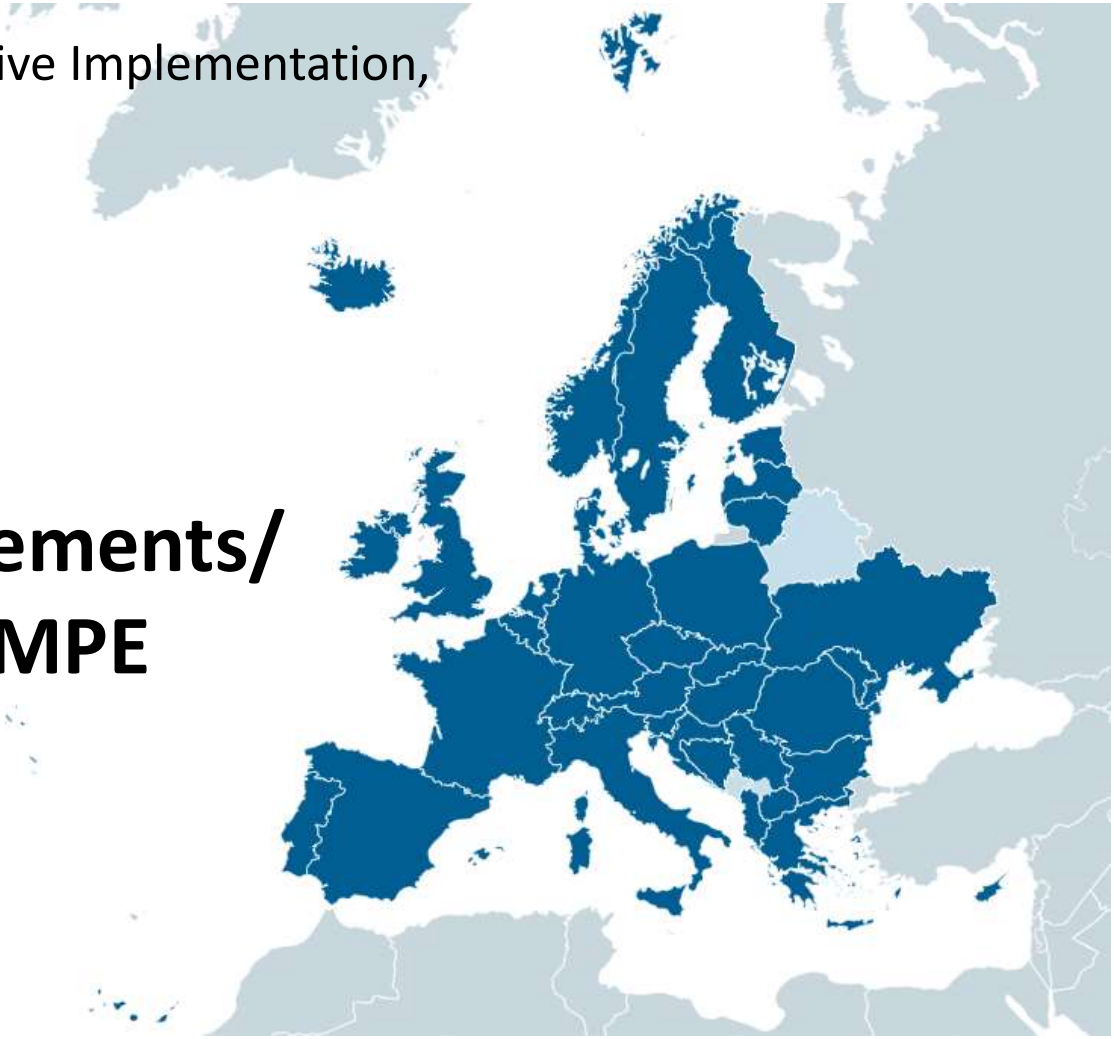
HERCA Workshop EU-BSS Directive Implementation,
Madrid, 20-22.5.2024



EFOMP: E&T requirements/ Implementation of MPE

Assoc. Prof. Paddy Gilligan,
Chief Physicist, Past President European Federation of Organisations for Medical Physics (EFOMP)
Mater Misericordiae University Hospital,
Dublin Ireland

EFOMP
EUROPEAN FEDERATION OF ORGANISATIONS FOR MEDICAL PHYSICS

Join at menti.com | use code 6722 3020

Mentimeter

which incident/practice had the highest occupational dose

linac | gallium generator | ct fluoroscopy | intraoral dental

Analysis of a radiation incident with intraoral dental radiological equipment

[1]J F MALONE, PhD, FIPEMB, FFRRCSI and [2]C HONE, MSc, MInstP

[1]Department of Medical Physics and Bioengineering, Garden Hill House, St James's Hospital, Dublin 8, and [2]Radiological Protection Institute of Ireland, 3 Clonskeagh Square, 119 Clonskeagh Road, Dublin 14, Ireland

Abstract

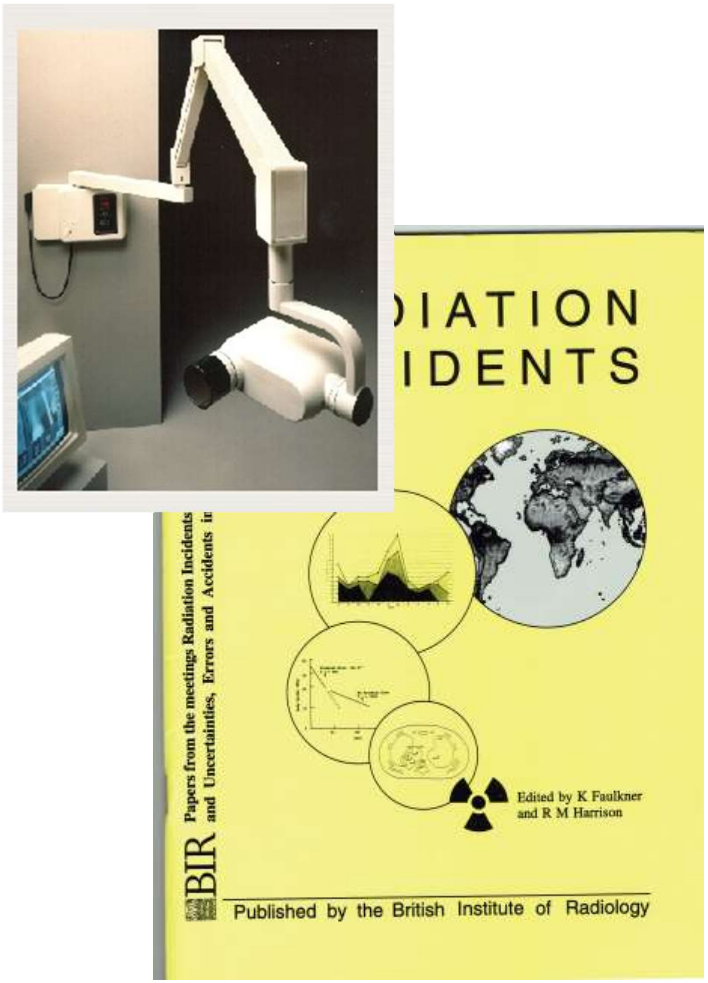
Many physicists, radiologists and radiographers are faced with the task of investigating radiation incidents that are alleged to have taken place. These investigations are often rigorous in nature, but they seldom become part of the process of litigation. If and when they do, an additional dimension of rigour and confrontation is introduced into the enquiry. A case is described involving a serious incident with dental radiological equipment, containing many lessons that may be applied to the preparation of other cases. The description includes an account of the incident, the circumstances surrounding it, the dosimetry, risk estimates and the medical consequences of the incident. In addition, some aspects of the associated legal proceedings are reviewed and assessed. As a result of the incident described a number of conclusions are drawn with respect to important practices in ensuring the safety of installations and the value of evidence brought forward by expert witnesses.

Many physicists, radiologists and radiographers are faced with the task of investigating radiation incidents that are alleged to have taken place. These investigations may be rigorous in nature, but they seldom become part of the process of litigation. If and when they do, an additional dimension of rigour and confrontation is introduced into the enquiry, driven by the adversarial system operated by the courts. This additional dimension may be particularly important in incidents where the formal position of the scientific community has been determined from a consensus of diverging opinions and findings rather than from a single definitive finding. This is the case, for example, in ment that dentists and their assistants who undertake radiological examinations must receive recognized training in the techniques involved and in radiological protection[11]. This has given rise to a significant number of special initiatives undertaken by both the European Community and National Professional Bodies to ensure that this requirement is met.

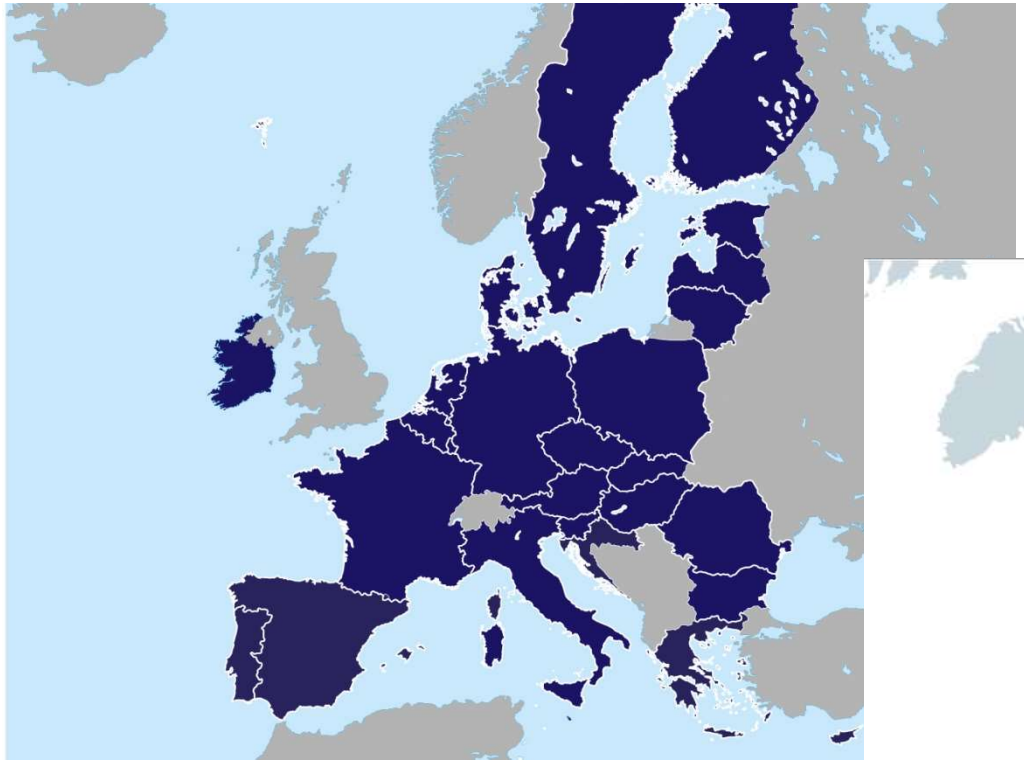
The incident described here took place against the above background of considerable public sensitivity about radiation, and notable additional refinements in the regulation and practice of dental radiology. The incident itself and the

Table I. Beam diameter and air kerma for 1.5 h at various locations from exit point of cone to floor

Location	Beam diameter (cm)	Air kerma (Gy) (in 1.5 h)
End of cone	7.5	30
Seat on dentist chair	30	3
Floor	60	0.7



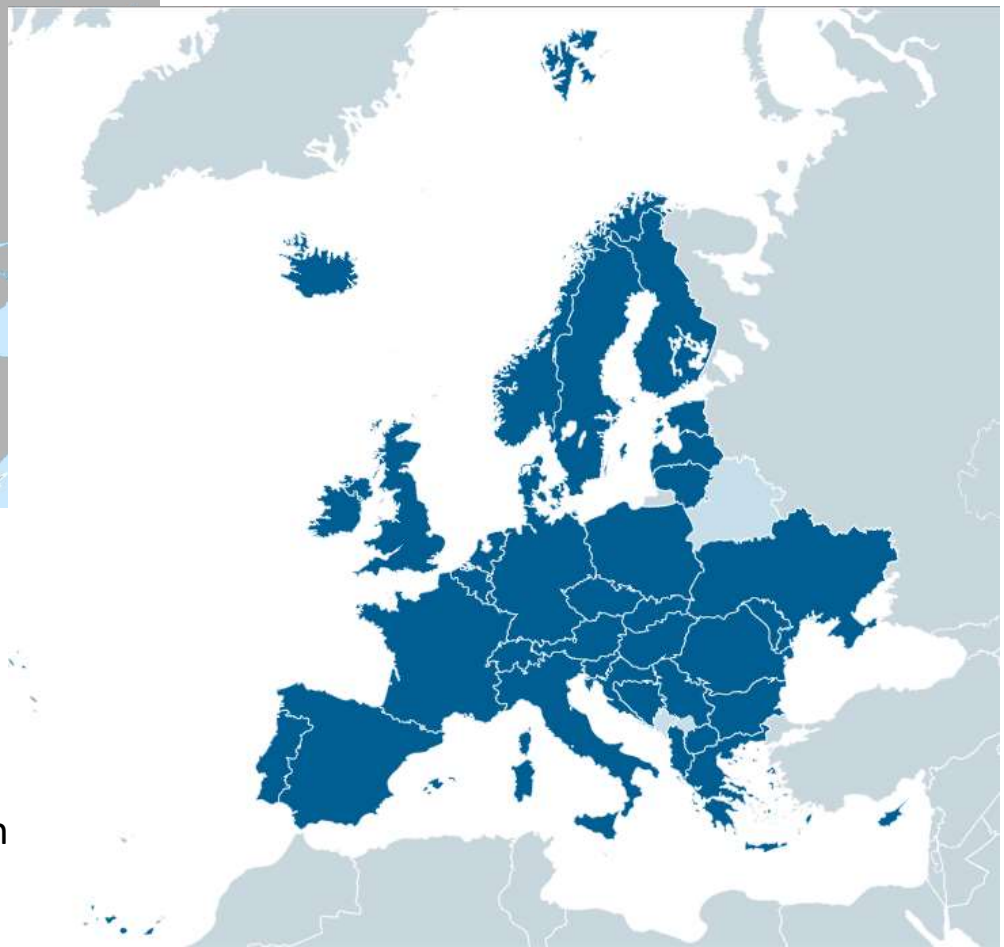
EFOMP & EUROPE



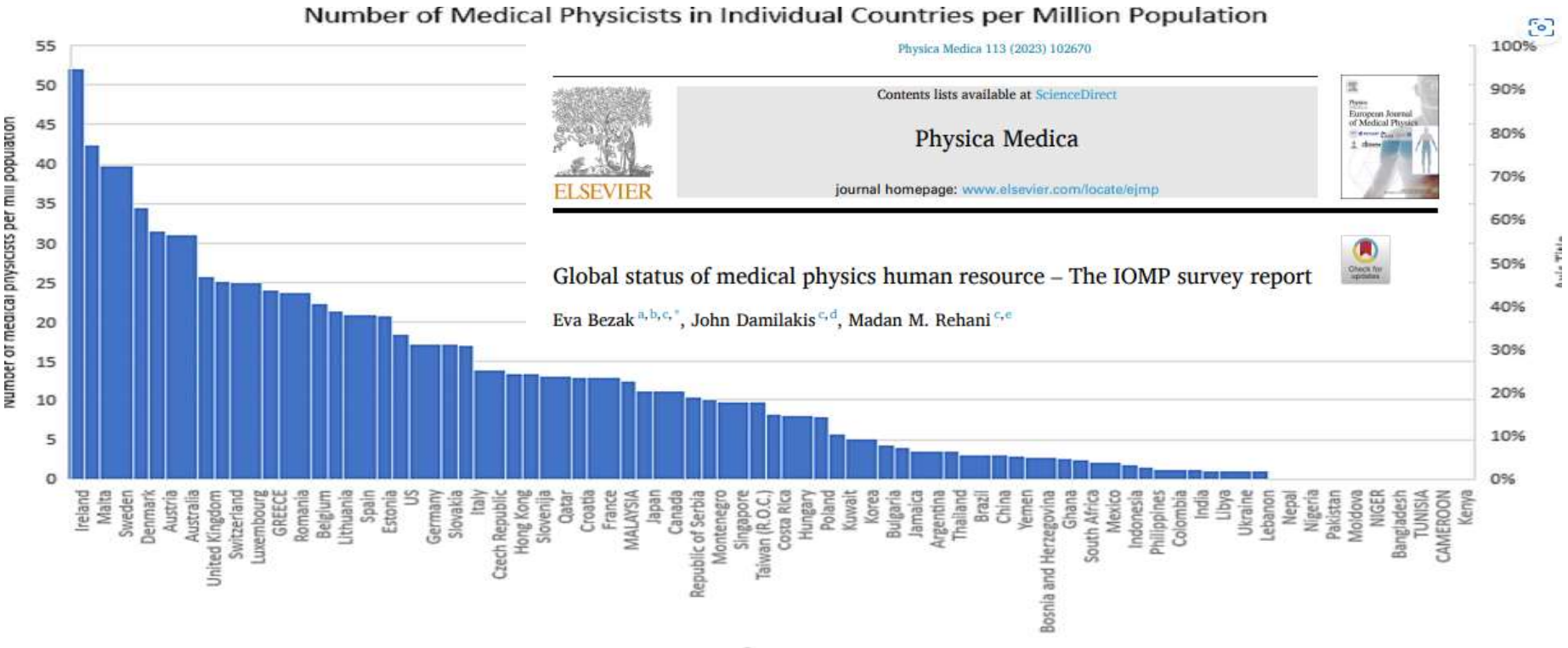
EU: 27 Countries

Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden

EFOMP: 37 Countries



IOMP survey EFOMP region 29 countries



Physica Medica 113 (2023) 102670

Contents lists available at ScienceDirect

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Global status of medical physics human resource – The IOMP survey report

Eva Bezak [a,b,c,*], John Damilakis [c,d], Madan M. Rehani [c,e]

Physics Per Million population radiation modalities

Medical Physics Sub-speciality	IAEA/EFOMP Survey (medical physicists per million population) (2015)				EFOMP (medical physicists per million population)
	Minimum No.	Maximum No.	Average No.* (wpop**)	Median No.	Recommended minimum No.*
Radiotherapy	3.8	22	9.6 (9.1)	8.2	9
Nuclear medicine	0.3	6.9	2.6 (2.0)	2.2	2
Diagnostic & interventional radiology	0.1	25	5.0 (3.0)	3.5	5
Radiation Protection	0	5.0	1.8 (2.2)	1.5	2
Total			19 (16.3)		18

* For hospitals in Europe that provide the average level of healthcare per million population as derived from the IAEA/EFOMP survey 2015.
** wpop – weighted population mean is the average obtained after weighting each country's value by their percentage contribution to the total European population.

2022

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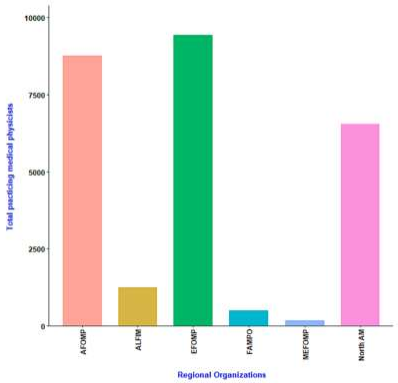
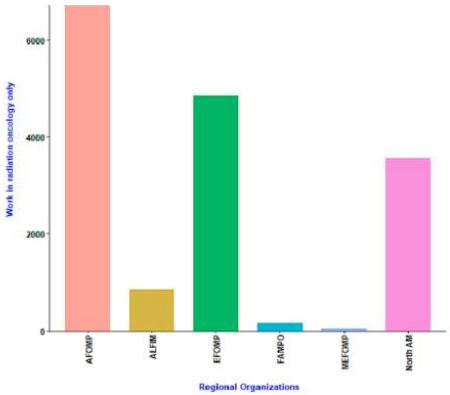




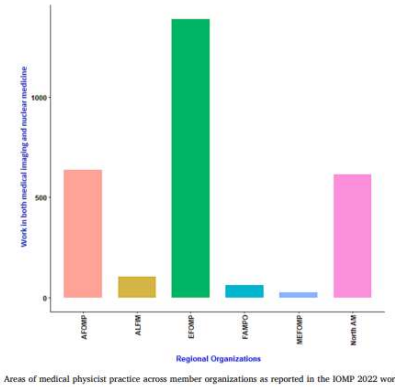


Fig. 3. Areas of medical physicist practice across member organizations as reported in the IOMP 2022 workforce survey.

Total

Radiation Oncology

Imaging and nuclear medicine

Planning for the future and current needs

- Highly variable numbers of medical physicists in Europe
- Vacancy and retirement rates
- Length to train
- Roles practical, professional and expert level
- 5% growth in medical radiological equipment per annum in Europe, 8% growth in research
- ++ Growth in Radiopharmaceuticals
- Increasing legal obligations and enforcement
- Greater Role in other areas non-ionising MRI, Lasers , Physiological Measurement
- Funded training and trainers
- EFOMP special interest groups , Particle therapy, AI, Dental , early careers, radionuclide therapy dosimetry

EFOMP & EUROPE

In most European countries Medical Physicists have set up National Societies of Medical Physics.

These Societies have joined the European Federation of Organisations for Medical Physics (EFOMP) as National Member Organisations (NMOs) of which there are currently 37.

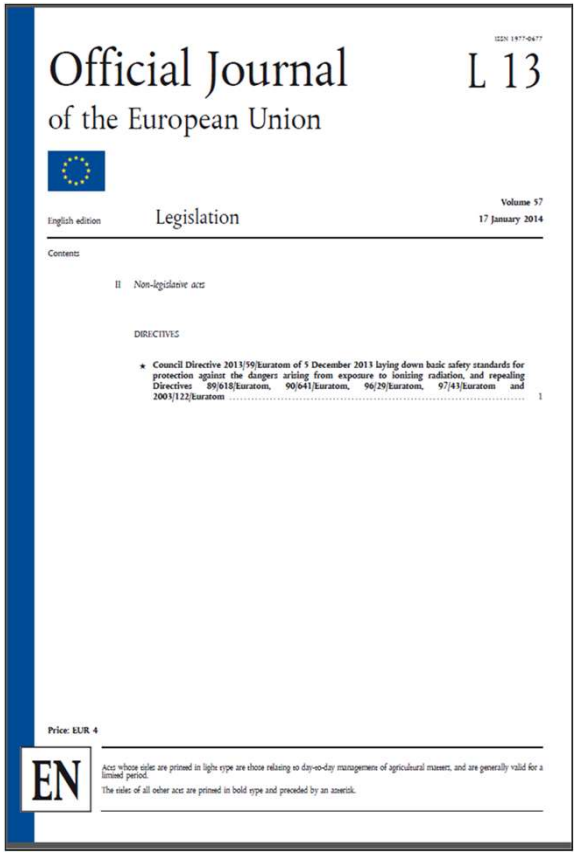
The importance of the activities carried out by over 9000 Medical Physicists in Europe in the service of patient health is a sufficient reason for this profession **to be recognised** as a **regulated profession** by the EU. Actually, approximately one third of European countries regulate Medical Physicists as healthcare professionals.

One of the key objectives of EFOMP is the **recognition by the European Commission of the Medical Physics profession as a regulated profession** under Council Directive 2005/36/EC on the recognition of professional qualifications, as amended by EU Directive 2013/55/EU for Mutual Recognition of Professional Qualifications, which provides for automatic recognition for a limited number of professions **based on harmonised minimum education and training requirements**, a general system for the acknowledgement of evidence of training and automatic recognition of professional experience, all within the EU.

One of the **main objective of EFOMP is to harmonise** and promote the education, training and practice of Medical Physics in Europe.

EFOMP Malaga Declaration 2023:
An updated vision on Medical Physics in Europe

Current position of Medical Physics as a healthcare profession in Europe



Official Journal of the European Union

L 13

Volume 57

17 January 2014

English edition

Legislation

Contents

II *Non-legislative acts*

DIRECTIVES

* Council Directive 2013/59/Euratom of 5 December 2013 laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation, and repealing Directives 89/618/Euratom, 90/641/Euratom, 96/29/Euratom, 97/43/Euratom and 2003/122/Euratom 1

Price: EUR 4

EN

Acts whose titles are printed in light type are those relating to day-to-day management of agricultural matters, and are generally valid for a limited period.

The titles of all other acts are printed in bold type and preceded by an asterisk.

2013/59/EURATOM Directive of December 5th 2013, establishing basic safety standards for protection against the dangers arising from exposure to ionising radiation has defined the **MEDICAL PHYSICS EXPERT (MPE)** as an individual **"having the knowledge, training and experience to act or give advice on matters relating to radiation physics applied to medical exposure, whose competence in this respect is recognized by the competent authority".**

2013/59/EURATOM: "Member States shall ensure that … in medical radiological practices, a medical physics expert is appropriately involved".

MPEs liaise with medical doctors and other healthcare professionals to ensure safe and effective use of radiation on patients

https://doi.org/10.1016/j.ejmp.2023.102620

EFOMP Malaga Declaration 2023:
An updated vision on Medical Physics in Europe

Current position of Medical Physics as a healthcare profession in Europe

MEDICAL PHYSICS IS THE APPLICATION OF PHYSICS TO HEALTHCARE, USING PHYSICS FOR PATIENT ASSESSMENT, IMAGING, AND TREATMENT

MEDICAL PHYSICISTS are graduate scientists, holding post-graduate qualifications, who work in many different areas of healthcare managing and delivering services and carrying out clinically oriented research and development

- **Medical Physicists** have key responsibilities for the calibration quality assurance and control, optimized use and safety of medical devices, particularly devices involving **ionising** and **non-ionising** radiation.
- … responsibility for the **commissioning**, data acquisition, adaptation and the **optimisation** of the use of **new devices** and their insertion into clinical use.
- … carry out **dosimetric measurements** and treatment **planning**, … essential components of external beam **radiotherapy, brachytherapy and nuclear medicine** (molecular) therapy of cancer patients.
- … **multidisciplinary nature** of medical physics and the rapid increase in the number and complexity of medical devices including **software components**
- … key role in clinically oriented **research** and the development of **new methodologies** and **instrumentation** for clinical use.
- … responsibility for **organising educational and training** courses in medical physics for **medical doctors and other healthcare professionals**

https://doi.org/10.1016/j.ejmp.2023.102620

Graded MPE: BSS EU 13/59

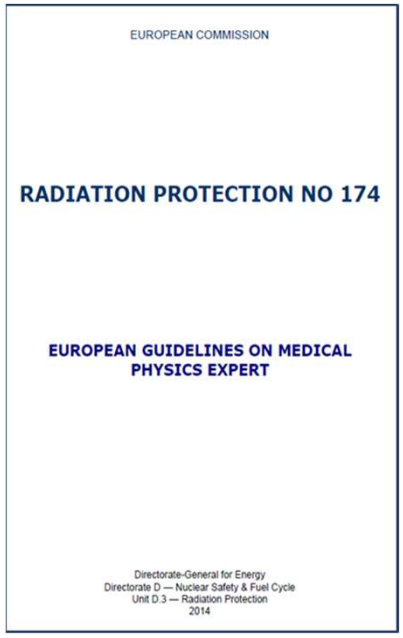
in medical radiological practices, a medical physics expert is appropriately involved, the level of involvement being commensurate with the radiological risk posed by the practice.

In particular: (i) in radiotherapeutic practices other than standardised therapeutic nuclear medicine practices, a medical physics expert shall be closely involved;

(ii) in standardised therapeutical nuclear medicine practices as well as in radiodiagnostic and interventional radiology practices, involving high doses as referred to in point

(c) of Article 61(1), a medical physics expert shall be involved; (iii) for other medical radiological practices not covered by points (a) and (b), a medical physics expert shall be involved, as appropriate, for consultation and advice on matters relating to radiation protection concerning medical exposure

RP-174 (2014) & EFOMP Policy statement 12.1 (2014)


EUROPEAN COMMISSION

RADIATION PROTECTION NO 174

EUROPEAN GUIDELINES ON MEDICAL PHYSICS EXPERT

Directorate-General for Energy
Directorate D — Nuclear Safety & Fuel Cycle
Unit D.3 — Radiation Protection
2014

Qualification Framework for the Medical Physics Expert (MPE) in Europe

MPE: "An individual having the knowledge, training and experience to act or give advice on matters relating to radiation physics applied to medical exposure, whose competence to act is recognized by the Competent Authorities" (Recast BSS)

The Qualifications Framework is based on the European Qualifications Framework (EQF). In the EQF Learning Outcomes are defined in terms of Knowledge, Skills, Competences (KSC) (European Parliament and Council 2008/C 111/01)

EDUCATION		CLINICAL TRAINING	ADVANCED EXPERIENCE and CPD	RECOGNITION
EQF Level 6 (e.g., Bachelor with 180 - 240 ECTS) (i)	**EQF Level 7** (e.g., Master with 90 - 120 ECTS) (iii)	**Clinical Certification in Medical Physics Specialty** (v)	**EQF Level 8 in Medical Physics Specialty** (vii)	**By Competent Authority as MPE in Medical Physics specialty** (ix)
Physics or equivalent (ii)	**Medical Physics*** or equivalent (iv)	Structured accredited clinical training residency in the specialty of Medical Physics in which the candidate seeks clinical certification. The duration should be typically two full-time year equivalents** (vi)	Structured accredited advanced experience and CPD in the specialty of Medical Physics in which the candidate seeks certification as MPE. The duration would be an additional *minimum* of two full-time year equivalents*** (viii)	**RE-CERTIFICATION** 5 year CPD cycle (x)

* Should include as a minimum the educational components of the Core KSC of Medical Physics and the educational components of the KSC of the specialty of Medical Physics (i.e., Diagnostic & Interventional Radiology or Nuclear Medicine or Radiation Oncology) for which the candidate seeks clinical certification. When this element of specialization is not included it must be included in the residency.
** The EQF level of the residency is intermediate between EQF levels 7 and 8.
*** In states where the MPE is required to be certified in more than one specialty of Medical Physics the number of years would need to be extended such that the MPE will achieve level 8 in each specialty.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EFOMP policy statement

European Federation of Organisations for Medical Physics (EFOMP) Policy Statement 12.1: Recommendations on Medical Physics Education and Training in Europe 2014

C.J. Caruana [a,*], S. Christofides [b], G.H. Hartmann [c]

[a] Medical Physics Department, Faculty of Health Sciences, University of Malta, Malta
[b] Medical Physics Department, Nicosia General Hospital, Cyprus
[c] Department of Medical Physics and Radiation Therapy, German Cancer Research Centre in Heidelberg, Germany

*ECTS = European Credit Transfer and Accumulation System
1 ECTS = 25-30 study hours, varying among countries
180 ECTS is typically a BSc in physics

MP, MPE, RPE

2013/59/EURATOM directive highlighted the need for a **liaison between MPE and Radiation Protection Expert (RPE)** in the hospital setting, implicitly recognizing that lack of cooperation can limit the effectiveness of radiation protection.
MPEs have the highest level of expertise in the area of radiation protection (EQF = 8) and are healthcare professionals with full responsibility for the physical aspects of the patients' radiation protection. MPE's core knowledge, skills and competences include those of the RPE, **MPEs in many European countries act also as the RPE**.

EFOMP adopts the following position regarding the responsibility of Medical Physicists in the field of Radiation Protection in hospitals: "The Medical Physics Expert (MPE) as defined in the directive 2013/59/ EURATOM should be the healthcare professional to supervise and assume the **responsibilities for radiation protection activities in hospital settings**, including patients, working staff, members of the public and visitors. The **Radiation Protection Expert (RPE) in hospital settings should be an MPE**, since medical physicists have the highest level of radiation physics knowledge and training".

NRS: Where are we now?

Physica Medica 85 (2021) 129–136

Contents lists available at ScienceDirect

Physica Medica

journal homepage: www.elsevier.com/locate/ejmp

Original paper

Education, training and registration of Medical Physics Experts across Europe

Ad J.J. Maas [a,*], Adriaan A. Lammertsma [b], Sam Agius [c], Christoph Bert [d], Brenda Byrne [e], Carmel J. Caruana [f], Paddy Gilligan [g], Efi Koutsouveli [h], Eric Pace [i], Marco Brambilla [j]

HUGE DIFFERENCES AMONG COUNTRIES!

One of the **main objective of EFOMP is to harmonise** and promote the education, training and practice of Medical Physics in Europe.

- **National Registration Scheme (NRS)** was defined as a **national agreement** detailing the way in which **medical physicists were trained and educated**, together with the availability of a **formal training programme for medical physicists**.

- Understanding implementation E&T and registration of MPEs across the EU countries is essential to develop policies intended to improve **harmonization** of MPEs, **provide possibility of free movement of MPEs** between EU countries and create the possibility to evaluate how EFOMP recommendations concerning E&T and registration of MPEs are implemented by the NMOs.

- Apart from EFOMP, other societies are involved in E&T for MPs and MPEs in Europe, as European Society for Therapeutic Radiology and Oncology (**ESTRO**), the European Association of Nuclear Medicine (**EANM**), the European Society of Radiology (**ESR**) and the International Atomic Energy Agency (**IAEA**)

NRS: Where are we now?

What is the model for medical physicists' education typically in Europe?

Physica Medica 85 (2021) 129–136

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Survey 2020:

E&T divided into 3 phases

1. A bachelor phase according to university standards.
2. A master phase according to university standards.
3. A third (clinical) phase of additional education and practical training in a clinical environment after completion of the master's degree. This phase may include postgraduate education at a university.

36 NMOs contacted, 33 completed the form

26 /27 EU members are represented in EFOMP, 25 participated

19/25 have an existing NRS for MPEs, 3 are considering starting one.

3 non-EU have an NRS, 2 are considering starting one.

NRS: Where are we now?

Can you provide insights into the typical content and distribution of courses in medical physicists' education in Europe?

Summary of the results of the NRS survey for the three phases of education and training of MPEs. The figures are from 22 countries reporting to have an NRS running.

	Phase 1	Phase 2	Phase 3		Total
	BSc	MSc	Post graduate		
Duration median (years)	3	2	4		9
Duration min-max (years)	3 to 4	1 to 2	2 to 6.5		7 to 11.5
			Theory	Clinic	
Not defined	1	1			
Physics and mathematics	8	2			
Applied physics	7	4			
Physics and medical physics	4	5			
Medical physics	1	2	20	22	
Radiation protection	1	7	20	22	
Biophysics			8		
Medical informatics			11		
Medicine			17		
Medical ethics			11	16	
Legislation			17		
Communication				17	
Collaboration				19	
Leadership				10	
Health advocacy				7	
Science and Research				8	
Total	22	21			

Original paper
Education, training and registration of Medical Physics Experts across Europe

NRS: Where are we now?

Can you provide insights into the typical content and distribution of courses in medical physicists' education in Europe?

NMOs in different European countries follow different paths to educate and train MPEs , but there are a few basic rules which are essential to guarantee the quality of the MPE:

1. A good foundation in basic ***Physics and Mathematics***, especially during the **Bachelor phase.**
2. The **Master phase** is used to strengthen ***fundamental Physics*** knowledge and to introduce *subjects* that are ***relevant for Medical Physicists,*** like Biophysics, Radiation Protection, Medical Physics, Biomedical Engineering and Teaching.
3. The **clinical phase** is used to introduce forthcoming medical physicists to clinical practice and for collaboration with both medical doctors and other health professionals. In addition, ***this phase is used to specialise in one of the working fields of medical physics***. Depending on the length of this phase, there is room for maturation of the professional.

The quality of the basic Physics and Mathematics education may be defined by the number of **ECTS credits** (European Credit Transfer and Accumulation System, 1 ECTS = 25-30 study hours, varying among countries)

100–200 ECTS credits should be devoted to **fundamental physics and mathematics** divided between Bachelor and Master phases (180 ECTS is typically a BSc in physics),
May be add Biophysics, Medical Physics, Radiation Protection and Medical Technology also in the Bachelor phase
To grant the title of MP or MPE at the end of the education and training programme **Radiation Protection is a mandatory subject.**

Original paper
Education, training and registration of Medical Physics Experts across Europe

NRS: Where are we now?

- How has the approach evolved over the years, and what factors have influenced these changes?
- How do professionals in the field balance learning on the job versus taking formal courses at universities?

This survey is ESTRO- EFOMP, specifically addressed to RT

Education and training structure for MPE as assessed by the current and previous surveys.

Number of countries with:	EFOMP PS 1 1984 [4]	EFOMP 2005 [19]	Current Survey 2020
Response to survey	19	25	26
National Training Scheme	9	16	20
University training scheme only	0	4	2
On-the-job training only	10	4	3
Training abroad	0	1	1
Duration of the training	1–4 years (median 3 y)	2.5–9 years (median3 y)	1–5 years (median3 y)
National registration of MPE as health professional	6	14	19
Pre-education to enter the training or to be directly hired by the hospital:			
BSc physics	1	7	5
MSc (medical) physics	8	9	15
BSc in science*	0	0	2
MSc in science*	0	0	2
No information	10	9	2

- Pre-education requested is now **MSc**
- The current average of **3 years** of training is **shorter** than generally required for training in **medical specialties.**
- MPEs in radiation oncology have a crucial clinical role a large percentage (**a median value from the survey of 75%**) of the program should be **spent in a hospital** to acquire competences and skills that are most relevant to clinical work.
- The **high level of qualifications** required to enter the training combined with the intensive level of training demands that the **residency (academic education and hospital training) should be paid**.
- **Certification** (or licensing) **as an MPE** after the training should be based on objective assessment of completion of a training program that **fulfills the national guidelines**.
- Hospitals, universities, or healthcare facilities that provide **MPE** training should be **certified by an official authority** responsible for training programs.
- The **training facility** and the quality of the MPE training should be **regularly audited** by the official authority.

C. Garibaldi et al. *Physica Medica 84 (2021) 65–71*

Main differences between the countries

How do professionals in the field balance learning on the job versus taking formal courses at universities?

Hard to generalize. The situation in Europe is very uneven.

Most differences between countries are in the postgraduate education and learning programme due to

- available learning environments
- sub-specialisations within Medical Physics itself

Most countries have E&T programmes for **Radiotherapy, Nuclear Medicine and Diagnostic and Interventional Radiology.**

Only a few countries have E&T programmes **Hospital Physics** (where, in addition to Medical Imaging, attention is given to **Operating Room** and **Intensive Care facilities**), **Clinical Neurology, Clinical Audiology, Hospital Laboratory.**

Important skills for healthcare professionals such as **leadership, health advocacy, science and research** are not equally considered in the 22 countries.

Use of **titles for the medical physics professional**: not all NMOs use the title of Medical Physicist (MP) and besides Medical Physics Expert (MPE), other titles like Qualified Medical Physicist, Specialised Medical Physicist and Clinical Physicist are used.

The use of MPE should be limited to professionals who have completed the full education and training programme for MPEs, other professional titles are for local use and should have their proper translation into MP and MPE for international use.

Original paper
Education, training and registration of Medical Physics Experts across Europe

NRS: Where are we now?

- 22 Countries have an NRS running
- 21/22 NRSs are monitored by a supervising committee
- 18 /22 has approval of the NRS by the Government (10 direct approval and 8 indirect approval)

Approval of the NRS by the Government is the best sign of formal recognition of the MPE.
A reliable system for MPE registration and re-registration is essential to guarantee the quality of the professional and it motivates him or her to take part in CPD.

Original paper
Education, training and registration of Medical Physics Experts across Europe

Recognition of MPE certification between EU Countries: IS THIS POSSIBLE?

- In the EU there is a system of automatic recognition of professional qualifications for seven sectoral professions: nurses, midwives, doctors, dentists, pharmacists, architects and veterinary surgeons.

- The recognition of professional qualifications laid down in Directive 2005/36/EC enables the free movement of professionals such as doctors or architects within the EU.

- Recognition is based on harmonised minimum training requirements.

- Applications must be made to DG GROW- DG for Internal Market, Industry, Entrepreneurship and SMEs

EU 55 /13 : Interstate recognition of medical physics expert

- Mobility of professionals regulated by Directorate General Grow, Applies to European economic area
- Requirements :
  - Regulated Profession
  - Common training platform in a third of EU member states
    - National Registration Scheme (11 EFOMP approved schemes based on RP 174. SEFM application in progress, not dependent on funded training program)
  - Proof that current system creates economic barriers;
    - Industry e.g. proton therapy manufacturers
    - Health care private health providers e.g. dentists and hospitals
    - Radiopharmaceutical industry

Communication has begun with DG grow , EFOMP realistic about time scale and prospects of success

physicist

Professions Regulated in Country

All

Profession regulated under Directive 2005/36/EC

All

Temporary and/or occasional provision of services

All

Attached to a profession

All

Refine Results

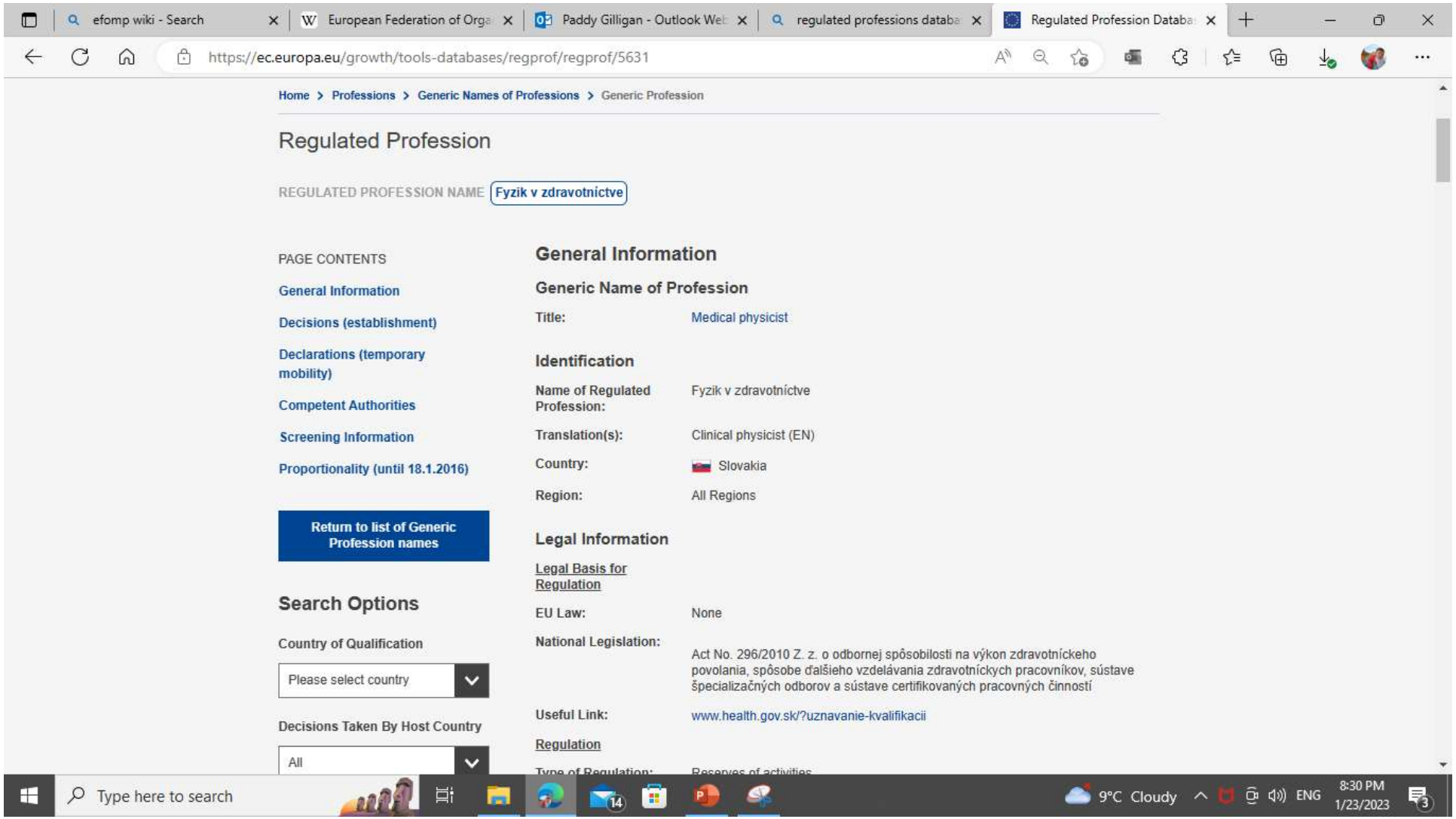
Clear All

Please Note

The only authentic name of a regulated profession is that of the language of the country in which the profession is regulated. Any translation of this title on this website is purely indicative.

The generic professions aim to give an indication about the general scope of activities of the regulated professions and to help find regulated professions which are listed in the language of the country in which they are regulated. However

Name of Regulated Profession	Country	Region	Recognition Under Directive 2005/36/EC	Qualification Level
Chartered physicist	United Kingdom (archived data)	All Regions	General system of recognition - primary application	Diploma of post-secondary level (exactly 4 years)
Fyzik v zdravotníctve	Slovakia	All Regions	General system of recognition - primary application	Diploma from post-secondary level (more than 4 years)
Físico	Spain	All Regions	General system of recognition - primary application	Diploma of post-secondary level (3-4 years)
Klinikai sugárfizikus	Hungary	All Regions	General system of recognition - primary application	Diploma from post-secondary level (more than 4 years)
Kontrolní fyzik při testování spouštění výzkumného jaderného reaktoru	Czech Republic	All Regions	General system of recognition - primary application	Diploma from post-secondary level (more than 4 years)
Přímé řízení provádění jednotlivých kroků testů fyzikálního a energetického spouštění na blokově dozorně reaktorového bloku jaderné elektrárny (provozní fyzik)	Czech Republic	All Regions	General system of recognition - primary application	Diploma from post-secondary level (more than 4 years)
Radiofísico Hospitalario	Spain	All Regions	General system of recognition - primary application	Diploma of post-secondary level (3-4 years)
Radiologický fyzik	Czech Republic	All Regions	General system of recognition - primary application	Diploma from post-secondary level (more than 4 years)
Sairaalafyysikko / sjukhusfysiker	Finland	All Regions	General system of recognition - primary application	Diploma from post-secondary level (more than 4 years)
Sjukhusfysiker	Sweden	All Regions	General system of recognition - primary application	Diploma from post-secondary level (more than 4 years)


efomp wiki - Search
European Federation of Orga
Paddy Gilligan - Outlook Web
regulated professions databa
Regulated Profession Databa
https://ec.europa.eu/growth/tools-databases/regprof/regprof/5631
Home > Professions > Generic Names of Professions > Generic Profession
Regulated Profession
REGULATED PROFESSION NAME Fyzik v zdravotnictve
PAGE CONTENTS
General Information
Decisions (establishment)
Declarations (temporary mobility)
Competent Authorities
Screening Information
Proportionality (until 18.1.2016)
Return to list of Generic Profession names
Search Options
Country of Qualification
Please select country
Decisions Taken By Host Country
All
General Information
Generic Name of Profession
Title: Medical physicist
Identification
Name of Regulated Profession: Fyzik v zdravotníctve
Translation(s): Clinical physicist (EN)
Country: Slovakia
Region: All Regions
Legal Information
Legal Basis for Regulation
EU Law: None
National Legislation: Act No. 296/2010 Z. z. o odbornej spôsobilosti na výkon zdravotníckeho povolania, spôsobe ďalšieho vzdelávania zdravotníckych pracovníkov, sústave špecializačných odborov a sústave certifikovaných pracovných činností
Useful Link: www.health.gov.sk/?uznavanie-kvalifikacii
Regulation
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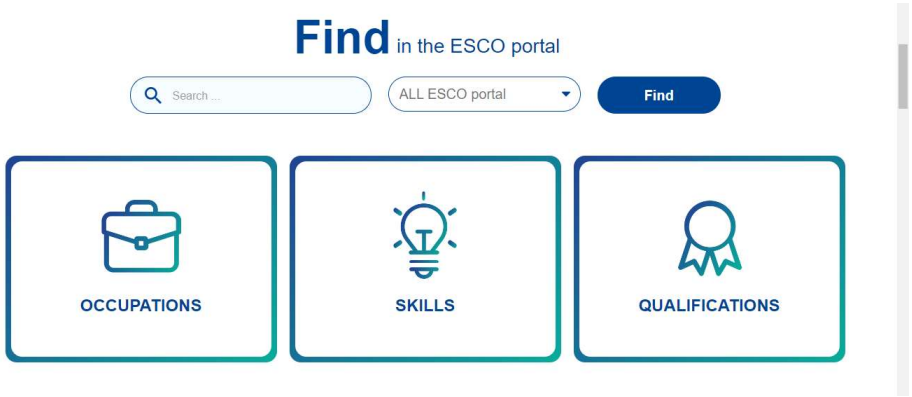
ESCO

ESCO is the multilingual classification of European Skills, Competences, Qualifications and Occupations. ESCO is part of the Europe 2020 strategy.
The ESCO classification identifies and categorises skills, competences, qualifications and occupations relevant for the EU labour market and education and training. It systematically shows the relationships between the different concepts.



Approval of National Registration Schemes (NRS) for MPEs

- It is EFOMP's policy to increase the quality of physicists working in a health care environment by ensuring harmonisation of education and training of MPEs across Europe in order to guarantee the competencies of the certified MPEs.

- Many European Countries do have a formal mechanism for recognising the qualifications of the MPE (22 NMOs have established NRS for MPEs)

- EFOMP has to approve these NRS to guarantee minimum training requirements
- Since 2018, EFOMP have reviewed and approved 11 NRS from our NMOs

EFOMP
EUROPEAN FEDERATION OF ORGANISATIONS FOR MEDICAL PHYSICS

EFOMP Approved National Registration Schemes

- Each application reviewed by EFOMP Professional Matters Committee members using criteria outlines
- 6-8 week process
- Report is prepared by Chair of committee for EFOMP board for final decision
- Approval given for 10 years but some recommendations may be given in final report which required action by the NMO

Country	Approval
Germany	2019
Netherlands	2019
France	2020
Austria	2020
Ireland	2021
Greece	2021
Poland	2021
Hungary	2022
Cyprus	2022
Finland	2023
Italy	2023

EFOMP CORE CURRICULA

Have there been any recent additions to the medical physicists' education program in Europe?

Are there any strategic plans or anticipated developments for the future of medical physicists' education in Europe?

To further strengthen harmonization, EFOMP, also in collaboration with other scientific societies, is establishing core curricula for each sub-speciality of MPE in

Radiotherapy ***(2022 – EFOMP-ESTRO) endorsed by 34 NMOs***

https://www.efomp.org/uploads/595e3c8a-52d9-440f-b50b-183c3a00cb00/Radiotherapy_cc_2022.pdf

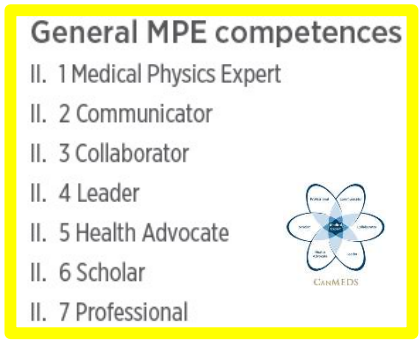
Nuclear medicine ***(hopefully July 2024– EFOMP-EANM)***

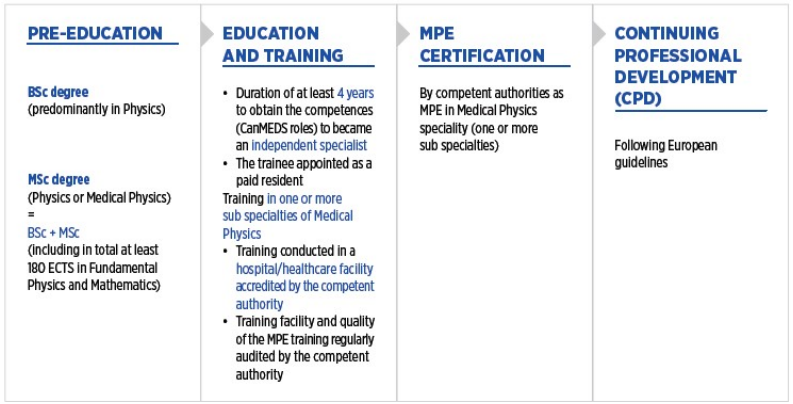
Medical Imaging ***(planned 2026 – EFOMP-ESR)***

EFOMP ESTRO CC IN RADIOTHERAPY

- Have there been any recent additions to the medical physicists' education program in Europe?

- What prompted these additions, and what impact are they expected to have on the education and training of medical physicists?

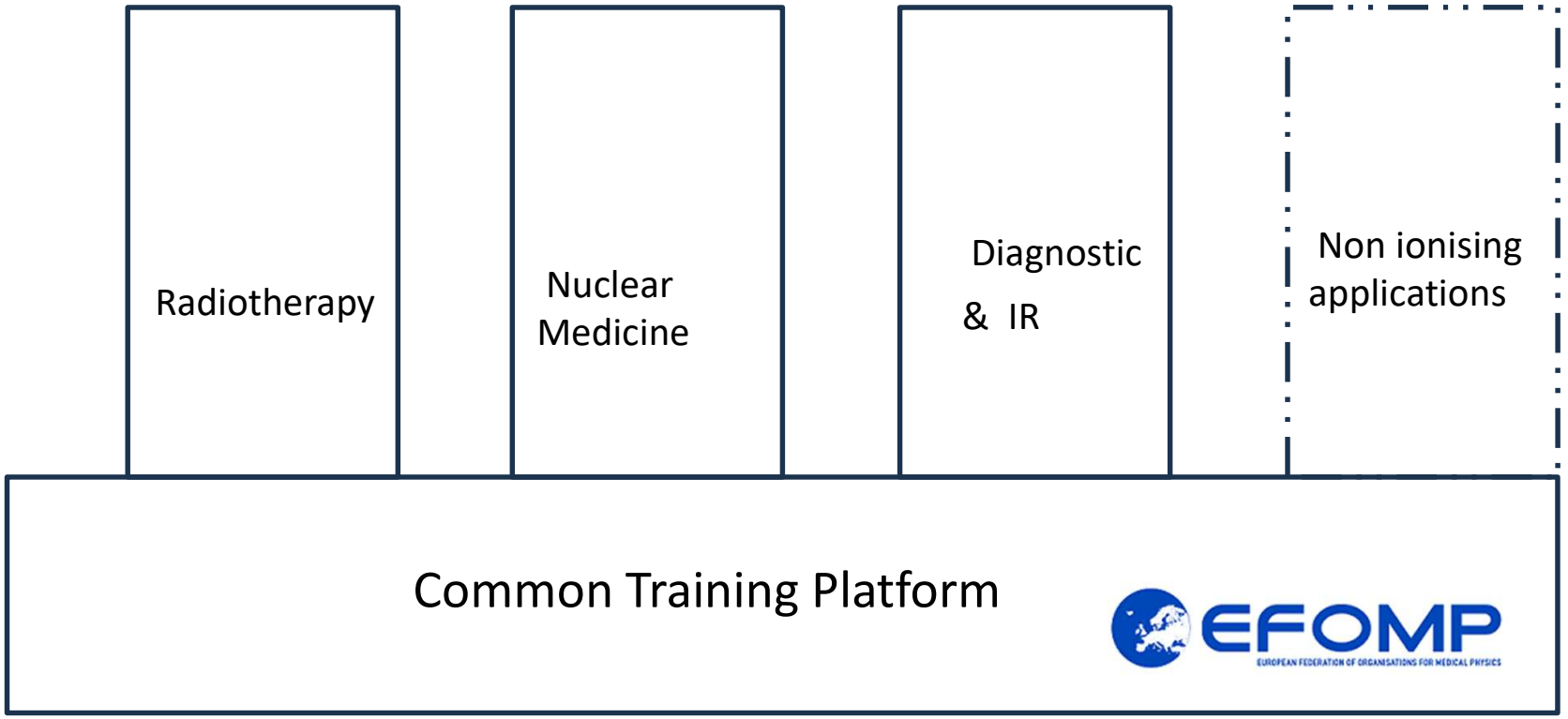




Examples of new subjects or common to other CC

Specific MPE physics knowledge, skills and competences	ECTS
III.1. Fundamentals of human anatomy, images of anatomy and physiology	2
III.2. Fundamentals of oncology and multimodal treatment	2
III.3. Core radiation physics	2
III.4. Radiobiology and radiobiological models	4
III.5. Radiation protection in medicine	5
III.6. Risk management, quality control and safety in the medical environment	5
III.7. Organisation, management and ethical issues in health care	3
III.8. Information and communication technology	4
III.9. Data processing, statistics, modelling and artificial intelligence	8
III.10. Dose determination	
III.10.1 Reference dosimetry	15
III.10.2 Non-reference dosimetry	10
III.11. Imaging for radiotherapy	
III.11.1 Principles of medical imaging and image handling	15
III.11.2 Imaging for treatment simulation	5
III.11.3 In-room imaging for set-up verification and on-line adaptive RT	5
III.12. External beam radiotherapy with photons and electrons	
III.12.1 Clinical use of treatment equipment	6
III.12.2 Treatment techniques for high energy electron and photon beams	10
III.12.3 Treatment planning	15
III.12.4 Techniques for managing geometrical and anatomical uncertainties and variations (margins, IGRT, ART)	6
III.12.5 Patient-specific quality assurance	6
III.13. Brachytherapy	12
III.14. Particle therapy	8
III.15. Principles of unsealed source therapy	2
IV. Research and innovation	30
*Deepen knowledge from this CC and/or additional topics from the CC of Medical Physicists in Nuclear Medicine and/or in Radiology [12,13]**	60
TOTAL	240

Core Curriculum for Medical physics experts



EFOMP & E&T

EFOMP actively supports the education and training of MPs and MPEs through:

- European School for Medical Physics Experts (ESMPE)
- NEW E-learning platform
- European Board of Accreditation for Medical Physics (EBAMP), an independent organisation that accredits medical physics education and training events. It allocates Continuous Professional Development (CPD) credits depending on the number of hours of education and hands-on training required of participants, often followed by a formal assessment.
- European Training and Education for Medical Physics Experts (EUTEMPE) network
- Committees working in various fields, many of them related to education.

Conclusion

- Need to anticipate current and future needs to serve the patient and staff population of Europe
- EFOMP aims to harmonise standards and strive towards mutual recognition
- Combined role of MPE/RPE for medical facilities is EFOMP policy
- Terminology for RPO/RPE/MPE in different states is an issue
- Graded approach to MPE involvement already in directive
- Implementation mixed for radionuclide therapies
- EFOMP resources and special interest groups help train

See you in Munich at ECMP 2024!