
Report to the Society and College of Radiographers

A project to develop draft modules and a credit framework to support development of management skills in radiographers

University of Hertfordshire and the Institute for Employment Studies
August 2012



Prepared by:

Dr Richard Price
School of Health & Emergency Professions
University of Hertfordshire, College Lane
Hatfield
Herts
AL10 9AB

Tel: 01707 284962

Email: r.c.price@herts.ac.uk

Dr Linda Miller
The Institute for Employment Studies
Watergate House
13/15 York Buildings
London
WC2N 6JU

Tel: 020 7104 2076

Email: linda.miller@employment-studies.co.uk

Introduction and background

In work undertaken for NHS Education for Scotland during 2010-11, training in workforce planning was identified as a central skill in helping managers bring about reforms to departmental structure and introducing new posts/roles within their departments (Miller, Price, Hicks and Higgs, 2011). In that work, and in other projects conducted for Skills for Health, it has emerged that managers are often unable to give accounts of the impact of introducing new posts/roles within their departments (eg Miller, Cox and Williams, 2009). Often this is because they do not have, or have not gained, access to data that proves (or disproves) impact. Often the evidence available hints at the savings (and hence cost-benefits) to be gained from the changes made but departments stop short of conducting any real evaluation. For example, at the 2010 SBK Healthcare conference on Delivering Efficiency Through Your Radiology Workforce, Amanda Martin gave an account of 'Creating a Lean Radiology Workforce Culture: Delivering Higher Performance to Remove Waste and Achieve Improved Utilisation'. While the work described was impressive, no account of any cost benefits was given. At the UKRC in 2011, Beverly Snaith gave an account of the savings that can be demonstrated as arising from changes in practice within imaging and radiotherapy departments when appropriate data is inspected, and the savings can be significant – more than enough to justify any initial investment in change. These hinted at a range of topics in which it would be beneficial for imaging and radiotherapy managers, and those aspiring to such positions, to have access to developmental support.

For some time the Society and College of Radiographers (SCoR) has been considering the support it might provide to help imaging service managers cope with changes taking place within the health sector and the changes in demands that arise from these changes. Work undertaken by the University of Hertfordshire and Institute for Employment Studies research team and reported elsewhere points to some salient areas in which development and support might be appropriately targeted. This report is based upon the work undertaken following the acceptance of the proposal from Richard Price and Linda Miller to undertake an initial scoping and development programme to identify areas for which learning modules could be developed.

Developing the themes and delivery

Overview

The report presents a number of themes on which units of learning or modules can be based. For each theme, an outline module identifying its purpose, key learning outcomes and an outline curriculum are presented to illustrate how the themes can operate in practice. The themes were identified by the project leads and an advisory group consisting of key individuals working within and external to the NHS. The group as a whole had the relevant specialist knowledge and experience in the field of management. Under each theme, content has been assembled to provide 'core knowledge' on which a module can be built.

Development process

The units were developed in three stages. First, in a discussion with the SCoR, a minimum list of topic areas was identified. Subject experts for each area were invited to join the advisory group. For one area – coaching - the expert was recruited to give input on the content of a potential coaching module and, in addition, to give advice on facilitating coaching support for the first and subsequent cohorts of learners.

The subject list and the experts who provided input and advice were as follows:

Name	Affiliation	Expertise
Alison Carter	Independent consultant, specialising in coaching	Coaching
Stephen Evans	NHS Lothian	Radiology finance management
Martin Hurst	NHS Lothian	Workforce planning and change
Sue Lister	University of Warwick/NHS Institute for Innovation and Improvement	Innovation and Service Improvement
Amanda Martin	Bolton Hospital NHS Foundation Trust	LEAN in Imaging Services
Dilys Robinson	IES	Workforce planning
Beverley Snaith	Mid Yorkshire Hospitals NHS Trust	Evaluating service improvements
Dr. Heather Thornton	University of Hertfordshire	Managing change

The advisory group was invited to a half day workshop at the SCoR premises. Following an introduction by Professor Audrey Paterson the experts were put into pairs to identify the skeleton content. In each session the expert outlined their thinking on the minimum content required (and any pre-requisite knowledge required for entry to the programme) with the partner acting as a critical friend and asking for the reasons for including each component and seeking clarification where specialist terms were used. During the session the experts were asked to identify any additional units required (ie additional to those identified in the initial discussion with SCoR) and also confirmed whether the initial suggested modules should be retained as units or could be reduced to become part of the content of other modules.

At the end of the workshop, the notes kept by the pairs during the workshop were gathered in and were then typed up and circulated around the group for comment and editing. The outline modules are reported in the next section.

Themes and potential modules

Nine themes were identified from which nine outline modules have been developed. These are shown in the following table.

Managing people	Data evaluation and presentation
Workforce: change development deployment and planning	Managing change
LEAN	Coaching and supporting staff
Service evaluation	Finance and costing
Service improvement	

The way in which the module outlines are presented sets out their purpose, key learning outcomes and the minimum content. It was not the purpose of the exercise to develop full aims, objectives and learning outcomes, modes of delivery and a full assessment profile. These will need to be developed by awarding bodies who can build courses around the stated content and integrate within their learning and teaching strategies. Likewise an HEI seeking accreditation from the College of Radiographers will be expected to develop assessment which is innovative, robust and able to discriminate between the quality and standards of the work produced.

The size of each module and the credits awarded will be determined by an HEI. In addition, the award of academic credit will be optional and conditional upon undertaking an assessed activity. Modules could consist of 'bite-sized' chunks of knowledge at 5 or 10 credits or more standard sizes of 15 or 30 credits. The award of an MSc (normally equivalent to 180 M or level 7 credits) will be contingent upon undertaking a specified number of modules, including an assessed workforce change project, with the modules and project being completed within four years.¹ Exit awards at postgraduate certificate (60 credits) or postgraduate diploma (120 credits) should be available. Alternatively a short course or courses could be offered as CPD where the purpose would be to deliver stand alone topics as non-assessed training modules for individuals who do not wish to seek academic credit. Another approach to be incorporated would be to recognise prior experiential learning which will enable a learner to be awarded credits towards a final award. The number of credits to be awarded would depend on the depth of knowledge and its application in practice and an institution's policy.

Ideally, however, modules would sit within a post graduate framework that will enable participants to progress to a full master's award which would include a dissertation/project.

Module Outlines

Managing People

The purpose of this module is to enable learners to focus on the key issues in the management of people in their organisations. It should draw on theoretical and applied approaches to managing people.

Learners will need to develop a knowledge and understanding of the:

- contribution people make to organisational success and the key challenges associated with managing people in organisations;
- main strategic approaches to people management and the links to business strategies;
- scope of people management activities/practices outlining the key characteristics and contemporary debates associated with each human resource (HR) activity.

Curriculum content

Strategic approaches to people management and the links to business strategies.

The contribution people make to organisational success and the key challenges associated with managing people in organisations.

The scope of people management activities/practices outlining the key characteristics and contemporary debates associated with each HR activity.

¹ We suggest this as an initial time limit, although we recognise that different HEIs may wish to impose different time limits.

Management styles, influencing and involving; motivating; negotiating skills; communication (listening). Understanding of organisational culture and the role of the individual within it. Agenda for change. Emotional intelligence. Managing conflict. Performance management, disciplinary and grievance procedures. Performance-related pay. Giving and receiving feedback. Appraisal, Multi Source Feedback. Developing networks.

Workforce: change, development, deployment and planning

The purpose of this module is to enable students to understand and identify the dynamics of factors impacting on the workforce, its development, deployment and planning.

Learners will need to develop a knowledge and understanding of:

- key steps in workforce planning;
- the importance of strategic planning and its alignment to the needs of imaging and radiotherapy and to the health workforce needs in general;
- operational and capacity planning at departmental level.

Curriculum content

Government and NHS workforce policies.

Workforce planning, evidence, data-gathering.

Workforce supply (ie supply of radiographers and other imaging staff).

Workforce demand (likely future requirements).

Forecasting, including the use of simple forecasting tools.

Workforce intelligence and profiling – shape, age, qualifications, skill mix, ratio of support staff to qualified, and ratio of different grades: assistant, practitioner, advanced practitioner and consultant practitioner.

Workforce analytics. Workforce investment.

Capacity and capabilities of providing a 24/7 service.

Scope of management at departmental level, role of imaging/radiotherapy managers vs medical clinicians.

Clinical and professional trends: changes in technologies and their impact on diagnostics and treatments and staff mix.

Succession planning.

Getting organisational buy-in to the plan, in particular:

Group dynamics and the powerful nature of groups;

Influencing and networking skills;

Business planning, putting together a business case/cost benefit analysis.

LEAN

The purpose of this module is to enable learners to gain a theoretical and practical knowledge of LEAN and its application to radiology service evaluation and improvement.

Learners will need to develop the knowledge and understanding of:

- the theory underpinning LEAN;
- the application of LEAN theory to healthcare;
- service evaluation using LEAN tools;
- service improvement using LEAN tools.

Curriculum content

LEAN philosophy: respect for people; elimination of waste.

Understanding LEAN principles:

- Value: identifying value from the patient's (or clinicians) perspective;
- Value stream: identifying the value stream from start to end; creating a value stream-map (process map); value stream analysis; waste identification;
- Flow: improving flow by elimination of waste and batching;
- Pull: creating a system whereby the patient has their examination when they need it;
- Perfection: working towards perfection using visual management; process control boards; sustainment of change.

Identifying and using LEAN tools for evaluation of current state; use of data (qualitative and quantitative).

Identifying waste : transportation (of materials); inventory (over stocking); movement (of people); accidents; over production (ahead of demand); waiting (for next step); defects; over processing (of parts).

Assessing demand.

Determining value added vs non-value added tasks.

5S scoring: sort (get rid of waste); straighten (clean); safety; set for flow; sustain.

Service evaluation

The purpose of this module is to enable learners to be able to systematically appraise approaches to the evaluation of the delivery of imaging/radiotherapy services.

Learners will need to develop the knowledge and understanding of:

- methodological approaches to the evaluation of radiology service delivery;
- data analysis sources and their application in health services research and evaluation of the radiology service;
- ethical issues in health services research.

Curriculum content

Identifying aims and objectives and values of the imaging/radiotherapy service.

Types of evaluation, formative evaluation, process evaluation, impact/outcome evaluation.

Clinical effectiveness, risk, audit; research, technology assessment.

Defining standards.

Efficacy, effectiveness and efficiency.

Project management, planning and development.

Methods of systemic collection of appropriate data.

Strategies for the evaluation of a service initiative.

PESTLE Analysis (Political, Economic, Sociological, Technological, Legal, Environmental).

Service improvement

The purpose of this module is to enable learners to understand and apply tools and techniques to bring about service improvement.

Learners will need to develop the knowledge and understanding of:

- techniques for service improvement in imaging and radiotherapy;
- the use of improvement tools;
- the use of data and measures of quality standards and cost effectiveness;
- quality improvement and its impact on efficiency, and productivity of patient care.

Curriculum content

Process mapping, patient pathways in radiology and radiotherapy. Radiology tool kit. Fundamentals for quality improvement; quality and service improvement tools. Facilitation guides.

Service change. Project management.

Performance management; understanding.

Bottlenecks and constraints,

Batching of work, flow theory and modelling, control charts. Variations, queuing theory, patient booking.

Outcome measurement and effectiveness.

LEAN – reduce waste.

Service improvement tool kits.

Sustainability; theoretical models.

Patient perspectives. Commissioner's perspective.

Systems thinking: Where are you?

Patient and user feedback; Data analysis, historical; data mining; trends: systems/budget

Where do you need to be? service specifications – commissioners. Targets – local/national.

Costs – budget management; cost reduction.

What needs to change: people; process; equipment; measurement.

Project management; case study approaches to service improvement; small scale; single vs multiple.

Data evaluation and presentation

The purpose of this module is to enable learners to collect, analyse and present data for the evaluation of imaging/radiotherapy services. It is designed to support learners prior to undertaking their major project.

Learners will need to develop a knowledge and understanding of:

- methods of data collection in a range of investigative procedures
- working to ethical standards;
- the effective presentation of data;
- report writing consistent with professional standards.

Curriculum Content

Data collection methods. The importance of a baseline.

Sampling and sampling methodology: random sampling and stratified sampling.

Accuracy, sensitivity and specificity.
Efficiency, efficacy and effectiveness.
Use of descriptive and inferential statistical procedures.
Ethical considerations relevant to interventions and data collection.
Formulating, executing, analysing and reporting on the results of well-designed investigations.
Data presentation and methods, report writing.

Managing change

The purpose of this module is to enable learners to analyse and evaluate the dynamic nature of managing change.

Learners will need to develop a knowledge and understanding of the:

- complexities surrounding change;
- approaches to managing change;
- the importance addressing challenges of change.

Curriculum Content

Core concepts of change: managing a change project, conceptualisation.
Change agents. Change at different levels: organisational, team, individual.
Critical incident driven change, data-driven change.
Process models of change: incremental, transformational.
People and change: resistance, motivation eg adaptors, innovators, communication (engagement), participating in change, culture (readiness for change).
Tools and strategies: change management toolbox, workshops, drivers.
Evaluating and managing risks.
Forcefield analysis.
Leadership of change, identifying future leaders.
Training and development.
PESTLE analysis Political, Economic, Sociological, Technological, Legal, Environmental.

Coaching and supporting staff

The purpose of this module is to enable learners to understand the role of coaching in leadership, develop their own skills in coaching and be able to evaluate a range of approaches to coaching.

Learners will need to develop a knowledge and understanding of the:

- underpinning theoretical perspectives and research which inform the role of a coach in leading;
- range of skills/techniques appropriate to coaching;
- variety of approaches to coaching;
- evaluation of a range of skills appropriate to coaching with reference to their own personal and professional practice, and those of others.

Curriculum Content

Coaching theory.

Coaching models and theoretical base eg GROW (Goal, current Reality, Options (or Obstacles) and Will (or Way forward), principles/practicalities: equality, choice, dialogue (inclusive), application of learning to real life scenarios.

Peer coaching for supporting each other.

Principles of mentorship.

Management and leadership.

Team and individual dynamics of adult learning: how they learn, training and development theories.

Personal competencies: reflective practices, reflection in practice; active listening.

Questioning skills – right strategy, right question, right time.

Communicating with people, individuals and groups.

Finance and costing

The purpose of this module is to enable learners to: examine and evaluate topical issues within the financial field.

Learners will need to develop a knowledge and understanding of:

- the regulatory and governance frameworks in financial systems;
- finance within its health organisational context;
- current issues in the field of NHS finance;
- financial aspects and costing of imaging and radiotherapy services.

Curriculum content

Principles – legislation, transparency, value for money, scheme of delegation, tendering, stock-take, cash efficiency programmes (local re-investment plans) invoicing/receipting, methods of cost control.

Types of money: eg capital/revenue/endowment funds.

Types of maintenance contracts or preventative maintenance vs fully comprehensive, capital charges.

Organisation: standing financial instructions (SFIs).

Business planning. Developing business cases eg case study: replacement of imaging/radiotherapy equipment.

Budgeting: staff costs, agenda for change; maintenance, consumables eg contrast agents, catheters, stents.

Planning: anticipation of staff increments, cost increases (case study: new products to market eg stent)

Negotiation: tendering, procurement for parity.

Achieving cost savings.

Conclusion

This report has identified modules which sector experts consider constitute the minimum necessary for a management development programme for imaging and radiotherapy managers. The module outlines have set out their purpose, their outcomes in terms of knowledge and understanding along with an indicative content. There is scope for HEIs to determine (in agreement with the SCoR) the level at which they offer any validated modules

and awards to which they contribute ie postgraduate certificate, diploma or masters and agree credit ratings on that basis.

The initial potential market for the modules/award is around 2,000 radiographers and it is anticipated that the programme could be offered to other groups within the Allied Health Professions.

We are aware that managers in the NHS are busy - and are likely to become even busier as the current economic conditions continue to impact on services – so the outline delivery for a programme should be designed to take into account the minimal amount of time that managers can afford to spend away from their jobs. Therefore, it may be attractive to managers to access modules through the workplace and/or on-line as well as attending an HEI. However, delivery is a matter for an education provider to discuss with the SCoR when seeking accreditation.

The themes implicit within the modules are recommended to the SCoR as a basis for validation and/or accreditation of programmes and set out the minimum requirements of continuing/postgraduate professional development courses for which validation is requested from the College.

References

Miller L, Cox A, Williams J. June 2009 Report 465 Evaluation of the Advanced Practitioner Roles. Institute for Employment Studies.

Miller L, Price R, Hicks R and Higgs T. May 2011 Second Phase evaluation of the introduction of Radiography Assistant Practitioners in Imaging Services in Scotland. Final Report to NHS Education for Scotland (NES). University of Hertfordshire and the Institute for Employment Studies.