

Abstract

Van Bladel, L.¹

¹MD, Federal Agency for Nuclear Control, Brussels, Belgium

Patient safety in medical imaging: a regulatory authority vision

Increasing imaging possibilities, increasing radiation concerns

During the past decades, the application of ionizing radiation in medical imaging has undergone major changes. This on-going evolution enriches our diagnostic and therapeutic arsenal, but comes with the downside of increasing radiation doses to the population as a whole. At the level of the individual, exposures may lead to non-negligible stochastic risks, in particular when paediatric patients are concerned. And in interventional procedures, even acute radiation effects can be observed.

The right procedures, the right way

Medical imaging is there to serve health. But radiological and nuclear medicine procedures inevitably imply exposure to ionizing radiation. And in spite of remaining uncertainties with regard to the exact nature and magnitude of the connected risks at low doses, prudence is definitely warranted.

This prudence with regard to the radiation safety of persons submitted to medical exposures has been translated, in the system of radiation protection applied worldwide, into the principles of justification and optimisation. In essence, these principles tell us to perform the right procedures, the right way. This may sound very simple, but is a real challenge in clinical practice.

The “right procedure” is one that is performed on the right patient, to the right side and that is -above all- appropriate in the context of the care for this particular patient, at this time.

The “right way” is not just about dose optimisation, but most and for all about genuinely caring for the patient by offering high quality technical work while showing empathy and demonstrating respect for his or her dignity as a person. The end product should not necessarily be images that look nice, but they should definitely provide the information needed to confidently come to a diagnosis or guide a procedure, nothing more, for an ALARA dose.

Together towards a radiation safety culture

The traditional radiation protection framework aims at providing the necessary prerequisites for radiation safe imaging: medical imaging is allowed only if type-approved and regularly tested equipment is used by staff meeting the necessary educational and training requirements, in a safe environment, often a licenced undertaking.

More recently, the regulator’s attention has focussed on human factors, on roles, processes and procedures, and on the responsibilities of the respective role holders. This has resulted in regulatory requirements for quality assurance and auditing.

The ultimate goal of the radiation protection regulatory authorities is to have a true radiation safety culture reigning in our imaging departments. They realise however that isolated actions from their side will allow to achieve this goal. That is why they are actively promoting complementary and coordinated actions involving all parties concerned: patients, referrers, radiological practitioners, radiographers, physicists but also equipment manufacturers, health authorities, health technology assessment bodies, the European Commission and international organisations such as the ICRP, IAEA and WHO. Radiation protection competent authorities are convinced that such collaboration is the way forward and they are truly grateful for the positive reactions received to their call.