

2nd European Inspection Workshop

HERCA MedInspector 2018

Summary & Conclusions



**How to inspect justification and optimization
in Nuclear Medicine**

6-8 November 2018 | Stockholm, Sweden

HERCA Inspection Workshop Summary and Conclusions

16 May 2019

General

HERCA MedInspector 2018 was the second HERCA workshop for European inspectors. The previous MedInspector 2015 was focusing on inspections in radiology and the MedInspector 2018 was the first workshop focusing on inspections in nuclear medicine. The objectives of the workshop were:

- Networking and exchange of good practices among inspectors in the field of NM.
- To identify possible topics of interest for common work/action within HERCA WG MA.
- To continue the collaboration with EANM.

The workshop included lecturers, structured case based group discussions and general conclusion discussions. There were 42 participants from 21 countries. The European Association on Nuclear Medicine was represented by the chairman of EANM and the chair of the EANM Radiation Protection Committee. The overall conclusion from participants was that the workshop was highly useful and HERCA should take further actions on supporting implementation of the Basic Safety Directive in nuclear medicine and improving inspectors' skills and knowledge on nuclear medicine.

Summary of Discussions

Justification in Nuclear Medicine

Justification of medical exposure can be inspected by verifying that referral guidelines are available at least in the hospital or hospital district and by observing that procedures for patient identification are followed. More difficult is to inspect that an individual medical exposure is justified. For that there should be nuclear medicine physicians in the inspection team or there should be results from clinical audits available for inspectors. It would be also possible to carry out retrospective medical research on justification. In some countries inspectors may not be even allowed to see patient reports, if they are not medical professionals.

Optimization in Nuclear Medicine

For optimization of diagnostic nuclear medicine, there are diagnostic reference levels established in many countries, but not in all countries. On inspection it is possible to observe that written procedures are followed and the quality assurance has been carried out. Optimization of CT in hybrid imaging should be inspected. There should be also a medical physics expert (MPE) involved, but this is not the case everywhere.

In nuclear medicine therapy, the MPE should be closely involved in non-standardized treatments according to the Directive Article 58. The implementation of that was not clear. Moreover, the dosimetry of nuclear medicine therapy was in many cases unclear, because typically only manufacturer's guideline on the specified activity is followed and software for dosimetry are still under development. Both knowledge and skills of MPEs and inspectors were considered not to be up-to-date.

It came out that there is a lot of variation in Europe in protection of other therapy patients and members of the public. There is an old European guideline RP 97 that includes guidelines for protection following I-131 therapy. There is a clear need for that kind of guidelines for new therapy radionuclides as well. Moreover, there are no European guidelines on radiation protection in case of a therapy patient dies and for a cremation.

In nuclear medicine radiation protection for workers has to be optimized for both external and internal exposure. On inspection observation if the local procedures are followed is a key issue.

Conclusions

Verification of individual justification of nuclear medicine needs experience of nuclear medicine physicians. A link between clinical audit and inspection is needed for the justification aspect.

In nuclear medicine more emphasis should be paid on optimization. Transposition and implementation of the following Articles of the BSS Directive should be surveyed and further discussed in the HERCA WG MA:

→ **Article 56.1.** “For all medical exposure of patients for radiotherapeutic purposes, exposures of target volumes shall be individually planned and their delivery appropriately verified taking into account that doses to non-target volumes and tissues shall be as low as reasonably achievable and consistent with the intended radiotherapeutic purpose of the exposure.”

- Large differences were identified in the practices among hospitals in Europe: a few perform dosimetry, software is mostly in test use under development or there is a lack of evidence regarding the use of them.
- Co-operation between HERCA and EANM might increase awareness of HERCA inspectors on possibilities of dosimetry tools and EANM might support hospitals to implement new regulations based on the Article 56.1.
- HERCA might co-operate with AIPES (Association of Imaging Producers & Equipment Suppliers) to emphasize the need for dosimetry software to be part of the package of therapy radionuclides.

→ **Article 58 d) i)** “in radiotherapeutic practices other than standardised therapeutic nuclear medicine practices, a medical physics expert shall be closely involved;”

- Large differences were identified in interpretation of the Article.
- HERCA statement on implementation of the Article might support national practices.

→ **Article 61.1** “Member States shall ensure that appropriate medical radiological equipment, practical techniques and ancillary equipment is used in medical exposure... Special attention shall be given to quality assurance programmes and the assessment of dose or verification of administered activity for these practices.”

- HERCA might co-operate with AIPES (Association of Imaging Producers & Equipment Suppliers) as previously with COCIR to emphasize optimization of medical exposures.

There is a need for an update of the RP 97 Radiation Protection following Iodine-131 Therapy (Exposures due to out-patients or discharged in-patients) to cover new radionuclides. It was seen beneficial to establish co-operation between EANM and EC to work out an update of RP 97.

Training of inspectors in the field of nuclear medicine was highlighted to keep their knowledge and skills up to date. EANM offered to provide information for HERCA WGMA on available training courses organized by EANM.