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Background and Purpose

Medical physicists play a key role in radiation protection of patients, health care staff and public. The role of a properly trained scientist and registered medical physics expert is recognised in both legislative requirements and day to day practice of radiation protection. The European Federation of Organisations for Medical Physics (EFOMP) represents over 9000 medical physicists in 36 countries. The contribution of the medical physics community extends from fundamental research on the effects of radiation, proper dosimetry, to equipment and facilities design and optimisation of the benefit risk ratio in both the treatment and diagnosis of medical conditions. EFOMP plays a key role in supporting the European medical physics community in delivering these goals. It is our objective to ensure that highest standards of training/expertise that meet considered criteria are available to patients and healthcare staff throughout Europe.

Table 1 : Duties of Radiation Protection Expert and Medical Physics Expert under EU 13/59

Radiation protection expert advice on protection for staff and public covers	Medical Physics expert advice on protection for Patients covers
(a) optimisation and establishment of appropriate dose constraints;	(a) optimisation of the radiation protection of patients and other individuals subject to medical exposure, including the application and use of diagnostic reference levels;
(b) plans for new installations and the acceptance into service of new or modified radiation sources in relation to any engineering controls, design features, safety features and warning devices relevant to radiation protection;	(d) the preparation of technical specifications for medical radiological equipment and installation design;
(c) categorisation of controlled and supervised areas;	(c) acceptance testing of medical radiological equipment;
(d) classification of workers;	
(e) workplace and individual monitoring programmes and related personal dosimetry;	(e) the surveillance of the medical radiological installations;
(f) appropriate radiation monitoring instrumentation;	
(g) quality assurance;	(b) the definition and performance of quality assurance of the medical radiological equipment;
(h) environmental monitoring programme;	(g) the selection of equipment required to perform radiation protection measurements
(i) arrangements for radioactive waste management;	
(j) arrangements for prevention of accidents and incidents;	
(k) preparedness and response in emergency exposure situations;	
(l) training and retraining programmes for exposed workers;	(h) the training of practitioners and other staff in relevant aspects of radiation protection;
(m) investigation and analysis of accidents and incidents and appropriate remedial actions;	(f) the analysis of events involving, or potentially involving, accidental or unintended medical exposures;
(n) employment conditions for pregnant and breastfeeding workers;	
(o) preparation of appropriate documentation such as prior risk assessments and written procedures;	
The radiation protection expert shall, where appropriate, liaise with the medical physics expert.	The medical physics expert shall, where appropriate, liaise with the radiation protection expert

Table 2: Training requirements for the Radiation protection expert and Medical Physics expert under EU 13/69

Radiation Protection expert training (ENETRAP III, 2016)	Medical Physics Expert training (RP174)
Bachelor degree level either specifically in radiation protection, or in a physical/engineering/mathematical discipline	Bachelors degree in Physics (EQF Level 6)
Knowledge and understanding of fundamental principles of radiation protection Knowledge of operational radiation protection methods The ability to develop and provide appropriate advice with those topics on which the RPE is expected to provide advice(EQF level 6/7)	Master Degree in medical physics or equivalent (EQF level 7)
A minimum of 3 years' experience working in radiation protection environment	Clinical Training (2 Years full time equivalent)
	Advance experience and CPD in Medical Physics (2 years Full time)
	5 years reaccreditation cycle
Recognition by National Regulator	Recognition by National Regulator

Discussion

The training requirements for medical physics experts and radiation protection experts in health care are similar and can be delivered in a synergistic manner. Recent draft national proposals and working group output proposed a degree in natural or medical sciences as an adequate educational foundation to become a radiation protection expert. On the contrary, EFOMP believes, in agreement with ENETRAP II & RP 174 requirements, that a Bachelor's degrees in physical science is a necessary pre requisite to become a radiation protection expert in order to ensure patient , staff and public safety,

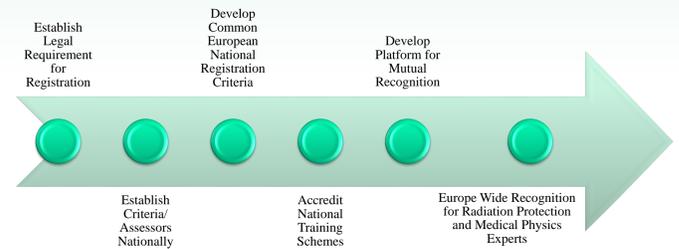


Figure 1: Steps to Ensuring standards and Mobility for Radiation Protection

EFOMP Initiatives towards Training Radiation Protection Expert / Medical Physics Expert (www.efomp.org) :

- Policy Statements on the role of the medical physicist and training
- Core curriculum development in Radiotherapy , Nuclear Medicine and Radiology
- European School for Medical Physics Experts (recent and upcoming editions include occupational dose monitoring and shielding of medical installations)
- Development of an Enhanced educational web based platform
- Special Interest Groups such as nuclear medicine dosimetry
- Working Groups
- EFOMP accreditation of National Registration Schemes
- Memoranda of understanding and collaboration with Major European and International bodies including EURAMED, EUTERPE, ESTRO, ESR, EANM,ENEN,EFRS.
- European Congress of Medical Physics (ECMP) with sessions on Radiation Protection (www.ECMP2022.org)
- European Examination Board (EEB) in Medical Physics
- Support for European Board of Accreditation in Medical Physics (EBAMP)

Conclusion

EFOMP is helping create a trajectory towards a standardised approach to the training of the radiation protection expert and medical physics expert, mobility and mutual recognition in the European Union and beyond.

References

- ENETRAP III. European Guidance on the Implementation of the Requirements of the Euratom BSS with respect to the Radiation Protection Expert and the Radiation Protection Officer, March 2016.
- ENETRAP-III-European-Guidance-Document-01-03-2016.pdf (euterp.eu)
- HERCA Guidance :Implementation of Radiation Protection Expert (RPE) and Radiation Protection Officer (RPO) Requirements of Council Directive 2013/59/Euratom November 2017
- Implementation of Radiation Protection Expert (RPE) and Radiation Protection Officer (RPO) Requirements of Council Directive 2013/59/Euratom : HERCA
- Caruana CJ, Tsapaki V, Damilakis J, Brambilla M, Martín GM, Dimov A, Bosmans H, Egan G, Bacher K, McClean B. EFOMP policy statement 16: The role and competences of medical physicists and medical physics experts under 2013/59/EURATOM. Phys Med. 2018 Apr;48:162-168