

1st European Inspection Workshop

HERCA MedInspector 2015

Working group 1 – Optimisation



Optimisation: Good Practices



- Some countries have been able to recruit and train medical physics experts to be involved in QC and optimisation process.
- Data on dose surveys and QC/Maintenance can be reviewed in advance of inspection to identify outliers and identify priorities for inspection activities.
- To archive optimized protocols on to paper or computer hard disc to guard against accidental deletion of optimised protocols during device maintenance.
- To share relevant information between different inspection authorities when likely breaches are found.

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2



Optimisation: Good Practices



- Some facilities have optimised CT protocols to include pediatric specific protocols and breast dose reduction protocols.
- Occupational health dose limits – discuss options/co-operate with professionals in order to reduce their own dose as well as reduce dose to patients.
- Some information on training records requested in advance for medical staff. This prompts gaps in training to be filled and records to be made available.

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3



Optimisation: Limiting Factors

- Some countries have no medical physics staff involved in optimisation or QC – no optimisation is possible.
- Some countries have no dose measurement equipment available and no interest in optimisation.
- Some independent hospitals have only minimum support from a medical physics company to comply with legal QC and optimisation requirements.
- Financial – challenge why the hospital did not purchase dose saving options such as iterative reconstruction and mA modulation options.
- Inspectors not aware of dose saving options on medical imaging equipment.
- Not everyone understands concept of DRLs.

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4



Optimisation: Limiting Factors

- Limited understanding of RP issues/optimisation by vascular/other surgeons. They may need training on optimisation personal protection and support by radiographers.
- Manuals may need to be translated into local language (unless English is legally allowable). Some countries require a translation from English. [Does anyone read the manual or do they rely on applications training?]

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5



Optimisation: Recommendations

- Hospitals to have a plan in place for medical physics experts. To train, inspire and recruit experts in medical physics, to carry out risk assessment, QC and patient dosimetry.
- Medical physics provision may require royal decree or regulation and support from their professions.
- Inspectors to challenge why local dose levels are greater than reference levels at inspection (but dose histogram tells us that some will be higher than the DRL). Explanation for high dose levels required.
- Inspectors to focus on higher risks of non optimisation in CT and in interventional radiology and cardiology.
- Inspector training to include dose saving options available (CTDI predictive, iterative reconstruction, pulsed fluoro, in-room dose awareness)
 - refresher training for inspectors
 - recruitment policy for radiographer inspectors

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6



Optimisation: Recommendations

- Interventional reference levels highly desirable even if we dont call it DRL (same approach for RT planning and verification).
- Inspectors to be aware of competing clinical risks in examinations, eg hygiene, embolisation, intervention.
- Training for non-radiology operators such as: vascular surgeons and others who use radiation to manage complex interventions with support by radiographers with training programme endorsed by their profession.
- To support introduction of dose recording devices directly connected to radiology devices eg dosewatch, dosemonitor and open source solutions as an aid to optimisation.