IRRS Good Practices

Review and Assessment (Module 6)

Review and assessment for medical exposure (6.14)

Sweden – Initial Mission

Mission Date: 14 to 25 November 2022

Good Practice

The DosReg portal is a very comprehensive tool for supervision and optimisation of patient dosimetry, both for licensees and for SSM. Additionally, the data on hospitals, equipment and typical doses for procedures, including clinical indication, being open access, allows any interested party to find relevant benchmarks for patient dosimetry.

Observation

SSM's DosReg web-application is a very comprehensive tool for patient dosimetry. It is readily available for licensees to use in the optimisation of medical exposures to patients. The data is publicly accessible and allows any interested party to find relevant benchmarks for patient dosimetry.

Basis

1. GSR Part 3 para. 3.168 states that "*Registrants and licensees shall ensure that dosimetry of patients is performed and documented by or under the supervision of a medical physicist, using calibrated dosimeters and following internationally accepted or nationally accepted protocols, including dosimetry to determine the following:*
   a) For diagnostic radiological procedures, typical doses to patients for common procedures;
   b) For image guided interventional procedures, typical doses to patients;
   c) For therapeutic radiological procedures, absorbed doses to the planning target volume for each patient treated with external beam therapy and/or brachytherapy and absorbed doses to relevant tissues or organs as determined by the radiological medical practitioner;
   d) *For therapeutic radiological procedures with unsealed sources, typical absorbed doses to patients.*"
2. GSR Part 3 para. 3.169 states that "*Registrants and licensees shall ensure that:*

a) *Local assessments, on the basis of the measurements required in para. 3.168, are made at approved intervals for those radiological procedures for which diagnostic reference levels have been established (para. 3.148).*
b) *A review is conducted to determine whether the optimization of protection and safety for patients is adequate, or whether corrective action is required if, for a given radiological procedure:*
    i. *Typical doses or activities exceed the relevant diagnostic reference level; or*
    ii. *Typical doses or activities fall substantially below the relevant diagnostic reference level and the exposures do not provide useful diagnostic information or do not yield the expected medical benefit to the patient."*

IAEA Comments/Highlights

Through its web-application, DosReg, SSM (the Swedish Radiation Safety Authority) collects data on patient doses in radiology and administered activities in nuclear medicine. This data is used to establish national diagnostic reference levels (DRLs) which are used in the licensee's optimization process. The yearly reporting of the number of procedures in radiology and nuclear medicine is also recorded in this tool.

This data allows SSM to identify trends in the use of radiopharmaceuticals in nuclear medicine, x-ray procedures and types of equipment. Most data contained in the system is publicly available. This includes typical doses for a set of procedures including clinical indications, with information on the hospital and type of equipment. DosReg is therefore not only a tool for SSM to establish DRLs and to perform general oversight of patient doses and use of equipment and radiopharmaceuticals, but also a comprehensive tool for licenses to help them in the optimization process. At last, it allows any interested party, including the general public, to benchmark relevant information on patient.