EDUCATION IN RADIATION PROTECTION FOR MEDICAL STAFF IN TRAINING

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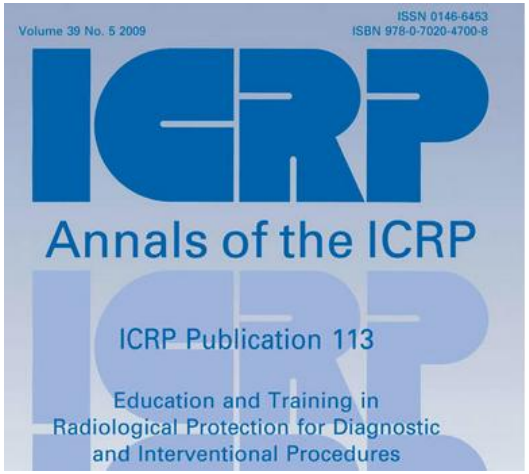
I NTRODUCTION

* **2013/59/EURATOM**

Legislative framework in Member States

Medical Staff Education and periodical Training in RP

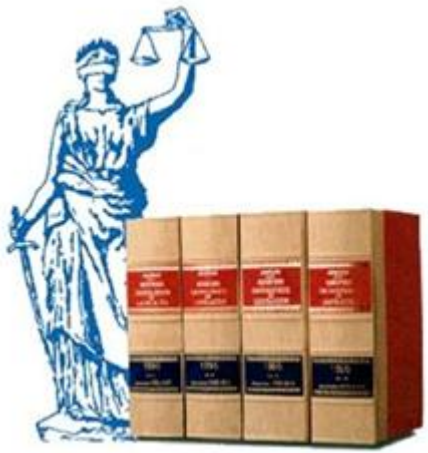
* **ICRP 113. Education and Training in RP for diagnostic and interventional procedures**



INTRODUCTION

* **National legislation:** RD 815/2001

  Ministerial Order 2006/04/21



Medical Physics and Radiation Protection Department

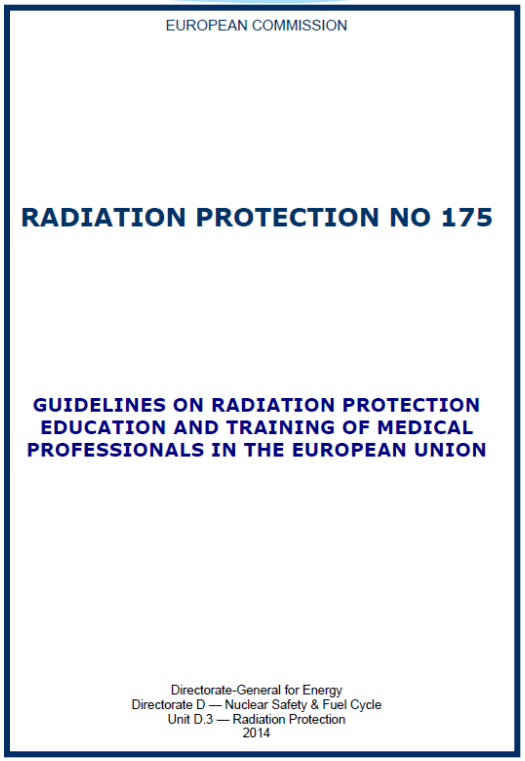
Radiation Protection education in the training programmes of medical specialities

INTRODUCTION

* **European Commission Guidelines for health practitioners**
  116 and 175

- Biological effects
- Justification
- Risk-benefit
- Typical doses received by patient
- Complex techniques
- New equipment

Education & Training in RP for referrers and practitioners



OBJECTIVE

* Analysis and evaluation of the education and training programmes on Radiation Protection from 2013 to 2015 in Madrid region

METHODOLOGY

* **Radiation Protection Education and Training** for physicians and nurses in training in Madrid
  - Preclinical Period → Medical University Schools
  - **Clinical Period → University Teaching Hospitals**

METHODOLOGY

* **Radiation Protection Education and Training** for physicians and nurses in training in Madrid

Clinical Period → University Teaching Hospitals

BASIC

- Residents (1st year)
- Nurses in training (1st year)
- Residents (3rd year)

ADVANCED

- NUCLEAR MEDICINE
- RADIOTHERAPY
- RADIOLOGY
- RADIOPHARMACY

METHODOLOGY

BASIC LEVEL (1st year)

Annual periodicity

1 session

- Structure of matter
- Radiation quantities and units
- X-ray equipment (generation, tube…)
- Image formation
- Biological effects of ionizing radiation
- Occupational and medical exposures
- Radiation Protection principles and legislation
- Radiological risk information for patients

evaluation
+
satisfaction
questionnaire

METHODOLOGY

BASIC LEVEL (3rd year)

Annual periodicity

1 session

- Radiation Protection in medicine
- Justification of medical procedures
- Optimization of radiation protection
- Discussion of practical cases

Practical exam
+
satisfaction questionnaire

METHODOLOGY

ADVANCED LEVEL

Biennial periodicity

Several sessions

- General theoretical contents
- Practical lessons
- Specific contents for the different specialities

evaluation
+
satisfaction
questionnaire

Reduced number
of trainees

METHODOLOGY

Satisfaction Questionnaire

Developed by Regional Council

- Contents and applications
- Documentation supplied
- Organization
- Utility for job
- Degree of knowledge
- Global assessment

+ suggestions and observations

RESULTS

Basic Level Courses

Residents (1st year)

- Great acceptation
- More than 1200 students in Madrid (increase of 120% respect to firsts editions)

Nurses in training

- First in 2013 adapted to nurse specialities

Residents (3rd year)

- Best evaluated (in this level)

RESULTS

Basic Level Course for nurses in their first year of residency			
Year	2013	2014	2015
Number of participants	235	120	120
	Marks from 0 (min) to 10 (max)		
Theoretical contents	6.04	6.22	6.91
Practical contents	5.46	5.56	5.74
Methodology suitability	5.31	5.54	6.49
Utility for their job	4.52	5.18	5.82
Degree of knowledge acquired	5.62	5.43	6.26
Aroused interest	4.96	5.31	5.91
Response to previous expectations	5.32	5.25	6.21
Delivery documentation quality and suitability	7.04	5.78	7.35
Employed resources quality and siutability	6.64	6.11	7.03
Employed installations suitability	7.13	7.55	8.00

RESULTS

Basic Level Course for trainees during third year of residency at Madrid region		
Year	Number of participants	Global assessment
2013	752	6.83
2014	755	7.05
2015	2731	6.79

RESULTS

* **Advanced Level Courses**

Specialities directly making use of ionizing radiation

- Best evaluated course (more related to their clinical practice)

Accreditation by the regulatory body to perform ionising radiation procedures

DISCUSSION

* Period 2013-2015

Interest in medical aspects more than in RP Physics

- Emphasize Principles of RP in Medicine

- Practical contents
- Radiological risk information
- Situations involving pregnant women and paediatric patients (Justification Principle)
- Radiobiological Effects

Theoretical contents are difficult but necessary

CONCLUSIONS

- Arising a better understanding of ionizing radiations in medical practice
  - Justification of radiation procedures
  - Optimization of RP in operational and medical exposures
- New technologies and more sophisticated procedures require continuous education in Radiation Protection to be imparted for all health professionals

Contents adapted	• Higher degree of implication and motivation of the residents
Attendance rises continously	• more persons (patients and workers) obtain benefit
Better communication of radiation risk (specially paediatric and pregnant women)	• Improvement of patient's safety

Thank you for your attention