IAEA 60 Years
Atoms for Peace and Development

Factsheet for Decision Makers

Radiation Protection of Patients

JUSTIFICATION OF MEDICAL EXPOSURES

Why is it important?

Ionizing radiation is highly beneficial to society, with many medical uses that contribute greatly to the care and management of patients. However, there is also an associated radiation risk for patients that needs to be considered.

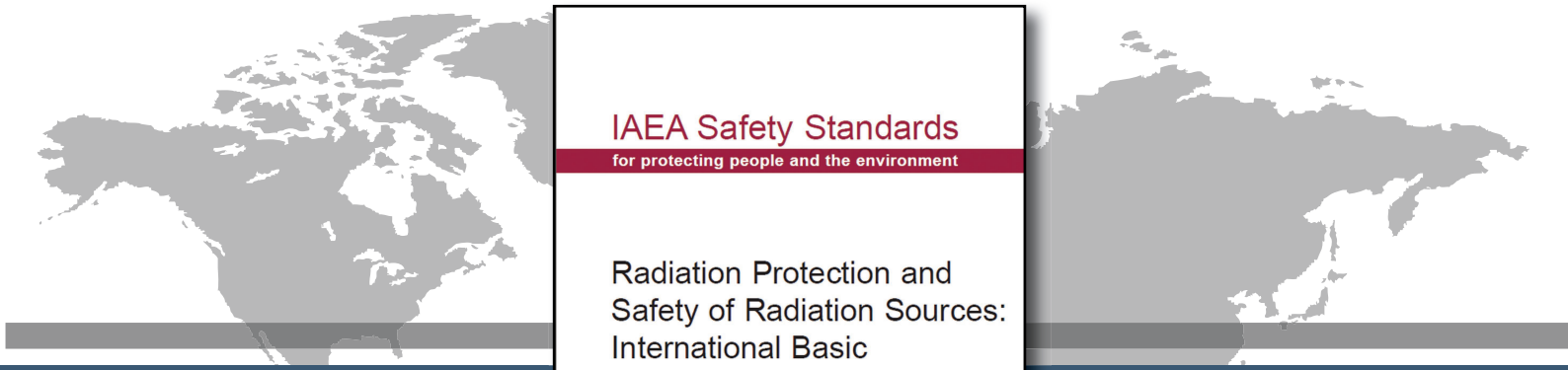
The goal of justification of medical exposures is to avoid unnecessary imaging or therapy procedures, which would result in patients being unnecessarily exposed to ionizing radiation and its potential risks.

What do I need to know?

Justification and optimization are the two cornerstones of radiation protection of patients. Dose limits do not apply in medical exposures as they may limit the medical benefits to the patient. Dose limits apply to occupational and public exposure only.

Justification of medical exposures entails weighing the diagnostic or therapeutic benefits of exposure against its potentials for harm, and taking into account the benefits and risks of available alternative techniques that do not involve ionizing radiation exposure.

The process of justification allows determining whether the exposure will take place or not. Once justified, the procedure should be optimized and performed such that the exposure of the patient is managed in order to achieve the medical objective.



The International Basic Safety Standards (BSS) are the international benchmark for radiation safety. The BSS are used in many countries as the basis for national legislation to protect workers, patients, the public and the environment from the risks of ionizing radiation.

The BSS are based on the most recent scientific evidence on the effects of ionizing radiation and take into account practices and experiences from around the world in the use of ionizing radiation and nuclear techniques. Eight international organizations sponsor the BSS.

What actions are required?

The government is responsible for establishing and implementing a legal and regulatory framework for radiation protection in medicine.	The regulatory body is responsible for establishing requirements and guidelines, authorization and inspection, and for enforcing legislative and regulatory provisions.	The hospital management has a prime responsibility for safety and for establishing and implementing a radiation safety programme.	Medical staff is responsible for the overall protection, both for patients and for themselves, in the delivery of medical exposures.

Pay particular attention in justification to:

- Generic justification of a radiological procedure should be carried out by the health authority in conjunction with the appropriate professional bodies;
- The justification of medical exposure for an individual patient should be achieved through consultation between the radiological medical practitioner and the referring medical practitioner considering:
  - The appropriateness of the request;
  - The urgency of the procedure;
  - The characteristics of the exposure and of the individual patient;
  - The relevant information from any previous procedures;
  - The relevant referral guidelines;
- Exposures of volunteers who are part of a programme of biomedical research are subject to approval by an ethics committee (or other institutional body with similar functions).

Resources

Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards, No. GSR Part 3
http://www-pub.iaea.org/MTCD/publications/PDF/Pub1578_web-57265295.pdf

Radiation Protection of Patients (RPoP) website
https://rpop.iaea.org/RPoP/RPoP/Content/index.htm

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