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ESR, EFRS and EFOMP continue collaboration in medical radiation protection optimisation

After successful conclusion of the EC-funded Tender project to establish a European Medical ALARA Network, the three professional organisations involved – the European Society of Radiology (ESR), the European Federation of Radiographer Societies (EFRS) and the European Federation of Organisations of Medical Physics (EFOMP) – decided to ensure sustainability of the EMAN network and signed a relevant Letter of Intent.

Dissemination and outreach play a key role in contributing to an effective safety culture in the medical sector. In that spirit, the Steering Committee members are pleased to launch the first edition of the EMAN Newsletter and hope you enjoy the read.

The EMAN Steering Committee



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ESR, EFRS and EFOMP committed to sustain and expand EMAN

ESR PLEASSED TO HOST POST-PROJECT EMAN NETWORK

The ESR fully recognises the need for sustained collaboration in medical radiation protection optimisation as a core partner together with the other professional societies originally involved in the project. Furthermore the ESR is pleased to host the EMAN Secretariat and to ensure the management of the post-project EMAN Network, which underlines the recognition of the importance of this inter-professional cooperation. The ESR looks forward to fruitful collaboration and successful outreach to relevant stakeholders and observers in the coming months, as the future success will strongly depend on their active involvement. The ESR is ready to add its contribution in order to work towards a comprehensive network of medical radiation protection aiming to further harmonise the safety culture in Europe.



■ www.myesr.org

EFRS LOOKS FORWARD TO BUILDING UPON AND DISSEMINATING THE WORK OF THE EC PROJECT

The EFRS Board is pleased that the European Medical ALARA Network (EMAN), as developed in the course of the EC Tender project, came to a positive end and looks into a bright future. The EFRS welcomes the joint effort of the core partners aiming to give maximum visibility to the work done so far and to develop a strategy to involve the European health professional/scientific societies, whose members use ionising radiation in their daily practice. Representing over 100,000 radiographers throughout Europe, the EFRS is well placed and ready to contribute to a wide dissemination of the Network's activities and achievements.



■ www.efrs.eu

EFOMP WELCOMES SUSTAINED COLLABORATION IN RADIATION PROTECTION OPTIMISATION

Radiation protection in the medical sector is a complex endeavour, involving a diversity of stakeholders with different responsibilities and needs. EFOMP fully supports the initiative to sustain the important work the EC-funded EMAN project has achieved in the field of radiation protection optimisation and is pleased to be one of its core partners. Due to the complexity, EFOMP would like to emphasise the importance of an inclusive multi-stakeholder approach and has dedicated itself to supporting the Network's outreach to relevant organisations. EFOMP looks forward to a continued lead of the working group on radiological safety for patients and personnel in activities using x-ray equipment outside the x-ray departments.



■ www.efomp.org

Activities & outlook of the new network

One of the key aims of the EMAN Tender project funded by the European Commission (EC) has been to establish a sustainable European Medical ALARA Network where different stakeholders within the medical sector will have the opportunity to discuss and to exchange information on various topics relating to the implementation of the ALARA principle in the medical field.

After the end of the EC-funded project in October 2012, it was agreed that the three professional organisations involved – ESR, EFRS and EFOMP – shall constitute the core partners and drive the sustainable post-project network as the Steering Committee. Together they represent over 160,000 professionals working in the health sector. The collaboration was formalised in a Letter of Intent between the three parties, signed in autumn 2012.

• INVOLVEMENT OF STAKEHOLDERS AND OBSERVERS

As the key asset of the EMAN Network lies in a multi-stakeholder approach, the Steering Committee is currently reaching out to the various stakeholders with a potential interest in the scope of the network and who share a common interest to improve medical radiation protection. Interested medical professional organisations are encouraged to join the Network as Stakeholders, while European and international organisations and bodies are invited to take on an observer and/or advisory role as Observers of the Network. Both types of engagement imply regular interaction with the Steering Committee and active participation in the activities of the Network through representation in the EMAN Stakeholder Group.

As a first step the consortium partners of the EC funded project were successfully invited to join the post-project EMAN Network:

- Swedish Radiation Protection Authority (Observer)
- German Bundesamt für Strahlenschutz (Observer)

- European Radiation Dosimetry Group (Observer)
- Centre d'étude sur l'Evaluation de la Protection dans le domaine Nucléaire (Stakeholder)

As a second step, the Steering Committee has extended invitations to a number of medical professional organisations and international and European bodies, including the European Commission, IAEA, WHO, Heads of the European Radiological protection Competent Authorities (HERCA). The Cardiovascular and Interventional Radiological Society of Europe (CIRSE) has already declared its interest in active involvement.

• ACTIVITIES IN THE FIRST YEAR OF THE NEW NETWORK (2013)

In addition to the stakeholder outreach, the first activities of the new Network include a revision and update of the project website (currently ongoing), as wide dissemination of the valuable documents developed during the EC funded phase is one of the key tasks to ensure uptake and implementation of the suggested optimisation measures.

During that process the Stakeholder Group will serve as a multiplier contributing to promoting optimisation in radiation protection among its individual members and through its communication channels.

Collaboration for the time being focuses on the scope of activities of the EC-funded project, i.e. on the three following application areas of ionising radiation

- Computed tomography (CT)
- Interventional procedures
- The use of x-ray equipment outside the radiology department

To that end, the three working groups of the EC-funded project will resume their activities, update their documents and build upon the achievements during the EC-funded period. In addition, the Steering Committee – depending on stakeholders' demand – may decide to

extend the scope of activities to other clinical areas to optimise radiation protection.

Moreover, EMAN will continue to support the European Commission (EC) in its activities relating to the optimisation of radiation protection of individuals submitted to medical exposures; formulate proposals to the EC on harmonization issues, and propose to the EC solutions of identified issues at the European level.

An annual EMAN meeting is envisaged to review activities, discuss the way forward and to disseminate the Network's achievements to the interested communities. The first meeting, gathering the Steering Committee, the Stakeholder Group as well as the working group leaders and members, will be organised during ECR 2013 in March.

• LONG-TERM OVERARCHING VISION

The long-term vision of collaboration of the Steering Committee members is to establish a single point of contact (SPOC) for the health professionals workforce, covering all aspects of medical radiation protection to avoid fragmentation of activities and duplication of effort. The activities of EMAN will potentially be integrated into the SPOC once established.

• HOW INDIVIDUALS CAN CONTRIBUTE TO EMAN

As you have realised, EMAN has set itself ambitious goals and has embarked on resource-intensive activities in order to establish and improve a radiation protection and patient safety culture in Europe.

If you are interested in the scope of the Network and share our interest to improve this safety culture, you are most welcome to contribute to the activities of the working groups. Please contact the EMAN Secretariat, who will be happy to put you in contact with the relevant chairperson.



Want to know more?

For more information, please visit the EMAN website at <http://www.eman-network.eu/> or contact the EMAN Secretariat at eu-affairs@myesr.org

This workshop of 2.5 days was held with the aims of presenting the results of the EC project to other stakeholders (professional organisations, COCIR), regulatory authorities (EC, HERCA, national authorities) and international organisations (ICRP, IAEA) as well as to hear their approach to optimisation and proposals for further activities.

Outcomes of the EMAN Workshop (June 2012)

AIMS AND ORGANISATION

Ten thematic sessions (7 plenary, 3 in working groups dedicated to the three main objects of the EC project) served to analyse the needs for optimisation, to present current activities of all participating partners, and to jointly look for good examples of practical optimisation, for chances of improvement, and for the requirements and solutions of implementing a sustainable EMAN network.

EXTRACT OF PRESENTATIONS AND DISCUSSIONS

It is beyond the format of a summary to list all the many excellent ideas presented during the workshop; those can all be accessed through the EMAN-website (www.eman-network.eu).

First, it was essential that the EC, the regulatory authorities and international organisations presented the global trends in radiation

protection in medicine, their top projects and willingness to contribute to optimisation in Europe. COCIR showed the voluntary self-commitment of the imaging industry through concrete actions in CT and its interest in cooperating with the medical partners and the authorities. Beyond the formal EMAN members, the European Society of Paediatric Radiology (ESPR), the European Association of Nuclear Medicine (EANM), the European Society for Radiotherapy and -Oncology (ESTRO), the European Society of Gastrointestinal Endoscopy (ESGE), the Cardiovascular and Interventional Radiological Society of Europe (CIRSE) and a representative of Interventional Cardiology presented ways to improve optimisation in their specific areas. Experiences with clinical audits, with the cooperation between hospitals and manufacturers as well as between radiographers, radiologists and physicists, and with e-learning in Italy to reach persons outside the departments of radiology were very illustrative. The working groups concentrated on their specific areas of activity and were able to point out many practical approaches to optimisation, such as to reduce occupational exposure in intervention.

The future of EMAN was intensively discussed. Since this is the subject of another article in this newsletter showing the more recent development, no details are given here.

CONCLUSIONS

In the Conclusion Session, important needs for the future EMAN network were listed, and those repeatedly proposed shall be mentioned here: Most participants suggested to include as many professional partners as possible working with X-rays, radioisotopes and therapeutic radiology in order to cover the whole medical field. It was also a broadly identified need that EMAN should include the whole range of radiation protection activities, i.e. above all justification, clinical audits and ed-

ucation/training in addition to optimisation. Interdisciplinary cooperation was recognised as one of the most important achievements of the EC project; as medical radiation protection is a multidisciplinary task, the cooperation of all partners including the referrers is essential, and within the departments of radiology, the core team of radiographers, radiologists and medical physicists has an extraordinary role. Finally, the need for increasing the visibility of EMAN and for reaching all medical actors was pointed out as a major goal for the further work.

ANNOUNCEMENT

EMAN MEETING AT ECR 2013

Does your organisation share an interest in contributing to an effective safety culture in the medical sector?

The EMAN Steering Committee is pleased to invite interested organisations to participate in the **EMAN Meeting on the occasion of the European Congress of Radiology (ECR) in Vienna, March 7-11.**

Besides a project presentation, this meeting will inform about activities of the EMAN project after conclusion of the EC-funded period, discuss priorities for the coming months and encourage participation of interested organisations.

Date: Friday, March 8, 2013
17:00 – 18:30
Austria Center Vienna

For information and registration, please contact: angelika.benkovszky@myesr.org



Summary of achievements of EC-funded EMAN Project

The aim of the EC-funded EMAN project was to develop radiation protection optimisation strategies in three areas of diagnostic and interventional radiology: computed tomography, interventional radiology and cardiology and radiological practices performed outside radiology department. Three working groups with representatives of the professionals involved, medical radiologists and cardiologists, radiographers, medical physicists and regulators, worked two years identifying need and priorities for the implementation of elements to increase the level of radiation protection, both for patients and, when relevant, involved staff.

The results achieved by the three multidisciplinary groups provide the methodology to apply in other fields of diagnosis and therapy. It is recommended that the same methodology is applied at the hospital level, establishing multidisciplinary “core teams” to implement exposure optimisation in the different areas.

The role of the “core team” is to develop optimised procedure protocols, train staff and supervise practice. The knowledge, competence and skills of the members of the core team have to be defined together with training initiatives, supported by EMAN and scientific societies.

This article summarises the main achievements of the three working groups (WG) together with recommendations addressed towards the European Commission, standardisation and regulatory bodies, manufacturers and users. Complete information is contained in the synthesis and final documents posted on the EMAN website.

• OPTIMISATION IN COMPUTED TOMOGRAPHY

The WG on optimisation in CT, chaired by Jürgen Griebel from from German Bundesamt für Strahlenschutz (BfS, Munich), has set up 8 sub-groups to explore specific items and develop recommendations. The WG, recognised the need for important interventions aiming to reduce, or optimise, patient dose, and devel-

oped a series of recommendations, of which the most relevant ones are reported here:

- The European Commission should develop actions both on research and guidelines:
 - research should compare exposure and associated radiation risks with clinical benefit from the increasing use of CT by taking into account information on age of the patients and clinical indication of the performed CT exams
 - guidelines should be developed to promote the ALARA approach to the principle of justification, with the help of harmonised referral guidelines on a European level and to promote standardised and optimised protocols and algorithms in individual health assessment.
 - European action to assess and promote the use of an updated set of DRLs for adult and paediatric patients.
- Manufacturers should develop software tools to popularise databases with individual patient-specific exposure parameters, to compare exposure with DRLs, and to develop automatic techniques to adapt kV settings.

On the dosimetry side, it is necessary to clarify the concept of organ dose, compared to effective dose, to develop new dosimetry quantities and to express dose for wide x-ray beam and relative measurements protocols.

• OPTIMISATION OF PATIENT AND OCCUPATIONAL EXPOSURES IN INTERVENTIONAL RADIOLOGY AND RADIOLOGY

As part of the medical procedures using ionising radiation, interventional radiology and cardiology (IR and IC) procedures are performed in increasing large numbers worldwide. These procedures often imply high radiation doses to patients, but also for the healthcare personnel. This is reinforced by the fact that many of the specialists performing interventional procedures do not have proper education and training in radiation protection

tasks. As a consequence, there are more and more concerns about radiation protection of patients and healthcare personnel using such techniques. Major areas of concern are high extremity doses to hands and legs, as well as to the eye lens of the physicians. Recent data on the effects of eye lens exposure increase concerns about possible delayed effects such as lens injuries or cataracts for the medical staff. The WG has developed a synthesis document in which current information on practices and related doses and protection elements have been reported and discussed. Derived recommendations aiming to increase the level of optimisation of exposures are summarised here:

- European Commission and, where appropriate, national authorities should promote:
 - the assessment and the use of DRLs for all interventional practices, for adults and children. DRLs, taking into account the complexity factor of procedures, should be part of the revised EC Guidelines on DRLs
 - the development of monitoring methods and protocols for staff, in particular for the monitoring of doses to extremities and to the lens of the eyes
 - the assessment and the use of “trigger or alert” levels to identify which patients submit to follow-up to identify possible skin lesions due to complex and high dose procedures
 - the implementation of a quality audit and the accreditation of radiation protection training
- Healthcare professionals should have appropriate education and training in radiation protection. The level of education and training should be adapted to the radiation risk and to the specificities of the procedure. Physicians and medical physicists should be involved in the specification of the equipment to be purchased. Optimised clinical protocols and quality control procedures have to be developed and adopted.

OPTIMISATION IN X-RAY PRACTICES PERFORMED OUTSIDE RADIOLOGY DEPARTMENT

Radiation protection of patients and staff for practices performed outside radiological departments are of particular interest due to the: limited information on type, frequency of procedures and doses; increased frequency of procedures, some of them complex and taking place in surgical theatres; fact that procedures are performed by non-radiologists and nurses with poor or no training in radiation protection and procedure optimisation. The working group identified some practices and procedures to study in vascular surgery, gastroenterology, urology, orthopaedics, neurosurgery, anaesthesiology and gynaecology. For these, an extensive literature data analysis has been performed together with specific sets of data collected from hospitals accessed by the members of the working group.

The identified lack of optimisation revealed the following optimisation actions:

- The European Commission should:
 - strengthen patient dose monitoring at the hospital level and the assessment of national figures to fill the knowledge gap;
 - revise the *EC Guidance on Diagnostic Reference Levels for Medical Exposure (RP 109)* including DRLs assessed for these practices with a methodology developed to assess DRLs when a limited set of data is available;
 - recommend to apply harmonised staff exposure monitoring guidelines conveniently developed by HERCA (Association

of Heads of European Radiological Protection Competent Authorities) and EMAN;

- promote clinical audit and inspection activities
- develop a Radiation protection *Guideline for the optimisation of radiological practices performed outside radiology departments*, based on a structure propose by EMAN.

- HERCA should also work on the harmonisation of national staff dosimetry databases where the inclusion of specialists' radiological workload will allow for extracting dose information for specific group of specialists.
- The European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry (COCIR) should promote development of standards aiming to reduce patient and staff doses for mobile interventional equipment.
- Education and training of professionals in radiation protection is seen as a priority. Most practitioners have little or no education in radiation protection and optimisation methods. Specific methodologies have to be used to reach the large number of practitioners (medical specialists, nurses, radiographers and medical physicists). The MEDRAPET project is providing hints to be used in developing proper training packages.
- Stakeholder's involvement. The experience and agreement reached with the European Society of Gastrointestinal Endoscopy (ESGE) is seen by EMAN as a model to propose to other professional specialities to enlarge the network.

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IMPRINT

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