Radiographers

This document is the second draft of the standards of proficiency following the PLG's meeting on 25th April 2006.

Key:

This document incorporates the agreed changes to the generic standards shown elsewhere.
The profession-specific standards are shown in italics.
Additional standards or wording is shown in bold.
Deleted standards or wording is shown in italicised type, struck-through.

Expectations of a health professional

1a: Professional autonomy and accountability

Registrant radiographers must:

1a.1 be able to practise within the legal and ethical boundaries of their profession
- understand the need to act in the best interests of patients, clients and users at all times
- understand what is required of them by the Health Professions Council
- understand the need to respect, and so far as possible uphold, the rights, dignity, **values** and autonomy of every patient, client and user including their role in the diagnostic and therapeutic process and **in maintaining health**
*- be able to practise in accordance with current legislation governing the use of ionising **and non-ionising** radiation for medical and other purposes*

1a.2 be able to practise in a non-discriminatory **and non-oppressive** manner

1a.3 ~~be able to maintain confidentiality and obtain informed consent~~
understand the importance of and be able to maintain confidentiality

1a.4 **understand the importance of and be able to obtain informed consent**

1a.5 be able to exercise a professional duty of care

1a.6: **be able to practise as an autonomous professional, exercising their own professional judgement**
- be able to assess a situation, determine the nature and severity of the problem and call upon the required knowledge and experience to deal with the problem
- be able to initiate resolution of problems and be able to exercise personal initiative
- know the limits of their practice and when to seek advice **or refer to another professional**
- recognise that they are personally responsible for and must be able to justify their decisions

1a.7 recognise the need for effective self-management of workload **and resources** and be able to practise accordingly

1a.8 understand the obligation to maintain fitness to practise
- **understand the need to practise safely and effectively within their scope of practice**
- understand the importance of maintaining ~~health and care for themselves~~ **their own health**
- **understand the need to keep skills and knowledge up to date and the importance of career-long learning**

~~1a.8 understand the need for career-long self-directed learning~~

1b: Professional relationships

Registrant radiographers must:

1b.1 be able to work, where appropriate, in partnership with other professionals, support staff, patients, clients and users, and their relatives and carers
- understand the need to build and sustain professional relationships as both an independent practitioner and collaboratively as a member of a team
- understand the need to engage patients, clients, users and carers in planning and evaluating diagnostics, treatments and interventions to meet their needs and goals
- **be able to make appropriate referrals**
- be able to interpret and act upon information from other health care professionals, in order to maximise health gain whilst minimising radiation dose to the patient
*- be aware of the general working of health **and social** care services*

1b.2 be able to contribute effectively to work undertaken as part of a multi-disciplinary team

1b.3 be able to demonstrate effective and appropriate skills in communicating information, advice, instruction and professional opinion to colleagues, patients, clients, users, their relatives and carers
- be able to communicate in English to the standard equivalent to level 7 of the International English Language Testing System, with no element below 6.5
- understand how communication skills affect the assessment of patients, clients and users, and how the means of communication should be modified to address and take account of factors such as age, physical and learning disability
- be able to select, move between and use appropriate forms of verbal and non-verbal communication with patients, clients, users and others
- be aware of the characteristics and consequences of non-verbal communication and how this can be affected by culture, age, ethnicity, gender, religious beliefs and socio-economic status
- understand the need to provide patients, clients and users (or people acting on their behalf) with the information necessary to enable them to make informed decisions
- understand the need to use an appropriate interpreter to assist patients whose first language is not English, wherever possible
- recognise that relationships with patients, clients and users should be based on mutual respect and trust, and be able to maintain high standards of care even in situations of personal incompatibility
- be able to advise other health care professionals about the relevance and application of radiotherapy or imaging modalities to the patient's needs

Therapeutic radiographers only
- understand the behaviour of people undergoing radiotherapy within the oncology setting, as well as that of their families and carers
- understand the information and psychosocial needs of patients, their families and carers
Diagnostic radiographers only
- understand the psychology of illness, anxiety and uncertainty and the likely behaviour of patients undergoing diagnostic ~~radiographic~~ ***imaging*** *procedures, as well as that of their families and carers*

1b.4 understand the need for effective communication throughout the care of the patient, client or user
- recognise the need to use interpersonal skills to encourage the active participation of patients, clients and users
- be aware of the need to empower patients to participate in the decision-making processes related to their radiotherapy or diagnostic imaging examination

The skills required for the application of practice

2a: Identification and assessment of health and social care needs

Registrant radiographers must:

2a.1 be able to gather appropriate information
- be able to use physical, graphical, verbal and electronic methods to collect information from a range of sources including patient history, radiographic images and biochemical reports

2a.2 be able to **select and** use appropriate assessment techniques
- be able to undertake and record a thorough, sensitive and detailed assessment, using appropriate techniques and equipment
- be able to assess, monitor and care for the patient before, during and after irradiation

2a.3 be able to undertake or arrange clinical **or scientific** investigations as appropriate

2a.4 be able to analyse and evaluate the information collected
- be able to interrogate and process data and information gathered accurately in order to conduct the imaging procedure or radiotherapy most appropriate to the patient's needs

2b: Formulation and delivery of plans and strategies for meeting health and social care needs

Registrant radiographers must:

2b.1 be able to use research, reasoning and problem solving skills ~~(and, in the case of clinical scientists, conduct fundamental research)~~
- recognise the value of research to the systematic evaluation of practice
- be able to ~~conduct~~ **engage in** evidence-based practice, evaluate practice systematically, and participate in audit procedures
- be aware of ~~methods commonly used in health and social care research~~ a range of research methodologies
- be able to demonstrate a logical and systematic approach to problem solving
- be able to evaluate research and other evidence to inform their own practice
*- understand the problems encountered at the ~~patient radiation~}~ **patient or client radiation** / technology interface and be able to find appropriate solutions to such problems*
- be able to select and explain the rationale for examination and treatment techniques and immobilisation procedures appropriate to the patient's physical and disease management requirements

2b.2 be able to draw on appropriate knowledge and skills in order to make professional judgements
- be able to change their practice as needed to take account of new developments
- be able to demonstrate a level of skill in the use of information technology appropriate to their ~~profession~~ **practice**
- be able to apply the risk-benefit philosophy to radiation exposure to protect both individual patients and the population gene pool
- be able to calculate radiation doses and exposures

2b.3 be able to formulate specific and appropriate management plans including the setting of timescales
- understand the requirement to adapt practice to meet the needs of different client groups distinguished by, for example, physical, psychological, environmental, cultural or socio-economic factors

2b.4 be able to conduct appropriate diagnostic or monitoring procedures, treatment, therapy or other actions safely and skilfully
- understand the need to maintain the safety of both patients, clients and users, and those involved in their care
- ensure patients, clients and users are positioned (and if necessary immobilised) for safe and effective interventions
- be able to manage complex and unpredictable situations including the ability to adapt planned diagnostic imaging examinations, interventions or treatments and to manage adverse and critical care incidents, to prioritise workload and use of resources

- be able to use independent methods to establish and confirm patient identity prior to treatment or imaging
- recognise the need for spatial awareness, visual precision and manual dexterity in the precise and safe manipulation of treatment units or imaging equipment and related accessory equipment
- be able to operate radiotherapy or diagnostic imaging equipment safely and accurately
- be able to check that equipment is functioning accurately and within the specifications, and to take appropriate action in the case of faulty functioning and operation
- know and be able to apply the key concepts which are relevant to safe and effective practice as a supplementary prescriber This standard only applies only to registrants who wish to have their name annotated on the register.
- be able to recognise changing signs and symptoms and the progression of disease, decide not to treat (if necessary) and make appropriate referrals before administering any further radiation treatment
Diagnostic radiographers only
- be able to perform the full range of plain film and standard contrast agent examinations, including those undertaken on patients suffering from acute trauma, and where the
patient's medical, physical or mental health needs require examinations to be carried out in non-standard imaging environments
- be able to manage and assist with fluoroscopic and complex contrast agent procedures
*- be able ~~to assist with~~ perform a **standard head** computed tomographic (CT) examination, **assist with CT examinations** of the **spine**, chest and abdomen in acute trauma and to contribute effectively to other CT studies*
- be able to manipulate exposure and image recording parameters to optimal effect
- be able to use to best effect the processing and related technology supporting film-based and computer-based imaging systems
- be able to distinguish disease and trauma processes as they manifest on diagnostic images
- be able to appraise the diagnostic image information for clinical manifestations and technical accuracy, and take further action as required
Therapeutic radiographers only
- be able to scrutinise and interpret the radiation prescription in such a way that radiotherapy is delivered accurately and reproducibly
- be able to undertake complex radiation dose delivery calculations involving a range of radiation types and energies
- be able to generate a treatment plan and verify treatment parameters ensuring optimal radiotherapy prescription delivery
- be able to perform the full range of radiotherapy processes and techniques accurately and safely
- be able to localise the target volume precisely in relation to external surface markings and anatomical reference markings
- be able to interpret and evaluate images obtained during radiotherapy planning and treatment

Discussion

There was discussion at the last meeting regarding the suggestion from SOR regarding recognising child/elder abuse. The full suggestion made was:

'understand the concept and risks surrounding child and elder abuse and neglect and if the registrant has cause to believe that abuse / neglect is suspected with patients / clients in their care that reporting procedures are immediately implemented'

The concerns regarding a standard in this area were around whether it was appropriate as a threshold ability; was encompassed in other standards about recognising trauma processes; and was covered or would be better covered in the standards of conduct, performance and ethics.

Following discussion after the meeting, it was agreed with the registrant member of the PLG that this would not be included in the standards but that we would consider this issue in the course of the review of the standards of conduct, performance and ethics.

2b.5 be able to maintain records appropriately
- be able to keep accurate, legible records and recognise the need to handle these records and all other **[ ]** information in accordance with applicable legislation, protocols and guidelines
- understand the need to use only accepted terminology (which includes abbreviations) in making **[ ]** records

2c: Critical evaluation of the impact of, or response to, the registrant's actions

Registrant radiographers must:

2c.1 be able to monitor and review the ongoing effectiveness of planned activity and modify it accordingly
- be able to gather information, including qualitative and quantitative data that helps to evaluate the responses of patients, clients and users to their care
- be able to evaluate ~~management~~ intervention plans ~~against treatment milestones~~ using recognised ~~health~~ outcome measures and revise the plans as necessary in conjunction with the patient, client or user
- recognise the need to monitor and evaluate the quality of practice and the value of contributing to the generation of data for quality assurance and improvement programmes
- be able to make reasoned decisions to initiate, continue, modify or cease treatment or the use of techniques or procedures, and record the decisions and reasoning appropriately
- understand that outcomes may not always conform to expectations but may still meet the needs of patients, clients or users

2c.2 be able to audit, reflect on and review practice
- understand the principles of quality control and quality assurance
- be aware of the role of audit and review in quality management, including quality control, quality assurance and the use of appropriate outcome measures
- be able to maintain an effective audit trail and work towards continual improvement - participate in quality assurance programmes, where appropriate
- understand the value of reflection on clinical practice and the need to record the outcome of such reflection
- recognise the value of case conferences and other methods of review

Knowledge, understanding and skills

3a:
Registrant radiographers must:

3a.1 know the key concepts of the biological, physical, social, psychological and clinical sciences which are relevant to their profession-specific practice
- understand the structure and function of the human body, relevant to their practice, together with ~~a~~ knowledge of health, disease, disorder and dysfunction
- be aware of the principles and applications of scientific enquiry, including the evaluation of treatment efficacy and the research process
- recognise the role of other professions in health and social care
- understand the theoretical basis of, and the variety of approaches to, assessment and intervention
- know the physical principles of radiation generation, interaction, modification and protection underpinning the use of radiation for diagnosis or treatment
- understand the risk benefit philosophy and principles involved in the practice of diagnostic or therapeutic radiography
- understand the radiobiological principles on which the practice of radiography is based
- understand concurrent and common pathologies and mechanisms of disease
- understand the capability, applications and range of technological equipment used in diagnostic imaging or radiotherapy
- understand radiation dosimetry and the principles of dose calculation
- know the pharmacology of drugs used in diagnostic imaging, or oncology as it relates to radiotherapy practice
- understand the methods of administration of drugs
- understand the philosophy underpinning the development of the profession of radiography
- understand the role of the radiographer in the promotion of health and health education in relation to healthy living and health screening for disease detection
- be aware of the current developments and trends in the science and practice of radiography
- understand the quality assurance processes in place within diagnostic imaging or radiotherapy

- understand the legislative, policy, ethical and research frameworks that underpin, inform and influence practice
- know the concepts and principles involved in the practice of diagnostic imaging orradiotherapy and how these inform and direct clinical judgement and decision-making
- be able to formulate and provide information to patients and their carers about the treatment or imaging process and procedures, with regular reappraisal of their information needs, as appropriate
- be able to remove and re-apply dressings and supports appropriately and in a safe, effective and considerate manner
- distinguish between normal and abnormal appearances evident on images
- know the physical and scientific principles on which image formation using ionising and non-ionising radiation is based
Therapeutic radiographers only
- know the biochemical science of radiation pathophysiology
- know the structure and function of the human body in health and disease, especially regional and cross sectional anatomy of the head and trunk, histology, haematology,
and the lymphatic and immune systems
- know the diagnostic procedures, investigations and physiological symptoms which result in patients being referred for radiotherapy
- understand oncology, the pathophysiology of solid and systemic malignancies, epidemiology, aetiology and the management and impact of cancer
Diagnostic radiographers only
- know the signs and symptoms of disease and trauma that result in patients being referred for diagnostic imaging procedures
- know the structure and function of the human body in health, disease and trauma, especially the musculo-skeletal system, the soft tissue organs, regional and cross-sectional anatomy of the head and trunk, and the cardiovascular, respiratory, genito-urinary, gastro-intestinal and neuro-endocrine systems
~~*- know the physical and scientific principles on which image formation using Ionising radiation is based*~~

3a.2 know how professional principles are expressed and translated into action through a number of different approaches to practice, and how to select or modify approaches to meet the needs of an individual, groups **or communities**

3a.3 understand the need to establish and maintain a safe practice environment
- be aware of applicable health and safety legislation, and any relevant safety policies and procedures in force at the workplace, such as incident reporting, and be able to act in accordance with these
- be able to work safely, including being able to select appropriate hazard control and risk management, reduction or elimination techniques in a safe manner in accordance with health and safety legislation
- be able to select appropriate personal protective equipment and use it correctly

- be able to establish safe environments for clinical practice, which minimise risks to patients, clients and users, those treating them, and others, including the use of hazard control and particularly infection control
- understand the need to ensure the physical and radiation safety of all individuals in the immediate work environment at all times
- be aware of immunisation requirements and the role of occupational health
- know the correct principles and applications of disinfectants, methods for sterilisation and decontamination and dealing with waste and spillages correctly
- know and be able to apply appropriate moving and handling techniques
- be able to use basic life support techniques and be able to deal safely with clinical emergencies

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