

Current activities of the Nordic Working Group on X-ray diagnostics

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History of the WG

- WG on matters related to the **use of x-ray equipment in medical diagnostics and intervention**, the so-called "röntgengroup" or "diagnostic x-ray group".
- Was first formalised in 1978 and held its first meeting in Norway that year.
- Since 1983 the group has held annual meetings.

30 years

Members of the group

- Denmark: Hanne Waltenburg
- Finland: Ritva Bly, Hannu Järvinen 2006-2008
- Iceland: Guðlaugur Einarsson
- Norway: Eva Godske Friberg, Hilde Olerud, Anders Widmark
- Sweden: Anja Almen, Wolfram Leitz
- Also others participated in meetings

Main tasks of the WG

- to exchange information on the national activities and achievements,
- to discuss problems and development for regulatory issues and
- to coordinate or undertake joint efforts of research.



Joint research projects

- The projects aim at
 - supporting the regulatory activities and
 - promoting the development of quality assurance and radiation safety in diagnostic radiology.
- The results of the work are published in the series of the Report on Nordic radiation protection co-operation (seven reports by 1999) and also as scientific papers in international journals.
- A recent joint project, **Nordic survey on paediatric CT examinations**, is going to be presented in this NSFS meeting.

Next joint projects

- Studies on justification of CT examinations
- Implementation of the optimization principle in x-ray diagnostics



Recently discussed topics

- administrative and statistical information
- authorization of new type of x-ray equipment
- diagnostic reference levels
- issues on patient dosimetry
- quality assurance of x-ray equipment
- special applications (e.g. computed tomography and interventional radiology)
- diagnostic dosimetry
- clinical auditing

Diagnostic dose reference values / 2007

- **Denmark**
 - New DRLs given in website
- **Finland**
 - New DRLs for adult CT examinations (head, chest, abdomen, lumbar spine) have just been given. Some DRLs were decreased, some increased in comparison with current values.
 - Preliminary reference levels for a few common IR procedures have been proposed in a report of the **SENTINEL** project (to be published)
- **Iceland**
 - No DRLs published.
- **Norway**
 - Published guidance (Veileder 5) has established some DRLs.
 - Working group on reporting of representative doses established by the NRPA
- **Sweden**
 - DRLs will be revised 2007
 - More than 1500 "standard doses" reported, 10 % exceed DRL
 - Doses of conventional examinations have been decreased, but only slightly for CT and mammographic examinations.

Patient dosimetry / 2007

- **Denmark**
 - Patient doses about doubled with 64-slice equipment (as in Finland)
- **Finland**
 - Number of all X-ray examinations collected and published by STUK in 2005. Results are being combined with patient dose data to update collective effective dose (population dose) from medical use of radiation. Calculations are almost completed for conventional X-ray examinations and CT examinations, and are now going on for IR procedures and other fluoroscopy.
- **Iceland**
 - 13,3 % increase of dose in CT from 2003 to 2006
- **Norway**
 - New simpler radiological coding system planned
 - Application of DICOM standard in dose collection
 - Discussed in the context of **DOSE DATAMED** project
 - Dose in CT examinations in Norway has increased from 30 % to 59 % from the total dose of all X-ray examinations
- **Sweden**
 - Number of conventional X-ray examinations is decreasing
 - Validation of data for most common examinations (Top 25)

Special applications / 2007

- **Finland**
 - Within the **EURADOS/CONRAD** project double dosimetry practices (for staff dosimetry) and the algorithms to derive effective dose in high dose interventional procedures has been studied; interim report to be published in a special issue of Radiation Protection Dosimetry.
 - **In one hospital 15 out of 20 CT examinations were judged not justified.**
- **Norway**
 - CT lung screening of smokers and former smokers is introduced by a private x-ray institute. Regulatory requirements are under discussion.
 - Co-operation in several CT projects
 - Cost-effective dental survey method has been introduced. Co-operation in a **dental CBCT project.**
- **Sweden**
 - **Justification of CT: evaluation of referrals (justification, quality of referral, chosen method). Results: 20 % unjustified, 6 % not indicated, 15 % another method should have been chosen (MRI or US).**
 - **Discussion: This study should be expanded to other Nordic countries.**

Other joint activities

- Workshops on inspections, organized in 2005 and 2007 by SSI
- plans for IRPA 2010 meeting in Helsinki
- Cooperation with the Baltic countries in the field of x-ray diagnostics (**Satellite meeting on 26 May 2008 in Ålesund**).
- Joint projects and activities:
 - DRLs
 - Training
 - Regulatory issues
 - QA of latest technology

Website of the WG

- <https://www.gr.is/nordicxray/index.htm>

