



Kuvantamiskeskus

Medical Physics Expert – status ja Sevillan kuulumiset

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SF ry, Espoo 17.2.2012

27.1.2012

EU:n Medical Physics Expert

Lääketieteellisen fysiikan asiantuntija on alun perin määritelty EU:n MED-direktiivissä (Dir 97/43, Medical Exposure Directive, 1997)

Suomen lainsäädäntö on harmonisoitu MED-direktiivin mukaiseksi.

Termin **Medical Physics Expert** pitäisi tarkoittaa samaa kaikkialla EU:ssa.

v. 2009 käynnistettiin haku EU:n projektiksi nimellä ”**Medical Physics Expert EC Project**” tai ”**Guidelines on Medical Physics Expert Project**”



EU MPE-projektin voitti konsortio:

- Medical Physics Group. Dept. of Radiology. Complutense University of Madrid, (UCM). Spain. COORDINATOR
- European Federation of Organizations for Medical Physics (EFOMP)
- Institute of Physics and Engineering in Medicine (IPEM). UK
- Dept. of Physics, "Enrico Fermi" .University of Pisa. Italy
- German Society of Medical Physics (DGMP). Germany
- North East Strategic Health Authority North East; Yorkshire and the Humber Quality Assurance Reference Centre, UK and associated participants
- World Health Organisation (WHO) observer



EU-MPE: Joitakin muita avainhenkilöitä

Eduardo Guibelalde, projektipäällikkö

Física Médica

Facultad de Medicina

Universidad Complutense de Madrid

Renato Padovani (Stelios Christofides, johtoryhmä)

Secretary General of EFOMP

SOC di Fisica Sanitaria

Az. Ospedaliero-Universitaria S. Maria della

Misericordia

33100 Udine, Italy

Remigius Baranczyk

Representative of EU and IPEM (johtoryhmä)



Projektin tavoitteet:

The main objective of the project is to provide for improved implementation of the Medical Exposures Directive (MED) provisions related to the Medical Physics Expert (MPE) and to **facilitate the harmonisation of the MPE among the European Union Member States**. Therefore the project will also support the European Commission in its activities relating to the optimisation of radiation protection of individuals submitted to medical exposures.

In addition the project will:

- issue a widely accepted document at European level that eventually could be considered as a **European Guideline on the professional competences for the MPE and the minimum requirements to be acknowledged as MPE** according to the MED,
- make **recommendations for the most appropriate education and training structures**, based on the European Higher Education Area, to achieve the defined required professional competences,
- propose a detailed “standard” **syllabus for the education and training** of the MPE,
- update **criteria for staffing levels in Medical Physics Departments** depending on the complexity and equipment of Radiological Services.



Menetelmät:

To fulfil these objectives, the project will specifically rely on:

- Nine **Working Groups**, where specific topics, all deserving special attention, will be extensively discussed by professionals from the medical physics area (**nyt 5: MPE, Radiologia, Isotooppi, Sätehoito, Staffing levels**)
- A **website to widely diffuse the information** gathered and the work carried out by the working groups and to **facilitate the exchange of information** among the members of the consortium, the European Federation of Organisations for Medical Physics (EFOMP) and other experts and specialists not included in previous collectives.
- A final **workshop** to present and discuss the work performed in the scope of the project, inviting representatives of Medical Societies and well-known European and non-European experts on the topics analysed by the different working groups (**Sevilla 10-11.5.2011**) .



Suomen kontribuutio:

Vastattavat kyselyt:

- Medical Physics Expert survey
- Staffing level of Medical Physicists (yksi vastaus TAYS:sta per toimiala: sädehoito, isotooppi, radiologia, mitenkähän muut sairaalat, yhteensä 14 vastausta)



<http://portal.ucm.es/web/medical-physics-expert-project/inicio>

Kokous Sevilla 9-10.5.2011

**S. Hyödynmaa osallistui Suomen Sairaalafyysikot ry:n edustajana,
Myös Ritva Bly (STUK ja HERCA)**

**-Kolme posteria (koulutusjärjestelmä, fyysikoiden tunnuslukuja,
staffing levels)**

-Osallistuminen keskusteluun



Vastaukset: Medical Physics Expert Survey

> 100 Saksa

50-99 Ruotsi, Ranska, UK

25-49 Suomi, Tanska, Portugali, Italia

10-24 Liettua, Norja, Hollanti, Espanja, Kreikka

3 - 9 Kypros, Itävalta, Turkki

1 - 2 Viro, Makedonia, Romania

0 Venäjä, Latvia, Islanti

Hienosti vastattu Suomi !



Staffing level survey (van Putten)

Survey opened November 2010

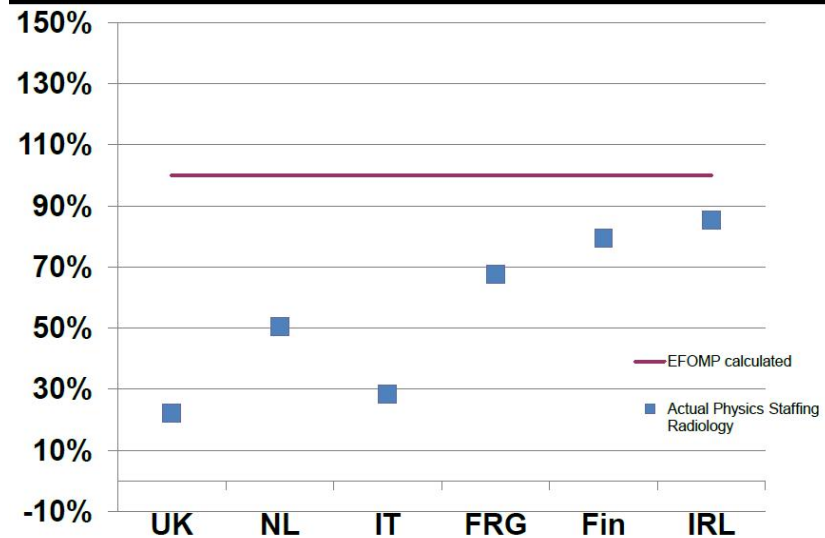
Currently 145 replies received

Top Replies (25 April 2011)

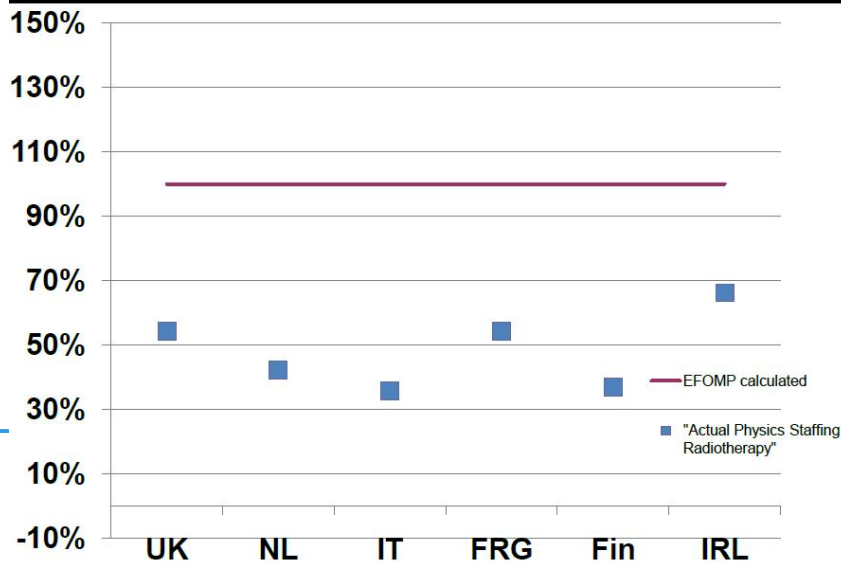
- Italy 27
- United Kingdom 20
- Netherlands 14
- Germany 12
- Finland 11

Compared to EFOMP Policy statement 7:

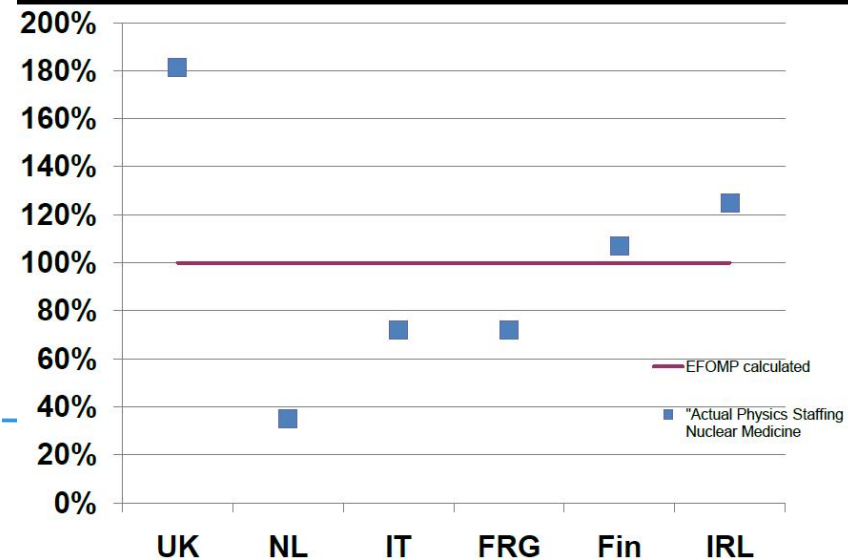
Physicist staffing in Radiology



Physicist staffing in Radiotherapy



Physicist staffing in Nuclear Medicine



Physica Medica (2008) kysely 2005-06

The present status of Medical Physics Education and Training in Europe: An EFOMP survey[☆]

T. Eudaldo, Chairperson of the Education, Training and Professional matters (ETP) Committee of EFOMP^{a,*}, K. Olsen, Chairperson of the Standing Committee of Registration of EFOMP^b

FI Ei kliinistä harjoittelua !

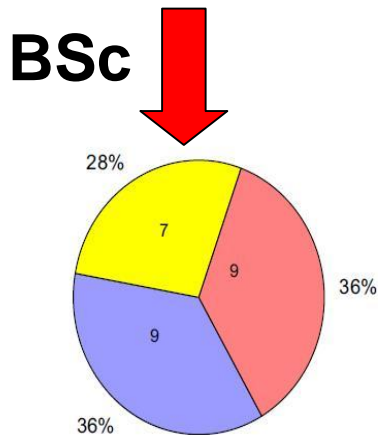


Figure 1 Percentage distribution of the type of basic university degree required to enter Medical Physics education in the 25 countries.

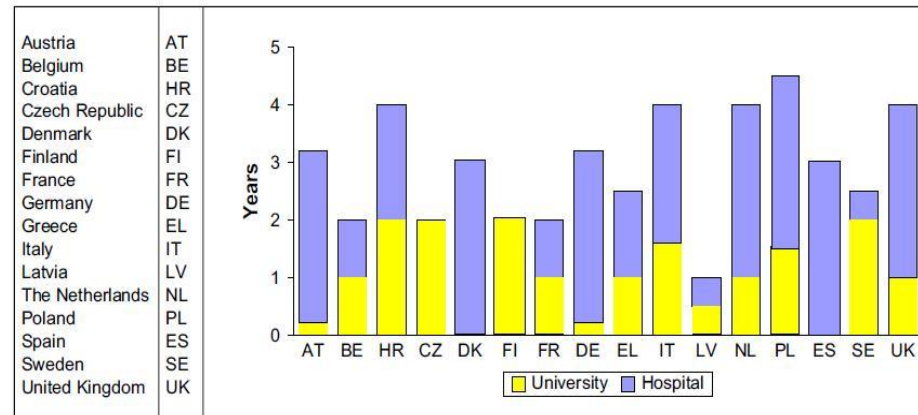


Figure 4 Duration (in years) of the post-graduate training for the 16 countries with a nationally approved programme. The figure shows the time spent at the university and the time spent at the hospital.

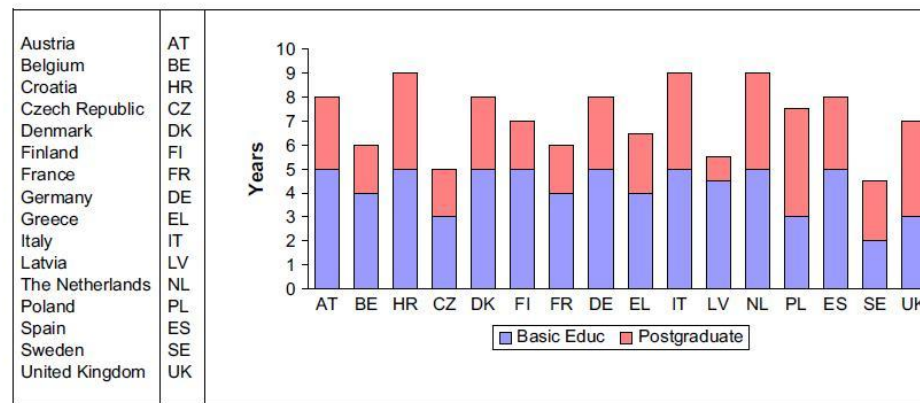
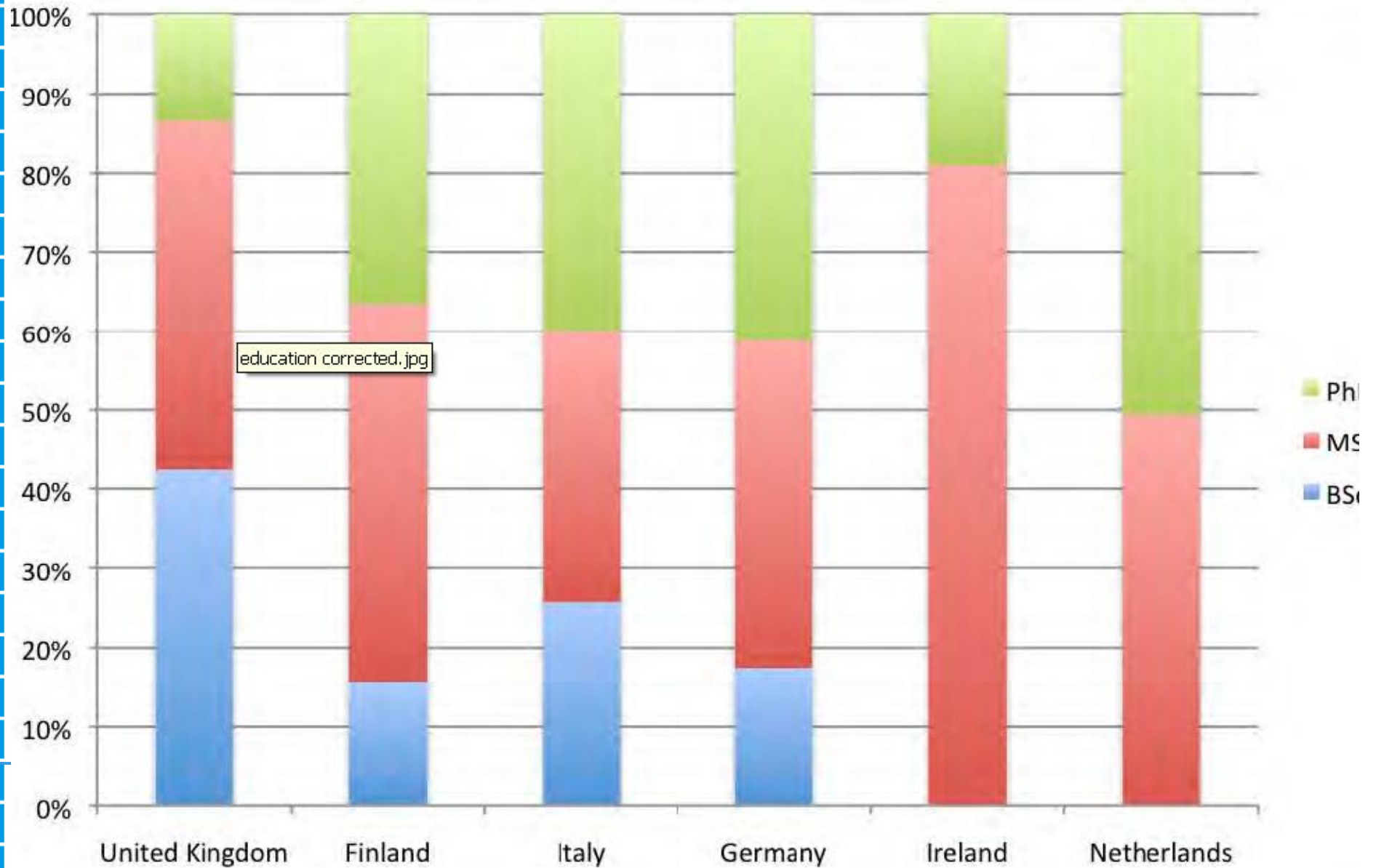


Figure 5 Duration (in years) of total training to become a Medical Physicist in the 16 countries with a nationally-approved programme. The two parts of training: basic education and post-graduate education, are clearly identified in the figure.



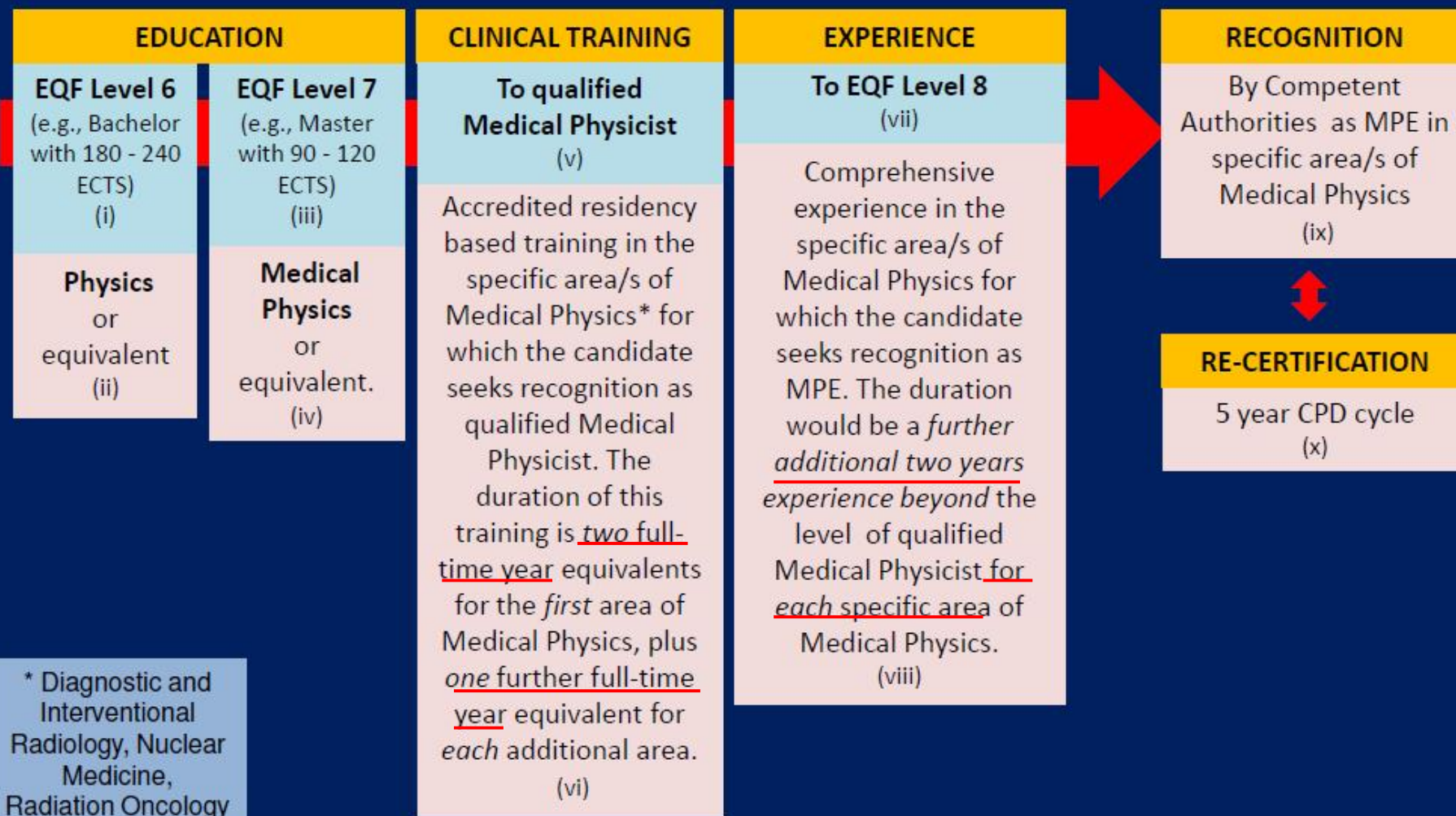
Education levels differ strongly by country



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)



* Diagnostic and Interventional Radiology, Nuclear Medicine, Radiation Oncology

New draft of the BSS directive (R. Baranczyk)

NEW:

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.

OLD:

MPE: Expert in radiation physics or radiation technology applied to medical exposure, whose training and competence to act is recognized by the competent authorities.



Contnd

NEW:

Depending on the medical radiological practice, the MPE shall take responsibility for dosimetry, including physical measurements related to the evaluation of the dose delivered to the patient and contribute in particular to the following:

- the optimization of radiation protection of patients and other individuals submitted to medical exposure, including the establishment and the use of diagnostic reference levels**
- the definition and performance of quality assurance tests of the medical radiological equipment**
- the preparation of technical specifications for medical radiological equipment installation design**
- the surveillance of the medical radiological installation with regard to radiation protection**
- the selection of equipment required to perform radiation protection measurements and give advice on medical radiological equipment**
- the training of practitioners and other staff in relevant aspects of radiation protection.**

Where appropriate, the task of the MPE can be carried out by a Medical Physics Service

OLD:

- as appropriate, acts or gives advice on patient dosimetry**
- the development and use of complex techniques and equipment**
- optimization**
- quality assurance, including quality control**
- other matters relating to radiation protection, concerning medical exposure**



contnd

In medical radiological practice, a MPE shall be appropriately involved, the level of involvement being commensurate with the radiological risk proposed by the practice. In particular:

-In radiotherapeutic practices, other than standardized therapeutical nuclear medicine practices, a MPE shall be closely involved

-In standardized therapeutical nuclear medicine and diagnostic practices, **in radiodiagnostic and interventional radiology practices**, a MPE shall be involved

- For other simple radiodiagnostic procedures, a MPE shall be involved, as appropriate for consultation and advice on matters relating to radiation protection concerning medical exposure



(Sanamuoto vanhassa EU-direktiivissä:)

The European Medical Exposures Directive (97/43/Euratom), Clause 3 of Article 6 “Procedures” states:

*“In radiotherapeutic practices, a medical physics expert **shall be closely involved** (oltava mukana > oltava aina henkilökohtaisesti mukana).*

*In standardized therapeutical nuclear medicine practices and in diagnostic nuclear medicine practices, a medical physics expert **shall be available** (oltava käytettävissä siten, että hänet voidaan tarvittaessa aina kutsua paikalle).*

*For other radiological practices, a medical physics expert **shall be involved, as appropriate, for consultation** (käytettävä asiantuntemusta), on optimization including patient dosimetry and quality assurance including quality control, and also to give advice on matters relating to radiation protection concerning medical exposure, as required”.*



contnd

Acceptance testing, involving the MPE, is carried out before the first use of the equipment for clinical purposes, and thereafter performance testing on a regular basis, and after any major maintenance procedure.

In particular, appropriate education, training and **retraining shall be in place to allow the recognition of .. MPE... Training, retraining and information relevant in individuals shall be repeated at appropriate intervals and **documented**.**

Member states shall ensure that the necessary arrangements are in place to ensure the continuity of expertise of MPE



Käydyistä keskusteluista:

Monissa maissa termi ”medical physics expert” ymmärretään alansa huippuerikoisasiantuntijaksi ja pätevyysvaatimuksilta odotettiin jotain paljon enemmän, kuin sairaalafysiikan pätevyys (esim. EFOMP:n ajama erikoissairaalafysiikan pätevyys).

Suosittelut LFA:n (tai sairaalafysiikan) eettiset säännöt Suomessa ovat olleet jo v:sta 2005 lähtien, niihin pitäisi ehkä hieman lisätä yleisiä säteilysuojelua korostavia eettisiä näkökohtia => LFA:n eettiset säännöt.

WHO:

Medical Physics Expert >> Clinical Radiation Physics/Protection Expert

IAEA:

**2-3 yrs clinical training > QMP
+ 6 yrs clinical work > MPE
”Physicist without clinical training
cannot be considered clinically
qualified”**

AAPM:

**Pätevyyskuulustelu tärkeä,
board exam since 1933**

Suomessa, since 1966?

