

Priority topic of EURAMED for 2nd call of CONERT

Patient-tailored diagnosis and treatment: full exploitation and improvement of technology and techniques with clinical and dose structured reporting

Challenge:

In terms of optimising radiation protection for the increasing number of patients exposed to ionising radiation in the context of medical diagnosis and treatment there are various steps that are unsolved so far. One major approach, the comprehensive tailoring of imaging and therapeutic procedures in terms of the clinical question, anthropometric and physiological parameters as well as individual susceptibility of each patient and especially children and lesion-specific characteristics is a key challenge that still is not addressed properly. Patient-tailored procedures will reduce the risks for individual patients. The patient group and indication dependent optimisation in terms of dose distributions need to be improved and standardized to allow a better compliance with COUNCIL DIRECTIVE 2013/59/EURATOM (BSS) Article 56 (Optimisation in medical use) and to pave the way for susceptibility dependent medical application of ionising radiation. Therefore a full exploitation of technology and techniques is needed with clinical and dose structured reporting.

Scope:

The scope of the proposed topic is to foster the full exploitation of technology and its improvement for diagnostic or therapeutic applications to patients dependent on characteristic parameters (individual susceptibility, age, gender etc. and clinical indication) in combination with providing documentation and optimisation tools (e.g. by clinical implementation of diagnostic reference levels, harmonisation of procedures for stratified patient groups, maximise clinical information and/or benefit relative to patient risk etc.) including the uncertainties in the determination of the variables. A project fitting to this topic will either aim to implement harmonisation or documentation schemes throughout Europe improving patient radiation protection and allowing better data for future patient based radiation biology or show feasibility of individualisation or stratification approaches and determine how such approaches could be implemented in the future. Projects need to include clear concepts of dosimetric description of procedures in combination with clinical outcomes (structured clinical and dose reporting) and of ways for standardisation (an example for such an approach could be IRAs based on such structured reporting, but other examples like in theranostics could also be possible). It would be beneficial, to address justification and the ethical basis underlying the optimisation process.

Connections are seen with approaches of MELODI, EURADOS and SSH.

Expected Impact:

Optimised and harmonised practices will lead to reduced uncertainty in radiation exposure and corresponding risks. There will be a better dose documentation and a patient tailored optimisation of radiation application to patients to reduce the risk for individualised patients. Both aspects would be big steps for a more efficient implementation of the BSS. In addition, this individualised risk reduction harmonised throughout Europe will give greater confidence and assurance to patients. This could allow also a better communication for such medical applications.

Type of action:

Research and innovation actions. Project proposals may address part of the scope and links to other subtopics are welcome. Involvement of young researchers in hospitals is mandatory.