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## CIRSE 2014: Radiation Protection Culture Integral to IR



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Safety is best achieved when it is built into the system rather than a choice, said Prof. Efstathopoulos from Greece, speaking at the Cardiovascular and Interventional Radiology Society of Europe (CIRSE) Congress in Glasgow this week. While radiation protection is top of everyone's mind, implementing a radiation protection culture in your radiology department is more than just implementing guidelines and recommendations, he said.

Prof. Efstathopoulos explained that radiation protection culture is a newly introduced meaning in the medical field. Culture refers to the total range of activities and ideas of a group of people, and combines knowledge, values, behaviours and experience. In June this year, the International Radiation Protection Association (IRPA) published its [Guiding Principles for Establishing a Radiation Protection Culture](#).

He put the question - is there a need to establish a radiation protection culture when already we have guidelines, rules and agencies? Yes, the need is clear, he said. The number of interventional radiology and interventional cardiology procedures has doubled in the last decade. Interventional procedures deliver an effective dose to patients ranging from 5 to 70 mSv. IR contributes about 10 percent of total collective dose.

### Radiation Protection Culture Objectives

1. Provide safe working environment for employees
2. Ensure patients safety
3. Promote knowledge of radiation risks
4. Optimisation of existing radiation protection programmes
5. Minimise unsafe practices
6. Control radiation risks
7. Share responsibility among workers

Programmes build on the three classical principles of radiation protection: justification, optimisation and dose limitation. To which, said Efstathopoulos, are added the sharing of competence by training and education.

Leadership is key. The department leader and other interventionalists have to demonstrate absolute commitment to safety. Decision-making procedures reflect safety first. It is also essential that a QA programme is running in the routine work of the department.

### How to Establish a Radiation Protection Culture

1. Provide continuing education for staff, who need new knowledge, new attitudes as well as new skills.
2. Build a positive and creative work environment
3. Promote Stakeholder engagement between health authorities, patients, academics, manufacturers and medical staff.

In practice, said Efstathopoulos, implementing a radiation protection culture requires persuasion. Good practices should be rewarded and unsafe practices banished. The culture needs guidelines and recommendations, radiation doses according to the ALARA (As Low as Reasonably Achievable) principle, with special attention to radiation protection of children.

He reminded the audience that radiation protection culture is a dynamic process that needs continuous evaluation and systematic improvement. Radiology departments need to use quantitative and qualitative tools to examine how well the radiation protection culture is being implemented and check if goals are being achieved.

Radiology managers need to provide leadership and develop good relationships with administrators and employees. Radiology managers are responsible for staff training and implementation of guidelines and recommendations under the guidance of agencies such as the International Radiation Protection Association (IRPA).

Radiology staff need to implement guidelines and recommendations, build trust with patients and create a strong team spirit. A radiation protection culture has the benefits for patients of more effective diagnosis and treatment, improved safety, minimisation of undesired results and minimisation of exposure to radiation.

In conclusion, said Efstathopoulos, a radiation protection culture includes beliefs, strategies, recommendations and practices. It demands deep

knowledge of radiation risks, safety rules and the participation of all stakeholders. It is learned shared and usually adaptive. It should be an integral part of clinical routine, and needs continuous evaluation and updates.

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