



# Medical Physics Expert European Guidelines

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## Project Objective:

The objective of this 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 harmonization of the MPE among Member States aiming at their cross-border mobility. In order to achieve this objective the contractor shall carry out three major tasks:

- **Conduct an EU-wide study on the MPE**
- **Organize a European Workshop on MPE**
- **Develop EU Guidance on MPE**



## The Project Contractor

The project was undertaken by a consortium consisting of the following organisations:

### Coordinator

Medical Physics Group, Department of Radiology, Complutense University of Madrid, (UCM), Spain

### Partners

- ❖ European Federation of Medical Physics (EFOMP), UK
- ❖ Institute of Physics and Engineering in Medicine (IPEM), UK
- ❖ Department 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, United Kingdom and associated participants

### Observer

World Health Organisation (WHO)





## Duration of Contract

The contract was signed on the 30<sup>th</sup> of December 2009 and its duration is 24 months. The project is to end on the 30<sup>th</sup> of December 2011.

To achieve the project objectives, the project consists of the following nine (9) Work Packages:

**WP 0** Management and coordination of the project

**WP 1** European Union Survey on Medical Physics Expert

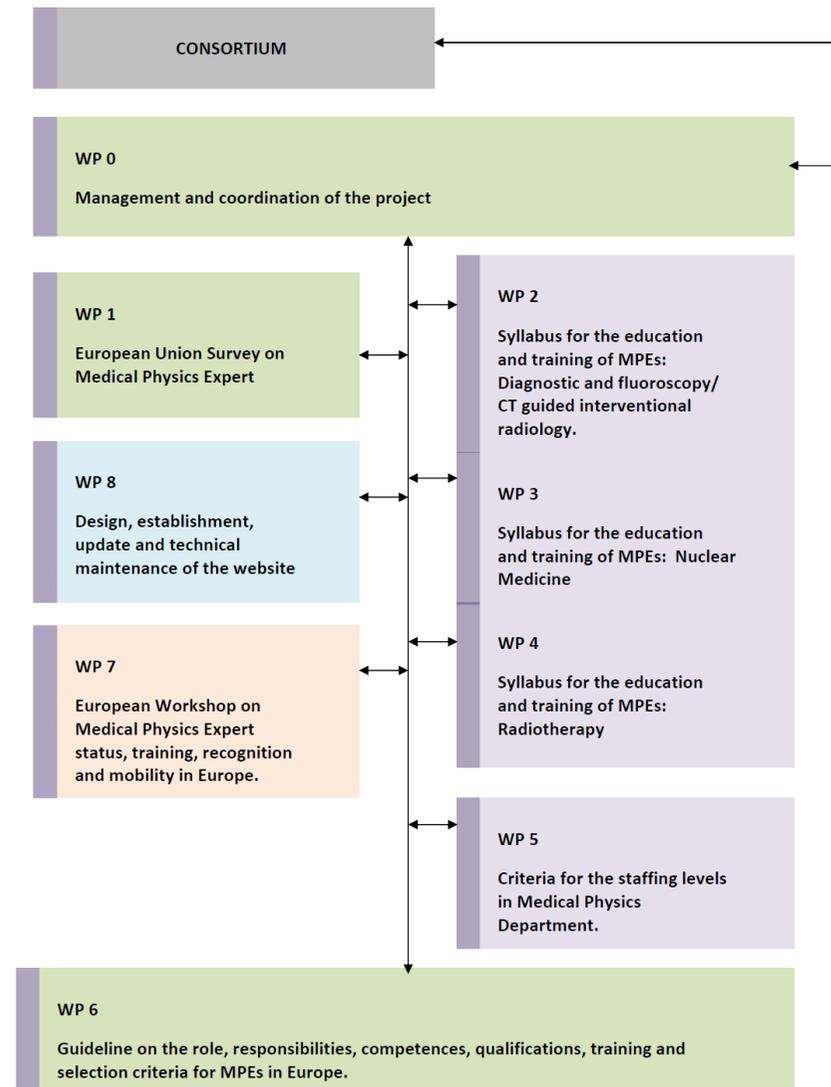
**WP 2** Syllabus for the education and training of MPEs: Diagnostic and fluoroscopy/ CT guided interventional radiology

**WP 3** Syllabus for the education and training of MPEs: Nuclear Medicine

**WP 4** Syllabus for the education and training of MPEs: Radiotherapy



- WP 5** Criteria for the staffing levels in Medical Physics Department
- WP 6** Guideline on the role, responsibilities, competences, qualifications, training and selection criteria for MPEs in Europe
- WP 7** European Workshop on Medical Physics Expert status, training, recognition and mobility in Europe
- WP 8** Designing, establishment, update and technical maintenance of the website





➤ **Conduct an EU-wide study on the MPE**

The EU-wide Study on the MPE was agreed by the project consortium to be conducted by:

- ❖ A questionnaire to assess the present situation regarding the MPE role and resources (including human) and get the views of the MPEs on what they are presently doing and where they see themselves heading.
- ❖ A questionnaire to assess the present situation with staffing levels and the future requirements
- ❖ To undertake a representative number of qualitative interviews with key informants





- ❖ **The questionnaire to assess the present situation**  
The members of the Consortium agreed that the questionnaire should include the following:
  1. **Interpretation and implementation of the draft BSS:**
    - a. **What duties do MPE perceive they have in the draft BSS / what duties do other stakeholders perceive the MPE should have?**
    - b. **What are the actual present responsibilities of the MPE and how do they differ from those in the draft BSS?**
    - c. **What are the perceived required number of MPE (per notional unit of work e.g. population, equipment, clinical procedure) and resources necessary to provide for the requirements of the draft BSS?**
    - d. **What are the actual number of MPE (per notional unit of work e.g. population, equipment, clinical procedure) and available resources? (separate data for DR, NM, RT)**





- ❖ The questionnaire to assess the present situation
- 2. MP profession and the MPE:
  - a. Status, legal and practical arrangements for training, education and recognition of MP and MPE
  - b. Other responsibilities presently exercised by MP not included in the provisions regarding the MPE within the draft BSS e.g., Radiation Protection Expert
  - c. Mutual recognition between member states and other barriers to mobility. How many MPE who did their education and training in another country?
  - d. How is the word 'expert' perceived by MPE / other stakeholders? Is advice provided by MPE acted upon? Are MPE expected / allowed to provide unsolicited advice? Is the role constricted by statutory requirements? Is MPE a consultant level appointment?



- ❖ The questionnaire to assess the present situation
- 2. MP profession and the MPE:
  - e. Do MP have their own department or part of another (e.g., DR, NM, RT)?
  - f. Do MP departments include members from other professions?
  - g. **Opinions** of the MPE regarding the future development of their role
  - h. Who employs MPE and how are they recruited?

More than 800 responses have been received from the questionnaire and these are currently being analysed. Preliminary results have been presented at the Project's Workshop.



- ❖ **A questionnaire to assess the present situation with staffing levels and the future requirements**

**A survey questionnaire was devised to collect data on individual departments actual staffing levels.**

**Currently 127 responses were submitted.**

- ❖ **To undertake a representative number of qualitative interviews with key informants**

**This was undertaken during the IAEA IDOS Symposium in November 2010.**

**Forty interviews were conducted and are currently being analysed.**

**Preliminary results and some conclusions of the above surveys and interviews have been presented and discussed at the projects Workshop.**



➤ **Organize a European Workshop on MPE**

**The Workshop was held as a satellite workshop to the National Spanish Congress on Medical Physics and Radiation Protection at Seville, from Sunday afternoon the 8<sup>th</sup> of May till Tuesday morning the 10<sup>th</sup> of May 2011.**

**The workshop consisted of the following nine sessions:**

<b>Monday 09/05/2011</b>	<b>SESSION 1. PROJECT PRESENTATION.</b>	<i>Moderator: S. Christofides</i>	
09.00-09.20	Welcome. Objectives and structure of the EC Guidelines on Medical Physics Expert project	E. Guibelalde	MPE Project Coordinator
09.20-09.40	Medical Physics Expert: from 97/43/EURATOM Directive to Revised Recast Euratom BSS Directive	R. Baranczyk	European Commission Chairperson EURATOM Working Party on Medical Exposures
09.40-10.00	Medical Physics Expert: Headline questions.	E. Vañó	
10.00-10.20	Guidelines on Medical Physics Expert project . The European Federation of Organisations for Medical Physics (EFOMP) point of view	S. Christofides	EFOMP President





➤ **Organize a European Workshop on MPE**

<b>Monday 09/05/2011</b>	<b>SESSION 2. MEDICAL PHYSICS EXPERT SURVEY</b>	<i>Moderator: K. Faulkner</i>	
11.00-11.15	Medical Physics Expert survey	K. Faulkner	MPE WG1 Project leader
11.15-11.40	Survey background and findings	J. Blenkinsopp	MPE WG1 member
11.40-12.00	The results of the interviews	R. Bunton	MPE WG1 member
12.00-12.15	Questions we would have asked / didn't include	J. Malone	MPE WG1 member

<b>Monday 09/05/2011</b>	<b>SESSION 3. MEDICAL PHYSICS EXPERT STAFFING LEVELS</b>	<i>Moderator: E. Vañó</i>	
12.30-12.50	Staffing levels.	S. Evans	MPE WG5 Project leader. IPEM representative
12.50-13.10	Analysis of the EFOMP staffing questionnaire and census of Medical Physics in Europe	W. Van der Putten	Chairperson, Professional Matters Committee EFOMP
13.10-13.30	Interpretation of terms included in Euratom Directive and its relationship with staffing necessities	S. Christofides	EFOMP President

Stelios Christofides, EAN 13<sup>th</sup> Workshop "ALARA and the Medical Sector", Oscarborg Fortress (Norway, 7-10 of June 2011)



Universidad  
Complutense  
Madrid





➤ **Organize a European Workshop on MPE**

<b>Monday 09/05/2011</b>	<b>SESSION 4. QUALIFICATION FRAMEWORK AND SILLABI FOR MEDICAL PHYSICS EXPERT IN EUROPE</b>	<i>Moderator: A. del Guerra</i>	
15.00 - 15.20	Qualification and Curriculum Frameworks for the MPE in Europe	C. Caruana	Chairperson, Education and Training Committee EFOMP
15.20 - 15.40	Syllabus for the education and training of MPEs in Radiotherapy	T. Eudaldo	MPE WG4 Project leader
15.40 - 16.00	Syllabus for the education and training of MPEs in Diagnostic Radiology	K. Geleijns	MPE WG2 Project leader
16.00 - 16.20	Syllabus for the education and training of MPEs in Nuclear Medicine	A. del Guerra	MPE WG3 Project leader
<b>Monday 09/05/2011</b>	<b>SESSION 5. PANEL DISCUSSION</b>	<i>E. Guibelalde, S. Christofides, R. Baranczyk, E. Vañó, K. Faulkner, S. Evans, W. Van der Putten, C. Caruana, A del Guerra, T. Eudaldo, K. Geleijns</i>	
17.00 - 18.30			

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➤ Organize a European Workshop on MPE

Tuesday 10/05/2011	SESSION 6. GUIDELINES FOR MEDICAL PHYSICS EXPERT: VIEW OF STAKEHOLDERS	Moderator E. Guibelalde	
09.00-09.20	The MPE draft guidelines: view of the Heads of the European Radiological protection Competent Authorities (HERCA)	R. Bly	Co-chairperson of the HERCA Working Group on Medical Applications
09.20-09.40	The Medical Physics Expert definition and Qualification Framework outside European countries and its comparison with the MPE Guidelines	C. Borrás	International Educational Activities Committee , AAPM
09.40-10.00	The MPE draft guidelines: view of the International Atomic Energy Agency (IAEA)	A. Meghzifene	IAEA representative
10.00-10.20	The MPE draft guidelines: view of the World Health Organization (WHO)	F. Shannoun	WHO representative





## ➤ Organize a European Workshop on MPE

<b>Tuesday 10/05/2011</b>	<b>SESSION 7. GUIDELINES FOR MEDICAL PHYSICS EXPERT: VIEW OF PROFESSIONAL SOCIETIES</b>	<i>Moderator S. Christofides</i>	
11.00 - 11.20	The MPE draft guidelines: view of the European Federation of Radiographer Societies (EFRS)	G. Paulo	Vice president of the EFRS
11.20 - 11.40	The MPE draft guidelines: view of the European Society of Radiology (ESR)	E. Breatnach	Chairperson ESR Education Committee
11.40 - 12.00	The MPE draft guidelines: view of the European Association of Nuclear Medicine (EANM)	M. Lonsdale	Chairperson of the EANM Physics Committee
12.00 - 12.20	Perspectives on Professional issues: view of the European Society for Therapeutic Radiology and Oncology (ESTRO)	T. Eudaldo	ESTRO Physics Committee
<b>Tuesday 10/05/2011</b>	<b>SESSION 8. POSTER PANEL DISCUSSION WITH POSTER AUTHORS</b>		
12.20 - 13.30			

**The fifteen accepted posters were briefly presented by their lead authors and a discussion followed.**





➤ Organize a European Workshop on MPE

<b>Tuesday</b> <b>10/05/2011</b> 15.00 - 17.00	<b>SESSION 9. PANEL DISCUSSION:FINAL CONCLUSIONS</b>	
	Need for further action by the Commission regarding harmonizing and improving mobility	<i>E. Guibelalde, S. Christofides, F. Shannoun, A. Meghzifene, R. Bly, C. Borrás, E. Breatnach, M. Lonsdale, G. Paolo, E. Vañó, R. Baranczyk</i>

**The Proceedings of the workshop will be published in the European Commission's Radiation Protection Report Series.**

**The comments and recommendations made by the 65 participants of the workshop will be taken into consideration when writing the Guidelines on Medical Physics Expert.**



- **Develop EU Guidance on MPE**
  - ✓ **Education and recognition scheme**
  - ✓ **Detailed "standard" syllabus for the education and training of MPE**
  - ✓ **Recommended number of MPE for the different practices and the parameters to be considered**

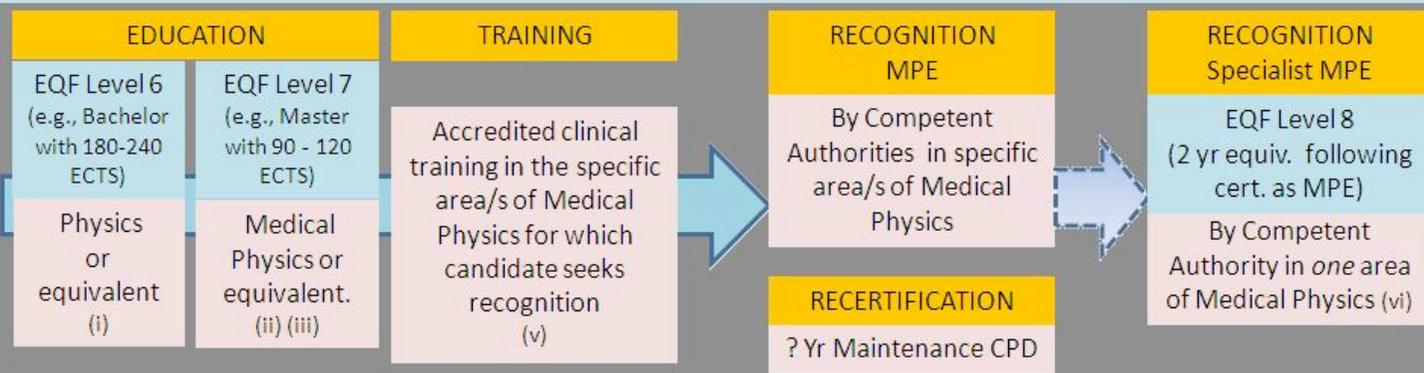
The final draft of the guidelines document will be send to all the stakeholders to express their final comments and suggestions for the improvement of the document before this is submitted to the European Commission as the final draft document.



## 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)

EQF = European Qualifications Framework KSC = Knowledge, Skills, Competences (EP&C, 2008/C 111/01)



- (i) 'Equivalent' here meaning EQF Level 6 with a high level of physics and mathematics content.
- (ii) 'Equivalent' here meaning EQF Level 7 with a high level of physics and mathematics content, *plus further additional education* in the Core KSC of Medical Physics (as specified in this document) and the KSC specific to the area/s of Medical Physics for which the candidate would be seeking recognition (as specified in this document). This additional education can precede or be concurrent with the training.
- (iii) The entry educational level for the MPE has been set at EQF Level 7 because to provide effective, safe and economical practice based on current best evidence, the MPE requires highly specialized knowledge, critical awareness of knowledge issues in the field, specialized problem-solving skills, ability to manage work contexts that are complex and ability to review the performance of teams (2008/C 111/01).
- (iv) 2 yr. eq. for one area of Medical Physics, 3 yr. eq. for two areas, and, 4 yr. eq. for three areas.
- (v) Accredited credentialing training programme for further on-the-job development of the Core KSC of Medical Physics and the KSC specific to the area/s of Medical Physics for which the candidate would be seeking recognition . This training should ideally take the form of a Residency and may be partially or totally concurrent with the Masters. Training will be under the direction of Specialist MPEs.
- (vi) Achievement of Level 8 to be demonstrated by extensive portfolio and clinically oriented thesis in one area of MP.





The outcome of the project will be a set of standards for the Medical Physics Expert in Europe. This will allow development of :

- ✓ Harmonization of education (MSc “tuning”)
- ✓ Standards for clinical skills and training
- ✓ European wide professional recognition
- ✓ Continuous professional development
- ✓ Education and training
- ✓ Aid in mobility of medical physicists

Radiation Protection is an integral and essential part of all these activities.

Information is available on the Project’s Website at:

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

