

European Qualifications Framework (EQF) Level 7 Benchmarking Document: Radiographers

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Introduction

The European Federation of Radiographer Societies (EFRS) was founded in 2008 and currently represents in excess of 100,000 radiographers and 8,000 student radiographers across Europe through 38 national societies, and 54 educational institutions and 1 trade union. According to Article 2 of the EFRS Constitution, the role of the EFRS is to:

"represent, promote and develop the profession of radiography in Europe, within the whole range of medical imaging, nuclear medicine and radiotherapy and moreover everything that is directly or indirectly related or beneficial to this role, everything in the broadest meaning." [1]

In order to be recognised under the EFRS definition of a Radiographer [2], the level of Knowledge, Skills and Competence of a radiographer should be at Level 6 of the European Qualifications Framework (EQF) [3,4], which is equivalent to the European Higher Education Area (EHEA) Qualifications Framework Bachelor level [5]. For this purpose the EFRS definition is:

"Radiographers are medical imaging and radiotherapy experts who are professionally accountable to the patients' physical and psychosocial well being, prior to, during and following examinations or therapy; take an active role in justification and optimisation of medical imaging and radiotherapeutic procedures; are key-persons in radiation safety of patients and third persons in accordance with the "As Low As Reasonably Achievable (ALARA)" principle and relevant legislation." [2]

Purpose of this document

The purpose of the document is to serve as point of reference and benchmark for educational institutions, employers and professional bodies. The document is not intended to impose curricular content on educational institutions, but it may serve as a benchmark to institutions that currently offer, or are in the process of developing, Radiography educational programmes at EQF Level 7. This document may also serve to promote mobility and to facilitate and encourage lifelong learning in keeping with the aims of the EFRS.

It also takes into account the requirement for European educational institutions to be socially responsible to educate radiographers so that

they may work, not only across Europe, but within a globalised healthcare sector. Therefore there is a requirement to educate highly skilled healthcare professionals who are capable of making a considerable contribution to the wellbeing of a population by being able to adapt and work in different countries and different healthcare systems.

This is echoed in Article 2 of the EFRS Constitution which references the development of European standards of professional practice, the harmonisation of the initial and postgraduate education, and the facilitation of free movement of radiographers [1].

Content

This document first outlines the requirements for Level 7 programmes, the varied structures employed within Level 7 programmes, and essential components of a Level 7 programme.

In keeping with the EQF format and the Level 6 benchmarking document [6], learning outcomes within this document are grouped in Knowledge, Skills and Competence (KSC) tables, however, unlike the Level 6 benchmarking document, learning outcomes for Diagnostic Radiography, Radiation Therapy and Nuclear Medicine are not separately listed.

Procedure

This benchmarking document was developed on behalf of the EFRS members by: Paul Bezina (University of Malta), Jonathan McNulty (University College Dublin), Thom Roding (Inholland University of Applied Sciences) and the EFRS Nuclear Medicine and Radiotherapy Expert Committees. The group was supported by Dorien Pronk-Larive (CEO EFRS). Several drafts of this benchmarking document were reviewed and discussed by the EFRS Board, Educational Wing Management Team, Advisory and Expert Committees before being circulated to Full and Affiliate EFRS Members for comment. The final version was approved by the General Assembly at the EFRS AGM 2016.

Background Information

Education and role of the radiographer in Europe

The science and practice of Radiography is over a hundred years old and from the earliest days there has been much debate about the role of the radiographer in the fields of diagnostic imaging and radiation therapy. From the beginning the story of Radiography has been one of constant, rapidly changing and ever-expanding technology and radiographers have been at the frontier of the developments that have taken place in healthcare delivery over the years.

In Europe there are a range of providers of Radiography education, including universities, universities of applied sciences, technical institutes and vocational colleges. Radiography education across Europe has made great progress in the move to a student-centred learning outcomes approach, which is now widely accepted and in use. Data on Radiography education across Europe has been published by the EFRS [7,8].

The former Higher Education Network for Radiography in Europe (HENRE) developed a methodology which is laid down in the Tuning Template for Radiography in Europe [9-11] to design and deliver 1st cycle degree programmes using a learning outcomes and competence framework. The HENRE Tuning document makes a clear distinction between learning outcomes and competences in order to distinguish the different roles of the most relevant players in the learning process: the academic staff and students. In the Tuning document competences represent a dynamic combination of knowledge, skills, abilities and attitudes and are distinguished between subject specific and generic ones. Learning outcomes are formulated by academic staff with competences developed or achieved by students during the learning process. In the Qualification Framework of the European Higher Education Area (QF-EHEA) based on the Dublin Descriptors, learning outcomes, including competences, are seen as the overall results of learning. The descriptors consist of generic statements of typical expectations or competence levels of achievement and abilities associated with the Bologna cycles. The word competence is used in a broad sense, allowing for gradation of abilities and skills.

Harmonisation of education in Europe can be a result of all the actions described above, but nevertheless content and level of education programmes remain a national responsibility. The EFRS EQF Level 6 Benchmarking Document for Radiographers is an example of a resource which can be used to facilitate such harmonisation [6].

Bologna Cycles

The Bologna Declaration identifies two sequential levels known as cycles: first cycle (Bachelor) and second cycle (Master). The subsequent Berlin Communiqué identifies a third (Doctoral) cycle based on research. Successful completion of the first cycle gives access to the second cycle and successful completion of the second cycle gives access to the third cycle [12].

First cycle (Bachelor) programmes consist of between 180 to 240 ECTS; second cycle (Master) normally consist of 90 to 120 ECTS, however, they may consist of 60 ECTS providing a total of 240 ECTS have been accumulated in the first cycle [12].

The European Qualifications Framework (EQF)

Agreed by the European Commission and Parliament in 2008, the European Qualification Framework (EQF) recommendation is now being put into practice across Europe. It acts as a translation device to make national qualifications more readable across Europe, promoting workers' and learners' mobility between countries and facilitating their lifelong learning. It encourages countries to develop and relate their National Qualifications Framework (NQF) to the EQF so that all qualifications issued will carry a reference to the appropriate EQF Level. The National Qualifications Framework in each EU country will identify the appropriate EQF Level.

European countries are increasingly emphasising the need to recognise an individual's knowledge, skills and competences; those acquired not only at school, university or other education and training institutions, but also outside the formal system. Validation of the acquired competences is already well organised in some countries and European guidelines [3,4] have been developed for this purpose.

The EQF is closely related to the qualifications framework for the European Higher Education Area [5]. The EQF may create the impression that there are two distinct overarching frameworks for higher education in Europe. It is therefore important to underline that while the wording of the EQF is not identical to that of the EHEA Framework, the two frameworks are compatible and their implementation is coordinated.

Learning Outcomes and Knowledge, Skills and Competence

The EQF defines learning outcomes as statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of Knowledge, Skills and Competence.

EQF defines Knowledge, Skills and Competence as follows:

- **Knowledge** means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. In the context of the European Qualifications Framework knowledge is described as theoretical or factual.
- **Skills** means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the European Qualifications Framework skills is described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).
- **Competence** means the proven ability to use knowledge, skills and personal social and/or methodological abilities, in work or study situations and in professional and personal development. In the context of the European Qualifications Framework competence is described in terms of responsibility and autonomy.

Table 1. EQF Level 6 (Bachelor) and Level 7 (Master) Definitions

	Level 6	Level 7
Knowledge	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research.
Skills	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study.	Critical awareness of knowledge issues in a field and at the interface between different fields specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields.
Competence	Manage complex technical or professional activities or projects, taking responsibility for decision making in unpredictable work or study contexts take responsibility for managing professional development of individuals and groups.	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams.

Level 7 Programmes

Based on the total number of credits accumulated, in addition to the Bachelor programme credits, some higher education institutions may award qualifications such as a:

- Postgraduate Certificate (on obtaining 30 ECTS)
- Postgraduate Diploma (on obtaining 60 ECTS*)

* for Masters programmes of 90 to 120 ECTS

The recent EFRS Education Survey revealed that of the 41 responding institutions (across 21 countries), 11 (26.8%) indicated that they did not offer any Level 7 / postgraduate programmes. Level 7 Postgraduate Certificates were available in 15 (36.6%) institutions, Postgraduate Diplomas in 10 (24.4%), Masters programmes in 16 (39.0%), and Level 8 Doctoral programmes in six (14.6%) [Figure 1] [7,8].

For the purpose of this Level 7 benchmarking document the focus of the following sections will be on Masters programmes.

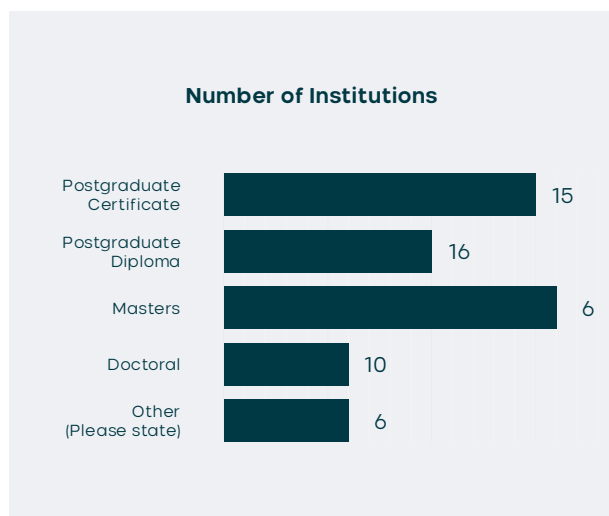


Figure 1. Level 7 and Level 8 Postgraduate Programmes for Radiographers [7,8]

Masters Programmes

Masters degrees are academic qualifications awarded to individuals who successfully complete studies and demonstrate specialised knowledge and skills and competence in a specific field of study and/or practice.

Entry Requirements for a Masters Programme

Entry requirements for Masters degrees can vary across Higher Educational Institutions and according to the individual programme requirements. Normally a Bachelor degree (Level 6 / 1st cycle) qualification is required although some Higher Educational Institutions may consider accepting other levels of qualification. Institutions may take into consideration the qualification, clinical experience and other activities, including continuing professional development (CPD), undertaken which together may be seen as being equivalent to meeting the entry requirements. Depending on the nature of the individual programme, such as a clinical-professional Masters, clinical experience in the proposed field of study may be required. Students undertaking a programme should be compliant with national requirements to undertake clinical practice.

Duration and Credits for a Masters Programme

The duration of a Masters programme depends on the number of credits being undertaken and whether the studies are being undertaken on a full-time or part-time basis. Second cycle programmes would require students to undertake a programme of study consisting of a minimum of 60 ECTS to a maximum of 120 ECTS, with the norm being 90 ECTS which may be undertaken on a full-time basis over three academic semesters* or its equivalent in part-time studies.

*Bologna - maximum workload per calendar year = 90 ECTS

Types of Masters Programmes

Masters programmes can be categorised as being Taught or Research programmes. Taught programmes may or may not include a research thesis / dissertation (depending on institutional or national regulations).

Taught Masters programmes:

Taught programmes normally consist of a series of modules / study units which may be delivered through varying modes of teaching and learning. These modes may include blended learning and distance learning / e-learning approaches.

Taught programmes in specialist areas of radiographic practice normally include modules / study units incorporating clinical practice and

assessment to ensure that Level 7 knowledge, skills and competencies are achieved in the relevant field.

Upon successful completion the graduates are considered to have undertaken specialist studies in a particular field which should be reflected on the students transcript and diploma supplement. Examples of different specialist programmes at Masters level currently offered across Europe include:

- brachytherapy,
- computed tomography (CT),
- clinical education,
- clinical leadership / management,
- dosimetry,
- general radiography,
- image interpretation and reporting,
- interventional procedures,
- magnetic resonance imaging (MRI),
- mammography,
- medical imaging,
- nuclear medicine (NM),
- ultrasound (US),
- positron emission tomography (PET),
- radiation protection,
- radiation therapy (RT),
- RIS / PACS,
- treatment planning.

Where a thesis / dissertation is required as part of the programme, students will generally be required to undertake a Research Methods and Statistics module / study unit and the assessment of the thesis / dissertation will generally require an oral presentation and defence of the work.

Research Masters programmes:

Research Masters programmes consist of focused and in-depth, independent, supervised research in a particular field of study. As part of such programmes students will be required to undertake a Research Methods and Statistics module / study unit and to undertake research leading to the submission of a thesis / dissertation. The assessment of the thesis / dissertation will generally require an oral presentation and defence of the work. The student works under the supervision of a supervisory team in a similar fashion to a Doctoral-level (EQF Level 8) research programme, however, the duration of study would be shorter and at EQF Level 7. Clinical practice-based modules / study units do not normally form part of a Research Masters programme.

Exit Awards and stand-alone modules / study units at Level 7

Some higher education institutions may offer the opportunity for a student to be given an academic award based on the number of credits successfully completed. For example the completion of 30 ECTS at Level 7 may lead to the award of a postgraduate certificate (see Level 7 Programmes section above).

Higher Education Institutions may also provide the option for students to register and obtain credits by undertaking individual modules / study units at Level 7 as part of continuing professional development (CPD). It may then possible for such modules / study units to be taken into consideration for the award of an academic qualification.

Components of a Masters Programme

Besides the highly specialised knowledge, skills and competencies in the relevant area of study being followed, Level 7 Masters programmes in Radiography will generally also include elements of:

Clinical audit

Clinical audit is a systematic examination or review of medical procedures. It seeks to improve the quality and the outcome of patient care through structured review whereby practices, procedures, and results are examined against agreed standards for good medical procedures. Modifications of the practices are implemented where indicated and new standards applied if necessary[13].

Communication

The ability to convey information to another effectively and efficiently.

Devices and technology

Medical device means any instrument, apparatus, implement, machine, appliance, implant, reagent for in vitro use, software, material or other similar or related article, intended by the manufacturer to be used, alone or in combination, for human beings, for a specific medical purpose [14].

Evidence-based practice

Evidence-based practice is the use of current best evidence in making decisions about the care of the individual patient through the integration of clinical expertise with the best available external clinical evidence from systematic research.

Leadership and management

Leadership is the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organisation of which they are members. Management comprises directing and controlling a group of people for the purpose of co-ordinating and harmonising that group towards accomplishing a goal.

Patient safety

Patient safety is the absence of preventable harm to a patient during the process of health-care. The discipline of patient safety is the coordinated efforts to prevent harm, caused by the process of healthcare itself, from occurring to patients [15].

Radiation protection

Radiation protection is the protection of people from harmful effects of exposure to ionising radiation, and the means for achieving this.

Reflection

Reflection is a generic term for those intellectual and affective activities in which individuals engage in to explore their experiences in order to lead to new understandings and appreciations [16].

Research

Research is the systematic investigation into, and study of, materials, sources, etc, in order to establish facts and reach new conclusions.

Risk management

Risk management in healthcare is the process of assessing risks, developing and implementing risk management plans, and monitoring risks on an ongoing basis and is essential approach to improving the safety of patients and staff.

Quality control / assurance

Quality Control may be defined as the observation techniques and activities used to fulfil requirements for quality and Quality Assurance may be defined as the planned and systematic activities implemented in a quality system so that quality requirements for a product or service will be fulfilled [17].

Programme Outcomes

Based on the second cycle qualifications from the 'Dublin Descriptors' and subsequently the Framework of Qualifications for the European Higher Education Area [5], it is expected that upon successful completion of studies students would be expected to achieve the following outcomes:

1. Knowledge and understanding

Knowledge and understanding provide a basis and opportunity for originality in developing or applying ideas in a research context.

Masters level graduates will:

- 1.1 be able to identify, formulate, plan, develop and conduct radiography research, choose appropriate methodological and analytical tools to analyse and interpret data (using quantitative and qualitative approaches)
- 1.2 have demonstrated the ability to improve and innovate and to determine the fundamental issues in the area of study
- 1.3 demonstrate originality in developing and applying specialised theoretical and practical knowledge in the area of study
- 1.4 have demonstrated critical awareness of current issues in the area of study and at the interface between the area of study and related fields in radiography and healthcare
- 1.5 Dependent on whether their programme includes clinical modules / study units:
- 1.6 have demonstrated the ability to use highly specialised clinical practice skills in the relevant field of study
- 1.7 have in-depth theoretical and clinical knowledge, skills and competencies

2. Applying knowledge and understanding

Applying knowledge and understanding through problem solving abilities in new or unfamiliar environments within broader contexts.

Master level graduates will:

- 2.1 have the ability to develop within their profession, apply their knowledge to new applications and explore new fields
- 2.2 be able to apply knowledge and understanding of research methods in identifying, formulating, planning, developing and conducting research
- 2.3 be committed to improve and innovate practice and services based on current theories of radiography
- 2.4 demonstrate a deeper understanding of relevant national and European legislation related to radiography
- 2.5 apply scientific methods in practice and critically appraise strategies that enable graduates to manage change, promote quality and ensure patient safety
- 2.6 Depending on their programme of studies graduates may be in a position to:
 - take up positions with greater responsibilities related to their specialist area of studies within organisations
 - act as clinical experts undertaking role development in the context of the wider medical environment
 - act as researchers
 - act as experts in quality assurance / control procedures
 - act as experts in practical radiation protection

3. Making judgements

Making judgements to integrate knowledge, skills and competencies using critical analysis, reflection and evidence-based practice as appropriate.

Master level graduates will:

- 3.1 have the ability to apply professional judgement in routine and complex situations through the integration of their own knowledge and that of other professions as appropriate
- 3.2 critically appraise the literature, as the basis for making judgements, in order to

integrate knowledge in their specialist field with healthcare

- 3.3 demonstrate reflective and evidence-based practice which is informed by research and proven best practice

- 3.4 be able to evaluate the influence of national and European practice and healthcare

4. Communication

Effective communication of professional knowledge to colleagues, other healthcare professionals, patients and the general public as appropriate.

Master level graduates will be able to:

- 4.1 communicate their professional knowledge using varying approaches and at an appropriate level
- 4.2 communicate benefits and risks of undertaking and not undertaking procedures within their field

5. Learning skills

Learning to study in a manner that may be largely self-directed or autonomous.

- 5.1 Graduates will have skills such as self-reflection, clinical reasoning and the ability to manage complex problems
- 5.2 Graduates will learn and practice as an independent practitioner as well as in collaboration with other healthcare professionals
- 5.3 Graduates are versatile professionals with the ability to practice and adapt in routine and challenging and rapidly changing environments
- 5.4 Graduates will be committed to lifelong learning and continuous professional development

Level 7 Learning Outcomes

Knowledge		Skills		Competences	
Research					
K1.	understand a broad range of research methods and have an in depth understanding of their chosen research method(s)	S1.	utilise, interpret, evaluate and analyse complex data	C1.	identify and refine a research question
K2.	be knowledgeable of peer-review publication processes	S2.	critically appraise scientific literature	C2.	formulate and plan a research study
K3.	understand the role of systematic reviews, how they are undertaken, analysed and evaluated	S3.	demonstrate competence in statistical analysis in order to explore complex data	C3.	conduct research using appropriate method(s)
K4.	be aware of formal and informal methods of dissemination of research findings	S4.	be confident in understanding and critically appraising epidemiological studies	C4.	analyse and interpret data (using the appropriate approach)
K5.	be knowledgeable of how to critically appraise literature	S5.	develop and present comprehensive research proposals which are appropriate and valid	C5.	be able to write a thesis / dissertation at the expected level
K6.	understand the role and use of epidemiological evidence in public health	S6.	compile and submit ethics applications as appropriate	C6.	have demonstrated the ability to improve and innovate practice through evidence-based practice
K7.	understand concepts, assumptions and techniques in the collection, analysis and presentation of data appropriate to their research	S7.	plan and implement the research study and report findings	C7.	act as a lead in research as appropriate
K8.	consolidate and develop their understanding of the research process	S8.	reflect on the evidence-base, national and international research and proven best practice, in comparison to their research	C8.	identify a relevant publication and write a research paper for publication
K9.	be aware of the ethical considerations associated with the research process	S9.	undertake in-depth study in their area of specialisation	C9.	disseminate findings locally, nationally and internationally through relevant conferences and events
		S10.	produce a thesis / dissertation based on their research		

Knowledge		Skills	Competences		
General Professional Requirements					
K10.	have in depth knowledge of relevant national and European regulations, legislation and guidelines	S11.	apply national and European regulations and legislation as part of daily practice	C10.	communicate their professional knowledge and underpinning rationale to specialist and non-specialist audiences using appropriate techniques
K11.	understand best practices in effective communication with patients, carers and other healthcare professionals	S12.	demonstrate effective communication with patients, carers and other healthcare professionals	C11.	practice effectively and confidently across national borders and cultures
K12.	have an in depth knowledge of the benefits and risks associated with procedures within their specialised area and on how this information should be communicated to patients and other health professionals	S13.	present the benefits and risks associated with procedures within their specialised area to patients and other healthcare professionals	C12.	have the ability to integrate knowledge from their own and other professions in order to handle complexity
K13.	be aware of cultural considerations and specific patient needs	S14.	contribute effectively towards the establishment of a safety culture	C13.	practice effectively within a culture of safety
K14.	have an in depth knowledge of general aspects of patient care and in all aspects of patient care related to patients presenting for procedures within their specialised area	S15.	manage specific patient needs taking into account any cultural considerations	C14.	critically appraise literature in order to evaluate the relationship between illness, radiography and health status
K15.	demonstrate an understanding of the importance of teamworking / interprofessional or multidisciplinary working in the clinical environment	S16.	demonstrate best practice in general aspects of patient care and in all aspects of patient care related to patients presenting for procedures within their specialised area	C15.	analyse and compare the professional role of radiography practice in their own country in relation to published international roles and practices
K16.	be knowledgeable on clinical audit and the role of the radiographer	S17.	work effectively as part of a multidisciplinary team in the clinical environment	C16.	demonstrate a broad and deep vision of radiography and be able to determine the fundamental issues in radiography
		S18.	undertake clinical audits at a local or national level as appropriate	C17.	communicate effectively with patients, carers and other healthcare professionals
		S19.	lead and train radiographers and other healthcare professionals	C18.	manage and care for diverse patient types as part of daily clinical practice
		S20.	contribute to the education and training of students	C19.	practice effectively as part of a multi-disciplinary team and lead teams where appropriate
		S21.	participate in change management, project management, risk management and quality management within the clinical department	C20.	have the ability to lead and conduct clinical audits

Knowledge		Skills	Competences	
Specialised Field				
K17.	be in possession of the appropriate theoretical and clinical knowledge in their chosen field of specialisation	S22. justify and optimise procedures relevant to their area of specialisation as appropriate	C21. use specialised theoretical and practical knowledge some of which is at the forefront of knowledge in radiography. This knowledge forms the basis for originality in developing and/or applying ideas	Dependent on whether their pathway choice includes practical components
K18.	have an in depth knowledge and understanding of principles, devices and technology relevant to their area of specialisation	S23. demonstrate specialised skills and undertake relevant procedures	C22. have demonstrated critical awareness of knowledge issues in radiography and at the interface between different fields	C26. have demonstrated the ability to use advanced practical skills in the relevant field of radiography
K19.	have an in depth knowledge and understanding of patient safety issues relevant to their area of specialisation	S24. assume clinical responsibility for procedures	C23. have the ability to develop within their profession, apply their knowledge to new applications and explore new fields	C27. have in-depth theoretical knowledge, deeper insight and advanced clinical skills
K20.	have an in depth knowledge and understanding to justify and optimise procedures relevant to their area of specialisation	S25. evaluate the technical and clinical aspects of procedures relevant to their area of specialisation	C24. be committed to improve and innovate practice and services based on current theories of radiography science, a deeper understanding of relevant EU social and health-care legislation in relation to effective radiography practice	Depending of the composition of their study programme graduates will be competent to:
K21.	have an in depth knowledge and understanding of quality control / assurance relevant to their area of specialisation	S26. be able to identify anatomy and pathology and report on findings as appropriate in medical imaging and/or radiotherapy	C25. apply scientific methods in practice, and critically appraise strategies that enable practitioners to manage change and promote quality care	C28. take up positions with more challenging responsibilities for the practical organisation and management of their departments
		S27. demonstrate analytical and critical skills relevant to their area of specialisation		C29. where appropriate, act as clinical experts undertaking role development in the context of the wider medical environment
		S28. demonstrate reflective and evidence-based practice in their area of specialisation		C30. act as expert in the development of quality control procedures, the surveillance of the total quality chain in the department and the implementation of radiation safety measures
		S29. appraise and apply, as appropriate, recent developments relevant to their practice		C31. act as consultants or liaisons giving feedback to industry and input to public health authorities
		S30. contribute to the education and training of other staff and students in their area of specialisation		C32. have demonstrated the ability to manage and lead as appropriate

Knowledge		Skills	Competences
Personal and Professional Development			
K22. be knowledgeable of the importance of personal and professional development for healthcare professionals	S31. plan their own personal and professional development	C33. be competent in self-reflection, clinical reasoning and the ability to manage complex problems	
K23. understand the validity and methods employed in reflective practice	S32. undertake personal and professional development	C34. learn and practice as independent practitioners as well as in collaboration with other healthcare professionals	
	S33. apply reflective practice	C35. be versatile professionals with the ability to practice and adapt in routine challenging and rapidly changing environments	
	S34. identify their own learning needs and those of others as appropriate	C36. be committed to lifelong learning and continuing professional development for themselves and others	
	S35. develop personal and professional development plans for themselves and others as appropriate		
	S36. maintain a record of their own personal and professional development		

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