ECMP Oral Abstracts

[001] The role of the MPE in risk management
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Purpose. In many sectors, for example in aviation, risk management and the associated processes and requirements have become indispensable. In medicine, where there is a significant risk of harm to life, risk management is still not available in some disciplines. Most of the persons in charge are directly involved in the processes and it is difficult to objectively demand causes, consequences and improvement ideas and to evaluate them.

Methods. Risk management involves all the professions. Additionally coordinating and organizational activities must be taken over. In radiotherapy, that could be the radiation-oncologist, the radiation-technologist or the medical physicist, because of their integration into the work processes.

Why medical physicists are particularly suitable in risk management?
• Medical physicists are physicists from heart and characterized by high and having a great affinity to logical thinking. They are usually successful at implementing projects, both in terms of planning and practical implementation.
• MPE’s often work as link between the prescribing (radiation oncologist) and the executing (radiation technologist). Most errors or near-misses occur in prescription or in execution. So the MPE holds a very neutral position.
• Already in physics study at university error calculation and tolerance limits are central topics and are major prerequisite in risk management.

Why are medical physicists not likely to be involved in risk management?
• Physicians are told to be not communicative
• Formalities are a little suspect to a physicist, but indispensable in risk management.

Training for the physicist to become a MPE includes not only the appropriation on medical and health technological knowledge but also the development of a structured personality. So the MPE shows ideal prerequisites to play a leading and driving role in.

Conclusions. Of course, good risk management requires the cooperation of all professional groups on an appreciative and respectful approach, but experience shows that at least in radiotherapy, medical physicists are often chosen to take a lead. This makes sense but we encounter the problem that this fact has to be taken into account in the framework conditions or regulatory requirements and additional staff in the field of medical physics is required.

[002] Practical examples of risk management in radiotherapy
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Introduction. Risks are naturally also present in radiotherapy, where the patient is subject of the application of high doses of ionizing radiation. For the case of radiotherapy already exist extensive quality assurance procedures that have been developed for the imaging and treatment equipment and software involved. Nevertheless, all quality assurance measures on e.g. the dose applied focuses only on the technical side of the risk linked to the administration of radiation. The personal operating these machines or software follow usually organized procedures and are faced by the workload given in relation to the workforce provided by the institution. Actions and decisions are taken, that may impose also risks to patients not covered by the above mentioned quality assurance systems of the machines.

The goal of risk analysis in radiotherapy is to reduce all possible kind of risks linked to patients during their treatment, but this is also part of the risk management which seeks to continuously improve the quality of the treatment and safety of the patient. Additionally, this includes also the prevention of the institution as well as the people working there from unjustified claims of patients. This is of economical value to the institution as insurance premiums are calculated according the level of risk of insurance claims.

Materials and Methods. The risk analysis is usually following the proactive method of “healthcare failure mode and error analysis" (hFMEA)[1]. This starts with the identification of possible sources of risks in all procedures involved. This is best done by a internal team of experts from the institution itself knowing all related facts, that is accompanied by an external expert for risk analysis. Risks are then categorised according their potential frequency of occurrence, detectability and severity of consequences in form of a risk or hazard scoring matrix, where scoring values can be used to classify the associated risk. From this risk matrix priorities have to be set for measures to control and reduce these risks if possible. Practical examples of risk analysis in radiotherapy are used to illustrate this procedure.

Reference