The Mandate and Work of ICRP Committee 3 on Radiological Protection in Medicine

Colin J Martin, PhD (ICRP C3 Vice-Chair)
Committee 3 (Protection in Medicine) is concerned with the protection of persons and unborn children when ionising radiation is used in medical diagnosis, therapy, and biomedical research, as well as protection in veterinary medicine.

- Evaluate RP needs related to emerging technologies.
- Produce recommendations and user-friendly guidance on RP.
ICRP maintains formal relations with other organisations with an interest in radiological protection through specific agreements, or by granting Special Liaison status.

Representatives from the World Health Organization, the International Atomic Energy Agency cooperate closely with Committee 3.
Left to right, **Front row:** Donald Miller, Eliseo Vano, Madan Rehani, Pedro Ortiz Lopez

**Middle row:** Colin Martin, Sandor Pallet, Pek Lan Khong, Katrine Riklund Åhlström, Michel Bourguignon (in insert);

**Back row:** Baorong Yue (insert), Reinhard Loose, Ola Holberg (representative, IAEA), Pierre Scalliet, Yoshiharu Yonekura, Keon Kang, Kimberly Applegate (insert) and Lawrence Dauer (insert).
ICRP C3 (Protection in Medicine) 2017-2021
8 new members for 2017

- **Alsuwaidi** Jamila Dr MP (UAE)
- **Applegate** Kimberly Prof RD (USA)
- **Bourguignon** Michel Prof NM (France)
- **Cantone** Marie-Claire Prof MP (Italy)
- **Demeter** Sandor Prof NM (Canada)
- **Hosono** Makoto Prof NM (Japan)
- **Kang** Keon Prof NM (Korea)
- **Loose** Reinhard Prof RD (Germany)
- **Martí-Climent** Josep Prof MP (Spain)
- **Martin** Colin Dr MP (UK) **Vice-Chair**
- **Niu** Yantao Dr RD (China)
- **Rehani** Madan Prof MP (India/USA) **Secretary**
- **Small** William Prof RO (USA)
- **Sutton** David Dr MP (UK)
- **Van Bladel** Lodewijk Dr SURG (Belgium)

C3 members are from 12 countries
ICRP C3: Most Recent Publications

Annals of the ICRP

ICRP PUBLICATION 1XXX

Diagnostic Reference Levels in Medical Imaging

Editor-in-Chief
C.H. CLEMENT

Associate Editor
H. OGINO

Authors on behalf of ICRP
E. Vano, D.L. Miller, C. J. Martin, M.M. Rehani, K. Kang,
M. Rosenstein, P. Ortiz, S. Mattsson, R. Padovani, A. Rogers

PUBLISHED FOR
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by
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Please cite this issue as ‘ICRP. 201x. Diagnostic reference levels in medical imaging.
ICRP Publication 1XXX. Am. ICRP 4X(X-X)’
• Issue and principles for use of DRLs
• Considerations in conducting surveys to establish DRLs
• Electronic collection to increase amount of data
• Specific modalities:
  • Radiography, digital radiography, fluoroscopy, interventional procedures, CT, nuclear medicine, multimodality imaging procedures
• Paediatrics: Dealing with range of sizes
• Use of the DRL process in clinical practice
1. Quantities used for DRLs should assess the amount of ionising radiation to perform a medical imaging task, and should be easily measured or determined.

2. DRL values should be based on surveys of the DRL quantities for procedures performed on appropriate samples of patients. Not phantoms.

3. National and regional DRL values should be revised at regular intervals (3-5 years).

4. DRL values are dependent on the state of practice and the available technology at a point in time.
5. DRL values shall not be used for individual patients or individual examinations.

6. For interventional procedures, complexity of the procedure may be considered in setting DRLs.

7. A DRL value is considered to be consistently exceeded when the local median for a representative sample of patients is greater than the DRL value. Consistently means ‘in a majority of cases’.

8. Comparison of local practices to DRL values is not sufficient. If a local or national DRL value is exceeded, investigate and take corrective action immediately. That is optimization!
An increasing number of medical specialties use fluoroscopy outside of imaging departments. These staff groups are likely to receive high doses to the eyes. This publication addresses their protection and dose monitoring.
Occupational RP in Interventional Procedures

- Occupational exposures and reported radiation injuries to staff in x-ray guided interventions
- Issues in monitoring staff exposure and dose assessment
- Methods for protecting body, eyes and head, thyroid and extremities
- Main characteristics of protection devices
- Quality control tests for protective devices
- Education and training
ICRP C3 Publications in Process in 2017

Task Group 101
Radiological Protection in Therapy with Radiopharmaceuticals
C3 with input from C2: Revisions following critical review by C3

Annals of the ICRP

ICRP PUBLICATION XXX

Radiological Protection in Therapy with Radiopharmaceuticals

Editor-in-Chief
C.H. CLEMENT
Associate Editor

Authors on behalf of ICRP

PUBLISHED FOR
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Please cite this issue as ‘ICRP, 20YY. Title of the annals. ICRP Publication XXX, Ann. ICRP 00 (0).’
RP in Therapy with Radiopharmaceuticals

- Justification and optimization of treatment methods, by indication for treatment
- Methods for collection of biokinetic data
- Methods for absorbed dose calculations
- Radiological protection issues specific to therapy with radiopharmaceuticals
Available at [www.icrp.org](http://www.icrp.org) for many Committee 3 publications; some are also available in Spanish

- P84, P85, P86, P87, P93, P112, P113, P117, P120, P121, P127, P129

Of particular interest:

- P86 – Accidents in Radiotherapy
- P112 – Preventing Accident Exposures from New External Beam Radiotherapy Technologies
- P127 – Radiological Protection in Ion Beam Radiotherapy
- P135 DRLs - preparation
Committee 3 - Current Work Plan

- TG 36 (with C2): Radiation dose to patients from radiopharmaceuticals Update to P128.
- TG 79: (with C1, 2 & 3) Use of Effective Dose as a Risk-Related Radiological Protection Quantity.
- TG 89: Occupational Radiological Protection in Brachytherapy.
- WP (with C1) Radiological Protection in Medicine in Relation to Individual Responses to Ionising Radiation
- WP for “Internet Resource on Radiation Protection for Health Care Providers” Incorporate in “ICRPaedia”?
Possible Future Topics for Further Consideration include the following:

- Framework for optimization in medical imaging
- Radiological protection aspects of daily imaging in radiotherapy.
- Protection of the eye lens and cardiovascular system.
- Overexposures and unintended exposures in diagnostic and interventional procedures. Collaboration with IAEA.
- Use of ionising radiation for assessment of body composition linked to sports performance.
- Improving patient dosimetry and protection in high dose imaging procedures (interventional, CT).
- Radiation protection in veterinary medicine.
ICRP Committee 3

- ICRP Committee 3 is ready to work on the topics demanded by the medical and other scientific societies
- Collaborate with other international or national organizations in the development of guidance
- Welcome any suggestions of other areas in which there is a perceived need for more guidance
Thank you