Professional organisations, radiation protection priorities and project collaboration

MEDRAPET — Medical Radiation Protection Education and Training

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A Study on the Implementation of the Medical Exposure Directive’s Requirements within the European Union

It is well known that medical exposures constitute the most significant man-made source of radiation exposure to human populations. The importance of education and training in radiation protection is widely recognised. Hence, the European Commission launched the MEDRAPET project to improve the implementation of the Medical Directive’s provisions for radiation protection education and training of medical professionals in the EU member states and to update the Radiation Protection 116 Guidelines.

The EC-funded tender project MEDRAPET was conducted between December 2010 and March 2013. The professional organisations involved include the European Society of Radiology (ESR), as coordinator, as well as the European Federation of Organisations for Medical Physics (EFOMP), the European Federation of Radiographer Societies (EFRS), the European Society for Therapeutic Radiology and Oncology (ESTRO), the European Association of Nuclear Medicine (EANM), and the Cardiovascular and Interventional Radiological Society of Europe (CIRSE). These are some of the main European stakeholders and professional groups involved in medical radiation protection training. In addition, an Expert Advisory Panel was established to advise the consortium on project-related issues and to observe the developments of the project. It was composed of representatives from relevant international organisations (e.g. International Commission on Radiological Protection — ICRP, International Atomic Energy Agency — IAEA, and World Health Organisation — WHO), government bodies (e.g. German Federal Office for Radiation Protection — BfS) and others.

The activities of the project focused on three main tasks:

1. Conducting an EU-wide study on the radiation protection training of medical professionals in the EU Member States (Work Package 1)

The objective of this Work Package was to devise and implement an EU-wide study in order to establish the status and legal and practical arrangements in the Member States regarding radiation protection training of medical professionals. A web-based survey was used to obtain a view regarding radiation protection education and training of medical professionals from a) national radiation protection authorities, b) professional societies, scientific societies and organisations whose members work with ionising radiation on a daily basis, and c) educational institutions related to graduate and postgraduate education of health professionals.

The survey showed that of the 28 radiation protection authorities who responded, fewer than half believe that legislation in their country adequately addresses the needs of education and training in radiation protection for students/residents. A substantial proportion (36%) said regulations in their country do not include requirements for continuing education and training in radiation protection for radiologists, radiation oncologists, nuclear medicine physicians, interventional radiologists or interventional cardiologists. Relatively few authorities (24%) provide educational radiation protection material for health professionals on their websites. Respondents believe that a lack of interest, or action, from health authorities, professional societies and scientific societies, and a lack of financial resources constitute major barriers to continuing education in radiation protection for health professionals in their country.

About 55% of radiology, radiography, nuclear medicine and radiation oncology societies stated that they organise courses focused on radiation protection for their members. The corresponding percentage for medical physics societies was 65%. A limited number of interventional radiology societies (23%) provide such courses for their members. For interventional radiologists, 65% of the basic training in radiation protection is covered during residency, while other interventionalists did not report such training. The majority of societies said that current national legislation adequately addresses the needs of their members in radiation protection education and training.

Although the EU directives regarding education and training in radiation protection data from 1997, along with major publications from international organisations such as IAEA and ICRP, 20% of medical educational institutions said that they are not aware of the recommendations of these directives. More than 70% of higher education institutions stated that the curricula of their program include lessons on radiation protection.

2. Organising a European Workshop on radiation protection training of medical professionals in the EU Member States (Work Package 2)

A workshop on education and training in medical radiation protection was held in Athens, Greece on April 21-23, 2012. 108 participants from 29 different countries discussed the results of the MEDRAPET survey and examined opportunities, difficulties and future trends in medical radiation protection education and training.

The main conclusions of the workshop, which provided input for the drafting of a Guidance Document under Work Package 3, were:

- Education and training in medical radiation protection is of crucial importance for all medical professionals working with ionising radiation. High-standard training courses at EU level are a key prerequisite to ensure excellence in radiation safety and to implement strategies for financial optimisation in medical institutions.
- Curricula and dedicated training in radiation protection for fluoroscopically-guided endovascular interventions are missing. Continuous professional development (CPD) courses should be provided for all medical professions working with ionising radiation.
- There is a need to implement the medical exposure directive’s requirements on radiation protection education and training of medical professionals in many states of the European Union.
- Universities, training institutions, radiation protection authorities, health authorities, scientific and professional societies, hospitals, educational authorities, international organisations and equipment manufacturers all have an important role in the promotion, organisation, certification, accreditation, support of the training activities in radiation protection for medical exposures.
- Cooperation between the different stakeholders is crucial.
- An effort should be made to increase CPD courses in radiation protection education and training for all professions and specialties, as the majority of educational activities are carried out at undergraduate level or during residency.
- A European body for accreditation in medical radiation protection is needed to promote radiation protection by evaluating and accrediting graduate, residency and CPD courses focused on medical radiation protection.

3. The development of a European Guidance document on radiation protection training of medical professionals (Work Package 3)

The outcome of the study and the conclusions of the workshop led to the creation of a European guidance document on radiation protection education and training of medical professionals. The guidance document includes a) recommendations on radiation protection training of medical professionals, b) learning outcomes for each medical profession working with ionising radiation defined in terms of knowledge, skills and competence (KSC) in accordance with the European Qualifications Framework and the European Guidelines for lifelong learning in nuclear and radiological safety at EU accreditation, certification and recognition of the medical education and training in radiation protection, d) a list of education and training resources, and e) examples of topics to be included in training activities.

The guidance document has been published in the radiation protection series of the European Commission (Radiation Protection No. 175).