COCIR

Sustainable Competence in Advancing Healthcare

IAEA International conference on radiation protection in medicine

Achieving Change in Practice

IAEA

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Round table B:

How are we meeting radiation protection challenges in design and implementation of new technologies?

Manufacturers' Perspective

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DITTA

MANUFACTURERS' COMMITMENT

COCIR supports the Bonn call for action.

Manufacturers key engagement towards radiation safety:

1. **Improved safety** of medical devices by enhancing the radiation protection features in the design of both physical equipment and software and to make these available as default features rather than optional extra features;
2. Support the development of technical solutions for **reduction of radiation exposure** of patients, while maintaining clinical outcome, as well as of health workers;
3. Enhance the provision of **training tools and support for users** that is specific to the particular medical devices, taking into account radiation protection and safety aspects;
4. Address the **special needs of health care settings** with limited infrastructure, such as sustainability and performance of equipment, whether new or refurbished;
5. **Strengthen cooperation** and communication with appropriate stakeholders, such as health professionals and professional societies;
6. **Efficient communication with health and radiation regulatory authorities** and their representative organizations.

REDUCTION OF RADIATION EXPOSURE

Dose management features developed by manufacturers

- Predefined Protocols for Adults and Children
- Dedicated Infant Imaging Mode
- Dose alerts and notifications (Dose Check)
- Automatic tube current modulation (AEC)
- Advanced tube and collimator design
- Dose Modulation Options
- Beam Shaping and modulation
- Dose efficient x-ray detection
- Image Reconstruction and Post-processing
- Dose reporting (DICOM Radiation Dose Structured Reporting)

➡ Industry has put a lot of effort to enable DICOM RDSR on modalities, for new systems as well as field upgrades, in order to promote more widespread availability of comprehensive dose data.
However there still is very little customer demand for these upgrade packages.

REDUCTION OF RADIATION EXPOSURE

New technologies have significantly contributed to decreasing the dose for examinations as well as the dose to healthy tissues in radiotherapy:

- Predefined Protocols for Adults and Children
- Dedicated Infant Imaging Mode
- Dose alerts and notifications (Dose Check)
- Automatic tube current modulation (AEC)
- Advanced tube and collimator design
- Dose Modulation Options
- Beam Shaping and modulation
- Dose efficient x-ray detection
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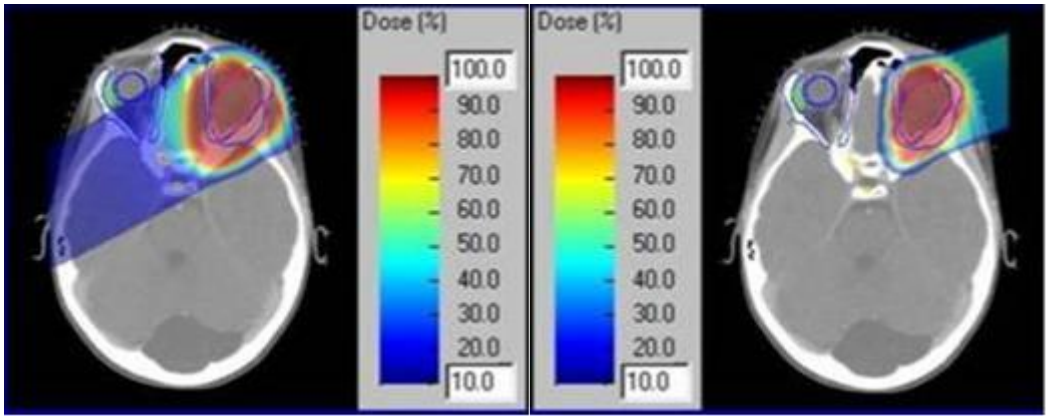
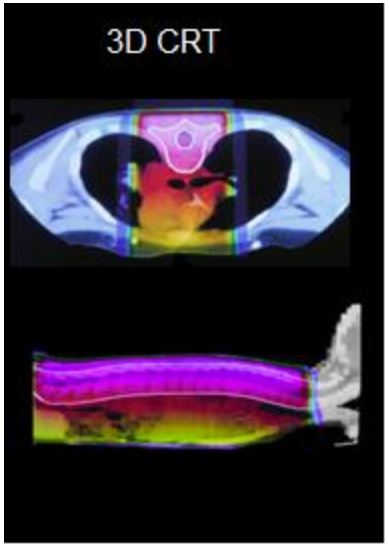
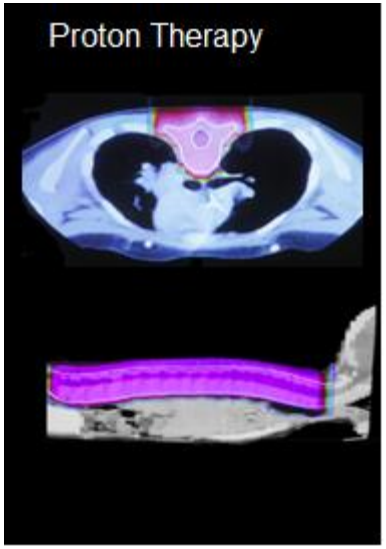
Before **New Technologies**







WHAT IS STILL TO BE DONE

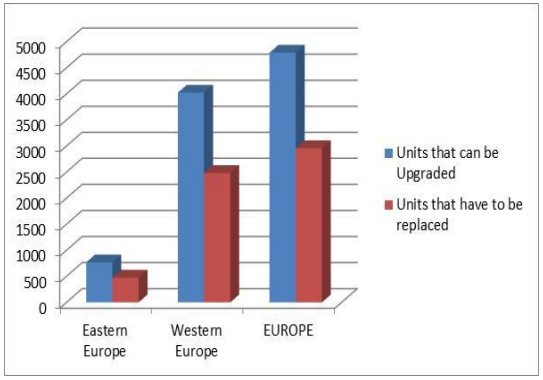
REDUCE OBSOLESCENCE

The uptake of new technologies is slow (COCIR 2016 report on density and ageing profile).

- One quarter of the Computed Tomography installed base falls below accepted standards for radiation dose optimization.
- More than 3000 scanners in Europe are not suitable for upgrade (dose modulation and iterative reconstruction engines)

COCIR is working to produce an age profile for RT.

- A preliminary finding is that more than 40% of installed RT systems are older than 10 years.



2/3 of European CT installed base do not comply with those triggers. 25% cannot be upgraded

DITTA RECOMMENDATIONS

ROOM FOR IMPROVEMENT

1. **Adopt the latest technologies**
   - ✓ DITTA encourages healthcare providers to adopt the latest technologies, which provide the opportunity to improve quality, efficacy, patient safety and productivity. Currently, most purchase decisions are price-driven and fail to consider any 'incremental value' the technology or method provides
2. **Replace obsolescent equipment that cannot be upgraded**
   - ✓ DITTA calls upon national and regional governments and policy-makers to support replacing technologically obsolescent equipment that cannot be upgraded to ensure comprehensive, coherent and sustained investment
3. **Ensure continuous training and education of users**
   - ✓ It is the healthcare providers' responsibility, to assess and maintain their equipment, their own staffs' competency and to liaise with the relevant manufacturers for their training requirements as well as to enable their staff to participate to training and education
4. **Support smart and transparent procurement**
   - ✓ Support smart and transparent procurement processes are in place and include maintenance/servicing as well as training of users, to ensure fair competition

Industry remains committed in improving radiation safety in healthcare by continuing to innovate and partner with regulators and clinicians.

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