means that what can easily be accepted as a well known harmless artefacts in the diagnostic setting can have detrimental negative effects if used for treatment guidance in radiotherapy. Therefore, the MRI-physicist needs specific training in how the image data will be used in the radiotherapy workflow.

The MRI-expertise can be an in-house MRI-physicist working with radiotherapy or as a service provided by diagnostic radiology physicists. In any case, it is important that the MRI-physicist will be specifically trained and dedicated to radiotherapy. Not all MRI-physicists from radiology can have the knowledge needed in radiotherapy. Similarly, an MRI-physicist working in radiotherapy cannot be an expert on all MRI techniques. An ideal model is to have a dedicated MRI-physicist in-house in radiotherapy, which will act as a link to the other MRI-physicists in radiology, and thereby facilitate the discussion and knowledge transfer in both directions.

The present question will be even more important to discuss when hybrid modalities, such as MR-linacs, will be implemented in the clinics. It is obvious that the MR-scanner is a part of the treatment machine. Therefore, the installation of MR-linacs should be combined with recruitment of in-house MRI-expertise.

Traditionally, there have been different physicists dedicated to radiotherapy, nuclear medicine, MRI and other radiology. The future hybrid modalities in both diagnostics (PET/MR, PET/CT) and therapy (MR/linac) will be the end of the era for "One Modality Physicist". This is a great challenge to the physics profession.

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[I061] Can't live without you – Working with radiotherapy physicists from the perspective of a radiation oncologist

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The field of radiation oncology is rapidly evolving. This is the result of fast technological progress on one side, but also of joined forces in the multidisciplinary field itself: radiation oncologists, medical physicists, radiographers and radiobiologists closely work together to propel our discipline.

During the lecture I will touch upon the "cross-fertilization" of radiation oncologists and medical physicists, and, having worked in two European countries, outline the perceived differences in the content of the work conducted by medical physicists.

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[I062] The roles of radiographers in medical imaging and radiotherapy in Europe

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Very fast development of technologies in medical imaging and therapy has changed the role of radiographer in Europe. Over the past ten years education and necessary skills and competencies for radiographers has become more similar in most EU countries due to input of EFRS Educational Wing, but there are still rather significant differences in the roles of radiographers between countries.

Role expansion is often initiated by external and internal factors that lead to advanced practice for radiographers. However, there is also a limiting factor that functions as a barrier for development of radiographer's role and mainly that is connected to resistance when radiologists/medical physicists object to image interpretation or performance of particular methods or procedures like ultrasound and radiotherapy treatment planning, or when the required education and training to support such roles is not available. This presentation aims to highlight the current status of radiographers in Europe with a particular focus on opportunities in medical imaging and radiotherapy related to quality control and radiation protection.

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[I063] Safety and quality in the medical imaging department

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Quality and safety of treatment of patients in the medical imaging department depend on cooperation between several professionals. First there is the medical doctor who is specialized in (interventional) radiology and/or nuclear medicine. This medical specialist is responsible for the medical treatment of the patients i.e. acceptance of the patient, the medical treatment and the report of the findings. Second, there is the radiographer who is responsible for the well-being of the patient, the technical actions during the treatment and the after-care. More in the background is the medical engineer who is responsible for the medical equipment i.e. maintenance, reliability and costs. Last but not least we have, also more or less in the background, the medical physicist expert (MPE) who is responsible for the right set-up for the intended treatment, quality assurance procedures concerning technical set-up, involved dosimetry and radiation protection concerning patients. Also, in some hospitals, the MPE is appointed as the radiation protection officer according to the EU Council Directive Basic Safety Standards 2013/59/Euratom. Within this role the MPE is responsible for radiation protection of department staff and environment. Together these professionals are entitled to optimise the treatment process in the light of diagnostic or therapeutic values and acceptable risks.

Conclusions. Each professional has had an education and a specialized training fit for the job. The medical specialist and the medical physicist are both trained at a high science level i.e. medicine and physics. Radiographer and medical specialists are trained how to deal with patients and equipment, and the medical engineer and medical physicist are technical experts who know the equipment in detail, including the underlying physics. There is also much overlap between knowledge of these professionals and best results are achieved when they cooperate closely. This means they must know each others jobs and position, related to patient, equipment and each other. Respect is the central theme and this can be best paid when they understand each other's duties and responsibilities. It appears that close cooperation strengthens itself (positive feedback) and close cooperation improves knowledge of each other's jobs which increases mutual respect.

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[I064]

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