

# Strengthening justification of medical exposure in diagnostic imaging

IRPA13, 13-18 May 2012, Glasgow, Scotland

John Le Heron<sup>1</sup>, Jim Malone<sup>2</sup>, Ola Holmberg<sup>1</sup>, Madan Rehani<sup>1</sup>, Renate Czarwinski<sup>1</sup>

<sup>1</sup> *Division for Radiation, Transport and Waste Safety, IAEA, Vienna, Austria*

<sup>2</sup> *Trinity College, St James's Hospital, Dublin, Ireland*



**IAEA**

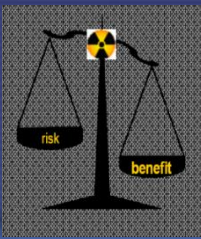
International Atomic Energy Agency

# Radiation protection in medical exposure

- Two radiation protection principles apply
  - Justification
  - Optimization of protection
- Hence, the relative importance of justification
  - But its level of implementation is poor
- In this presentation:
  - Justification & the new International BSS
  - IAEA initiatives to strengthen justification

# Justification of medical exposures

## - Evolution of ICRP recommendations



1990 – ICRP 60

Should be dealt with in the same way as justification of any other practice

But adds that each procedure is subject to a separate decision

1996 – BSS 115

**Based on ICRP 60**

1996 – ICRP 73

A more complex approach - 3 levels

- Justification of a practice
- Generic justification of a defined procedure
- Justification of a procedure for an individual patient

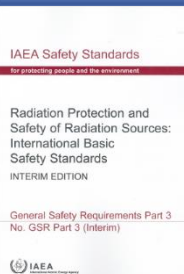
2007 – ICRP 103

– ICRP 105

ICRP 73 approach is maintained – medical exposure of patients calls for a different and more detailed approach to the process of justification

2011 – New BSS

**Based on ICRP 103**



# Putting theory into practice

- Justification Level 3 – individual patients
  - Who is responsible?
  - How can implementation be improved?

Especially in Diagnostic Imaging

# Who? – Respective roles and issues

## Referring medical practitioner

- Clinical context, medical history
- Defensive medicine

## Radiological medical practitioner

- Knowledge about procedure – benefits, risks, limitations
- Financial conflict of interest

“Request for consultation”  
*versus* “instruction to perform”

Referral guidelines / criteria of appropriateness

..shall be carried out through consultation between the radiological medical practitioner and the referring medical practitioner, ....

# Strategies for strengthening the implementation of justification (1)

- Promoting Awareness
  - Devising means for effective communication about radiation risks and hence the actual need for justification
  - Patients, physicians, public



Radiation protection of patients website  
rpop.iaea.org



Worldwide need for promoting awareness

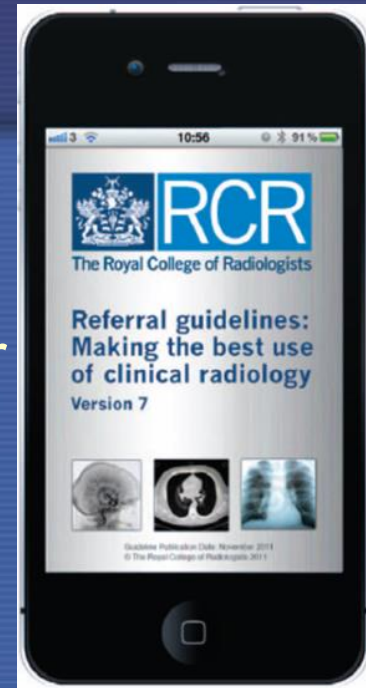
# Strategies for strengthening the implementation of justification (2)

- Appropriateness

- Joint responsibility

- Development and use of referral guidelines or appropriateness criteria

- Professional bodies
- Software for referral



## International collaboration in developing guidelines

- Shared review of the literature
- Uniform methodology
- Exploring joint approaches to improve their use

- Availability of relevant information from the patient's previous radiological procedures



IAEA Smart Card/SmartRadTrack project



Making the radiological procedure history available

# Strategies for strengthening the implementation of justification (3)

- Audit
  - Reviewing the effectiveness of the referral and related processes
  - New BSS – Radiological review

Critical review of the current practical application of justification (& optimization) for the radiological procedures being performed in the facility



# Summary

- Strengthening justification of medical exposure in diagnostic imaging
  - New BSS
    - Improved framework
  - The 3 A's
    - Awareness
    - Appropriateness
    - Audit



Bonn Conference  
3-7 Dec 2012

J.Le.Heron@iaea.org

