

# ICRP Committee 3 overview (Protection in medicine)

E. Vaño<sup>a</sup>, D. L. Miller<sup>b</sup>, M. Rehani<sup>c</sup>

<sup>a</sup> ICRP Committee 3. Chairman. <sup>b</sup> ICRP Committee 3.

Vice-Chairman. <sup>c</sup> ICRP Committee 3. Secretary.

Contact: [eliseov@med.ucm.es](mailto:eliseov@med.ucm.es)

Be part of the European Society of Radiology's radiation protection initiative, become a Friend of EuroSafe Imaging. [www.eurosafeimaging.org](http://www.eurosafeimaging.org)

Committee 3 of the International Commission on Radiological Protection (ICRP, the Commission) is concerned with the protection of persons and unborn children when ionising radiation is used for medical diagnosis, therapy, or biomedical research.

Since 2000, Committee 3 has produced, either alone or in conjunction with other ICRP committees, 18 reports dealing with radiological protection (RP) in medicine (abstracts are available at <http://www.icrp.org/publications.asp>). The relevant publications for diagnostic and interventional radiology are:

- » Publication 121: Radiological protection in paediatric diagnostic and interventional radiology (ICRP, 2013b);
- » Publication 120: Radiological protection in cardiology (ICRP, 2013a);
- » Publication 117: Radiological protection in fluoroscopically guided procedures performed outside the imaging department (ICRP, 2010);
- » Publication 113: Education and training in radiological protection for diagnostic and interventional procedures (ICRP, 2009b);
- » Publication 105: Radiological protection in medicine (ICRP, 2007c);
- » Publication 102: Managing patient dose in multi-detector computed tomography (ICRP, 2007a);
- » Publication 93: Managing patient dose in digital radiology (ICRP, 2004a);
- » Publication 87: Managing patient dose in computed tomography (ICRP, 2000d);
- » Publication 85: Avoidance of radiation injuries from medical interventional procedures (ICRP, 2000b);
- » Publication 84: Pregnancy and medical radiation (ICRP, 2000a);
- » Supporting Guidance 2: Radiation and your patient: a guide for medical practitioners (ICRP, 2001a); and
- » Supporting Guidance 2: Reference levels in medical imaging: review and additional advice (ICRP, 2001b).

### Work in progress

In 2012, Committee 3 updated a work plan that included several topics of interest for radiological imaging:

1. TG 88: Radiological protection in cone-beam CT. Madan Rehani (Chair). This draft document contains recommendations and guidance on RP for the use of cone-beam CT (CBCT) in medical and interventional applications. Dental applications are also discussed briefly. Applications covered include interventional radiology, intra-operative surgery, radiotherapy, breast imaging, and head and neck imaging.
2. WP Justification: framework for justification in medical uses of ionising radiation (including imaging of asymptomatic individuals). Katrine Åhlström Riklund (Chair) The document will provide practical guidance on Level 2 and Level 3 justification for medical professionals. It should not overlap with the work of professional bodies, and will emphasise that RP is neither the only nor the main issue professionals need to consider. The table of contents was revisited and approved at Committee 3's 2013 meeting.
3. WP: Occupational protection issues in interventional procedures (fluoroscopically guided). Pedro Ortiz-Lopez (Chair)
  - » This report will integrate information that is scattered among different reports and publications and provide detailed information on specific dosimetric aspects of RP (e.g. active dosimetry, RP tools, RP methods, tests of protective devices).

WP: Diagnostic reference levels for diagnostic and interventional imaging. Eliseo Vano (Chair)

- » The document will include different existing methodologies for determining DRL values, including use of full patient dose distributions for optimisation (not just the 3rd quartile); the link between DRLs and image quality or diagnostic information (including post-processing) for different clinical tasks; standardisation and consensus on the levels of complexity for some common procedures and their impact on DRLs; deriving trigger (alarm) levels from DRLs for investigation of high dose values; recommendations for the use of multiple dose related quantities simultaneously; the recommended time interval for updating DRLs, and factors to be considered when establishing the time interval.

### Topics under consideration

- » Individual human sensitivity to ionising radiation.
- » Framework for optimisation for individual patients.
- » Dose quantities and units in imaging equipment.
- » Patient eye dose in CT.

**The system of RP in medicine**

- Medical exposure of patients, including their comforters and carers, and volunteers in biomedical research.
- Application of the fundamental principles (justification, optimisation of protection, and dose limits –not applicable for patients).

**Educational area at the ICRP website**  
<http://www.icrp.org/page.asp?id=35>

- Pregnancy
- Interventional Radiology
- Accidents in Radiotherapy
- CT dose management
- Digital Radiology

**STRUCTURE**

ICRP Main Commission | Scientific Secretariat

Committee 1 Effects | Committee 2 Doses | Committee 3 Medicine | Committee 4 Application | Committee 5 Environment

Task Groups

**Committee 3, Protection in Medicine:** develops recommendations and guidance on the protection of patients, staff, and the public against radiation exposure in medicine.

**STRATEGIC OBJECTIVES, 2011 – 2017**

- Respond to new challenges in radiological protection.

**Educational area at the ICRP website**  
<http://www.icrp.org/page.asp?id=32>

**Free Guides and Explanatory Notes**

- Radiation and your Patient: A Guide for Medical Practitioners
- Explanatory note on Diagnostic Reference Levels