



NHS Education for Scotland
Role Development for Radiographers,
& Radiography Support Staff
within Scotland

Final Project Report
March 2006



Acknowledgements

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Foreword

Delivering for Health (Scottish Executive, 2005) recognises the importance of developing sustainable clinical teams and building on the existing platform of role development for nursing and the allied health professions.

Role development for radiographers and radiography support staff is central to sustaining clinical teams within radiology and oncology services and is already supporting faster access to diagnosis and treatment. There is an increasing body of evidence to support its effectiveness, for example, in areas such as plain film reporting. Radiography workforce redesign allows a spectrum of staff to use their skills to best effect, building capacity across the team and enhancing job satisfaction.

This report on Role Development for Radiographers and Radiography Support Staff outlines the methodology used and the outcomes of the NHS Education for Scotland project work streams, but also importantly highlights the required success factors for the implementation of role development. The first builds on the current platform of role development in the radiography workforce, using the existing evidence base and learning from models in practice. The second focuses on engagement and support of the radiography workforce, radiologists, oncologists and other members of the healthcare team. Partnership working with other stakeholders in workforce planning, strategic planning, senior management, professional bodies and education is recognised as essential. The third success factor highlights key requirements in education and training, including investment, access and capacity for mentorship.

Since the project commenced, there have been a number of advances in radiology, for example computed tomography colonography and cardiac magnetic resonance imaging examinations, which will have implications on future service provision and workforce requirements. The process of workforce redesign is therefore a continuum and requires ongoing review and change.

This report hopefully provides a lever for change to clinical teams providing front-line services and to those that support them in their everyday efforts to make services better for patients and the public.

I have been privileged to chair the multi-disciplinary steering group for this project as representative of the Royal College of Radiologists and am grateful to all members of the group who have given their time, expertise and consideration to the project over many months. I am also grateful to the project management team for their dedication to completion of this large and important piece of work.



Liz Robertson
Consultant Radiologist

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Executive Summary

Introduction

The delivery of high quality patient and public centred care by NHS Scotland is dependant on the people that work in it. The development of a sustainable and flexible workforce that can respond to the changing needs of healthcare is underpinned by responsive and accessible education and training.

Radiographers in both diagnostic and therapy are key members of the health care team, covering an increasingly diverse spectrum of clinical fields and modalities. For radiographers to support better access to and provision of diagnostic and therapeutic services, it is essential that they align and develop their roles to embrace innovative ways of providing services to the benefit of patient and the public in Scotland.

Patients, their families and carers want prompt access to both diagnostic and therapeutic services. The waiting time targets specified in *Fair to All, Personal to Each* (Scottish Executive, 2004) and *Cancer Waiting Times: National Delivery Plan* (Scottish Executive 2005) aim to shorten the time people wait for care, diagnosis and treatment. The diagnostic standards announced in the Spring of 2005, specify that no patient will wait more than 9 weeks for eight key tests and that these standards will be included within a maximum wait of 18 weeks for outpatients or inpatient/day case episodes.

Delivering for Health (Scottish Executive, 2005) reinforces the need for shorter waiting times and better community based access to diagnostics and emphasises the need to develop sustainable health care services for the future, through mainstreaming change and improvement. Patient-centred care requires effective clinical teams, equipped and empowered to implement service change and develop new roles and skills.

Workforce redesign requires personal and professional development and life long learning for a broad range of healthcare staff. The NHS Education for Scotland Strategic Work Plan 2005-2008 outlines a direction of travel that is responsive to the changing needs of healthcare provision and supports future workforce development, including role development and new ways of working.

The Society and College of Radiographers, in response to the growing need for change and modernisation within the health service, published a *Strategy for Professional and Educational Development of Radiographers* (College of Radiographers, 2002), advocating widening of entry pathways into radiography and supporting development of radiographers into complex and challenging new roles, using the 4-tier career progression framework.

The Scottish Executive Health Department published *Building on Success - Future Directions for the Allied Health Professions in Scotland* (Scottish Executive, 2002), advocating the further development of healthcare professionals to meet the diversity and flexibility required of a modern health service. The Scottish Executive Health Department (SEHD) then announced financial support for skill mix and role development for diagnostic and therapeutic radiographers and radiography support staff in Scotland.

The Project: Role Development for Radiographers and Radiography Support Staff

NHS Education for Scotland (NES) was commissioned to undertake the necessary work and a project *Role Development for Radiographers and Radiography Support Staff in Scotland* was established.

The **key drivers** for this initiative were identified as:

- Increased patient expectations of earlier diagnosis and intervention.
- Expansion of cancer services and cancer waiting times.
- Current and projected demand for clinical radiology services.
- Workforce challenges.
- Needs of an ageing population.
- Historical career structure.
- Limited development for radiography staff.
- Waiting times targets.

The **aims** of the project were:

- To facilitate increased support for role development for radiographers and radiography support staff through stakeholder engagement, including radiography staff and managers, radiologists, oncologists and other medical and clinical colleagues.
- In identified implementation sites, to demonstrate evidence of a plan to implement the 4-tier structure, with delivery of the initial steps of the plan and identification of the potential impact on patient care.
- To ensure project objectives and work streams reflect the values of patients and the public.
- To develop a minimum of five post-graduate curricula with associated course material, able to be accessed (in Scotland) flexibly by radiographers.

The **potential benefits** for role development were identified as:

...for patients

- Improvement in knowledge base and skills of radiography staff across a spectrum of grades will enhance the quality of care when the patient needs it.
- Reduction of reporting times, waiting times and therefore, faster diagnosis and delivery of treatment for patients.
- Increased recognition of the importance of patient/public involvement in the future provision of healthcare.
- Improved communication between services, with recognition of benefits in collaboration across and between health board areas.

...for staff

- The 4-tier model gives recognition of the current and future role of radiographers and their career development. It is vital for future recruitment and retention of radiographers in the context of increased competition with regions in the UK that are further advanced in implementing the 4-tier model.
- Increased motivation for radiography support staff due to recognition and support of the need for their future education and career pathways.
- Reduced vacancies and staff turn-over.
- Raising awareness, and the understanding, of the benefits and implications of the career progression framework for radiography staff, radiologists, oncologists, other medical colleagues and senior management.

Emerging Themes and Recommendations

The **emerging themes** are collated from all work streams in the project and are summarised below with associated recommendations.

Emerging Theme 1: Building on existing practice

There is an existing and growing platform of role development in both diagnostic and therapeutic radiography, across a broad range of clinical areas but variable uptake across Scotland.

The three NES Implementation sites evidenced commitment from relevant stakeholders to the implementation of the 4-tier model by clearly defined short-medium term action plans.

Recommendations

- 1a NHS Boards** individually and working collaboratively through regional planning arrangements, should commit to supporting radiography role development in the context of sustaining diagnostic imaging and radiotherapy service provision in Scotland. This should take account of the work of the National Radiotherapy Advisory group and link with the work of the **Diagnostic Collaborative** and local stakeholders.
- 1b NHS Boards** individually and working collaboratively through regional planning arrangements, should review the current models in practice, the existing evidence base and the work from the NES Implementation Sites to progress the implementation of the 4-tier model, informing pay modernisation plans and workforce plans.
- 1c NHS Boards** working with the **National Diagnostics Delivery Team** and the **National Waiting Times Unit** should develop proposals for investment in longer-term sustainable change, supported by the redesign and improvement work facilitated by the **Centre for Change and Innovation**.
- 1d** The **Allied Health Professions Consultant in Cancer** within the Cancer Team at the Scottish Executive Health Department should support **NHS Boards** in role development, new roles and succession planning for diagnostic and therapeutic radiographers.
- 1e Radiology and radiotherapy services** should gather information on how role development and redesign will add value to the patient journey and contribute to local and national targets. Measures should be built in to assess the impact on the patient experience as well as job satisfaction. The impact of role redesign should be shared locally, regionally and nationally.

Emerging Theme 2: Engagement and support

The support and engagement of the radiography workforce, radiologists, oncologists and other healthcare colleagues are paramount to the progression of role development.

The radiologist survey reported 82% of responding radiologists and 100% of responding oncologists, support radiographer role development. Concerns remain around the medico-legal implications and the capacity for mentorship.

Recommendations

- 2a** The **Society and College of Radiographers** should to continue to raise awareness and understanding of the 4-tier career progression framework and achieve clarity regarding advanced practice and a greater understanding of the Consultant Radiographer role.
- 2b** The **Scottish Executive Health Department** and **NHS Education for Scotland** should work in partnership with the **Royal College of Radiologists**, the **Society and College of Radiographers** and **service providers** in NHS Scotland to establish a specialist advisory board to focus on a collaborative approach to sustainable services in Scotland.
- 2c** Current joint working by the **Society and College of Radiographers** and the **Royal College of Radiologists** should result in a published document clarifying joint understanding of medico-legal and governance issues. **NHS Boards** should consider this in the development of their governance frameworks.

Emerging Theme 3: Consultant practitioner development

Sustainable clinical teams in radiology and radiotherapy departments will need effective clinical leadership from radiographers as well as radiologists and oncologists. The development of consultant radiographers has been successful in other parts of the UK but the first consultant radiographer has not yet been appointed in NHS Scotland. Funding has been allocated for ten AHP consultant posts for 2006/2007 by the Scottish Executive Health Department.

Recommendations

- 3a** The **Allied Health Professions Consultant in Cancer** within the Cancer Team at the Scottish Executive Health Department should provide advice and facilitate the development of sustainable roles for consultant diagnostic and therapeutic radiographers, including the leadership and research & development aspects of the roles.
- 3b** The **AHP Professional Officer** at the Scottish Executive Health Department, in consideration of the Career Framework, should make explicit links between the development of consultant practitioners and the career framework in partnership with **Skills for Health** and **NHS Education for Scotland**.
- 3c** The **specialist advisory board** should consider how consistency and transferability of skills could be achieved for advanced practitioners and consultant roles, to ensure sustainability of service provision in areas of national priority.

Emerging Theme 4: Assistant Practitioners and associated educational support

The use of radiography support staff is widespread in both diagnostic and therapeutic radiography and will continue in the future. The development of new assistant practitioner roles has to date been limited in Scotland. The educational support for the assistant practitioner role is recognised as a requirement for role development and mechanisms to support this are in development.

Recommendations

- 4a Radiography services** should implement the first level of the 4-tier model by optimising current and future educational opportunities for their support staff.
- 4b NHS Education for Scotland** should develop the systematic methodology adopted in the consensus workshop, into a transferable toolkit for skills maximisation. This could be used by clinical teams for local skill mix reviews.
- 4c** The career pathway for assistant practitioners should be progressed by articulation between the educational programmes for assistant practitioners (in which the HNC is embedded) and the University courses for under-graduate radiography. **NHS Education for Scotland** should lead this in partnership with Higher Education, Further Education, Scottish Qualifications Agency, Society and College of Radiographers and NHS Scotland.
- 4d NHS Education for Scotland** should work with stakeholders to support radiography support staff in maximising current and future educational opportunities in support of role development.

Emerging Theme 5: Education & training for Advanced and Consultant Practitioners

Post-graduate programmes for radiographers in Scotland need to be accessible to support the range of knowledge and skills throughout the 4-tier career progression framework. Data from NHS Greater Glasgow would suggest a shortfall in the number of radiographers with the post-graduate qualifications to underpin a substantial and immediate increase in advanced practice. This requires investment of staff time and financial support to allow radiographers to participate in post-graduate programmes.

The NHS Education for Scotland scoping exercise (2004) highlighted that there was limited educational support for role development for radiographers in Scotland, with the majority of educational programmes based in English Institutions.

In the course of the NHS Education for Scotland Project, five post-graduate programmes have been commissioned by NHS Education for Scotland and are now being delivered in Scotland. In addition to these programmes, an MSc in medical ultrasound (Glasgow Caledonian University) and a range of clinical image reporting modules (University of Dundee) have been developed.

Mentoring is required for both radiographers in advanced practice and radiologists in training. Radiologist and oncologist support for mentoring are vital, in terms of both training and governance arrangements.

Recommendations

- 5a NHS Boards** individually and working collaboratively across regions, should consider the development and educational needs of the radiography workforce required to underpin the future integrated workforce in the context of service redesign and new patient pathways. This should be reflected in local learning plans.
- 5b NHS Education for Scotland**, in partnership with NHS service providers and Higher Education Institutions should continue to participate in the review of educational requirements of clinical radiology and oncology teams in response to the future advances in radiology and oncology.
- 5c Higher education institutions** in partnership with **NHS service providers** should keep under review the curriculum for radiography under-graduate programmes as the knowledge and skill requirements develop and extend with scope of practice.
- 5d The specialist advisory board** should explore creative solutions to the mentoring aspects of advanced practitioner education and development. Consideration should also be given to developing opportunities for an integrated approach to the future training of trainee radiologists and reporting radiographers.
- 5e NHS Education for Scotland** should work with stakeholders to support radiography staff in maximising current and future educational opportunities in support of advanced practice and role development.

1.0 Background

1.1 Strategic Context

Modernisation of NHS Scotland is essential to ensure the changing healthcare needs of Scotland are met as laid out in the *National Framework for Service Change in the NHS in Scotland* (Scottish Executive, 2005). Fundamental to this is the development of a sustainable, flexible and competent workforce.

The development of a new model of service delivery within radiography, known as the 4-tier model was initiated in 1999, in *Radiography Skills Mix: a report on the 4-tier service delivery model* (Department for Health, 2003). The 4-tier model aims to maintain and develop practice standards, promote new roles, extended roles and advanced practice together with improvement of recruitment and retention by widening routes of access to clinical careers.

The delivery model has four levels as follows:

Assistant Practitioner:	An assistant practitioner performs protocol-limited clinical tasks under the direction and supervision of a registered practitioner.
Practitioner: (Registered)	A practitioner autonomously performs a wide-ranging and complex clinical role; is accountable for his or her own actions and for the actions of those they direct.
Advanced Practitioner:	An advanced practitioner, autonomous in clinical practice, defines the scope of practice of others and continuously develops clinical practice within a defined field.
Consultant Practitioner:	A consultant practitioner provides clinical leadership within a specialism, bringing strategic direction, innovation and influence through practice, research and education.

From the professional perspective, the Society and College of Radiographers, in response to the growing need for change and modernisation within the health service, published a *Strategy for Professional and Educational Development of Radiographers* (College of Radiographers, 2002), advocating widening of entry pathways into radiography and supporting development of radiographers into complex and challenging new roles.

In October 2002, the Minister for Health and Community Care, announced financial support for skill mix and role development for diagnostic and therapeutic radiographers in Scotland. He indicated that radiographers in both diagnostic and therapeutic radiography are key members of the health care team and are ideally placed to progress development of patient centred services. Involved in a spectrum of health care including child health, obstetrics, cancer, stroke, trauma, orthopaedics and heart and lung disease, radiographers can contribute to modernisation of a significant range of Scottish services. It is therefore appropriate that their roles embrace innovative ways of providing services for the benefit of patients in Scotland.

NES was commissioned by SEHD to lead a project entitled *Role development for radiographers and radiography support staff in Scotland*.

Key drivers for this development were identified as:

- Increased patient expectations of earlier diagnosis and intervention.
- Expansion of cancer services and cancer waiting times.
- Current and projected demand for clinical radiology services.
- Workforce challenges.
- Needs of an ageing population.
- Historical career structure.
- Limited development for radiography staff.
- Waiting times targets.

1.2 Scoping Exercise

The *Role Development for Radiographers and Radiography Support Staff in Scotland* project commenced with the completion of a comprehensive scoping exercise in April 2004. The aim of the scoping exercise was to review the extent of existing role development of both radiographers and radiography support staff within Scottish radiography (diagnostic and therapeutic), together with associated education provision to underpin the current role development requirements. The exercise also identified opportunities for future role development and education frameworks which would need to be put in place to support the development.

1.2.1 Methodology

Fifty-three Scottish radiography centres were invited to provide information through questionnaire and semi-structured interviews relating to the areas of role development of registered radiographers, assistant practitioners and support staff. Detail of the nature of the roles, available training and educational provision were requested. Centres were also asked to identify areas of role development they would wish to implement and existing barriers to development. Forty-six centres responded. Five were regional responses. Responses were received from all five radiotherapy centres.

1.2.2 Findings

Four main themes emerged from the scoping exercise:

- Broad range of role development
 - Limited role development opportunities for radiography support staff
 - Limited specialist post-graduate education in support of role development in Scotland
 - Limited educational support for radiography support staff
- a. There was a **broad range of role development** (diagnostic and therapeutic) in Scotland with considerable variation in uptake. This was particularly true in diagnostic radiography, with more consistency in therapeutic radiography - see Figures 1 and 2.

Figure 1: Profile of role development in diagnostic radiography in Scotland, at Spring 2004
35 responses from diagnostic centres

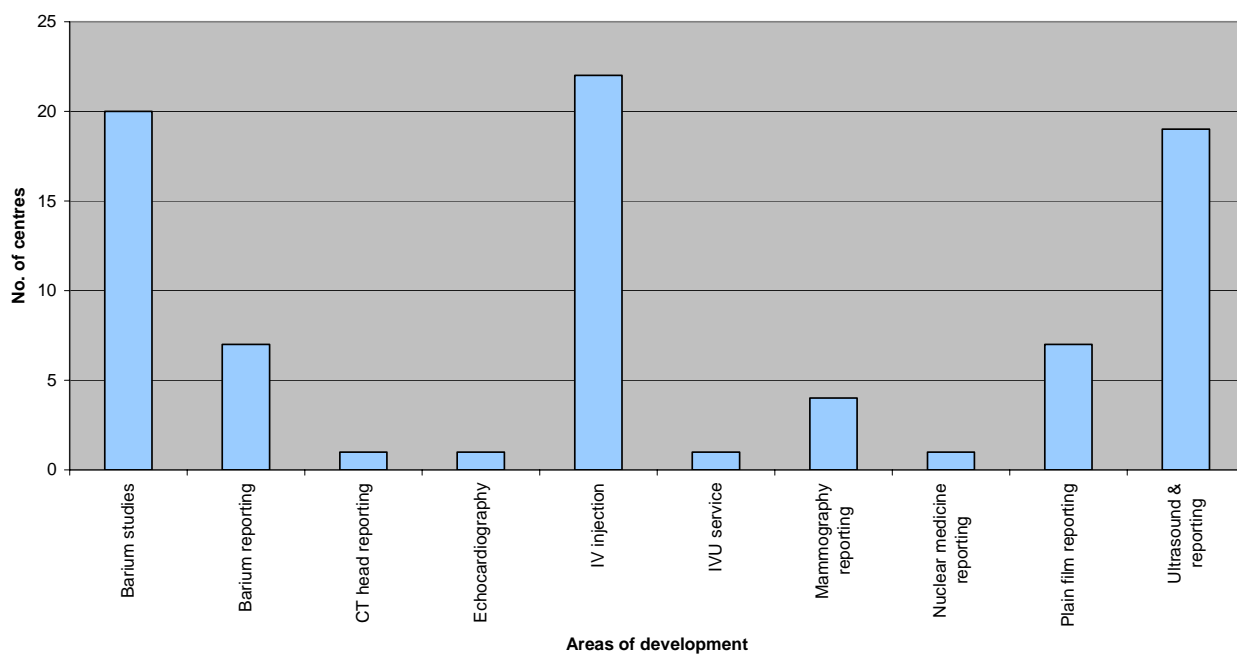
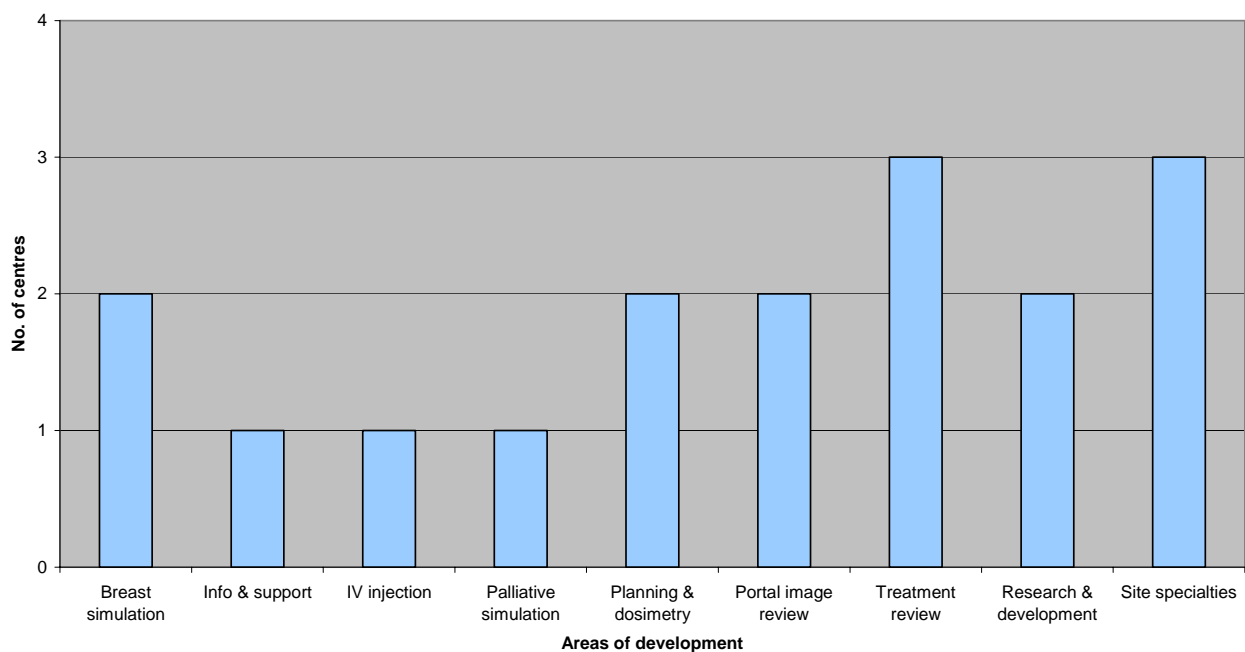


Figure 2: Profile of role development in therapeutic radiography in Scotland, at Spring 2004
5 responses from therapeutic centres



- b. There were **limited role development opportunities for radiography support staff**. Their use was widespread in diagnostic radiography with some commonality in scope of practice. There was no formal assistant practitioner role development in diagnostic radiography. Their use was emerging in therapeutic radiography with variation in scope of practice. Only one centre had a formal assistant practitioner role.

- c. There was **limited access to specialist post-graduate education** to support role development Scotland. Most of the relevant educational programmes were based in English Institutions. Refer to Figures 3 and 4.

Figure 3 - Higher Education Institutions (HEI) & subject accessed by diagnostic centres in Scotland to support role development, at Spring 2004

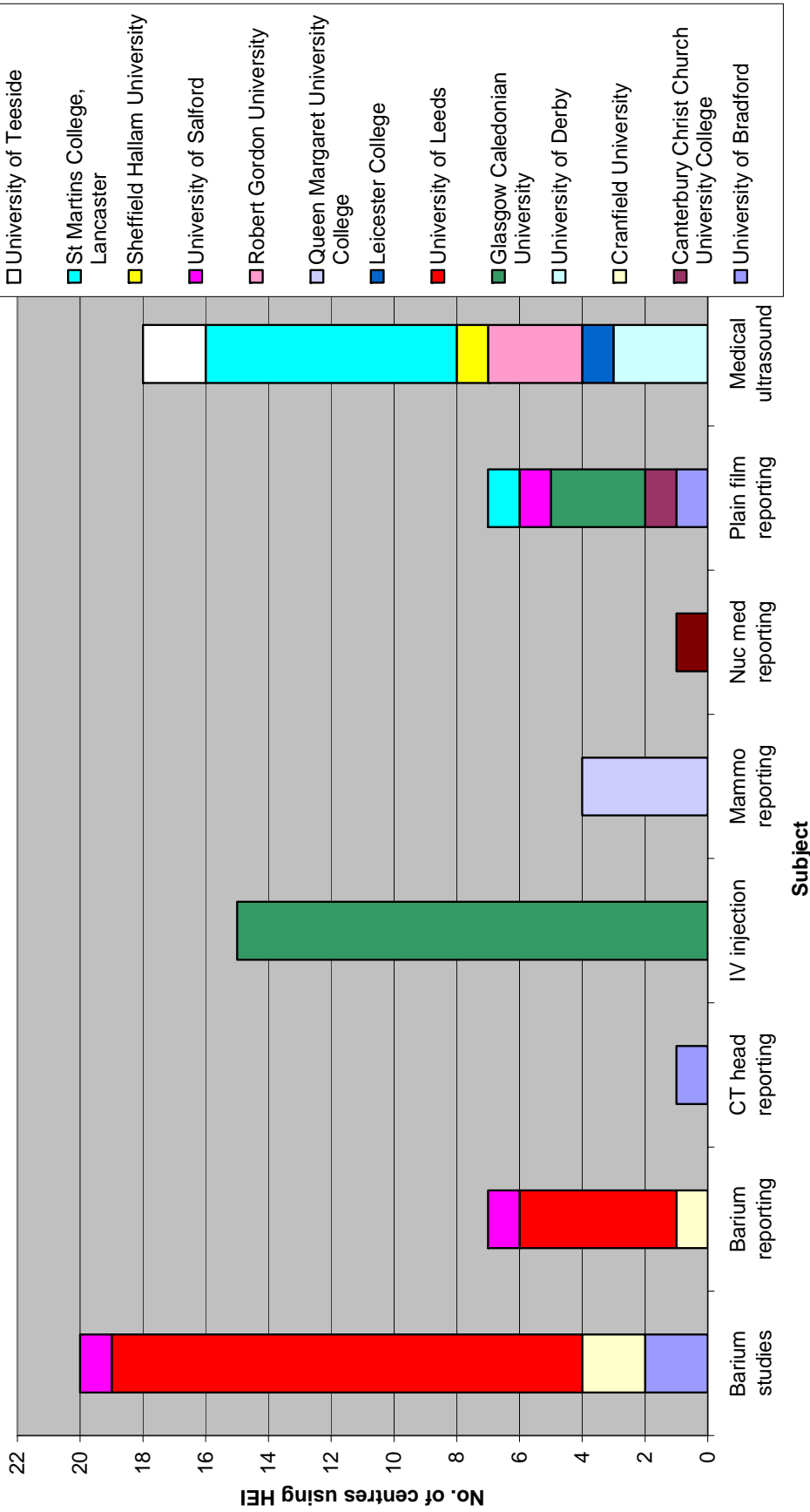
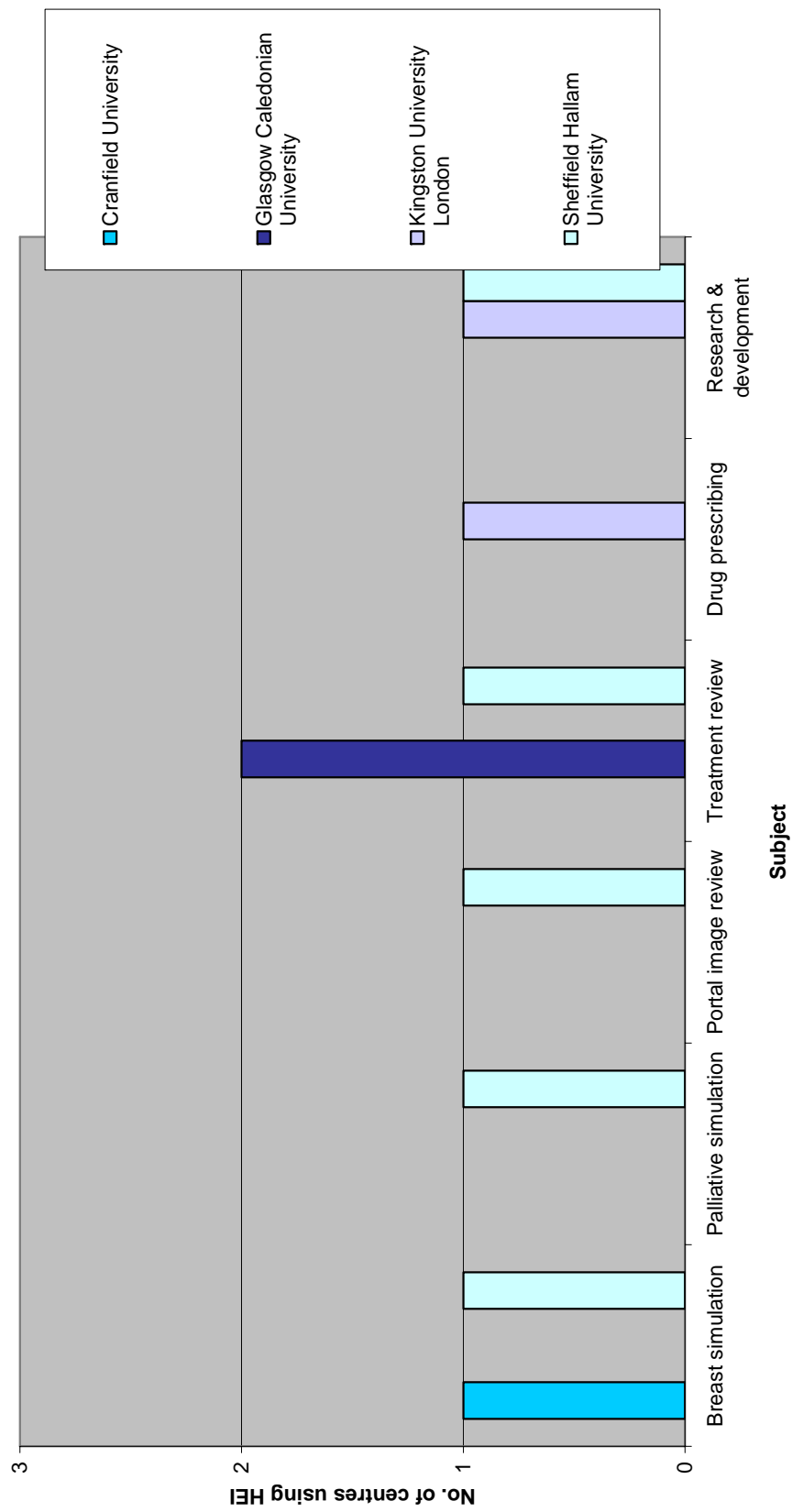


Figure 4 - Higher Education Institutions (HEI) & subject accessed by therapeutic centres in Scotland to support role development, at Spring 2004



- d. There was **limited educational support underpinning role development for radiography support staff** in Scotland, with the provision of only one radiography assistant practitioner education programme.

Further detail of the scoping exercise can be accessed at www.nes.scot.nhs.uk/allied/Radiography_development/docs/jointreportV6030205.pdf.

2.0 Project Structure

2.1 Project Methodology

In February 2004 a Project Lead was appointed, and both a multi-disciplinary Project Steering Group and a Project Management Group were established (see Appendix 1 for membership). An Education and Clinical Skills Sub-Group was established to progress work on the educational aspects of the project. See Appendix 1 for membership of project groups and Appendix 2 for project infrastructure.

From the strategic drivers and policy direction and the information from the scoping exercise, project objectives and associated work streams were formulated. These were ratified by the Project Steering Group.

2.2 Project Objectives

- To facilitate increased support for role development for radiographers and radiography support staff through stakeholder engagement, including radiography staff and managers, radiologists, oncologists and other medical and clinical colleagues.
- In identified implementation sites, to demonstrate evidence of a plan to implement the 4-tier structure, with delivery of the initial steps of the plan with identification of the potential impact on patient care.
- To ensure project objectives and work streams reflect the values of patients and the public.
- To develop a minimum of five post-graduate curricula with associated course material, able to be accessed (in Scotland) flexibly by radiographers.

2.3 Project Work Streams

- **Engaging stakeholders** to gain consensus on role development of radiographers and radiography support staff.
- **Influencing change** in NHS service providers to promote the 4-tier model.
- Developing key principles of working practice from **patient focus** groups.
- **Developing an educational framework** for role development of radiographers and radiography support staff.

3.0 Project Findings

3.1 Engaging Stakeholders

The Project Steering Group identified that a fundamental success factor for the project was effective engagement of a wide range of stakeholders and their consensus on the need for role development of the radiography workforce, within multi-disciplinary clinical teams.

As a consequence, specific work streams were created focused specifically on the following staff groups:

- Radiography workforce (managers, registered and support staff).
- Radiologists, oncologists and other medical colleagues.

Two approaches were taken - firstly a series of events and secondly the completion of a survey to ascertain views of radiography workforce development by radiologists and oncologists.

Three specific events were held:

- Radiography Consensus Conference, June 2004
- Advanced Practitioner Event, October 2004
- Consultant Radiographer Event, January 2005

3.1.1 Radiography Consensus Conference: June 2004

A Radiography Consensus Conference was held attracting over 120 radiographers, radiography managers and radiography support staff to allow exploration of the opportunities and challenges of future development of the radiography workforce and to capture consensus of emerging views. A series of parallel workshop sessions were held, led by professional leaders and experienced radiographers.

Workshop 1: Maximising Potential of the Radiography Workforce

The aim of this workshop was to allow participants to identify the unique clinical contribution of registered radiography staff in two specific but common patient pathways and to identify aspects of their current practice that could be delegated to assistant practitioners.

It was agreed that there were a considerable range of activities within both diagnostic and therapeutic radiography that could be delegated to appropriately trained assistant practitioners but that local protocols should be in place to identify the limits of assistant practitioner practice, minimising clinical risk to patients, patient safety and safeguarding assistant practitioners. There was agreement that, for diagnostic radiography, the elements of the examination process that involved higher levels of clinical and technical decision making should be undertaken by suitably trained and qualified radiographers. The systematic methodology adopted in the workshop was a useful approach to examining current practice which could be used in local radiography workforce planning.

Workshop 2: Advanced Practitioner Development

The aim of this workshop was to allow participants to debate the challenges to the development of advanced practitioner role.

Following discussion and debate, the following was agreed:

- Greater clarity and distinction was required in the use and understanding of the terms 'role development', 'advanced practice' and 'extended roles'. For instance, the term advanced practitioner should not be used for only the undertaking of an extended role because levels of extended practice do not always require to be at an advanced level.
- Advanced practitioners should work within a framework of advanced level competencies, including radiographic clinical skills, supervisory skills and communication as well as elements of research, audit and education.
- There was a consensus view that education required to be delivered in a format accessible locally to radiographers throughout Scotland.

Workshop 3: The Consultant Radiographer

The aim of this workshop was to allow participants to debate the challenges to the development of Consultant Radiographer roles.

Emerging themes included the need to promote Consultant Radiographers' roles as a matter of urgency; the essential requirement for support and engagement of medical staff and other healthcare professionals; the need for the issues of management of these posts to be resolved at a local level, together with the requirements of the post holders both clinically and academically.

Workshop 4: Assistant Practitioner Development

The aim of this workshop was to allow participants to debate the challenges to the development of assistant practitioner roles.

It became apparent from this workshop that there was lack of understanding within the radiography workforce of national policy direction for modernisation of service delivery and associated workforce development and that the status quo was not an option. The need for this to be addressed in the radiography workforce was strongly expressed.

There was agreement that assistant practitioner roles should not be developed in isolation but must be considered as part of a career progression framework with the same emphasis as placed on advanced practitioners and consultant radiographers.

A national approach to the provision of a comprehensive education framework for assistant practitioners was required. Higher National Certificate (HNC) competency frameworks for diagnostic and therapeutic assistant practitioners in collaboration with the clinical service needed to be developed. It was agreed that a systematic process to examine current practice with a range of departments to establish the scope of practice for both diagnostic and therapeutic assistant practitioners and ascertain appropriate local ratios of qualified to unqualified staff was needed.

3.1.2 Advanced Practitioner Workshop: October 2004

The decision to provide a specific event on advanced practice was based on the outcome of the previous event (Workshop 2) with the need for further debate in the professions regarding advanced practice. Participants included experienced clinical radiographers, with radiography managers from diagnostic radiography, therapeutic radiography and ultrasonography.

Emerging themes from this workshop, broadly reflect those outlined in Workshop 2 of the Radiography Consensus Conference June 2004.

Consensus views were:

- Advanced practice and extended practice are not interchangeable terms as the advanced practitioner may undertake a similar extended practice role to other colleagues but assumes a greater level of autonomy and responsibility for the procedure.
- The blend of skills of the advanced practitioner will differ in relation to extended role radiographers. Levels of extended practice do not always require to be at an advanced level. It is expected that the advanced practitioner will be at a consistently higher level across their entire range of abilities.
- Some advanced practitioners will work within a non-specialist area of practice but will be expected to display an advanced level of knowledge and skill in a specific field e.g. plain film reporting in A&E.
- The advanced practitioner role will demonstrate a broader as well as a more comprehensive skill portfolio with participation in clinical research, audit and provision of education.
- An extended role radiographer may work towards advanced practice status, with this seen as the natural progression for a radiographer who extends their role into a new scope of practice.
- In addition to discipline specific education and training there is a need to support radiographer development of leadership, management, audit, research, and higher-level communication skills.

The benchmark statements for advanced level practice in diagnostic and therapeutic radiography are outlined in *A Curriculum Framework for Radiography* (College of Radiographers, 2003).

3.1.3 Consultant Radiographer Event: January 2005

Building on Success: Future Directions for the Allied Health Professions in Scotland (Scottish Executive, 2002) specified the development of consultant allied health professional posts. This recognised the potential value in a variety of clinical settings including both diagnostic and therapeutic radiography.

A seminar on *The Role of the Consultant Radiographer* was held in January 2005, with the aim of introducing the concept of consultant radiographers to key stakeholders in Scotland. Six consultant radiographers from England were invited to the seminar to discuss the background to development of their roles, scope of practice, local arrangements and the benefits for patient care and service improvement. Each concluded by describing the challenges to the development of their roles and the lessons learnt.

A detailed summary of the speakers' presentations is available on the web site at www.nes.scot.nhs.uk/allied/Radiography_development/Seminar.

Emerging Themes

Consultant radiographer initiatives were typically locally driven as a result of service need and developed to address service pressures such as waiting time targets or lack of appropriate traditional staff groups to fulfil service demand. Other contributing factors included the need for service improvement, modernisation, meeting national guidelines with recruitment and retention issues. The developments were achieved through close and supportive working relationships with colleagues in radiology and oncology departments.

There was commonality in their remit including service improvement, promotion of radiography role development, research and transfer of experience and knowledge to radiology, radiography colleagues and other members of the healthcare team.

Other emerging themes included those related to accountability and indemnity. The majority of the consultant radiographers were directly responsible to clinical directors, bypassing the traditional radiography hierarchy. Indemnity was recognised as an unclear issue, and in some organisations consultant radiologists or oncologists were still taking responsibility for some clinical work on behalf of the consultant radiographer.

Local training has resulted in acceptance of the roles by the local organisation and the radiology and clinical communities. It was recognised that the lack of national accredited training could lead to issues around accreditation and transferability. There remains an issue of understanding of these roles, which would be clarified with the development of a specific educational entry level and a recognised clinical career pathway on a national basis.

3.1.4 Survey of Scottish Radiologists & Oncologists

Engagement of radiologists and oncologists in the process of role development was seen as essential for progress to be made. Their input to training and mentorship was essential in radiographer role development as was their support and endorsement of the overall process.

Methodology

A Radiographer Role Development Survey was distributed to all Scottish consultant radiologists on the national database (212 Scottish radiologists)

Similarly a Radiographer Role Development Survey was distributed to 41 Scottish consultant clinical oncologists.

Findings of Radiologists' Survey

Analysis of the questionnaire sent to diagnostic radiologists is shown as Appendix 3.

Consultant radiologists recognised local role development and detailed, through selective and free text, advantages to the radiographic profession of greater professional standing and assistance with recruitment and retention. The impact on dilution of junior radiologist training was an anxiety together with lack of clarity around the medico-legal framework. Nearly 60% did not consider the, then available, post-graduate radiography education and training was adequate to underpin the requirements of developed roles. Despite this, 82% of those responding reported support for radiographer role development and willingness to participate actively in its development.

An article summarising these findings entitled *Radiologist perceptions of radiographer role development in Scotland* is due to be published in *Radiography* in 2006.

Findings of Oncologists' Survey

The sample number of Oncologists was smaller but in those responding there was 100% support for radiographer role development. They perceived advantages in terms of radiographer recruitment and retention and enhanced multidisciplinary working and flexibility which would reduce pressure on the service. Their anxiety was also the impact on junior oncologist training through dilution, and lack of clarity around medico legal responsibility.

The results from the questionnaire sent to clinical oncologists are shown as Appendix 4.

3.2 Influencing Change

A major challenge for the project was influencing NHS providers to invest in the promotion and development of the 4-tier model. After consideration, it was agreed by the Project Steering Group that targeted investment in three Health Board areas should occur.

3.2.1 Implementation sites

Methodology

Aim

The aim for each implementation site was to develop, within a six-month period, an action plan that specified how promotion of the 4-tier model could be achieved in collaboration with key stakeholders. This was to include some assessment of potential impact on the quality of patient care.

Work Streams

The work streams for each implementation site were identical and required each:

- to undertake a detailed scope of current progress in relation to role development, building on information from the original scoping exercise;
- to identify areas of role development required to support future service needs and gain consensus from key stakeholders;
- to analyse the current workforce profile and identify the workforce required to support anticipated and potential role development;
- to engage key stakeholders at each stage of the project including radiographers, radiologists/oncologists, other medical colleagues and senior management;
- to develop a short-to-mid term implementation plan to support progress for the implementation of the 4-tier model; and
- to identify and incorporate key principles of patient/public involvement.

Criteria for implementation sites

It was accepted that the implementation sites needed to represent the spectrum of services in Scotland and to include representation of therapeutic and diagnostic radiography. Due to the diverse geographical locations of Scotland's healthcare it was important that these sites reflected the needs of both urban and remote/rural areas. Organisations with challenging workforce issues in radiology and radiography would be a key driver for change. There was also a requirement to have a local champion willing to lead development of new roles.

As a result of these key drivers a purposive sampling methodology was used to identify three types of implementation sites, one of which contained both diagnostic and therapy services. Vacancy rates of over the national average of 9.7% were common to all:

- Site A: Central teaching hospital
- Site B: Central district general hospital
- Site C: Rural or remote district general hospital.

The three Boards chosen as implementation sites were in NHS Fife (diagnostic only), NHS Greater Glasgow (diagnostic only) and NHS Highland (diagnostic and therapeutic). NES invested in the appointment of a Project Lead or Champion for each Health Board area through a formal Service Level Agreement. Local recruitment processes were used in each Health Board to allow an increase in local ownership and engagement. Funding was allocated to each implementation site to support the progress of the initial action plans e.g. to support training of radiographers or radiography support staff in identified priority areas of role development.

Action Plans from the Implementation Sites

Each Project Lead submitted a final report at the end of their six-month project. The initial and agreed action plans arising from each implementation site follow.

NHS Fife

- This site fulfilled the criteria of a 'central district general hospital with diagnostic services'
- Jeanne Mason was appointed as the NHS Fife Project Lead
- Six hospitals with x-ray departments were included in the implementation site, made up of two main acute sites, a maternity hospital and three community hospitals

The NHS Fife project identified an existing platform of role development in diagnostic radiography and the potential to further develop radiology services and advance radiographers and radiography support staff into new roles. The short and medium term plans have been ratified by the senior management team in terms of scope and direction of travel. NHS Fife is in the final stages of agreeing potential funding streams to support this.

Short-term plan:

- Four radiography staff to undertake plain film reporting.
- One member of radiography staff to develop reporting skills in mammography.
- The radiography team providing the barium service to be increased by one.
- Three existing support staff to undertake training as Assistant Practitioners.
- Agreement to pursue the potential for the appointment of a Consultant Radiographer.

Medium term plan:

- Consolidate skills and increase reporting sessions for plain film service.
- Consolidate skills in mammography reporting, biopsy and ultrasound provision.
- Extend sessions to meet demands within the barium service.
- Increase number of Assistant Practitioners depending on service needs and radiographer development.

“The project presented some unexpected challenges but also some unexpected achievements. The debate generated by this formal approach – primarily through engagement with stakeholders – has served to promote the skill mix agenda. The level of engagement achieved would have been more difficult if we had not been an implementation site. There remains a degree of skepticism within radiology about the type and extent of role development at all grades, however significant interest has been generated and it is hoped this will only gain momentum as results are demonstrated.

In addition, this project has given us the impetus to begin to address some of the issues raised. Ideas and priorities identified are now being considered as we redesign the service in line with other ongoing initiatives such as capacity & demand and the Unscheduled Care Collaborative.

Our partnership with NES has been the main tool for driving this agenda forward. The project team has been invaluable providing practical advice and support when required.

Supintendent Radiographer
NHS Fife

NHS Greater Glasgow

- This site fulfilled the criteria of a ‘Central teaching hospital with diagnostic services’.
- Dr Margot McBride was appointed as the NHS Greater Glasgow Project Lead.
- Seven radiology departments located in the north and south areas of Glasgow were included in the implementation site.

From the results of the meetings and interviews with radiographic staff and other key stakeholders in NHS Greater Glasgow at the beginning of the project, it became clear that process redesign is an urgent requirement to increase efficiencies in a time of growing demand. Current waiting lists, particularly for CT and MRI in the majority of Glasgow radiology departments are proving a major challenge and will remain so with the predicted increase in future workload in these modalities, together with ultrasound. The shortage of qualified radiographers and radiologists in Glasgow, particularly for specialised imaging modalities, will present a challenge in meeting the 2008 waiting times targets.

The NHS Greater Glasgow NES Project ran in parallel with and informed the NHS Greater Glasgow’s Acute Services Review (ASR). This review will identify the key issues to be addressed in relation to the demand and capacity for imaging services, the workforce required to meet current and future demands and the acquisition and implementation of additional imaging and information technology systems including picture archiving communications systems.

The design, development and delivery of the short-to-medium term plan for the implementation of role development within each of the seven radiology departments is currently undergoing a major review by NHS Greater Glasgow and the plans will be set out in the Acute Services Review report (for publication 2006).

The future integrated workforce profile could not therefore, be fully defined as the predicative figures, in relation to future demand for radiology services, remain under analysis by NHS Greater Glasgow strategic planners.

Recommendations were made in the project report to NES, as outlined below.

Summary of Recommendations:

The following areas of role development were identified:

- (a) An increase in radiographers reporting in:
 - plain film radiography
 - gastro-intestinal tract reporting
 - cranial computed tomography
 - mammography
 - magnetic resonance images (musculo-skeletal imaging)

Other areas of role development included:

 - administration of drugs
 - cardiology (vessel catheterisation)
 - mammography (perform breast biopsies)
- (b) The implementation of the 4-tier career framework to include the introduction of assistant practitioners, advanced practitioners and consultant practitioners.
- (c) The following areas for assistant practitioner scope of practice:
 - plain film radiography (within agreed protocols)
 - mammography
 - dental radiography
 - assisting in cardiac, CT and MRI procedures
- (d) The introduction of advanced and consultant radiographers in a suggested pilot study in Glasgow with associated monitoring and evaluation.

NHS Highland

- This site fulfilled the criteria of a 'remote or rural district general hospital with both diagnostic and therapeutic services'.
- Two Project Leads were appointed, Anne Patterson from radiology and Sheena MacDonald from radiotherapy.
- Raigmore Hospital was the implementation site for NHS Highland.

The Highland project identified an existing platform of role development in both diagnostic radiography and therapeutic radiography, the value of which was recognised by radiologists and oncologists and other members of the healthcare team.

Short-term plan:

- Service development needs identified as a priority included plain film reporting for diagnostic services and patient and portal image review for radiotherapy services.
- Two diagnostic radiographers will commence training modules in MRI and skeletal reporting.
- One therapeutic radiographer will train in portal image review.
- Three trainee assistants (two from radiology and one from oncology) will be identified to undertake assistant practitioner training.

Medium term plan:

- Continue the development of GI tract imaging, with the potential to introduce GI reporting in the future.
- Appoint further assistant practitioner trainees.

This project brought role development out of paper reports and into reality. All interested parties were included and informed. From a wealth of discussion came willingness to try and enthusiasm from potential participants in both departments. By far the majority are positive towards the development of radiographers and assistants. We are now ready to get into action and appoint trainees. Without implementation site status the subject would still be an agenda item. The changes will be gradual but there has already been a serious change in mind set. The project has made it possible to move forward.

Implementation site project officer
NHS Highland

3.2.2 Emerging themes from Implementation Sites

In December 2005, the Project Steering Group requested further information specific to the anticipated benefits, the challenges arising from the project and lessons learnt.

For all three implementation sites, the anticipated benefits have been summarised, firstly for patients and secondly for staff. The challenges and lessons learnt have been collated into essential success factors for the implementation of role development for radiographers and radiography support staff.

...for patients

- Improvement in knowledge base and skills of radiography staff across a spectrum of grades will enhance the quality of care when the patient needs it.
- Reduction of reporting times, waiting times and therefore, faster diagnosis and delivery of treatment for patients.
- Increased recognition of the importance of patient/public involvement in the future provision of healthcare.
- Improved communication between services, with recognition of benefits in collaboration across and between health board areas.

...for staff

- The 4-tier model gives recognition of the current and future role of radiographers and their career development. It is vital for future recruitment and retention of radiographers in the context of increased competition with regions in the UK that are further advanced in implementing the 4-tier model.
- Increased motivation for radiography support staff due to recognition and support of the need for their future education and career pathways.
- Reduced vacancies and staff turn-over.
- Raising awareness, and the understanding, of the benefits and implications of the career progression framework for radiography staff, radiologists, oncologists, other medical colleagues and senior management.

Essential success factors were identified as:

- Building on existing practice and support for role development
- Engagement and support
- Education and training

Building on existing practice and support for role development

There is an existing platform of role development in the radiography workforce across a broad range of clinical areas, with radiographers having actively increased their scope of practice and already working at an advanced level. This platform requires continued recognition and together with the existing evidence base from models in place, be used as a lever to further implement the 4-tier career framework. The impact of role redesign with radiology services should be measured and shared locally, regionally and nationally.

Engagement and support

It was recognised in all three implementation sites that change is required to meet the needs of both today's and tomorrow's radiology services. Individual personnel, including radiologists, often appeared highly motivated in accepting change in role redesign but collectively these views were not expressed openly. The resistance to future changes in role redesign because of perceived challenges around professional boundaries proved unhelpful in the implementation of change, and was a particular challenge for advancing practice in certain areas of clinical reporting. The model was most effective where radiographers and radiologists/oncologists worked in partnership to find solutions to these challenges.

The engagement of the clinical community i.e. radiography staff, radiologists/oncologists and other members of the healthcare team is therefore essential for change to be progressed. The opportunity for staff to debate the benefits and challenges of the 4-tier model openly in a solution-focused approach is seen as vital if progress is to be made.

Partnership working with a broad range of stakeholders including those in strategic planning, workforce planning, senior management, professional bodies/colleges and those colleagues in both Higher and Further Education is important in maximising opportunities for service change.

Education and training

Investment

The data from NHS Greater Glasgow on current staff post-graduate qualifications indicates a shortfall in the number of radiographers with the post-graduate qualifications to underpin a substantial and immediate increase in advanced practice. This requires investment of staff time and financial support to allow radiographers to participate in post-graduate programmes.

Accessible education

Post-graduate programmes for radiographers in Scotland needs to be accessible to support the range of advanced practice required for service need. The provision of education accessible in Scotland, although improved in the last two years, still presents a problem if staff have to travel long distances to access it. Provision of education to support assistant practitioners is currently limited, but work is in progress to provide Higher National Certificates in two Further Education Institutions by September 2006.

Mentoring requirements for radiographers

The variation in capacity for radiologist support in developing radiographer reporting creates a challenge for advancing practice, particularly in some areas of clinical reporting. The main reservation expressed by radiologists was their specific capacity to manage mentoring of radiographers and trainee radiologists as well as other competing demands.

Capacity for radiologists to provide the required mentoring for radiographers in their post-graduate education for clinical reporting is essential until there are sufficient radiographers who can provide this function.

3.3 Patient Focus & Public Involvement

Literature on the perceptions of patients to their care, treatment and examination was reviewed between February 2004 and February 2005. Much of the available information on patient satisfaction is with reference to a specific service or department and a significant amount of this research refers to nursing staff and/or nursing practice. There is very little currently available on the views of patients regarding the use of non-medical staff to carry out examination, treatments or consultations normally performed by a doctor or on the use of non-professional staff to carry out examinations normally performed by qualified and registered staff. This applies not only to radiography but also to other non-medical professions within health care. From the available literature, patients do not appear to be overly concerned about the professional background of the person conducting their examination providing they are competent, friendly, reassuring and caring. Patients are more concerned with practical issues such as access to services, convenient location of services, waiting times for their examination or treatment and receiving adequate and understandable information.

Obtaining relevant information from patients and any available literature to inform the development of a 4-tier system for radiography role development in services has been difficult. It is certainly an area which would benefit from further work on the general issues around role development in health care and on the specific area of role development in radiography.

3.4 Educational Framework

As part of the project infrastructure, an Education and Clinical Skills Sub-Group was established, with representation from radiographers in NHS Scotland, the three Higher Education Institutions providing under-graduate and post-graduate radiography programmes, Further Education and NHS Education for Scotland. See Appendix 2 for membership.

The remit of this group was to:

- Review the information from the initial scoping exercise, complete a learning needs analysis and identify six priority post-registration modules for pump prime funding.
- Develop an education framework for Assistant Practitioners.

3.4.1 Pump Priming of Post-Registration Modules

The Education and Clinical Skills Sub-Group reviewed the information from the scoping exercise and identified six post-registration modules or programmes for development. The group recommended that these programmes should be delivered through work/distance based formats which would meet the identified education priorities to support role development for registered radiographers.

The following priority programmes were ratified by the Project Steering Group:

	Module/Programme	Volume	Scottish Credit & Qualifications Framework Level ¹
Therapeutic Radiography	Palliative simulation	30 credits	Level 11
	Radiotherapy Electronic Portal Image Interpretation	30 credits	Level 11
	Drug prescribing	60 credits	Level 11
Diagnostic Radiography	Gastro Intestinal (GI) imaging & reporting	60 credits	Level 11
	Medical Ultrasound	180 MSc	Level 11
	Radiographic Reporting of Cranial CT Scans	60 credits	Level 11

NES proceeded with a tendering exercise, inviting all higher education institutions providing under-graduate and post-graduate education for either diagnostic or therapeutic radiography in the United Kingdom to submit proposals for pump priming monies for the development of these six areas. A collaborative approach was encouraged although applications from individual education providers were considered.

Outcomes

The MSc in Medical Ultrasound was awarded to St Martin's College, Lancaster with an academic delivery base in Stirling. In January 2006, there was an uptake of eight students, two for the Post-Graduate Certificate and six for the Post-Graduate Diploma.

Developments in the other four individual subject areas were awarded to a collaborative venture between Queen Margaret University College and The Robert Gordon University. All modules are work-based with the administration and quality aspects undertaken by the university offering the module. The Table below outlines the lead university for the individual modules and the uptake.

Module	Lead University	Commencement Date	Uptake at January 2006
Gastro-Intestinal (GI) imaging & reporting	The Robert Gordon University	February 2006	6
Palliative Simulation	The Robert Gordon University	September 2005	2
Radiographic Reporting of CT Scans	Queen Margaret University College	September 2005	0
Radiotherapy Electronic Portal Image Interpretation	Queen Margaret University College	September 2005	5
MSc Medical Ultrasound	St Martin's College, Lancaster	September 2005	8

¹ See www.scqf.org.uk for explanation of levels.

NHS Education for Scotland received no bids for Drug Prescribing programme development. However, in 2005, the Scottish Executive Health Department established a short-life working group to review the multi-professional requirements of Supplementary Drug Prescribing development in physiotherapy, podiatry, diagnostic and therapeutic radiography in Scotland.

3.4.2 Development of Educational Framework for Assistant Practitioners

Higher National Certificate Development

Promoting the development of Assistant Practitioners is a key aspect of the 4-tier model. In recognition of the value of role development of healthcare support workers, the Scottish Executive Health Department in January 2004, commissioned the Scottish Qualifications Agency (SQA) to develop four Higher National Certificates (HNC) for physiotherapy, speech & language therapy, diagnostic and therapeutic radiography. Although this was a parallel project, the Education and Clinical Skills Sub-Group was used as a resource for the HNC development in radiography.

The Higher National Certificates for both diagnostic and therapeutic radiography were validated by the Scottish Qualifications Agency in August 2005. Three additional work effectiveness units for each certificate are in the process of final development. Approval is in the process of being sought from the Society and College of Radiographers for the Assistant Practitioner Courses (within which the HNCs are embedded), with a planned delivery of September 2006.

Knowledge Requirements and Competency Frameworks

With the HNC development undertaken by SQA, the scope of the Education and Clinical Skills Sub-Group was limited to the development of an educational framework. A literature search for previous work undertaken in the development of assistant practitioners was completed in order to inform the process. Two working parties (one for diagnostic and one for therapy) were set up involving representatives from a range of clinical centres. The working parties identified relevant scope of practice, knowledge requirements and workplace competencies. These were circulated to working party members and the Project Management Group for consultation. Comments were collated and the revised edition was circulated to a wide spectrum of diagnostic and therapeutic radiography professionals for consultation.

An educational framework for assistant practitioners was achieved with the development of a competency framework identifying the knowledge and competencies required for assistant practitioners working in diagnostic and therapeutic radiography. The frameworks can be found at:

www.nes.scot.nhs.uk/allied/Radiography_development/Assistant_Practitioners_Guidance.

4.0 Emerging Themes & Recommendations

Emerging Theme 1: Building on existing practice

There is an existing and growing platform of role development in both diagnostic and therapeutic radiography, across a broad range of clinical areas but variable uptake across Scotland.

The three NES Implementation sites evidenced commitment from relevant stakeholders to the implementation of the 4-tier model by clearly defined short-medium term action plans.

Recommendations

- 1a NHS Boards** individually and working collaboratively through regional planning arrangements, should commit to supporting radiography role development in the context of sustaining diagnostic imaging and radiotherapy service provision in Scotland. This should take account of the work of the National Radiotherapy Advisory group and link with the work of the **Diagnostic Collaborative** and local stakeholders.
- 1b NHS Boards** individually and working collaboratively through regional planning arrangements, should review the current models in practice, the existing evidence base and the work from the NES Implementation Sites to progress the implementation of the 4-tier model, informing pay modernisation plans and workforce plans.
- 1c NHS Boards** working with the **National Diagnostics Delivery Team** and the **National Waiting Times Unit** should develop proposals for investment in longer-term sustainable change, supported by the redesign and improvement work facilitated by the **Centre for Change and Innovation**.
- 1d** The **Allied Health Professions Consultant in Cancer** within the Cancer Team at the Scottish Executive Health Department should support **NHS Boards** in role development, new roles and succession planning for diagnostic and therapeutic radiographers.
- 1e Radiology and radiotherapy services** should gather information on how role development and redesign will add value to the patient journey and contribute to local and national targets. Measures should be built in to assess the impact on the patient experience as well as job satisfaction. The impact of role redesign should be shared locally, regionally and nationally.

Emerging Theme 2: Engagement and support

The support and engagement of the radiography workforce, radiologists, oncologists and other healthcare colleagues are paramount to the progression of role development.

The radiologist survey reported 82% of responding radiologists and 100% of responding oncologists, support radiographer role development. Concerns remain around the medico-legal implications and the capacity for mentorship.

Recommendations

- 2a** The **Society and College of Radiographers** should to continue to raise awareness and understanding of the 4-tier career progression framework and achieve clarity regarding advanced practice and a greater understanding of the Consultant Radiographer role.
- 2b** The **Scottish Executive Health Department** and **NHS Education for Scotland** should work in partnership with the **Royal College of Radiologists**, the **Society and College of Radiographers** and **service providers** in NHS Scotland to establish a specialist advisory board to focus on a collaborative approach to sustainable services in Scotland.
- 2c** Current joint working by the **Society and College of Radiographers** and the **Royal College of Radiologists** should result in a published document clarifying joint understanding of medico-legal and governance issues. **NHS Boards** should consider this in the development of their governance frameworks.

Emerging Theme 3: Consultant practitioner development

Sustainable clinical teams in radiology and radiotherapy departments will need effective clinical leadership from radiographers as well as radiologists and oncologists. The development of consultant radiographers has been successful in other parts of the UK but the first consultant radiographer has not yet been appointed in NHS Scotland. Funding has been allocated for ten AHP consultant posts for 2006/2007 by the Scottish Executive Health Department.

Recommendations

- 3a** The **Allied Health Professions Consultant in Cancer** within the Cancer Team at the Scottish Executive Health Department should provide advice and facilitate the development of sustainable roles for consultant diagnostic and therapeutic radiographers, including the leadership and research & development aspects of the roles.
- 3b** The **AHP Professional Officer** at the Scottish Executive Health Department, in consideration of the Career Framework, should make explicit links between the development of consultant practitioners and the career framework in partnership with **Skills for Health** and **NHS Education for Scotland**.
- 3c** The **specialist advisory board** should consider how consistency and transferability of skills could be achieved for advanced practitioners and consultant roles, to ensure sustainability of service provision in areas of national priority.

Emerging Theme 4: Assistant Practitioners and associated educational support

The use of radiography support staff is widespread in both diagnostic and therapeutic radiography and will continue in the future. The development of new assistant practitioner roles has to date been limited in Scotland. The educational support for the assistant practitioner role is recognised as a requirement for role development and mechanisms to support this are in development.

Recommendations

- 4a Radiography services** should implement the first level of the 4-tier model by optimising current and future educational opportunities for their support staff.
- 4b NHS Education for Scotland** should develop the systematic methodology adopted in the consensus workshop, into a transferable toolkit for skills maximisation. This could be used by clinical teams for local skill mix reviews.
- 4c** The career pathway for assistant practitioners should be progressed by articulation between the educational programmes for assistant practitioners (in which the HNC is embedded) and the University courses for under-graduate radiography. **NHS Education for Scotland** should lead this in partnership with Higher Education, Further Education, Scottish Qualifications Agency, Society and College of Radiographers and NHS Scotland.
- 4d NHS Education for Scotland** should work with stakeholders to support radiography support staff in maximising current and future educational opportunities in support of role development.

Emerging Theme 5: Education & training for Advanced and Consultant Practitioners

Post-graduate programmes for radiographers in Scotland need to be accessible to support the range of knowledge and skills throughout the 4-tier career progression framework. Data from NHS Greater Glasgow would suggest a shortfall in the number of radiographers with the necessary qualifications to underpin a substantial and immediate increase in advanced practice. This requires investment of staff time and financial support to allow radiographers to participate in post-graduate programmes.

The NHS Education for Scotland scoping exercise (2004) highlighted that there was limited educational support for role development for radiographers in Scotland, with the majority of educational programmes based in English Institutions.

In the course of the NHS Education for Scotland Project, five post-graduate programmes have been commissioned by NHS Education for Scotland and are now being delivered in Scotland. In addition to these programmes, an MSc in medical ultrasound (Glasgow Caledonian University) and a range of clinical image reporting modules (University of Dundee) have been developed.

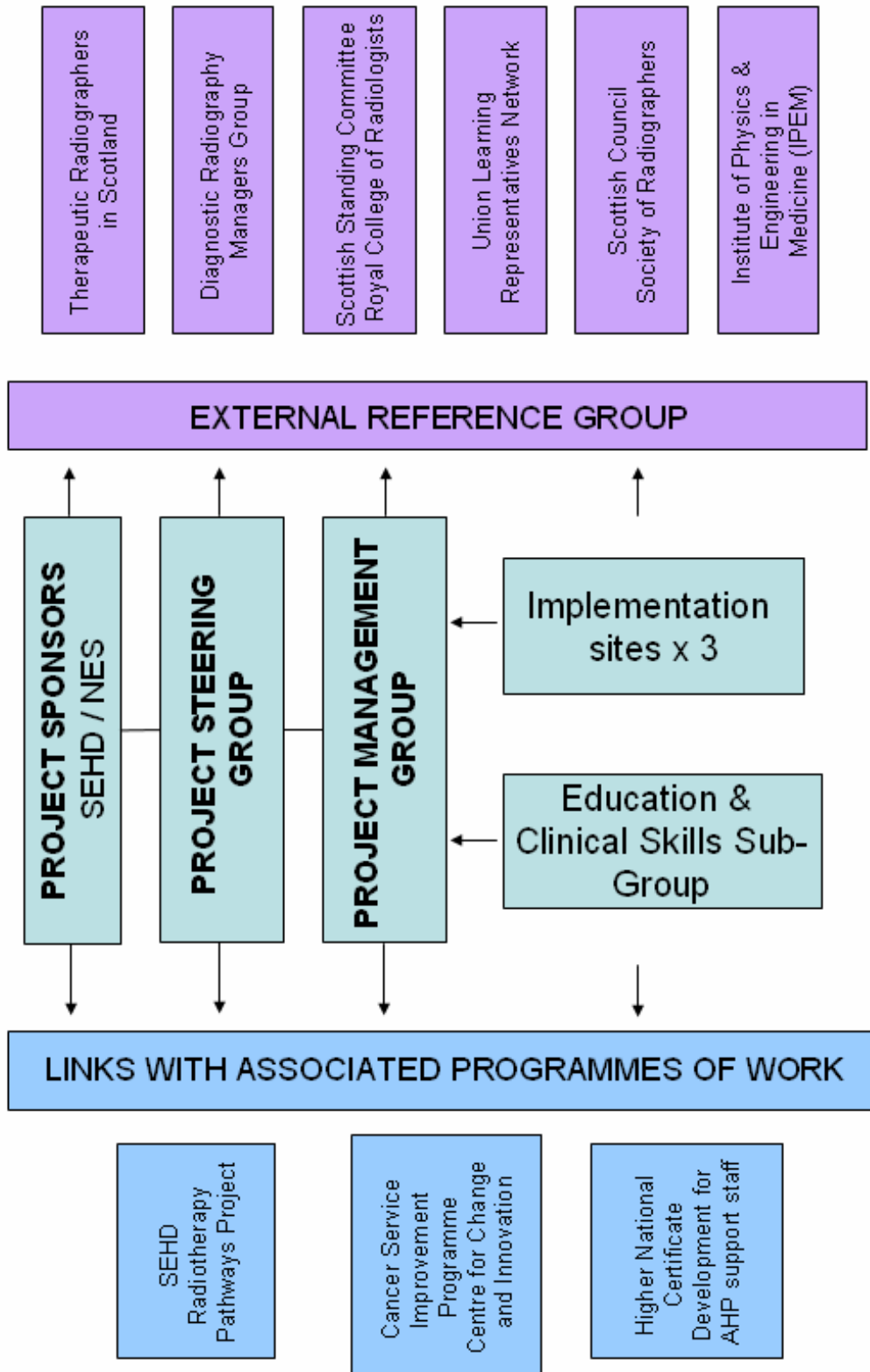
Mentoring is required for both radiographers in advanced practice and radiologists in training. Radiologist and oncologist support for mentoring are vital, in terms of both training and governance arrangements.

Recommendations

- 5a NHS Boards** individually and working collaboratively across regions, should consider the development and educational needs of the radiography workforce required to underpin the future integrated workforce in the context of service redesign and new patient pathways. This should be reflected in local learning plans.
- 5b NHS Education for Scotland**, in partnership with NHS service providers and Higher Education Institutions should continue to participate in the review of educational requirements of clinical radiology and oncology teams in response to the future advances in radiology and oncology.
- 5c Higher education institutions** in partnership with **NHS service providers** should keep under review the curriculum for radiography under-graduate programmes as the knowledge and skill requirements develop and extend with scope of practice.
- 5d The specialist advisory board** should explore creative solutions to the mentoring aspects of advanced practitioner education and development. Consideration should also be given to developing opportunities for an integrated approach to the future training of trainee radiologists and reporting radiographers.
- 5e NHS Education for Scotland** should work with stakeholders to support radiography staff in maximising current and future educational opportunities in support of advanced practice and role development.

Appendices

Appendix 1 - Project Infrastructure



Appendix 2 - Membership of Project Groups

Steering Group

Christine Blyth	Radiotherapy Lecturer, Queen Margaret University College
Dr Brian Durward	Dean of School of Health and Social Care, Glasgow Caledonian University
Martin Hurst	Role Development Project Officer, NHS Education for Scotland (February 05-July 05)
Pauline Ferguson	National Programme Manager, Cancer Service Improvement Programme, Centre for Change and Innovation
Lesley Forsyth	Role Development Project Officer, NHS Education for Scotland (February 04-December 04)
Anne Ingram	Director of Regional Planning & Workforce Development, North of Scotland Planning Group
Sonya Lam	Professional Officer (AHP), NHS Education for Scotland
Wilma Laurie	Patient Representative (June 2004 – June 2005)
Jacqui Lunday	AHP Professional Officer, Scottish Executive Health Department
Maria Murray	Professional Officer, College of Radiographers (from October 2005)
Jill Perchard	Clinical Nurse Manager, Radiology Department, Aberdeen Royal Infirmary
Elizabeth Porterfield	Cancer Services Co-ordinator, Scottish Executive
Dr Liz Robertson (Chair)	Representative of Royal College of Radiologists appointed by Scottish Standing Committee and Associate Medical Director, NHS Grampian Acute Sector, Aberdeen Royal Infirmary
Professor Alan Rodger	Consultant Clinical Oncologists & Medical Director, Beatson Oncology Centre
Anne Shaw	Professional Officer, College of Radiographers
Elizabeth Stow	Regional Officer, Society and College of Radiographers
Norma Wilson	Service Manager, Radiology Department, Falkirk Royal Infirmary
Sarah Ward	Programme Manager NHS Education for Scotland

Project Management Group

Christine Blyth
Martin Hurst
Lesley Forsyth
Sonya Lam
Norma Wilson
Sarah Ward

Education and Clinical Skills Sub-Group

Christine Blyth	Radiotherapy Lecturer Queen Margaret University College
Margaret Cockbain	Radiography Lecturer Queen Margaret University College
Lynn Cuthbertson	Radiography Lecturer Glasgow Caledonian University
Lesley Forsyth	Radiography Project Officer, NHS Education for Scotland (Feb-Dec 04) Radiography Lecturer, The Robert Gordon University (from Jan 05)
Donald Graham	Director of Radiography The Robert Gordon University, Aberdeen
Carole Hornsby	Superintendent Radiographer Radiotherapy Department, Ninewells Hospital, Dundee
Martin Hurst	Superintendent Radiographer Radiology Department, Western General Hospital, Edinburgh
Maureen McPake	Radiotherapy Lecturer Glasgow Caledonian University
Margaret Spalding	Superintendent Radiographer Beatson Oncology Centre, Western Infirmary, Glasgow
Helen Stimpson	Assistant Principal James Watt College, Greenock
Mairi Weir	Clinical Specialist Ultrasonographer Radiology Department, Western Infirmary , Glasgow

Appendix 3 - Results from Radiographer Role Development Survey - Scottish Radiologists

Returns

	Frequency	Percent
Surveys distributed	212	100
Surveys returned	130	61

Role

	Frequency	Percent
Radiologist	61	50
With management responsibilities	21	17.2
With education responsibilities	30	24.6
With education and Management responsibilities	10	8.2
Total	122	100

Years as a Consultant Radiologist

	Frequency	Percent
Less than 5 years	13	10.7
5 to 15 years	57	46.7
16 to 25 years	42	34.4
More than 25 years	9	7.4
Missing data	1	0.8
Total	122	100

What is your area of speciality?

	Frequency	Percent
Bone densitometry	1	0.8
CT	69	56.6
Chest/ respiratory	3	2.4
ENT	1	0.8
General	67	54.9
Gastrointestinal	33	27
Gynaecology imaging	2	1.5
Interventional	26	21.3
Mammography	32	26.2
Musculoskeletal	7	3.3
MRI	22	18
Neuro	17	13.9
Nuclear medicine	15	12.3
Oncology	1	0.8
Paediatrics	6	4.8
Ultrasound	49	40.2
Vascular	2	1.5

Base

	Frequency	Percent
District General Hospital	52	42.6
Teaching	64	52.5
Primary care	2	1.6
Breast screening	4	3.3
Total	122	100

Location

	Frequency	Percent
Argyll and Clyde	5	4.1
Ayrshire and Arran	6	4.9
Borders	1	0.8
Dumfries and Galloway	2	1.6
Fife	3	2.3
Forth Valley	5	4.1
Grampian	15	12.3
Greater Glasgow	32	26.2
Highland	6	4.9
Lanarkshire	14	11.5
Lothian	22	18
Tayside	10	8.2
Western Isles	1	0.8
Total	122	100

What areas of Radiographer role development are you aware are taking place within your department?

	Frequency	Percent
CT head scanning	9	7.4
GI barium studies performing	94	77
GI barium studies reporting	12	9.8
Intravenous injection	111	91
Mammography reporting	13	10.7
Nuclear Medicine reporting	2	1.6
Plain film reporting	23	18.9
Ultrasound	97	79.5
Ultrasound reporting	90	73.8

What areas of Radiographer role development is your department actively considering implementing?

	Frequency	Percent
CT head scanning	23	18.9
GI barium studies performing	13	10.7
GI barium studies reporting	17	13.9
Intravenous injection	8	6.6
Mammography reporting	9	7.4
Nuclear Medicine reporting	1	0.8
Plain film reporting	21	17.2
Ultrasound	12	9.8
Ultrasound reporting	12	9.8

What impact do you anticipate the education and knowledge requirements of Radiographer role development will have on you personally?

	Frequency	Percent
Increased teaching	1	0.8
Mentoring and supervision	15	12.7
Both	104	85.2
Missing data	2	1.6
Total	122	100

What impact do you anticipate the clinical skills requirements of Radiographer role development will have on you personally?

	Frequency	Percent
Increased teaching	0	0
Mentoring and supervision	13	10.6
Both	106	86.9
Missing Data	3	2.5
Total	122	100

Do you consider the current post registration Radiography education framework provides adequate knowledge to underpin role development?

	Frequency	Percent
Yes	38	31.1
No	65	53.3
Don't Know	10	8.2
Missing data	9	7.4
Total	122	100

Do you consider the current post registration Radiography education framework provides adequate clinical skills to underpin role development?

	Frequency	Percent
Yes	34	27.9
No	70	57.4
Don't Know	9	7.4
Missing data	9	7.4
Total	122	100

Do you consider any of the following an advantage of Radiographer role development?

	Frequency	Percent
Reduced pressure on your service	75	61.5
Reduction in personal workload	46	37.7
Flexibility to focus personal skills appropriately	57	46.7
Enhanced multidisciplinary approach	48	39.3
Increased flexibility for service improvement	74	60.7
Increased professional standing for Radiographers	97	79.3
Best use of manpower resources in current climate	78	63.9
Aid to Radiographer recruitment and retention	83	68
Improved credibility within the clinical community	15	12.3
Increased ability to provide effective clinical service	70	57.4
Ability to meet waiting time targets	64	52.5
Ability to meet best practice waiting time standards	42	34.4

Do you have any of the following anxieties in relation to Radiographer role development?

	Frequency	Percent
Impact on SPR training	77	63.1
Dilution of own skills	55	45.1
Loss of control of professional boundaries	38	31.1
Quality of patient care	39	32
Lack of trust in Radiographers' abilities	21	17.2
Lack of clear medico legal responsibilities	67	54.9
Lack of holistic Radiological care of the patient	30	24.6
Safety of patient provision	13	10.7
Clinical governance issues	44	36.1
Radiographers recognising limitations of their abilities	58	47.5
Erosion of salary differentials	9	7.4

Are you prepared to support and participate in Radiographer role development within your department?

	Frequency	Percent
Yes	100	81.1
No	11	9
Reluctantly	2	1.6
Possibly	1	0.8
Missing data	8	7
Total	122	100

Appendix 4 - Results from Radiographer Role Development Survey - Scottish Oncologists

Returns

	Frequency	Percent
Surveys distributed	41	100
Surveys returned	20	48

Role

	Frequency	Percent
Clinical Oncologist	8	40
With management responsibilities	4	20
With education responsibilities	3	15
With education and management responsibilities	5	24
Total	20	100

Years as a Consultant Clinical Oncologist

	Frequency	Percent
Less than 5 years	3	15
5 to 15 years	6	30
16 to 25 years	9	45
More than 25 years	2	10
Missing data	0	0
Total	20	100

Base

	Frequency	Percent
District General Hospital	0	0
Teaching	20	100
Total	20	100

Location

	Frequency	Percent
NHS Grampian	3	15
NHS Greater Glasgow	5	25
NHS Highland	0	0
NHS Lothian	9	45
NHS Tayside	3	15
Total	20	100

What areas of Radiographer role development are you aware are taking place within your department?

	Frequency	Percent
Cancer site specialists	15	75
Intravenous injection	6	30
Portal image interpretation	18	90
Patient information and support	16	80
Radiographer drug prescribing	4	20
Radiographer led palliative simulation	12	60
Radiographer led breast simulation	20	100
Research and practice development	11	55
Treatment planning	11	55
Treatment reviews	16	80

What areas of Radiographer role development is you department actively considering implementing?

	Frequency	Percent
Cancer site specialists	4	20
Intravenous injection	6	30
Portal image interpretation	2	10
Patient information and support	1	5
Radiographer drug prescribing	1	5
Radiographer led palliative simulation	6	30
Radiographer led breast simulation	1	5
Research and practice development	4	20
Treatment planning	2	10
Treatment reviews	4	20

What impact do you anticipate the education and knowledge requirements of Radiographer role development will have on you personally?

	Frequency	Percent
Increased teaching	1	5
Mentoring and supervision	2	10
Both	13	65
Missing data	4	20
Total	20	100

What impact do you anticipate the clinical skills requirements of Radiographer role development will have on you personally?

	Frequency	Percent
Increased teaching	1	5
Mentoring and supervision	3	15
Both	13	65
Missing Data	2	15
Total	20	100

Do you consider the current post registration Radiography education framework provides adequate knowledge to underpin role development?

	Frequency	Percent
Yes	7	35
No	10	50
Don't Know	3	15
Missing data	0	0
Total	20	100

Do you consider the current post registration Radiography education framework provides adequate clinical skills to underpin role development?

	Frequency	Percent
Yes	9	45
No	9	45
Don't Know	2	10
Missing data	0	0
Total	20	100

Do you consider any of the following an advantage of Radiographer role development.

	Frequency	Percent
Reduced pressure on your service	13	65
Reduction in personal workload	12	60
Flexibility to focus personal skills appropriately	12	60
Enhanced multidisciplinary approach	17	85
Increased flexibility for service improvement	14	70
Best use of manpower resources in current climate	15	75
Aid to Radiographer recruitment and retention	20	100
Improved credibility within the clinical community	5	25
Increased ability to provide effective clinical service	14	70
Ability to meet waiting time targets	8	40
Ability to meet best practice waiting time standards	8	40

Do you have any of the following anxieties in relation to Radiographer role development?

	Frequency	Percent
Impact on SPR training	11	55
Dilution of own skills	3	15
Loss of control of professional boundaries	1	5
Quality of patient care	1	5
Lack of trust in Radiographers' abilities	1	5
Safety of patient provision	0	0
Lack of clear medico legal responsibilities	7	35

	Frequency	Percent
Lack of holistic Radiological care of the patient	0	0
Clinical governance issues	4	20
Radiographers recognising limitations of their abilities	6	30
Erosion of salary differentials	1	5

Are you prepared to support and participate in Radiographer role development within your department?

	Frequency	Percent
Yes	20	100
No	0	0
Missing data	0	0
Total	100	100

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NHS Education for Scotland
Hanover Buildings, 66 Rose Street
Edinburgh
EH2 2NN

Tel: 0131 225 4365
Fax: 0131 225 5891

www.nes.scot.nhs.uk