European actions beyond the European Directive

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• Medical Physics 3.0 is an initiative to push physics into new territories of scholarship and practice in medicine.
• This reality requires us first to be competent in what we are meant to do for medicine. Next, we must determine how we can make that sustainable from a workflow, technical resource, and financial standpoint. This is sustainable excellence, one of the key objectives of MP3.0.
In quality and safety for clinical practice any less important than those for clinical trials? Physicists have the ability and skill to make their contributions more consistently excellent everywhere. But to do so, we need a stronger peer expectation, an explicit regulatory mandate, better tools, and models of effective practice. We have an opportunity to improve upon these needs through MP3.0.

28 member countries of the EU

- The idea to make the European Union came after two big wars happened in Europe.
- The European Union made it easier for people to move freely from one country to another.
- They can live, study or work in any country of the European Union they want.
- For example, a person from France can choose to move to Italy and work there.
- Or a student from Belgium can go study in a university in Greece.

The Bologna Declaration marked the beginning of the Bologna Process. It is set up as a process such that there would be follow-up ministerial meetings every two years to assess the progress made and to determine further steps needed to be taken.

- Proposed a European Higher Education Area in which students and graduates could move freely between countries, using prior qualifications in one country as acceptable entry requirements for further study in another.
- The Bologna Process is generally one of the most influential policy reforms in Europe with significant contributions to the formation of a more coherent higher education and research area in the continent.

The European Qualifications Framework (EQF) 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. The EQF aims to unify different countries' national qualifications systems to a common European reference framework. Individuals and employers will be able to use the EQF to better understand and compare the qualifications levels of different countries and different education and training systems.

Current recommendations on education and training of the medical physicist in Europe

Key activities of the MPE according to the European Guidelines (2014)

2. Dosimetry measurements.
3. Patient safety / risk management.
5. Clinical medical device management.
9. Education of healthcare professionals.
11. Innovation.
Some recommendations included in the European Guidelines on MPE (2014) (1)

- The Comptent Authority designated for the recognition of the MPE, should use the Qualifications Framework and KSC of the MPE specified in the Guidelines, for the recognition of the MPE to level 8 of the European Qualification Framework.

- To allow the mobility of the MPE between Member States, it is recommended that the education and training of each MPE be recorded in a document that can be used as proof of the recognised competence.

- Recommended staffing factors have been set for estimating the number of MPEs required for a given medical physics service involving the use of ionising radiations for radiotherapy, nuclear medicine and diagnostic and interventional radiology services. The factors are both equipment and task/patient based.

How these are connected to the new European Basic Safety Standards and other relative European or national laws
European BSS: 59/2013

Directive Published in the Official Journal of the European Union
17 January 2014
73 pages, 109 articles

All Member States must have adopted the European Law into their respective laws

Medical exposure in special section:

Chapter VII articles 55-64 (pages 25-28)

1. Article 55: Justification
2. Article 56: Optimization
3. Article 57: Responsibilities
4. Article 58: Procedures
5. Article 59: Training and recognition
6. Article 60: Equipment
7. Article 61: Special practices
8. Article 62: Special protection during pregnancy and breastfeeding
9. Article 63: Accidental and unintended exposures
10. Article 64: Estimates of population doses

Medical Physics Expert

1997/43/Euratom (previous legislation).

Medical Physics Expert only in 2 articles:
• Art. 2 (definitions) and
• Art. 6 (procedures).

2013/59/Euratom.

MPE in 9 articles:
• Art. 3 (definitions).
• Art. 14.2 (training).
• Art. 22.4.c.i (non medical imaging).
• Art. 57.b (responsibilities).
• Art. 58.d (procedures).
• Art. 59 (training and recognition).
• Art. 79.d (recognition of services and experts).
• Art. 82.3 (radiation protection expert).
• Art. 83 (medical physics expert).
Article 3: Meaning of Terms

• Medical physics expert means 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 recognised by the competent authorities;

Actions to develop Medical Physics profession throughout Europe beyond the European Radiation Protection Laws

EFOMP website
EFOMP strongly encourages its National Member Organizations to strive to ensure that the qualification frameworks and educational and training programmes in their respective states comply with the recommendations in this policy statement.

MISSION STATEMENT

Medical Physicists and Medical Physics Experts will contribute to maintaining and improving the safety, efficiency and effectiveness of healthcare services through patient-oriented activities requiring expert action, involvement or advice regarding the specification, selection, acceptance testing, commissioning, quality assurance/monitoring and optimized clinical use of medical radiological devices and regarding patient risks from ionising radiations including protection from such radiations, installation design and surveillance, and the prevention of unintended or accidental exposures; all activities will be based on current best evidence or own scientific research when the available evidence is not sufficient. The scope includes roles in biomedical research and education.
The Policy Statement can help eliminate or at least minimize accidents or incidents in the magnetic resonance environment and is recommended as a step towards harmonization of safety of workers, patients, and the general public regarding the use of magnetic resonance imaging systems in diagnostic and interventional procedures.

The EFOMP White Paper on Big data: “Big data and deep learning in medical imaging and in relation to medical physics profession”

"As medical physicists, we should pursue beyond the concept of technical quality to extend our methodology and competence towards measuring and optimising the diagnostic value in terms of how it is connected to care outcome..."
EFOMP European School for Medical Physics Expert

- ESMPE organizes medical physics education and training events specifically targeted by Medical Physicists who are already Medical Physics Experts or would like to achieve Medical Physics Expert (MPE) status.
- These events are open to all European Medical Physicists aiming Level 8 of the European Qualifications Framework.

2019 editions of ESMPE

European Network for Training and Education of Medical Physics Experts
A successful training and education program needs an optimal environment:

- Adequate number of cases for training
- Standardized, high-quality, teaching tools & quality assurance training
- High-end lab/simulators for practical training
- Regional certification (e.g., Biomedical Engineer certifiability)
- High-end applications (e.g., advanced dose monitoring, fetal care, etc.)
- Well-trained professionals (e.g., radiology practitioners, technologists, etc.)
- Prototype (local systems, please contact)
- Specific software (e.g., BrainLAB, others)

Most EC member states don’t have the capacity to offer courses in medical physics in radiology & interventional radiology up to ESIR level II.

Sharing is most efficient by common projects.
Module 3. Monte Carlo Simulations

Module 11 on Pregnant and paediatric patients

APPLY FOR EUROPEAN GRANTS TO ATTEND THE SCHOOLS YOU WANT!

In order to attend the all MPE and NPE schools you can apply for the ENEN grants.

The ENEN project supports financially, through mobility grants, students and professionals wishing to carry out education or training activities in medical physics.

These actions need to be completed before the end of the project (31st September 2020).

https://plus.enen.eu/grants/
The European Alliance for Medical Radiation Protection Research (EURAMED) represents a consortium of associations involved in the application of ionising radiation in medicine:

- European Association of Nuclear Medicine (EANM)
- European Federation of Organisations for Medical Physics (EFOMP)
- European Federation of Radiographer Societies (EFRS)
- European Society of Radiology (ESR)
- European Society for Radiotherapy and Oncology (ESTRO)

with the goal of jointly improving medical care and its radiation protection issues through sustainable research efforts.
VISION
Leading European research activities in medical radiation protection and harmonising clinical practice to advance the European radiation protection safety culture in medicine.

MISSION
• Improving medical care through sustainable research efforts in medical radiation protection
• Identifying common research areas
• Serving as a platform for medical radiation protection research
• Developing an aligned approach and response to European research calls
Conclusions

- "skill", "competent", "excellence", "regulatory mandate"..... All these words are found both in the Med Phys 3.0 initiative and European documents.

- The new European Law is a unique opportunity for medical physicists in Europe.
- It provides the tools to develop and expand our profession for the next 10 years or more.
- It is NOW or NEVER for Europe.

THANK YOU