

Applying radiation safety procedures in practice

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Prevention, Diagnosis, Treatment



Some previous considerations

- Justification, optimization and prevention of incidents and accidents are the pillars of radiological protection in health care.
- These principles are implicit in the notion of good medical practice.
- Health professionals are not necessarily familiar with these principles and normally have low awareness of radiation doses and risks.
- Health authorities should facilitate the application of the system of radiological protection in health care setting.
- Regulatory competencies are not always clear at the national level and there may be conflicts of interest or lack of independence.



- It is necessary an specific approach in medical radiological protection

In medical exposures, the individual is directly affected by potential benefit, but also by potential risk.



- Development in medical technology over the last decade offers new clinical solutions but carries new challenges in radiological protection.



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How to ensure patient safety?

The key point is the safe use of radiation in medical applications

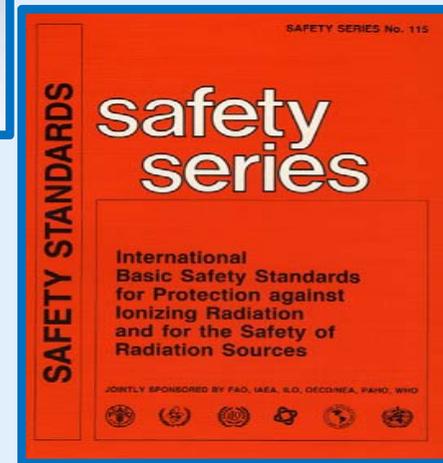
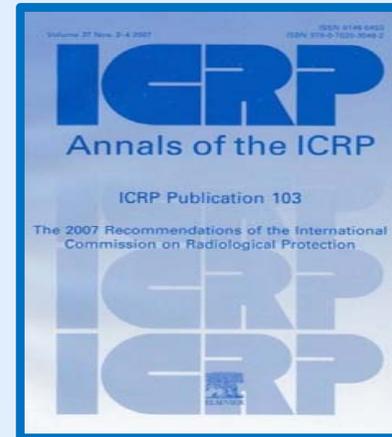
System of Radiation Protection: ICRP Publication 103, 2007



International Basic Safety Standards



EURATOM Basic Safety Standards
Directives: Council Directive
2013/59/Euratom



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Quality Management System

1.- Structure:

- ✓ Technology
- ✓ Human resources

2.- Procedures:

- ✓ Based in scientific evidences
- ✓ Risk / benefit analyses

3.- Results and improvements:

- ✓ external and internal audits



Justification

Optimization

Incident reporting, learning and follow up in medical radiation uses

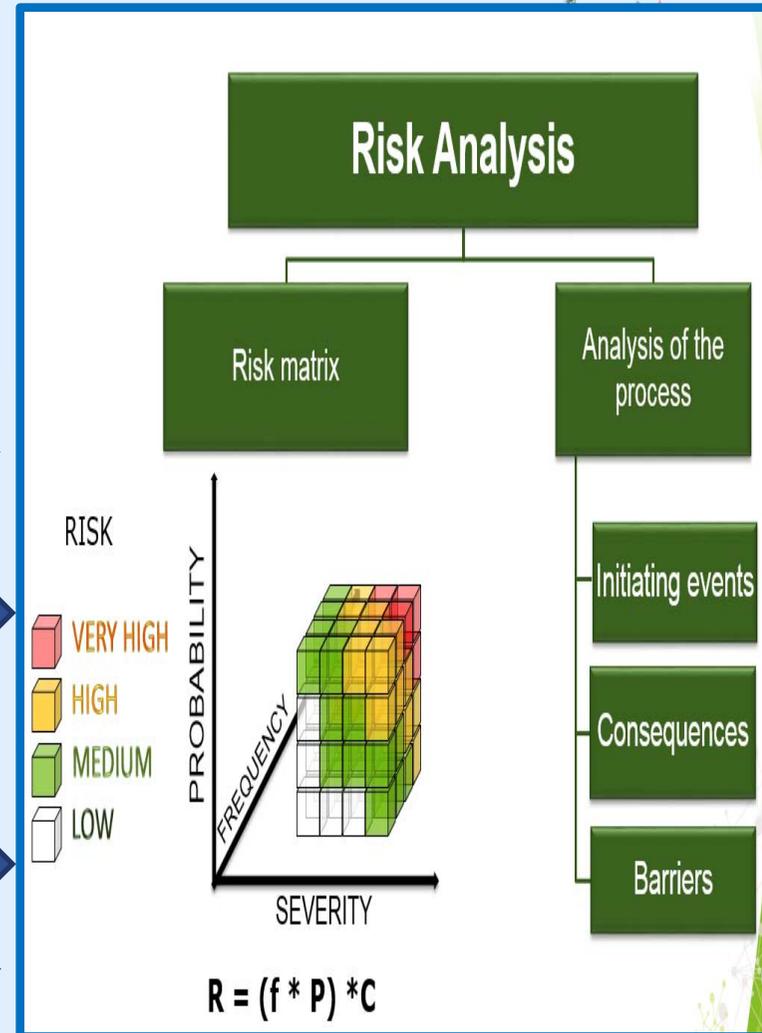
- Report incidents as a key practice to improve safety
- To analyze the root cause
 - What happened? Who was involved?
 - When and Where? Actual or potential damage and probability of recurrence
- To learn of mistakes
- Not look for guilty → Look for solutions
- Use standardized methodologies
- Classify incidents → INES scale



Currently, there are some controversies about the scope of incidents reports

Safety challenges to overcome in countries

- To Implement Radiological Protection System; regulation, expert recommendations
- To incorporate the necessary changes to face technological developments
- Coordination between health and regulatory authorities and stakeholders
- To incorporate radiological protection into patient safety strategies and the quality assurance system of health services
- To promote research in the field of medical applications in a efficient and collaborative manner, to warrant the adequate application of the new knowledge benefits
- To develop and implement effective training programs
- To develop risk/benefit analysis methodologies
- To develop and apply risk analysis methodologies
- Safety culture: Audits and measures
- Justification: screening programs (public and private criteria). Health or business?
- To explore and apply the possibilities offered by Big-Data and artificial intelligence
- International Cooperation programs



References

Scientific and technical sources:

- WHO, IAEA: Joint Position Statement
- ICRP
- EC
- HERCA WG Medical applications
- IberoAmerican Forum of Regulators (FORO)
- RP Technology Platforms and networks
- Scientific societies

**Bonn call for action:
10 actions to improve RP**



CIPRAM 2016 (Madrid)



Conferencia Iberoamericana sobre Protección Radiológica en Medicina
CIPRAM 2016, Madrid, 18, 19 y 20 de octubre 2016



Vienna 2017

