy, advising others in complex situations.
18. Interpret results of imaging and, where necessary, carry out additional image manipulation, imaging or adaptation of treatment delivery.
19. Ensure imaging examinations/radiotherapy interventions and their outcomes are recorded accurately.
20. Supply, administer and prescribe medicines within the legal framework.
21. Manage the whole patient pathway, lead the delivery of complex treatments using advanced technologies. (T)
22. Lead the delivery of complex imaging using advanced technologies, recording or reporting on

the outcomes. (D)

23. Work individually, collaboratively and/or in partnership to deliver person-centred care and interventions.
24. Develop, implement and review pathways of care, having regard to patients' health status and co-morbidities, promoting healthy living.
25. Meet the care needs of individuals and their significant others sensitively and respectfully having regard to the impact of illness and trauma, and to socio-cultural differences.
26. Demonstrate proficiency in basic life-support techniques, infection control and moving and handling.
27. Obtain informed consent or ensure that it has been given.
28. Advise other Health and Social Care professionals about patients' needs, referring them where necessary.

## 10.2. Links and Resources for Advanced Practitioners

### Introduction

SCoR has defined an advanced practitioner as *'an individual who has significantly developed their role and who consequently has additional clinical expertise in a defined area of practice, accompanied by deep underpinning, evidence based knowledge related to that expertise. They make appropriate clinical decisions related to their enhanced level of practice, directly impacting on the patient care pathway.'*

Education and Professional Development Strategy: New Directions SCoR 2010.

Advanced practitioners work in diverse areas of professional practice and achieving the outcomes for advanced practice will depend on where and how you are working. You will need to identify your personal and professional development needs as appropriate. The resources and links on this page may be useful.

### SCoR links:

Website page for Advanced Practitioners

<https://www.sor.org/career-progression/advanced-practitioners>

Accreditation of Advanced Practitioners

The Society of Radiographers (SoR) has established accreditation of advanced practitioners

<http://www.sor.org/learning/document-library/education-and-professional-...>

Policy and Guidance Document Library

<https://www.sor.org/learning/document-library> contains a variety of relevant documents, the most relevant of which are:

Education and Professional Development Strategy: New Directions

<https://www.sor.org/learning/document-library/education-and-professional-development-strategy-new-directions/advanced-practitioner#top>

Code of Conduct and Ethics

<https://www.sor.org/learning/document-library/code-conduct-and-ethics>

The Scope of Practice 2009

<https://www.sor.org/learning/document-library/scope-practice-2009>

Clinical Supervision Framework

[http://www.sor.org/learning/document-library/listtitles/title/supervision?sort by=field\\_date\\_published\\_value&title=clinical+supervision+framework&taxonomy\\_topics\\_tid=All&field\\_archive\\_value=0&Apply](http://www.sor.org/learning/document-library/listtitles/title/supervision?sort%20by=field_date_published_value&title=clinical+supervision+framework&taxonomy_topics_tid=All&field_archive_value=0&Apply)

### Education and training opportunities:

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Post-registration courses

<https://www.sor.org/learning/post-registration-courses>

Short courses and study days

<https://www.sor.org/short-courses-study-days>

CPD Now

<https://www.sor.org/learning/cpd/cpd-now>

e-learning including CORe-learning and e-learning for healthcare.

<https://www.sor.org/learning/e-learning>

Advanced practice specialisms

The publications on the Policy and Guidance document library are tagged according to their content and advanced practitioners in specialist clinical areas can find relevant documents by selecting the appropriate topic on the search tool. Topics include mammography, nuclear medicine, radiation protection, reporting, ultrasound.

For example, click here to access a list of ultrasound related documents in the policy and guidance document library

[https://www.sor.org/learning/document-library?sort\\_by=field\\_date\\_published\\_value&title=&taxonomy\\_topics\\_tid=550&field\\_archive\\_value=0](https://www.sor.org/learning/document-library?sort_by=field_date_published_value&title=&taxonomy_topics_tid=550&field_archive_value=0)

If you are an independent practitioner see Professional Standards for Independent Practitioners

<https://www.sor.org/learning/document-library/professional-standards-independent-practitioners>

Information on clinical specialisms can be found on the following website:

<https://www.sor.org/practice>

Pages exist for radiotherapy, x-ray radiation protection, ultrasound, cross-sectional imaging, nuclear medicine and reporting. Hot topics include clinical specialisms that are currently undergoing considerable change; information management and technology and children.

There are various groups and networks in specialist areas and information is given here:

<https://www.sor.org/practice/other-groups>

## Other links:

Department of Health (England)

<http://www.dh.gov.uk/en/index.htm>

Health in Wales

<http://www.wales.nhs.uk/>

NHS Scotland

<http://www.show.scot.nhs.uk/>

Delivering Care, Enabling Health: Harnessing the Nursing, Midwifery and Allied Health Professions' Contribution to Implementing Delivering for Health in Scotland (2006).

<http://www.scotland.gov.uk/Publications/2006/10/23103937/0>

Health and Social Care in Northern Ireland

<http://www.hscni.net/>

Knowledge and Skills Framework

The NHS Knowledge and Skills Framework (NHS KSF) and the Development Review Process (October 2004)

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[http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4090843](http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4090843)

Simplified KSF

<http://www.nhsemployers.org/PayAndContracts/AgendaForChange/KSF/Simplified-KSF/Pages/SimplifiedKSF.aspx>

[NHS Employers](http://www.nhsemployers.org/Pages/home.aspx)

<http://www.nhsemployers.org/Pages/home.aspx>

[Skills for Health](http://www.skillsforhealth.org.uk/)

<http://www.skillsforhealth.org.uk/>

[Advanced Practice in Radiography and Radiation Therapy: Report from the Inter-Professional Advisory Team](https://www.sor.org/news/document-sets-tone-advanced-practice-australia)

<https://www.sor.org/news/document-sets-tone-advanced-practice-australia>

[Delivering Care, Enabling Health: Harnessing the Nursing, Midwifery and Allied Health Professions' Contribution to Implementing Delivering for Health in Scotland](http://www.scotland.gov.uk/Publications/2006/10/23103937/0)

<http://www.scotland.gov.uk/Publications/2006/10/23103937/0>

[NHS Education for Scotland Post-Registration Career Development Framework \(2012\) for nurses, midwives and allied health professionals](http://www.careerframework.nes.scot.nhs.uk/using-the-framework/getting-started.aspx)

<http://www.careerframework.nes.scot.nhs.uk/using-the-framework/getting-started.aspx>

[Advanced Practitioner Level 7 on NES Career Framework](http://www.careerframework.nes.scot.nhs.uk/career-framework.aspx?levelGroup=1123)

<http://www.careerframework.nes.scot.nhs.uk/career-framework.aspx?levelGroup=1123>

[\(All links accessed Nov 2012\)](#)

## 10.3. Advanced Practitioner Case Study 1

I became interested in radiography as a teenager and always felt that radiotherapy was the best choice for me. I spent my clinical training over two sites (Charing Cross and Hammersmith hospitals) and this meant that, from the start of my career, I was used to using different types of radiotherapy equipment. After qualifying in 1998 I spent the first seven years of my career working in a number of different centres, both in the UK and in Australia. This helped to consolidate and extend my professional knowledge and skills, particularly in the area of treatment delivery. During this time I was fortunate to have worked in centres that were at the forefront of radiotherapy and had implemented techniques such as IMRT and stereotactic radiosurgery. I was also exposed to a wide variety of methods of image guided radiotherapy (IGRT).

In 2005, I obtained a band 7 position at The Royal Marsden Hospital (Fulham Road) and began post graduate education. Over the next five years I completed the vast majority of my MSc and also gained further experience in advanced radiotherapy practice. I was also fortunate enough to be a member of the implementation team for the Exactrac system which was the first in the United Kingdom. This gave me invaluable knowledge and experience on the implementation of new technology and the important role that radiographers have in this process.

During my time at Fulham road I had two papers published. First, in 2005, an overview of Gamma Knife radiosurgery for Synergy Imaging & Therapy Practice and then a paper on the potential role of adenovirus and Herpes Simplex Virus in the treatment of advanced squamous cell carcinoma of the head and neck. This was published in the Journal of Radiotherapy in Practice in September 2009.

In November 2009 I joined a brand new radiotherapy department at The London Clinic as the Clinical and Technical Development Superintendent. My first responsibility was the radiographer implementation of the CyberKnife and the training of all grades of radiographers in the use of the \_\_\_\_\_

system. Since the opening of the department my role has developed more in line with that of a traditional treatment floor superintendent but my current specialities and interests include stereotactic, IGRT, CPD and research.

In 2011, I completed my MSc and collaborated with a colleague in the radiology department in publishing an article in Synergy Imaging & Therapy practice entitled The Multidisciplinary Implementation of Radiosurgery for Intracranial Arteriovenous Malformations at The London Clinic. I successfully submitted a poster to the 2012 College of Radiographers Annual Radiotherapy Conference; Patient Selection Criteria for CyberKnife to the Pancreas and Spine, based on my dissertation.

My current position entails some managerial responsibilities. I supervise junior grades in the transition from band 5 to band 6 through the completion of a competency based work book. In addition I provide education on CPD and research. I am currently supporting several research projects within the department being carried out by radiographers.

I provide information and guidance to other CyberKnife users and deliver feedback to the CyberKnife manufacturer at UK users meetings. I also provide peer review and support to other radiographers of similar grades in other departments. The London Clinic frequently hosts visitors and we are a popular site for students looking for elective placements.

I am the clinical liaison radiographer with City University for whom we are a placement site. This role led to me being asked to write and present lectures for undergraduate students at City University on a variety of topics. I have also written an online lecture on stereotactic radiotherapy for post graduate students at Sheffield Hallam University.

I gained accreditation as an advanced practitioner in 2010 and believe that I am the first radiotherapy member in the UK to receive this accreditation.

**Stuart McCaighy**, Clinical and Technical Development Superintendent, Radiotherapy Department, The London Clinic

## 10.4. Advanced Practitioner Case Study 2

### Breast Specialist Therapeutic Radiographer

I graduated from the University of Orange Free State with a Baccalaureate in Diagnostic Radiography and honours in Radiotherapy and started my career as a Therapeutic Radiographer in 1986 at the National Hospital in Bloemfontein. At that time there were only a few radiotherapy departments to choose from, which resulted in limited career development and promotional opportunities. After a year I decided to channel my energy and ambitions into a marketing company where I gained invaluable experience in sales management, recruitment, staff motivation and training and gained promotion to marketing manager and trainer for the UK branch. Despite the challenges the job presented, in 1992 I returned to radiotherapy as I felt I wanted to make a difference to people's lives.

During the next ten years I worked in various departments and in 2003, took on the role of the pre-treatment superintendent at Charing Cross hospital. At that time, there was a four month waiting list for patients with breast cancer. I attended a breast planning and prescribing course with the intention of trying to reduce this. The course involved developing a competency portfolio under the clinical supervision of a specialist breast consultant. It was a long and arduous journey to work through the barriers to change presented by colleagues and clinicians; initially some clinicians were reluctant to delegate and my peers were sceptical about the change in my role.

Whilst developing my portfolios I completed an MSc in Radiotherapy and Oncology and my role and

responsibilities progressed from pre-treatment superintendent to breast specialist superintendent. As part of my dissertation, I worked with a radiologist who mentored and supervised me in delineating the brachial plexus and regional breast nodes. Currently I delineate all planning target volumes and approve treatment fields for the breast, breast boost and supraclavicular and axillary lymph node fields.

The role entails providing training and support and acting in an advisory role to a multi-professional team comprising clinicians, radiographers, clinical scientists, nursing staff and workshop and mould room technicians. I provide cover for the breast clinicians and help ensure we maintain the national waiting list targets. Part of the role is to lead practice and technique development and recently I presented a case for the Active Breathing Coordinator (ABC) and implemented ABC in the department for patients with left-sided breast cancer.

Prior to the development of the breast specialist role radiographers had not been invited to the breast MDT. Attendance has resulted in improvements to patient care; for example, I demonstrated to the surgeons some of the difficulties in breast boost planning and how the insertion of clips during surgery could aid the planning process and result in more accurate treatment delivery. Since then, insertion of clips in the tumour bed has become routine practice within the Trust.

Returning to education after 26 years presented me with a host of new challenges, one of which was the sacrifice of many evenings and weekends writing essays or collecting data for the MSc dissertation research project. The taught modules provided me with a framework to focus on various aspects of practice and guided the development of knowledge required. It enabled me to justify my actions and aided the progression to a point where I am able to continue my own independent professional development.

I have published on role development and attended numerous conferences to present posters or give presentations on regional breast lymph node radiotherapy, role development and service improvement. I was a member of the NICE medical technologies evaluation panel, evaluating INTRABEAM Radiotherapy and am a member of the Breast Radiotherapy Interest Group (BRIG). The next challenge will be to complete my PhD, continuing in the clinical setting, contributing to breast radiotherapy and the career development of therapeutic radiographers.

### **10.5 Advanced Practitioner Case Study 3**

#### **Advanced Practice Radiographer in Gynaecological Oncology at CUH**

I have worked as an Advanced Practice Radiographer at Cambridge University Hospital since 2005. Prior to this I undertook a number of diverse roles, including Clinical Lecturer and Clinical Trials Radiographer. I have embraced every role with a passion but have found my niche as an Advanced Practice Radiographer in Gynaecological Oncology, developing a special interest in cervix brachytherapy.

My role as an Advanced Practice Radiographer in Gynaecological Oncology facilitates the provision of specialist information regarding disease, treatment and side effects from the point of diagnosis for patients, relatives and carers.

Role extension, supported with a competency led training program has enabled me to assume a number of responsibilities, traditionally undertaken by the consultant oncologist. For example, I provide a radiographer led 'on treatment' review clinic for patients undergoing pelvic radiotherapy, following an agreed departmental protocol, which involves reviewing the patient on a weekly basis and assessing their general well being; identifying side effects and recording possible toxicity from radiotherapy/chemotherapy.

I undertake sizing and insertion of brachytherapy equipment for patients undergoing vaginal vault brachytherapy. This involves performing a vaginal examination prior to sizing, in order to exclude possible recurrence. I am also involved during the surgical procedure required for cervix brachytherapy; undertaking independent removal of the brachytherapy applicator following treatment.

Delivery of the brachytherapy pathway, fast becoming increasingly complex, is a daunting experience for many patients. Involvement of the Advance Practice Radiographer facilitates provision of effective information and support throughout the patient pathway, ensuring patients receive a high standard of care and the pathway remains, at all times focussed around the patient needs.

My role has significantly developed and evolved over the years and in fact continues to do so. I have developed additional clinical expertise, skills and attributes within my defined area of practice, underpinned with evidence based knowledge, allowing me to practice at an advanced level securely.

This involves studying at M level (level 7) in appropriate academic subjects; ultimately achieving the award of MSc Advanced Practice in Radiotherapy and Oncology.

Finding a balance between studying, my clinical responsibilities (and home life!) has represented a challenge. It is hard work but definitely manageable; in fact it eventually becomes second nature (and if I dare say, enjoyable!).

The role has presented me with many more challenges over the years. In 2009 Cambridge University Hospital became the first hospital in the United Kingdom to introduce Image Guided Brachytherapy. I was an integral member of a team responsible for its successful implementation; inspiring, motivating and collaborating to facilitate improvements in service delivery; offering appropriate advice to professional colleagues on care practices, delivery and service development.

Indeed, one of the most significant (and daunting) challenges to date was when I was invited to present at the CRUK, Cambridge. Around 100 radiographers, physicists and oncologists gathered for a progress meeting on the subject of implementation of IGBT for cervix cancer in the UK. The meeting provided me with the opportunity to inspire; describing how the role of the Advance Practice Radiographer is instrumental during service redesign and within the delivery of Image Guided Brachytherapy.

I feel extremely privileged to work as an Advance Practice Radiographer. No day is the same! The role enables me to demonstrate my expert knowledge and skills, interacting with the multidisciplinary team, identifying where service improvements can be achieved and ultimately delivering the highest standard of care to all patients.

### 10.6 Advanced Practitioner Case Study 4

This case study illustrates how diverse the scope of the profession is and how radiographers can end

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up with some very interesting and unusual career pathways.....

**Ian Arrowsmith,**

Chief Terminologist, Health and Social Care Information Centre

After studying for the Diploma of the College of Radiographers from Coventry School of Radiography (completed in 1988), following a short 6 month stint as a radiographer in Holland, I worked as a radiographer at Warwick Hospital and other imaging departments in the Midlands for over 10 years.

In 1993 I completed a Degree in Applied radiography at Southbank University and in 2001 was awarded an MSc in Health Information Management from the University of Warwick which gave me the opportunity to move into the field of Health Informatics as a terminologist.

I have been involved in the use of clinical terminologies in electronic health records for over 13 years following an earlier career as a radiographer in the UK National Health Service. I was originally taken on as a terminologist in the project to create SNOMED Clinical Terms in 1999 and have worked in or around this field since that time.

This period included several years as a Clinical Design Consultant in the Design Authority for the National programme for IT in the NHS – advising NHS colleagues, regulatory bodies and system suppliers in the delivery of what was the largest public sector procurement in the World. In this role I had responsibility for capture of health information requirements, specification, and high-level healthcare design to meet the needs of healthcare professionals and patient groups. This included elaboration and re-scoping of requirements and collaboration with regional teams and suppliers in system design. I was the lead officer for ensuring terminology components of electronic applications were consistent and made the best use of available standards.

Since 2007, as Chief Terminologist in the NHS, I have managed a team of clinical terminologists in the maintenance and delivery and implementation of several terminologies including the Read codes, Diagnostic Imaging codes and SNOMED CT.

I also played a part in the establishment and ongoing governance of the International Healthcare Terminology Standards Development Organisation (IHTSDO) having been an active member of the Content Committee for 5 years, the Member Forum for 6 years and currently as a non-executive director of the Management Board – the organisation now has 25 Member countries.

During recent years I have delivered educational sessions and workshops to colleagues in many countries including Canada, USA, Australia, Malaysia, Netherlands, Denmark, Sweden, Ireland, Norway and Singapore.

**Ian Arrowsmith,**

**Chief Terminologist at Health and Social Care Information Centre**

For more information see full interview here

<http://termcoord.wordpress.com/did-you-know/why-is-terminology-your-passion/interview-with-ian-arrowsmith/>

### **10.7 Case Study 5 Lucie Martin**

**Macmillan Radiotherapy Awareness Project Specialist**

**Career Pathway including education and training undertaken**

I studied three years at Sheffield Hallam University doing a degree in Radiotherapy and Oncology

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and qualified in 2007.

My first place of employment was at St James Hospital in Leeds as a band 5 therapeutic radiographer. I worked on one of the first XVI Elekta machines in the UK assisting in the protocol for prostate patients. After a year I decided I wanted to obtain some experience working abroad and worked agency at a centre in Cyprus. At this centre I had to learn to speak basic Cypriot and work at a more advanced level as there was no banding system. I quickly felt that I was developing in my role as a radiographer and liked the new responsibilities I had gained. Once my contract finished I returned to the UK and took a job back at Leeds as a band 6 therapeutic radiographer. I initially was placed on a busy linac with 45 patients a day. The opportunity for a 2 year secondment became available in Brachytherapy and as I had enjoyed that experience as a student I decided to go for it and took the post. I took full responsibility of running a busy theatre, manage a source of radiation, emergency procedures, staff training, education within department about Brachytherapy and changed the Feminine aftercare advice patients received. As my 2 years came to a close I began to look for alternative opportunities and applied for a job at Sheffield as a Macmillan Project Specialist. In April 2013 I began this first of a kind job.

## **Case presentation; context, role, and how service is delivered differently because of the role, Outcomes, Future**

IN 2010 NRAG (National Radiotherapy Advisory group) published a report about the current / projected activity of radiotherapy treatment fractions and NRAG assumptions. They found that the North of England particularly North Trent had the lowest numbers of fractions per million of population than the rest of England. As part of the 2011 national Radiotherapy awareness strategy, the Sheffield Trust bid Macmillan to assist in funding a post to investigate this.

My role is to increase radiotherapy awareness within our catchment area. My project consists of focussing on education, access and press coverage. Within these areas there are numerous tasks within the project such as developing fundraising buses to transport patients, education events for the public and health professionals and surveying health professionals within trust. The North Trent area is currently going through a lot of change as we have integrated into the Yorkshire and Humberside network therefore a large part of my job is networking and building relations between primary, secondary and tertiary care for radiotherapy awareness whilst raising Weston Park Hospitals profile.

The service improvement is to increase radiotherapy uptake over this time which we have already witnessed as well as dispel some of the negative views radiotherapy has within the community. My post is only 18 months long so it is essential that all the tasks I have started can continue when I leave post and be managed by staff within the department.

## **10.8 Case Study 6 Samantha Bostock**

### **Role of Lead Review Radiographer and Lead for Patient Care**

#### **Career Path:**

DCR qualified in 1995

Senior II - 1998

Double M-level module in Radiographer-led review clinics (distinction) - 2000. Leading to the review radiographer role and its progression.

Senior I - 2000

MSc (student design award) - MSc in Radiotherapy Practice (distinction) – modules include: Advanced History Taking and Assessment (double module), Dissertation (triple) – ‘The Effect of Individual Personal Information on Reducing Anxiety in Radiotherapy Patients’ (distinction) - 2004

Superintendent III - 2004

Advanced Communication Skills - 2007 (Maguire)

## Case Presentation:

Departmental organisation:

Service manager

↓

Deputy

↓

Band 7 Superintendents with specific lead areas (me)

↓

Band 6/5/4 radiographers/AHPs

I am lead for the radiographer-led review service - a team of qualified review radiographers review all diagnoses of patients receiving radiotherapy.

I am lead for patient care including information provision, management of side effects and link to other AHPs. I lead in the use of PGDs.

I also maintain a clinical presence by working clinically.

Service is delivered differently in that prior to my qualification as a review radiographer all patients were reviewed by either a staff grade doctor or their consultant oncologist.

## Future Plans:

Service progression - the provision of radiographer-led pre-radiotherapy appointments/clinics and follow-up clinics, telephone follow-ups, development of a community liaison practitioner post

Opening of satellite centre to include provision of patient care/info/support.

## Conclusion:

I enjoy my role as it is wide ranging and varied - maintaining clinical skills whilst carrying out an advanced role in patient care/review. I gain a lot of job satisfaction from my close work with patients and also work closely with radiographer colleagues, consultants, AHPs and nurses. I believe that there is potential for further role development and opportunities.

**Samantha Bostock.**

## 10.9 Case Study 7 Lorraine Whyte

### Practice Education Radiographer (Radiotherapy)

#### Career Pathway

I went to college for a year, then gained entry to Glasgow Caledonian University aged 29. I studied the four year undergraduate programme BSc (Hons) Radiography (Therapeutic) and undertook my clinical placements at the Beatson Oncology Centre. On graduation in 2002 I worked as a Radiographer for 3 – 4 years and also worked as the colorectal on-treatment review radiographer for one day per week. During this time I also completed the appropriate MSc module that accompanied this role. I was then appointed to a senior position and continued working for a MSc. In 2009 I was offered acting up as a Band 7 which continued for 2 years until I secured a permanent Band 7 in 2011. In February 2012 I began my post as Practice Education Radiographer.

**Case presentation; context, role, and how service is delivered differently because of the role**

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This is an entirely new role within the Beatson and is funded by the Beatson Charity Fund. In preparation for this role I achieved Practice Educator Accreditation from the SCoR using the experiential route. This role came about due to working in my own time as the SOR union learning rep and began with small CPD workshops which became hugely successful and highlighted the need for someone to have dedicated time to continue this role.

I have responsibility for the development, delivery and evaluation of the Therapy Radiography core and continuous professional development programmes:

- ♦ Planning, development and implementation of educational projects and initiatives
- ♦ Focus on patient and person centred care, grounded in life long learning and evidence-based practice
- ♦ Set within national, organisational and directorate objectives, guidelines and policies.

I am also responsible for development, implementation and maintenance of a robust system of training records for all members of staff, in accordance with local and national guidelines and in compliance with the requirements of the Society and College of Radiographers for Continuous Professional Development, with the Health Professions Council (HPC) for professional registration and regulation, and with legal requirements of the Ionising Radiation (Medical Exposure) Regulations (IR(ME)R)

I provide evidence-based expert knowledge and advice to therapy radiographers, radiotherapy assistants and returners-to-practice within the Beatson West of Scotland Cancer Centre (BWoSCC) and assist in the dissemination of research findings. I also mentor and supervise staff when necessary.

I also have a leadership role within the BWoSCC and facilitate the clinical, practice, professional and educational development of approximately 130 staff, consisting of Therapy Radiographers, Assistant Practitioners, Radiotherapy Assistants, one Modern Apprentice and the Mould Room Clinical Technologists. In addition, I assist in the retraining of staff returning to practice following a career break. I am also involved in the induction of new graduates and in the design and delivery of such training as is necessary to ensure that all radiography staff attain competencies in all new developments.

### **Outcome and/or future plans**

We have a satellite radiotherapy centre opening up in 2015 and I hope to gain more funding from the Beatson Charity Fund so I can spend a day a week there to look after the education and training needs of staff employed there.

### **Conclusion**

Strategic planning for future developments emphasises the need to build a secure future through investment in the cancer workforce. There is a strong requirement for future developments to be research based and a need to transfer such research findings into evidence-based practice throughout Radiotherapy. This can only be achieved through a robust programme of radiographer education and training and I believe that since the introduction of this role this has become a reality and benefits not only staff, but embodies safe, legal, effective, patient centred care.

**Lorraine Whyte**

## **10.10 Case Study 8 Ebenezer John**

### **Being a Clinical Lead Radiographer & Clinical Triage Team Manager**

Triage is a term derived from the French verb trier;

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“Trier: to separate, sift, screen or select.”

Triage is used as a clinical process in the delivery of modern healthcare where resources and expertise are constantly stretched and demand for services is universally high. Triage functions are thus deemed necessary to promote efficiency and accuracy at a pivotal stage in a patient’s diagnostic pathway.

I joined InHealth in 2008 to work as a Senior Triage Radiographer. It was a unique active role in which I benefitted from hands-on training from expert radiographers in this field.

The sheer thrill of dealing with such a large volume of referrals encompassing six major diagnostic modalities and at the same time charged with providing expert advice and guidance to various sources (including GP’s, patients, clinical and non-clinical staff and so on) gave me the opportunity to learn and develop valuable clinical leadership skills whilst broadening my knowledge in the area of MRI safety and clinical justification.

I am engaged in leading a team of skilled, highly experienced and multi- modality radiographers delivering triage services at InHealth Group.

InHealth Group provide extensive diagnostic services including MRI, Ultrasound, X-ray, DEXA, Endoscopy and Physiological Measurement services in both community and Secondary care environments within UK.

As a diagnostic service provider it promotes its diagnostic service management via the clinical triage department which pre-screens referrals received for various diagnostic modalities. This is achieved utilizing clinical protocols that help the radiographer determine the severity of the patient’s health issues and rank them according to urgency. Radiographers working within the triage environment adhere to RCR/iRefer and NICE guidelines during the referral vetting process. These guidelines are fully embedded into our local pathway and procedures to ensure the priority conditions of patient safety, clinical justification and clinical appropriateness are fully met before any patient receives an appointment for a diagnostic examination.

During this process triage Radiographers liaise directly with GP’s and patients to obtain missing clinical information and other facts to ensure patient safety, for example, (i) MRI safety questions relating to possible implants, (ii) mobility issues and (iii) guidance on claustrophobia amongst other things.

Clinical Triage members are also required to protocol each request and provide guidance to other departments including non clinical call centre agents, Clinical staff on the unit, PACS team and liaise directly with referring clinicians to provide expert advice on the correct or alternative modality as well as managing the report related complaint and query process.

In the current climate of extreme financial pressure on CCG’s, the introduction of such a step in policing the diagnostic industry ensures quality of service is both maintained and delivered to high standards without compromising patient care. And the current AQP process recommends such a triage process for diagnostic service closer to home as It ensures appropriate investigations are done each time resulting in direct cost savings to CCG’s and effective service delivery to both patients and clinicians on a large scale.

**Ebenezer John**  
**Clinical Triage Manager**  
**InHealth Group**

## **10.11 Case Study 9 Karen Bew**

**Advanced Practice Brachytherapy Superintendent in Poole Hospital NHS Foundation Trust**

**Career Pathway**

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I qualified in 1989 with a Diploma in Radiotherapy from Southampton College of Radiography. In 1995 I completed an end on degree gaining a 2:1 BSc (hons) in Therapeutic Radiography. During this time I progressed to a Senior 1 Radiographer on the treatment units. In 2007 I undertook a Masters module in Technical Advances in Radiotherapy, and lead the introduction of CBCT into the department. In 2008, I became the Brachytherapy Superintendent in order to introduce the new HDR machine and bring together all the brachytherapy services.

### Role

I was engaged to set up and develop the new HDR brachytherapy service that was replacing the LDR treatments for gynaecological cancer. As part of this remit I was tasked with bringing all brachytherapy together in the department, providing an overall service utilising the same area. I instigated setting up a theatre/treatment room for both gynae HDR and prostate LDR treatments, negotiating staff and services from both day and main theatres to support this. We now have a dedicated theatre and anaesthetic support for prostate LDR seed insertion and cervical HDR insertions using both general and spinal anaesthetics. I have achieved a Masters module in Advanced Practice from Sheffield with regards to vaginal vault insertions for HDR brachytherapy.

For the past five years I have been running this area, doing everything from bookings, patient information, protocols, training, education, research, audits, horizon scanning, budgeting and business plans to emotional and psychological support. In the last year a second advanced practice radiographer was appointed to brachytherapy full time to help the day to day running of the service so I could concentrate more on the managerial side, developing the service, being the RPS, and managing staff appraisals, development and recruitment alongside the other departmental superintendents. I have been involved in Peer Review, Cancer Wait time Targets, quality meetings, risk management, skill mix review and clinical group meetings. I have played an active role in the acquisition of PDU (Practice Development Unit) status for the Dorset Cancer Centre from Bournemouth University showing that as a centre we link our practice to both local consumer needs and national goals. I have participated in a variety of conferences and forums, mainly as a delegate but also a speaker, having given talks at the national Brachytherapy Radiographers Forum. I also give talks at a local level in the hospital and to patient support groups on a variety of topics linked to brachytherapy.

### Future plans

We are just changing from a 2-step prostate brachytherapy procedure to a 1-step procedure, and setting up training and writing protocols and procedures for this. Future projects will be training both advanced practice brachytherapy radiographers in ultrasound acquisition for positioning cervical applicators in theatre and 1<sup>st</sup> fraction vaginal vault insertions, prostate volume acquisition and fiducial marker implantation. This role should develop into a Consultant role with more research and development and participation in national initiatives.

**Karen Bew**

## 10.12 Case Study 10 Heather Dias

### Advanced Role Case Study

#### Macmillan Gynae/colo-rectal Radiographer

### Early career

I qualified as a therapy radiographer in 1980 and gained experience over the next few years in two different radiotherapy departments. I left the profession for a few years due to family commitments before returning to the profession in 1998 to another department. Here I have gained experience on the treatment machines, in brachytherapy, quality assurance and research.

As part of the department's policy to have evidenced levels of practice in order to take on role development, I undertook a master's module in treatment review. This was followed by a master's module on informed consent and thus enabled more involvement throughout the patient pathway. At

about this time I had the opportunity of working alongside an oncologist reviewing chemo-radiotherapy patients and after completing competencies now review these patients independently.

The post of a radiographer specialising in gynaecological cancers, supported by Macmillan, was advertised to which I was appointed

### **Specialist radiographer**

Part of my practice is in brachytherapy and in order to improve the service to patients and reduce clinician time, I now undertake vaginal vault insertions. Competency to do this was achieved by supervised and then independent practice backed up by written work under a master's module.

I became lead radiographer for the brachytherapy service and after attending a course was appointed as Radiation Protection Supervisor for brachytherapy. Although I had gained experience in brachytherapy over several years I took the opportunity to update my knowledge by completing a master's module in brachytherapy. This also allowed reflection on good practice and ways in which our service could be developed.

### **Role development**

Experience has been gained in this role within clinics, being a mentor to other radiographers and registrars and leading a small team of site specialist radiographers. My site specialism has been extended to include colo-rectal cancers. I have developed patient pathways and aim to provide more holistic care for patients.

I have developed information leaflets with colleagues and I have also revised gynaecological consent forms and introduced brachytherapy consent forms with the aim of improving the amount and quality of information that patients receive. Satisfaction with the service is monitored by the use of patient surveys.

### **Future**

Radiotherapy continues to develop with the introduction of new techniques and enhanced imaging. Therapy radiographers need to maintain and enhance their profile within cancer services and site specialism allows this to be achieved whilst offering patients quality care. It provides opportunities for role development and job satisfaction. This may be further expanded in the future with the emphasis on survivorship and improving outcomes, by offering greater support and information post treatment.

### **Heather Dias**

## **11. Consultant practitioners**

### **11.1. Outcomes for Consultant Practitioner**

The following statements identify the outcomes to be demonstrated by a consultant practitioner in their sphere of practice where applicable.

1. Practise creatively, advancing professional practice and challenging barriers that limit service and professional development.
2. Integrate effectively the diverse roles of the consultant: clinical practice, professional leadership, education and research.
3. Demonstrate accountability, recognising and responding appropriately to strengths and limitations in own knowledge, skills and attributes and to those of others.
4. Maintain and enhance expertise through engagement with continuing professional development.
5. Synthesise evidence for effective professional practice, demonstrating advanced critical assessment skills.
6. Initiate and lead audit, peer review and research, disseminating outcomes through presentation and publication.
7. Influence the development of services and contribute to strategy and policy.
8. Lead and promote the education and training of staff, students and other groups, contributing to relevant academic programmes.
9. Use and give professional supervision or coaching.
10. Exercise high levels of professional judgement and decision making in complex clinical situations.
11. Exercise professional and motivational leadership and consultancy within and across professional and organisational boundaries.
12. Demonstrate excellent interpersonal skills and inspirational personal characteristics.
13. Ensure the radiation safety of all individuals in the working environment.
14. When entitled to do so by the employer, undertake practitioner, operator and referrer roles within IR(ME)R 2000 and its subsequent amendments as appropriate to professional practice.
15. Take a critical role in the evaluation of new technologies, identifying their potential and developing strategies for their implementation.
16. Deliver a whole-system, patient-centred approach, rooted in multidisciplinary team working.
17. Supply, administer and prescribe medicines within the legal framework.
18. Meet the care needs of individuals and their significant others sensitively and respectfully having regard to the impact of illness and trauma and to socio-cultural differences.
19. Advise other health and social care professionals about patients' needs, referring them where necessary.

### **11.2. Links and Resources for Consultants**

#### **Introduction**

SCoR has defined a consultant practitioner as 'a champion in the clinical, academic or research field bringing innovative solutions to patient care. Their role is one that defines professional development and influences at a strategic level. As such, consultant practitioners play a pivotal role in the integration of clinical, education and research findings in practice. The consultant practitioner is able to initiate clinical service developments and deliver improved patient outcomes through the implementation of the findings of:

- ♦ *clinical research*
- ♦ *clinical audit*
- ♦ *clinical governance*

## ◆ *clinical risk assessment*

Education and Professional Development Strategy: New Directions, SCoR (2010)

Consultant practitioners work in diverse areas of professional practice and achieving the outcomes for consultant practice will depend on where and how you are working. You will need to identify your personal and professional development needs as appropriate. The resources and links on this page may be useful.

### **SCoR links:**

Website page for Consultants

<https://www.sor.org/career-progression/consultants>

Consultant radiographer group

The purpose of this SCoR group is to provide leadership in the development of and support for the Consultant Radiographer role

<https://www.sor.org/career-progression/consultants/consultant-radiographer-group>

Policy and Guidance Document Library

<https://www.sor.org/learning/document-library> contains a variety of documents, the most relevant of which are:

Developing the Business Case for Consultant Radiographers (2003).

<https://www.sor.org/learning/document-library/developing-business-case-consultant-radiographers>

Education and Professional Development Strategy: New Directions

<https://www.sor.org/learning/document-library/education-and-professional-development-strategy-new-directions/consultant-practitioner>

Code of Conduct and Ethics

<https://www.sor.org/learning/document-library/code-conduct-and-ethics>

The Scope of Practice 2009

<https://www.sor.org/learning/document-library/scope-practice-2009>

Clinical Supervision Framework

[http://www.sor.org/learning/document-library/listtitles/title/supervision?sort\\_by=field\\_date\\_published\\_value&title=clinical+supervision+framework&taxonomy\\_topics\\_tid=All&field\\_archive\\_value=0&Apply](http://www.sor.org/learning/document-library/listtitles/title/supervision?sort_by=field_date_published_value&title=clinical+supervision+framework&taxonomy_topics_tid=All&field_archive_value=0&Apply)

An evaluation of the impact of implementation of consultant practitioners in clinical imaging

<https://www.sor.org/learning/document-library/evaluation-impact-implementation-consultant-practitioners-clinical-imaging>

Consultant Radiographers: Succession Planning

<https://www.sor.org/learning/document-library/consultant-radiographers-succession-planning>

### **Education and training opportunities:**

It is expected that consultant practitioners will be educated to Masters level as a minimum and should be working towards doctoral qualifications. Many Universities offer professional doctorates as well as traditional PhD routes and information about these can be found on their websites.

Post-registration courses

<https://www.sor.org/learning/post-registration-courses>

Short courses and study days

<https://www.sor.org/short-courses-study-days>

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CPD Now

<https://www.sor.org/learning/cpd/cpd-now>

e-learning including CORe-learning and e-learning for healthcare.

<https://www.sor.org/learning/e-learning>

## Consultant practice specialisms:

The publications on the Policy and Guidance document library are tagged according to their content and consultants in specialist clinical areas can find relevant documents by selecting the appropriate topic on the search tool. Topics include mammography, nuclear medicine, radiation protection, reporting and ultrasound.

For example, click here to access a list of ultrasound related documents in the policy and guidance document library

[https://www.sor.org/learning/document-library?sort\\_by=field\\_date\\_published\\_value&title=&taxonomy\\_topics\\_tid=550&field\\_archive\\_value=0](https://www.sor.org/learning/document-library?sort_by=field_date_published_value&title=&taxonomy_topics_tid=550&field_archive_value=0)

If you are an independent practitioner, see Professional Standards for Independent Practitioners.

<https://www.sor.org/learning/document-library/professional-standards-independent-practitioners>

Information on clinical specialisms can be found on the following website :

<https://www.sor.org/practice>

Pages exist for radiotherapy, x-ray, radiation protection, ultrasound, cross-sectional imaging, nuclear medicine and reporting. Hot topics include clinical specialisms that are currently undergoing considerable change; information management and technology and children.

There are various groups and networks in specialist areas and information is given here:

<https://www.sor.org/practice/other-groups>

## Leadership:

The NHS Leadership Academy brings together all the national activity supporting leadership development in health and NHS funded services. <http://www.leadershipacademy.nhs.uk/>

The Leadership Framework provides a consistent approach to leadership development for staff in Health and Social Care irrespective of discipline, role or function, and represents the foundation of leadership behaviour. Fundamental to its development was a desire to build on existing leadership frameworks used by different staff groups and create a single overarching leadership framework for all Health and Social Care staff.

<http://www.leadershipacademy.nhs.uk/resources/>

The National Leadership Unit for NHS Scotland is situated within NHS Education for Scotland (NES) and delivers a range of leadership development programmes and activities across the NHS in Scotland. The Unit also supports the development of policy and strategy for leadership development across NHS Scotland: <http://www.nes.scot.nhs.uk/education-and-training/by-theme-initiative/le...>

## Research and Audit:

Information on research support and relevant articles can be found at:

<https://www.sor.org/career-progression/researchers/undertaking-research>

<https://www.sor.org/career-progression/researchers/getting-started>

The Allied Health Professions Research Network (AHPRN) also aims to increase research capability and capacity by providing research support. The network is currently formed by 21 regional 'hubs' which offer researchers assistance by way of peer review, mentorship schemes, sharing good practice, disseminating information and offering advice.

<https://www.sor.org/news/supporting-healthcare-research>

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Details of research funding details can be found at:

<https://www.sor.org/about-us/awards/corips-research-awards>

## Other links:

The institute for innovation and improvement has a number of excellent guides and tools including a very useful jargon buster.

[www.institute.nhs.uk](http://www.institute.nhs.uk)

The skills for health website has a number of e-learning training tools to aid workforce planning as well as tools available to help find competences, create and save lists of relevant competences and undertake assessments relating to competence based role and team profiles, and clusters.

[www.skillsforhealth.org.uk](http://www.skillsforhealth.org.uk)

Department of Health (England)

<http://www.dh.gov.uk/en/index.htm>

Health in Wales

<http://www.wales.nhs.uk/>

NHS Scotland

<http://www.show.scot.nhs.uk/>

NHS Education for Scotland (NES)

<http://www.nes.scot.nhs.uk/education-and-training/by-discipline/allied-health-professions.aspx>

The “Clinical / Academic Careers” resource:

<http://www.nes.scot.nhs.uk/education-and-training/by-discipline/allied-health-professions.aspx>

In addition, the “Senior AHPs: Leading Better Practice” resource:

<http://www.nes.scot.nhs.uk/education-and-training/by-discipline/allied-health-professions.aspx>

Health and Social Care in Northern Ireland

<http://www.hscni.net/>

Knowledge and Skills Framework

The NHS Knowledge and Skills Framework (NHS KSF) and the Development Review Process (October 2004)

[http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4090843](http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4090843)

Simplified KSF

<http://www.nhsemployers.org/PayAndContracts/AgendaForChange/KSF/Simplified-KSF/Pages/SimplifiedKSF.aspx>

NHS Employers

<http://www.nhsemployers.org/Pages/home.aspx>

Delivering Care, Enabling Health: Harnessing the Nursing, Midwifery and Allied Health Professions' Contribution to Implementing Delivering for Health in Scotland

<http://www.scotland.gov.uk/Publications/2006/10/23103937/0>

NHS Education for Scotland Post-Registration Career Development Framework (2012) for nurses, midwives and allied health professionals:

Consultant Level Level 8 on NES Career Framework

<http://www.careerframework.nes.scot.nhs.uk/career-framework.aspx?levelGr...>

Director - Level 9 on NES Career Framework

<http://www.careerframework.nes.scot.nhs.uk/career-framework.aspx?levelGr...>

(All links accessed Nov 2012)

## 11.3. Consultant Radiographer Case Study 1

I trained as a therapeutic radiographer at the Glasgow School of Radiotherapy in 1982 obtaining the DCR (T). In those days, I was not interested in university or academia. As radiographers, we learned 'on the job' and through experience.

I worked as a radiographer and then senior radiographer before taking a 6-year break to look after my children. During these years, 1994 to 2000, I went to 'night school' and studied basic computer packages and counselling skills as well as completing an HNC in special educational needs. I worked for a year as a support assistant in a school and then as a data coordinator in a clinical research organisation.

I returned to radiotherapy in 2000 as a radiographer at the Beatson Oncology Centre in Glasgow. Changes were happening; we had verify and record systems, dynamic wedges and MLC. The principles and techniques of radiotherapy had not changed and I was able to pick up the new technology quickly. In 2003, I became an information and support radiographer. Before leaving the Beatson in 2005 to work at the Edinburgh Cancer Centre, I had obtained two MSc modules.

I became a consultant radiographer in June 2008. My speciality was gynaecological oncology and the first year in post was to be a training period. This was to enable me to develop the specialist clinical knowledge required for the post. I worked with the multi-disciplinary team and the clinical oncologist as well as coordinating the introduction of the new HDR brachytherapy service.

When I accepted this post, I was awarded an honorary contract with Queen Margaret University, Edinburgh. I found I enjoyed lecturing to students and taking part in journal clubs and seminars with them. I enjoyed sharing my knowledge with them. I have been a member of the validation committee for the postgraduate diploma in radiotherapy and have taken part in the validation process.

The hardest thing for me about education is my own studying. I completed my MSc in radiotherapy in 2011 and it was toil, mainly because I tend to work to deadlines and I am a very good procrastinator. However, I was extremely proud of my achievement.

I no longer work with the gynaecology team and my remit has changed somewhat. In the past couple of years, I have developed and delivered anatomy and basic radiobiology teaching for our physics technicians. I am the lead on education and development for radiographers and have completely restructured our training packages. I am also active within the radiographers' CPD committee and enjoy encouraging and inspiring radiographers to develop their potential and promote the profession of radiotherapy. I believe in sharing practice and hope to organise a Scottish radiographers' shared practice event in the next few months. For me education is key to best practice as well as personal development. We are all educators in a way!

**Marie McCabe**, Consultant Therapeutic Radiographer, Edinburgh Cancer Centre

## 11.4. Consultant Breast Radiographer Case Study 2

I have been a consultant radiographer since 2007 and am involved with all aspects of patient care with regard to the diagnosis of breast abnormalities and malignancy. I work autonomously running my own symptomatic breast assessment clinics and also work in collaboration with radiologists in

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breast clinic sessions.

As a consultant radiographer I have progressed and gained in knowledge and experience and this role has given me great job satisfaction and fulfilment. I advocate fully this fourth tier of the radiography profession which gives autonomous working, flexibility and greater responsibility to those motivated and enthusiastic radiographers who wish to progress to this level.

My role within my department is structured, varied and very rewarding. I enjoy working collaboratively with radiologists and other members of the breast MDT.

Developing a network of fellow consultant breast radiographers has helped to inform my knowledge of all aspects of breast diagnostic imaging. This had enabled us all to develop best practice at a National level. My involvement with professional activities such as Symposium Mammographicum and the National Imaging Board has provided stimulating and exchange of ideas and knowledge has helped to further my development as a consultant breast radiographer.

Good communication and passing on my own knowledge and experience is a vital aspect of my work. Also the promotion and encouragement for advanced practitioners of all specialities in Wales has made my role interesting, fulfilling and a joy to perform.

#### Clinical Expertise:

My clinical practice encompasses:

- ♦ Stereo-tactic and ultrasound guided core biopsies
- ♦ Stereotactic and ultrasound guided wire localizations.
- ♦ Film reading, interpretation and reporting.
- ♦ Reporting of surveillance and family history mammograms.
- ♦ Present my own cases at multidisciplinary team meetings (MDT).
- ♦ Clinical Breast examination & Communication

#### Further development and skills

My post graduate qualifications include:

- ♦ Certificate of competency in mammography - 1997
- ♦ Film reading & interpretation - 2004
- ♦ Interventional techniques - 2005
- ♦ Clinical breast examination & client communication - 2006
- ♦ Breast ultrasound - 2008
- ♦ Research methods - 2008
- ♦ Breast cancer treatment management & care - 2009
- ♦ Competencies in Genetics counselling - 2009
- ♦ MSc in Medical Imaging - 2013

I gained my MSc in 2013, my dissertation was entitled 'Consultant radiographers – an evaluation of the role 8 years on'.

#### Education, Training & Development

I am team lead for advanced practitioners and mammographers', identifying training needs within the department. I mentor and teach radiology trainees, mammographers and new breast clinicians. I obtain great satisfaction in seeing others progress, and having helped and mentored them.

Radiology trainees rotate through my department and I help our radiologists to oversee their clinical practice during their time here. I complete training proformas for them to log their improved skills at biopsy taking, aspirations of cysts and abscesses and general ultrasound techniques and communication with patients. These are read and assessed by their course directors.

## Professional Leadership and Consultancy

It has been a challenging few years with the transition from analogue imaging to digital picture archiving systems and I initiated and lead a team from members of my department to develop process. As a team we had input into structural changes and equipment. It has been an interesting and educational few years with the advent of digital breast imaging.

During my time as a consultant radiographer in Dorset I was invited to be part of a steering group with Exeter University, helping to develop an MSc mammography module for the training of mammographers.

Also in Dorset, I was approached by the Primary Care Trust (PCT) to establish a family history counselling and assessment clinic for women with familial risk of breast cancer. This clinic was to be a brand new development within the Dorset screening service. I was answerable to the PCT for the progress and outcomes of this new clinic, meeting the PCT to discuss any problems and issues that had arisen. In the first year of running this clinic 7 breast cancers were diagnosed in women of moderate risk who were under the National Breast Screening Programme age of 50.

Since moving to Cardiff in 2011 to take up the first official consultant radiographer post in Wales I have been heavily involved with promoting the role of advanced practitioners and consultant radiographers in Wales. I have been involved with the Welsh National Imaging Board to improve career progression for advanced practitioners in Wales. In 2010 I was invited to be an organising committee member of Symposium Mammographicum, one of the largest international breast cancer conferences in the UK. This involves programme planning, venue, costs and exhibitors including bursaries and awards.

Health Inspectorate Wales supports consultant practitioners and has developed a Welsh Consultant Nurse, Midwives and Allied Health Professionals (CNMAHP) forum and support group. This meets twice a year and I have just attended a leadership challenge two day event where we meet, undertake leadership challenges and lectures.

## Service Planning and Development

Within the unit there have been various issues which I have highlighted to management as part of my leadership and involvement with service planning and development. Usually I get involved when I feel there are problems or issues that impact on patient safety. Examples include better rotation off radiography staff through the department, better administrative staff training where there is cover when staff are absent, re-banding of an excellent radiography helper whose work was undervalued and who needed recognition for the extra service, training and efficient care that she provided to both patients and staff. This re-banding by KSF criteria, rewriting of the job description and references, was acknowledged and granted.

## Research

I have been involved in collaborative research within my department on Tomosynthesis and 4D ultrasound tissue volume measurements. The Tomosynthesis research is to be presented at Royal College of Radiologists Conference in September 2013.

Research was also undertaken for my 2013 MSc dissertation on an evaluation of the current role of the consultant role 8 years on. A survey of 24 UK consultant radiographers and the dynamics of their role were undertaken.

I am currently involved with a survey and article comparing Welsh breast imaging services with England, to see if better integration between screening and symptomatic breast services provides better use of staff, resources and equipment.

**Zebby Rees** DCR MSc

Consultant Breast Radiographer & Vice chair of Symposium Mammographicum

The Breast Centre

University Hospital Llandough

Vale of Glamorgan

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## 12. Educators

### 12.1. Outcomes for Educator

The following statements identify the outcomes to be demonstrated by an educator in their sphere of practice, where applicable.

1. Develop understanding, knowledge and skills in education theory and practice.
2. Apply learning theories that are appropriate for adult professional learners.
3. Prepare and deliver relevant, current, evidence-based teaching.
4. Work collaboratively with colleagues to deliver interprofessional learning.
5. Apply sound principles and judgements in providing robust and fair, assessment processes for learners.
6. Promote and contribute to the education and training of academic and clinical staff, students and other groups.
7. Use and give professional supervision.
8. Evaluate the learning experience, responding and adapting as necessary.
9. Demonstrate excellent interpersonal skills and inspirational personal characteristics.
10. Act as a role model, enthusing and inspiring others to engage with learning.
11. Provide appropriate support mechanisms for learners.
12. Monitor learners' progress, maintaining records as appropriate.
13. Participate in curriculum development, reviewing and revising modes of study and devising or contributing to new modes.
14. Actively engage in audit and research.
15. Maintain and enhance professional credibility and expertise through engagement with continuing professional development.

### 12.2. Links and Resources for Educators

#### Introduction

Radiography educators generally work in the higher education (HE) sector as Lecturers, Senior Lecturers, Principal Lecturers and Lecturer Practitioners. Their roles encompass the development and delivery of education programmes for assistant practitioners and pre-registration programmes. They also support continuing professional development from level 6 to doctoral level study.

#### SCoR links:

Policy and Guidance Document Library

<http://www.sor.org/learning/document-library> contains a variety of documents and by selecting 'education accreditation' on the topics option, the most relevant documents can easily be found.

Education and Professional Development Strategy: New Directions

<https://www.sor.org/learning/document-library/education-and-professional-development-strategy-new-directions>

Code of Conduct and Ethics

<https://www.sor.org/learning/document-library/code-conduct-and-ethics>

The Scope of Practice 2009

<https://www.sor.org/learning/document-library/scope-practice-2009>

Clinical Supervision Framework

[http://www.sor.org/learning/document-library/listtitles/title/supervision?sort by=field\\_date\\_published\\_value&title=clinical+supervision+framework&taxonomy\\_topics\\_tid=All&field\\_archive\\_value=0&=Apply](http://www.sor.org/learning/document-library/listtitles/title/supervision?sort%20by=field_date_published_value&title=clinical+supervision+framework&taxonomy_topics_tid=All&field_archive_value=0&=Apply)

Quality Standards for Practice Placements

<https://www.sor.org/learning/document-library/quality-standards-practice-placements>

Improving Student Retention: Guidelines and Good Practice

<https://www.sor.org/learning/document-library/improving-student-retention-guidelines-and-good-practice>

## Education and training opportunities:

As a minimum, new entrants into HE normally require a Masters level qualification. A postgraduate qualification in learning and teaching in higher education, such as a Postgraduate Certificate, will generally be required but is often offered to new entrants by their employers.

Post-registration courses

<https://www.sor.org/learning/post-registration-courses>

Short courses and study days

<https://www.sor.org/short-courses-study-days>

CPD Now

<https://www.sor.org/learning/cpd/cpd-now>

e-learning including CORE-learning and e-learning for healthcare.

<https://www.sor.org/learning/e-learning>

Information on clinical specialisms can be found on the following website:

<https://www.sor.org/practice>

Pages exist for radiotherapy, X-ray, radiation protection, ultrasound, cross-sectional imaging, nuclear medicine and reporting. Hot topics include clinical specialisms that are currently undergoing considerable change; information management and technology and children.

## Other links:

The Higher Education Academy (HEA)

This is the national body for enhancing learning and teaching in higher education. It provides services to the whole sector, individuals, subject groups, disciplines and managers and has a useful Resources Centre.

[www.heacademy.ac.uk](http://www.heacademy.ac.uk)

The Leadership Foundation for Higher Education is committed to developing and improving the management and leadership skills of existing and future leaders of Higher Education and offers a wide range of programmes.

[www.lfhe.ac.uk/](http://www.lfhe.ac.uk/)

The Quality Assurance Agency for Higher Education (QAA) is the body that safeguards quality and standards in HE. The agency publishes a range of guidance documents including subject benchmarks and the Quality Code.

<http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

The government department responsible for higher education in England is Business, Information and Skills (BIS)

<http://www.bis.gov.uk/policies/by/themes/higher%20education>

The UK's higher education funding councils distribute public money for teaching and research to

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universities and colleges in England, Wales and Scotland. Higher Education in Northern Ireland is funded through The Department for Employment and Learning. At the present time, funding for pre-registration radiography education is channelled through the health authorities.

<https://www.gov.uk/government/topics/higher-education>

Department of Health (England)

<http://www.dh.gov.uk/en/index.htm>

Health in Wales

<http://www.wales.nhs.uk/>

NHS Scotland

<http://www.show.scot.nhs.uk/>

Health and Social Care in Northern Ireland

<http://www.hscni.net/>

Skills for Health

<http://www.skillsforhealth.org.uk/>

(All links accessed Nov 2012)

## 12.3. Educator Case Study 1

With hindsight it was probably inevitable that I would become a lecturer of some kind, coming from a family of established teachers and educators! However it took a while for this to become clear to me – 20 years to be exact.

My niche in radiography is the challenging, complex field of paediatrics, particularly musculoskeletal imaging. For several years I was content working my way through the ranks to the post of superintendent. My interest in teaching continued with student supervision, tutorials to specialist registrars in radiology and orthopaedics alongside regular outings to the University of the West of England (UWE) as a visiting lecturer.

My Postgraduate Diploma in reporting, including trauma and orthopaedics, was given a distinctly paediatric slant with the help of tutors at Sheffield Hallam University. Under the watchful eye of one of my mentors, a Consultant Paediatric Orthopaedic Surgeon, I undertook a role as an Advanced Practitioner within waiting list initiative clinics, reviewing patients alongside a clinician and utilising granted non-clinician imaging requesting rights. I often undertook the imaging required and contributed to patient diagnosis. At the same time, through collaboration with orthopaedic colleagues, I commenced writing for journals and later was invited to sit on the editorial board of Synergy with the aim of ensuring articles from my field of interest were accurate in content. I continued to give lectures in house and nationally, culminating in the invitation to deliver the William Stripp Memorial Lecture at UKRC in 2009.

An opportunity arose at UWE to join the Diagnostic Imaging team. Such a step after 20 years was an enormous challenge and I retained one day per week as a senior paediatric radiographer. Maintaining this involvement has demonstrated to students (and colleagues) that I am not remote from clinical practice and continue to maintain my practical skills. This appears to have increased my overall credibility, an advantage already well acknowledged in the midwifery field (Cook 2006).

Possibly this is an aspect of continuing professional development that more academic staff will be encouraged to follow. Various sources question the efficacy of lecturers as credible educators without the practical “know-how” that can only be obtained by regular clinical practice (Cook 2006, Hughes 1999, McHaffie 1994). I identify very much with the recommendations made by Cook, particularly the importance of “making the theory live” whenever possible - calling upon real life events to demonstrate an issue provides a memorable and more effective way of emphasising

crucial points

I have just reached my first anniversary as Senior Lecturer and am amazed at how much I have grown as an educator. I am nearing the end of an academic development program that will hopefully result in a Postgraduate Certificate in Teaching and Learning in Higher Education. This has assisted me in the learning and establishment of teaching strategies alongside a greater understanding of pedagogy that has enabled me to adapt my methods according to the level of learning to be achieved.

My first run as module leader for the Fundamentals of Radiographic Image Interpretation component has been a success and I am proud to have been credited with playing a key role in the metamorphosis of undergraduates to confident radiographic practitioners.

My orthopaedic consultant mentor once commented that the most important role that any professional has is as an educator - "to ensure that those who come after us are at the very least as clinically able and as knowledgeable as ourselves, if not better". I am now in a role that will enable me to do so to the best of my ability.

**Donna Dimond**, Senior Lecturer in Diagnostic Imaging, University of the West of England

## References:

Cook A. The value of clinical practice to senior lecturers in higher education. 2006 Br J Midwifery 14, ( 7): 396-400

Hughes D. Midwife teachers and clinical practice. Part 1: Separated but not divorced. 1999 Pract Midwife June 2 (6): 34-7

McHaffie HE. Hands-on experience: do teachers need it? 1994 Nurs Stand Aug 24-30; 8 (48):29-31

## 12.4. Educator Case Study 2

Having qualified as a diagnostic radiographer in 1989 in one of the last few cohorts of the Diploma in Radiography, my experience of undergraduate education was very different to that delivered today. In 2003 I decided that I needed a role change as I felt that I had reached a point in my clinical career where further advancement was difficult. I successfully applied for a new role of radiography placements manager at Canterbury Christ Church University (CCCU). It was a bit of a step into the unknown and, at times, I felt quite isolated in what was a non-traditional education role.

Whilst employed at CCCU I was offered the chance to commence a Postgraduate Diploma in Clinical Reporting, which fulfilled a long held ambition. After two years in the post and with my PgD almost complete I decided that the placements role was not right for me and decided to return to clinical work. At the time, I could not see how I could utilise my reporting skills and did not feel confident enough to lecture. However, I was determined to continue with higher education and completed my MSc in 2009. I found the experience of the Masters level programme stimulating; it encouraged me to analyse my work practices and to seek further opportunities to develop my CPD profile. It also improved my self-confidence and made me realise that I could deliver lectures!

After further NHS clinical work as a PACS manager, MRI radiographer and undertaking plain film reporting, I decided that I wished to stretch myself further and spent a day observing a lecturer. This confirmed my interest in working in academia and I undertook some sessional lecturing at undergraduate and postgraduate levels. My preparation for this came from my experience of being taught at Masters level and delivering presentations as part of the course assessments. A senior lecturer vacancy arose and I decided the time was right to apply for such a position. This was a big career change which I felt would provide opportunities for me to develop my areas of interest and hopefully, at some point, to make a difference to the future education of radiographers.

I have now been employed at CCCU since February 2011 and have found the experience stimulating and motivating. I am involved in various courses including postgraduate MRI reporting and a web based image interpretation programme. As a relative newcomer to education I aim to develop my lecturing and assessment skills to address the varying needs of undergraduate and postgraduate students. As a new academic I am currently undertaking a post graduate certificate in learning and teaching to develop the appropriate skills and knowledge required for this role. I am keen to seek further opportunities to enhance my knowledge of the delivery of radiography education and to learn new ideas from others. I have seen how innovative ways of teaching can make a difference to students and help to retain interest and motivation.

The transfer from clinical work to higher education was not one taken lightly as it was a big career change for me. I have found my first few months to be a steep learning curve but have found it satisfying when students leave a lecture with a smile and a thank you! My first module seems to have gone well with positive comments from students. I am thoroughly enjoying the very varied work which is providing a wealth of opportunities to develop my areas of expertise and interest to benefit radiographers in the UK and internationally. I am hoping to contribute to the radiography research base in the not too distant future.

**Lisa Pittock**, Senior Lecturer, Canterbury Christ Church University

### 12.5. Educator Case Study 3

I qualified as a radiographer in 2008 from Birmingham City University (BCU) and went straight to work in the hospital where I trained, the George Eliot Hospital. Here I cemented my degree education into practice skills by working as a Band 5 radiographer.

The Band 5 role satisfied my radiological curiosities for some time as I was still developing as a radiographer. After a period of some months I was approached to become Society representative. This was a demanding role which equipped me with the ability to talk to large groups about current issues and standards, sometimes of a controversial nature. Reflecting on this role I found a desire to forward/pass on current and up to date knowledge. Alongside this I was becoming more and more involved with students, not in an official capacity, but I had the desire to help students alongside whom I had previously trained.

A year after qualification I put myself forward for the reporting course at BCU as I had always shown an interest in and an affinity for reporting. Becoming a reporting radiographer was a difficult and demanding task whilst working full time however, and corny as it may sound, it rekindled my love of learning. The reporting role automatically makes you an individual that other radiographers go to for support and knowledge.

With my background as Society rep I was involved in the departmental process of the change from on-call systems to a shift system. This provided me with essential skills for my upcoming role as a lecturer such as rota systems, time management and multi-disciplinary working groups.

Throughout the first year of my reporting training it was becoming evident that I wanted to follow my post graduate qualification to come “full circle” and give back this knowledge to the next radiographers. To achieve this I requested BCU to consider me for guest lecturing and I delivered a session on the differences between OA and RA. Through this process I was still studying for my second year of the reporting course.

At this stage a vacancy became available at BCU for a 12 month contract and I jumped at the chance and was successful. I had applied myself and put myself in the way of the education circle and my goal was achieved. I started this position in March 2012 alongside my completion of my

Postgraduate qualification in image reporting and have never looked back. I still use my clinical/reporting skills as I do believe it to be important to practice what you preach, something which I can also draw upon to aid current students.

**Graham Kelly**, Diagnostic radiography lecturer, Birmingham City University

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## 12.6. Educator Case Study 4

I began my training as a Therapeutic Radiographer in 1997 at the School of Radiography, based at both Ipswich Hospital and at University College Suffolk. Upon qualification I worked in the Radiotherapy Department at Ipswich Hospital; it was here that I started to consolidate the theoretical knowledge I had acquired whilst further developing professionally in gaining new clinical skills.

I always had a keen interest in education / teaching in the workplace. It originated in time spent observing my Clinical Lecturer supporting my peers and me on placement and thinking that I would one day like to be in a similar role. I later became a student mentor and enjoyed guiding my students, supporting them in their training, and sharing my knowledge with them.

My first experience of professional pedagogy was as Lecturer Practitioner / Superintendent Radiographer, a joint appointment at Guy's and St Thomas' Hospital and London South Bank University. The role enabled me to continue clinical work as well as be responsible for UG students undertaking their clinical placement. During this time I embarked on my PgC in teaching and eventually completed my MA in Interprofessional Healthcare Education in 2007. The whole process of studying for a Masters/ post-graduate qualification proved pertinent to my job by helping me develop my confidence in teaching.

Throughout my career I have been very fortunate to have had opportunities to work abroad and gain international experience. These experiences have been immensely rewarding and valuable personally and professionally. My first overseas experience was working at the Peter MacCallum Cancer Centre in Melbourne, Australia, where I was exposed to new treatment techniques, planning and dosimetry protocols. In my last year at the Centre I held the position of Clinical Educator / Deputy Radiation Therapist, with responsibility for training of RT students and interns, and an involvement in overall staff development.

My second overseas experience was in Las Vegas, United States where I studied for the ARRT qualification. During this period I undertook clinical work at the 21st Century RT Department and was involved in some teaching on the Radiation Therapy Technology programme at the College of Southern Nevada.

In 2009 I made the transition into full time academia as a Lecturer in Radiotherapy and Oncology at City University, London. I presently teach across the foundation, undergraduate, and postgraduate programmes. I am also a link lecturer and visit the students when they are on placement. This opportunity has allowed me to remain familiar with current clinical practice. Recently, I commenced studying for a PhD in Radiography, which I find challenging and at the same time thoroughly enjoyable and rewarding.

**Ricardo Khine**, Lecturer in Radiotherapy and Oncology, City University London

## 13. Managers

### 13.1. Outcomes for Service Manager

The following statements identify the outcomes to be demonstrated by a service manager.

1. Develop understanding, knowledge and skills in leadership and management theory and practice.
  2. Develop and maintain successful relationships at all levels within the organisation and with relevant external partners.
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3. Apply integrated management and clinical knowledge to challenging and novel situations.
4. Provide effective leadership for the whole service.
5. Contribute expertise to the development of services nationally.
6. Lead and support staff through transformational changes to develop and deliver better services.
7. Reflect on experiences and use the lessons learned to guide decisions and actions.
8. Comply with relevant legislation.
9. Take responsibility for radiation safety.
10. Develop and keep under review strategic and operational plans for the service.
11. Use resources effectively and efficiently to improve quality and productivity.
12. Plan and develop workforce capacity and capability.
13. Develop and promote a learning environment that values and supports staff and students.
14. Use and give professional supervision or coaching.
15. Maintain and enhance expertise through engagement with continuing professional development.
16. Engage in commissioning for imaging and oncology services.
17. Understand organisational culture and its implications for governance.
18. Establish and operate effective risk management and business continuity processes.
19. Develop and implement robust quality management systems.
20. Establish systems for the development, dissemination and implementation of clinical policies, procedures and guidelines.
21. Develop and use appropriate management and communication systems and networks.
22. Monitor trends and developments, evaluating their impact.
23. Evaluate opportunities to enter new markets and to introduce innovations and improvements that meet patients' needs.
24. Monitor the processes and performance of the service, benchmarking with comparable organisations.
25. Develop and use systems to provide data and information for performance management adhering to SMART (specific, measurable, achievable, realistic and time-limited) principles.

## 13.2. Links and Resources for Managers

### Introduction

The role of a senior service manager within imaging and oncology is wide ranging and education and training in leadership and management is available from providers both within and outside the health and social care sector. The following resources and links are to both generic and specific sources to support you with your development needs in leadership and management.

### SCoR links:

Website pages for managers

<https://www.sor.org/career-progression/managers>

<https://www.sor.org/career-progression/managers/useful-publications>

<https://www.sor.org/career-progression/managers/useful-links-resources>

Policy and Guidance Document Library

<https://www.sor.org/learning/document-library>

Most relevant:

A Framework for Professional Leadership in Clinical Imaging and Radiotherapy Services (2005)

<https://www.sor.org/learning/document-library?title=leadership>

Education and Professional Development Strategy: New Directions

<https://www.sor.org/learning/document-library/education-and-professional-development-strategy-new-directions>

### Education and Training Opportunities:

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e-learning including CORE-learning and e-learning for healthcare.

<https://www.sor.org/learning/e-learning/core-learning>

Customised Modules developed with Nelson Croom (in progress)

Developing draft modules and credit framework to support development of management skills in radiographers-University of Hertfordshire and the Institute for Employment Studies (in progress)

Post-registration courses

<https://www.sor.org/learning/post-registration-courses>

Short courses and study days

<https://www.sor.org/short-courses-study-days>

The National Radiology Managers Conference:

<https://www.sor.org/managers/national-conference>

CPD Now

<https://www.sor.org/learning/cpd/cpd-now>

IHM accredited manager programme <http://www.ihm.org.uk/en/education/ihmaccreditation.cfm>

Information about the NHS Graduate Management Training Scheme can be found

at: <http://www.nhsgraduates.co.uk/the-scheme.aspx>

## Other Links

Skills for health – competencies <https://tools.skillsforhealth.org.uk/>

CFA National Occupational Standards for management and leadership

<https://www.sor.org/eazines/toptalk>

NHS institute for innovation and improvement:

<http://www.institute.nhs.uk/>

NHS leadership framework:

</learning/document-library/education-and-career-framework-radiography-workforce/132-links-and-re-sources-managers>

NHS Improvement Diagnostics:

<http://www.improvement.nhs.uk/diagnostics/>

The NHS Knowledge and Skills Framework (NHS KSF) and the Development Review Process (October 2004)

[http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4090843](http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4090843)

Simplified KSF

<http://www.nhsemployers.org/PayAndContracts/AgendaForChange/KSF/Simplified-KSF/Pages/SimplifiedKSF.aspx>

NHS Employers

<http://www.nhsemployers.org/Pages/home.aspx>

Department of Health (England)

<http://www.dh.gov.uk/en/index.htm>

Health in Wales

<http://www.wales.nhs.uk/>

NHS Scotland

<http://www.show.scot.nhs.uk/>

Health and Social Care in Northern Ireland

<http://www.hscni.net/>

(All links accessed Nov 2012).

### 13.3. Service Manager Case Study

I entered radiography in 1983, training at Bolton Royal Infirmary before taking up my first post at Manchester Children's Hospital. Whilst at the Children's Hospital, I was the Society of Radiographers (SoR) representative and was elected as the national delegate to the SoR resulting in me being involved in national policy setting. I introduced the red-dot scheme to the hospital, delivering appropriate training to staff and was the first radiographer in the country to gain the MSc in Clinical Radiographic Reporting in 1999 and among the first to independently report trauma images.

I returned to the Royal Bolton Hospital as a Lecturer Practitioner taking responsibility for the education of undergraduate students as well as being course leader for the Reporting programme at the University of Salford. Whilst at the University, I gained a Postgraduate Certificate in Teaching and Learning in Higher Education. I also had an enterprise role which involved me identifying new markets and developing innovative CPD courses.

In 2007 I was appointed as Acute Radiology Clinical Manager at Bolton. I currently have responsibility for 110 members of staff from numerous professions and across a range of modalities. This requires effective leadership skills and the ability to manage many tasks simultaneously, prioritising and achieving deadlines. I undertake all management roles such as attendance, recruitment and selection, capability, risk management, development of business continuity plans, and I am involved in budget setting meetings. I also investigate and respond to complaints, incidents and breaches of policy.

I have had 7 years involvement with Lean methodologies, initially being involved in its introduction to healthcare when Bolton became a pilot site for the Institute of Healthcare Improvement (IHI) in 2005. I have since progressed through the Trust Lean academy currently working at Platinum standard. I am able to evaluate a service, identify change and successfully implement that change to bring about improvements in quality and productivity. This has enabled me to develop successful relationships at all levels within the Trust, as well as being able to support staff through change. I completed a Professional Doctorate in Health and Social Care in 2011, using mixed model research to evaluate the outcomes of a lean approach to the transformation of an orthopaedic radiology service and I facilitate and lead many Lean initiatives within the department. I am acknowledged as an expert in this field and I have been invited to work on two National projects relating to service improvement in Radiology.

I have striven to develop a learning environment within the department and support staff at all levels to develop themselves both professionally and personally, whether through attendance at the weekly CPD meetings that we hold or completion of Masters level programmes. I ensure that evidence-based radiography is practised throughout the department. I have maintained my clinical

skills, taking part in two clinical sessions each week. I also teach image interpretation skills at local HEIs. My relationships with external organisations have resulted in me acting in an advisory capacity at numerous HEIs on module development as well as undertaking fitness to practice assessments on lecturers/practitioners. I coach or mentor other managers both within the Trust and external to the Trust.

More recently, I have been involved in the commissioning of a new site for the Trust offering services to outpatients. This has required capacity and demand planning and the development of robust quality management systems as the site is remote from the main hospital setting. I take part in and support others doing audit, and as the Radiation Protection Supervisor, I undertake regular audit of radiation regulations. **Amanda Martin**, Radiology Clinical Manager, Bolton Royal Infirmary

## 14. Researchers

### 14.1. Outcomes for Researcher

The following statements identify the outcomes to be demonstrated by a researcher in their sphere of practice, where applicable.

1. Develop understanding, knowledge and skills relevant to audit and research.
2. Contribute to a research environment that supports and encourages local, national and international class research.
3. Work towards expanding the body of knowledge for the profession.
4. Promote collaboration between clinical departments, education providers and other stakeholders to afford greater access to information resources.
5. Participate in a mentoring scheme which nurtures and supports those new to research.
6. Initiate and lead audit and research that is ethically sound.
7. Disseminate research outcomes through presentation, publication and the establishment of web- based resources and/or forums.
8. Collaborate with others to encourage interdisciplinary research.
9. Raise research awareness and promote a culture of creativity, enquiry and critical thinking.
10. Establish clear and defined research priorities involving public and patients appropriately.
11. Seek external funding for research.
12. Organise research events to showcase research being undertaken.
13. Maintain and enhance expertise through engagement with continuing professional development.
14. Use and give professional supervision.
15. Implement research outcomes appropriately.

### 14.2. Links and Resources for Researchers

#### Introduction

The objects for which the Society and College of Radiographers (SCoR) is established include: “To promote study and research work in radiography and radiotherapeutic technology and allied subjects and to publish the results of all such study and research.”

Evidence-based practice in health care means that all clinical decisions made should be based on research studies and that these research studies are selected and interpreted according to some specific norms characteristic for evidence-based practice. In radiography, it is about understanding and being involved in both using and determining what is best practice so that the highest quality service can be delivered. Radiographers need to gather accurate information or evidence to support their professional practice

## SCoR links:

Website page for Researchers

<https://www.sor.org/career-progression/researchers>

Research group

Constituted in 2002, the aim of the Research Group is to help the SCoR fulfil its objectives, by encouraging all radiographers to use research in their practice and to promote radiography's unique knowledge base.

<https://www.sor.org/career-progression/researchers/research-group>

National Researcher Profiles

The DH researcher profiles are for all AHPs to achieve uniformity and parity across the roles. Bands range from 6 to 8d

<https://www.sor.org/career-progression/researchers/moving>

Research help

Information on research support and relevant articles can be found at:

<https://www.sor.org/career-progression/researchers/undertaking-research>

<https://www.sor.org/career-progression/researchers/getting-started>

<https://www.sor.org/career-progression/researchers/moving>

Funding sources

Details of SCoR funding support for research can be found at

<https://www.sor.org/about-us/awards/corips-research-awards>

Policy and Guidance Document Library <https://www.sor.org/learning/document-library> contains a variety of relevant documents, the most relevant of which are:

SCoR Research Strategy and Research Priorities

The Society and College of Radiographers' (SCoR) third Strategy for Research continues the work of previous editions. This recognises the important link between research and clinical practice, ensuring an evidence-based culture for the radiographic profession. SCoR has determined strategic drivers and a five year plan for the profession to help managers produce their own departmental strategies for research and to aid those in the profession who wish to be research active but are unsure of the help and support available.

<https://www.sor.org/learning/document-library/research-and-radiography-profession-strategy-research-2010-2015>

[https://www.sor.org/system/files/section/201109/SCoR\\_research\\_priorities.pdf#overlay-context=career-progression/researchers](https://www.sor.org/system/files/section/201109/SCoR_research_priorities.pdf#overlay-context=career-progression/researchers)

Research Radiographers' starter pack

The purpose of this pack is to provide a useful aid and support mechanism for radiographers starting out in research. The pack has been compiled by a group of experienced research radiographers and focuses on areas fundamental to development. It offers advice on appropriate training and education needs, highlights the importance of the legal requirements required to participate in research and suggests ways of accessing further information.

<https://www.sor.org/learning/document-library/acornscor-research-radiographer-starter-pack-therapeutic-and-diagnostic-radiographers>

Code of Conduct and Ethics

<https://www.sor.org/learning/document-library/code-conduct-and-ethics>

The Scope of Practice 2009

<https://www.sor.org/learning/document-library/scope-practice-2009>

## Other links:

The Allied Health Professions Research Network (AHPRN) also aims to increase research capability

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and capacity by providing research support. The network is currently formed by 21 regional 'hubs' which offer researchers assistance by way of peer review, mentorship schemes, sharing good practice, disseminating information and offering advice. <http://www.ahpf.org.uk/RFAHP.htm>

Department of Health (England)

<http://www.dh.gov.uk/en/index.htm>

Health in Wales

<http://www.wales.nhs.uk/>

NHS Scotland

<http://www.show.scot.nhs.uk/>

Health and Social Care in Northern Ireland

<http://www.hscni.net/>

The National Institute for Health Research (NIHR)

Includes information about health research and development, funding streams such as RfPB, calls for proposals and Fellowships, the processes required for gaining ethics approvals and the facilities and research networks provided by the NHS. <http://www.nihr.ac.uk/>

NHS Evidence

Provides free access to clinical and non-clinical information: local, regional, national and international. Information includes evidence, guidance and Government policy.

<http://www.evidence.nhs.uk/>

The Medical Research Council (MRC)

Their mission is to promote research into all areas of medical and related science with the aims of improving the health and quality of life of the UK public.

<http://www.mrc.ac.uk/index.htm>

Research Councils UK (RCUK)

A strategic partnership of the UK's seven Research Councils. <http://www.rcuk.ac.uk/Pages/Home.aspx>

UK Clinical Research Collaboration (UKCRC)

Brings together the major stakeholders that influence clinical research in the UK and particularly in the NHS.

<http://www.ukcrc.org/>

National Cancer Research Institute (NCRI)

A partnership of the major cancer research funding bodies from the Government, charity and private sectors. Its purpose is to accelerate and advance cancer research for the benefit of patients and the UK cancer research community.

<http://www.ncri.org.uk/>

National Institute for Health and Clinical Excellence (NICE)

Working with clinical bodies, NICE systematically appraises health interventions before they are introduced into the Health Service. It offers clinicians clear guidelines on which treatments work best for patients and which do not.

<http://www.nice.org.uk/>

INVOLVE

Aims to ensure improvement in public involvement in Research and Development in the NHS, public health and social care. The way that decisions are made about what should be a priority for research; the way that research is commissioned, chosen and funded

<http://www.invo.org.uk/>

The Academic Clinical Oncology and Radiobiology Research Network (ACORRN)

Its aim is to develop radiotherapy research in the UK by networking and supporting individuals and

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groups, developing an integrated UK strategy and infrastructure to support.

<http://www.actionradiotherapy.org/>

(All links accessed Nov 2012)

### 14.3. Researcher Case Study 1

I became interested in research whilst undertaking A level psychology: I was fascinated that there was more than one answer or perspective to a problem. I was also fascinated with technology and how things work so a career in diagnostic radiography seemed ideal, the perfect mix of patient psychology and technology. My passion for asking questions meant that I thoroughly enjoyed my research module as part of my undergraduate degree at the University of Hertfordshire, and that was when I realised research and radiography could be combined.

I loved working as a radiographer and initially began to specialise in trauma and CT, but I found it difficult to maintain my interest in everyday work when there was so much more to learn. My early clinical years taught me that despite all our advances in medical technology, there was still so much more that wasn't known.

At that time (2000) there was a move within the NHS towards the 4 tier structure. Before this change could be implemented there was a need to know more about competencies and occupational standards. I had an opportunity to move back to the University of Hertfordshire as a researcher on a 1 year project on the development of occupational standards in medical imaging and oncology (Prime N, Mellor F.E. et al. 2000). During this project I learnt a lot about clinical governance and qualitative research methods, however I missed clinical practice so I registered as a bank radiographer at two local hospitals and undertook out of hours shifts covering holidays and sickness. This was when I realised there was overlap between research and clinical practice with the former feeding the latter, but equally the gap between them was huge with little understanding between the two sides. This was the point where my aim became to combine radiography with research in a more practical way, and to encourage radiographers to become more engaged with research at all levels.

This motivation encouraged me to seek out further training and I found many free courses available from understanding ethics to the local Research Design Service (RDS), as well as submitting abstracts to conferences where I learnt from other presenters. At the same time I joined the Anglo European College of Chiropractic in Bournemouth to help develop fluoroscopy to measure the movement of the lumbar spine. This was a perfect opportunity to combine radiography with research and also learn about quantitative research methods. I also gained a fascinating insight into the world of back pain and how a multi-disciplinary approach, especially involving AHPs and MSK practitioners, was essential.

Once again I also made contact with a local hospital and offered my services as a bank radiographer which satisfied my other clinical interests. I joined the Society of Radiographer's research group in 2006 and later the Research Forum for Allied Health Professions in 2008. These groups gave me a great overview of how changes at the top are influenced by evidence from the shop floor, how this evidence needs to be underpinned by good clinical research and effective dissemination and how working across professions in a truly multi-disciplinary way is essential, not just across clinical professions but also across academics and researchers.

I admit my bias is for research but this is inextricably linked to education and clinical practice, they do not stand alone. Working in both clinical and academic settings (some of it voluntary) made the new PhD funding scheme from the National Institute for Health Research an ideal opportunity. I was successful in gaining a fellowship in 2009 for a part time PhD using fluoroscopy to look at inter-vertebral motion. This fellowship has opened many doors including access to much wider support and encouragement as a whole and in relation to my PhD. I also met many other dynamic AHPs, nurses and midwives who believe that their passion, research and clinical practice can change their service for the better. Having such a peer group is great personal motivation.

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I am in a really fortunate position with the perfect mix of research, clinical practice and education. I enjoy working as a radiographer and I also enjoy engaging with the profession on a wider level, using and synthesising evidence to influence practice and policy, and encouraging radiographers to engage with research. The NIHR fellowship also brings responsibilities and I am always flattered, and bemused, to be asked to speak at conferences. On a more serious note however I hope my story can encourage other radiographers to grasp the opportunities available to them and to forge their own pathway.

**Fiona Mellor**, Research Radiographer/NIHR Clinical Doctoral Research Fellow, Anglo-European College of Chiropractic, Bournemouth. UK.

## Reference

Prime N, Mellor FE et al. (2000). Imaging and Oncology: The Future Development of Occupational Standards - Project to Determine the Potential for the Continued Development of Occupational Standards in Imaging and Oncology. N. Prime, University of Hertfordshire. UK.

## 14.4. Researcher Case Study 2

Upon qualifying, I wanted to get a job and practice radiography, as did the majority of graduates from my programme. The thought of returning to full-time studying was a long way from my mind, even though this possibility had been mentioned to me in the final year of my programme. However, while I was working at Guy's at St Thomas' hospitals, my role involved rotation through the osteoporosis screening and research unit. My time here exposed me to research patients and volunteers and I became increasingly aware of the scope of research being undertaken, along with the fact that I was working with international leaders in this area. During this period a PhD studentship was advertised and one of the staff within the department suggested I should apply. My initial response was that I would not be able to afford the pay cut, but she just suggested that if you really want to do something you find ways of affording it. This led me to apply and I was somewhat surprised when I was offered the position. I felt privileged to have been offered such an opportunity and there was no question that I would take the studentship, but stepping out of a secure and structured career and into the unknown was a bit daunting.

When I started the PhD it was very different to working clinically. Firstly, there was the financial shock, with a studentship stipend resulting in a huge pay cut. However, some bank and on-call shifts sorted this side of things out and also let me feel that I was maintaining my skills as a radiographer. Secondly, there was the type of work. I went from spending all day seeing patients in a relatively co-ordinated and structured day, to spending much of my time reading and preparing ethics applications. I was expected to be very much self-directed and, while my supervisors were fantastic and pointed me in the right directions, it was also clear that it was down to me to decide on what I needed to do and when. Studying also did not stop when I got home, there were always papers to read and work to catch up on. I was also sent to Israel for training on the equipment I was going to use. This was a new experience, being based in a factory setting in a different country and experiencing how research and development worked in industry.

I was lucky to be based in an excellent unit, with a very supportive environment and plenty of help at hand. The PhD I did was clinically based and, as such, involved recruitment of patients and volunteers. This was challenging at first and the thought that the study was reliant upon people agreeing to do the research was a bit unnerving, but once the first few volunteers came through and more followed, my confidence grew. The work involved in undertaking the PhD took me on a steep learning curve to begin with, followed by a period of steady data collection. Another steep learning curve came when the data analysis commenced and I quickly had to get acquainted with statistical methodologies. Writing up was another mammoth challenge, which led to a large thesis and five

journal publications. Completing a PhD is rather like training to undertake research. You make some mistakes along the way and at the end come out with the experience to know what works and how you might do things differently for your next study. It also makes you realise that the more research you do, the more there is that needs to be done!

During my induction I was told that once you complete a PhD in a subject you would be a world class researcher in that field. I never believed this until I was at a conference in the USA soon after completing my PhD and an eminent professor, whose work I had referenced a lot came up to me to discuss my work with me and complimented me. This shows that once you start publishing your work, all sorts of people will read it!

Completing a PhD has opened a lot of doors for me and my first job was a post-doctoral research position. This provided me with good experience and enabled me to consolidate my research skills and move forward into new studies. I was also able to apply for funding for studies, all of which helped me to learn my trade as a researcher. During this time I also started teaching medical students and realised how much I enjoyed teaching and watching the development of the students who had studied my module. The down side of my post-doctoral positions was that they were always fixed term contracts, so I was aware that if funding did not come in, I may not have a job next time my contract was up for renewal. I then saw an advertisement for a lectureship, which looked like someone had taken my CV and written an advertisement around it. I decided I should apply and was lucky enough to be offered a lectureship at the University of Exeter. The transition was tough and the volume of teaching and administration was much greater than during my post-doctoral positions, so I found my research taking a back seat for a while. However, after some time, I found that I could balance research and my other duties and was successful at achieving funding for some studies and making the clinical contacts locally who collaborate on the research studies I undertake. I have found that my research skills and educational skills are evolving and developing as I go on and I still have a passion for research, in particular clinical research, and still collaborate and publish with my PhD supervisors. I think this passion spills over to my students and I am able to provide good supervision for our undergraduate and postgraduate students undertaking their research projects as well as providing high quality education in my specialist areas.

**Dr Karen Knapp, Senior Lecturer, University of Exeter**

## 14.5 Case Study 3 Carolyn Costigan

Principal Research Radiographer Manager of R&D Imaging Support Unit (Band 8a) Nottingham University NHS Trust

- ♦ I qualified in Dublin as a diagnostic radiographer (DCR), specialized in MRI when I moved to the UK in 1995, obtained an MSc in MRI in Lancaster in 2000. Subsequently moved to the Sir Peter Mansfield MR Centre at University of Nottingham to work in MR research.
- ♦ Presently in an NHS post: I provide leadership for the clinical research activities of the Imaging R&D Support Unit, including organizing trials within Radiology and Nuclear Medicine, assisting with the development of grant applications, conducting my own MRI research projects, assisting with the implementation of research findings into clinical practice at the MR and CT units and day-to-day managing the Unit's task of authorizing research studies involving radiation and imaging.
- ♦ I am responsible for promoting and developing research opportunities for the radiographers at NUH NHS Trust.
- ♦ I do one clinical MR session weekly .
- ♦ I am starting a part time PhD in translational research with the School of Medicine at Nottingham University in January 2014.
- ♦ This is exciting post with a mixture of research and clinical work

**Carolyn Costigan DCR MSc**

## 14.6 Case Study 4 Sarah Barber

### Advanced Radiographer – Trials and Research

#### Career pathway

I graduated from Leeds University in 1999; I began working in Norwich soon after. I first become involved with Clinical Trials in 2003 and this became a more formal part of my role in 2008 when external funding from the Comprehensive Local Research Network (CLRN) was secured, this facilitated my role to be backfilled for two days per week so I could be released from clinical duties to focus on Clinical Trials within the Department. Initially this was very much a desk based role. A lot of time was spent implementing new trials within the department and ensuring that the QA was completed.

In 2010 the department secured funding for eight Advanced Practice roles, one being in Trials & Research.

A colleague has taken on my previous role which continues to be funded by the CLRN and this has facilitated me in taking a more patient focused approach to Clinical Trials.

#### Case presentation

Since being in post I have successfully completed 3 M-Level modules and the Advanced Communication Skills course hosted by NCAT. This studying has enabled me to obtain informed consent from patients who are participating in radiotherapy studies. This has reduced the workload for the Consultants and streamlined the trials pathway as I follow the patient through to randomisation, ensuring that all trial requirements are scheduled and completed in a timely fashion ready for treatment.

We have also recently finished recruiting into our first official departmental study. Part of my role is to develop and encourage research to be done within the department suitable for publication. A research pathway is being developed to encourage everyone to put their ideas forward and ensure that what we are practicing is actually evidence based.

#### Future Aims

The aims for the future are to continue to develop departmental research and to publish our findings.

I am currently undertaking further M-level study and I hope to utilise this current module to enable me to start conducting on treatment reviews and eventually the follow up appointments for patients participating in radiotherapy studies. Patients who are participating in either departmental or national studies may require additional reviews for data collection or clinical reasons and it is important to have a pathway in place as well as an individual as a point of contact to ensure this group of patients is managed effectively.

#### Conclusion

There are two key components to my current role and as they develop I believe they may become separate roles in their own individual right. Feedback from conferences and meetings has shown that this is not a feature unique to my department, often the terms trials and research are banded together as one role. Although there are obvious similarities between the two roles, I believe in the future as each component expands they will need to become separate from each other in order to be able to develop each role to its full potential.

#### Sarah Barber

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