

The importance of implementing radiation protection in the national eHealth-strategy

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Medical use of radiation

SPECIAL:

Direct and planned exposure of an individual

CHALLENGES:

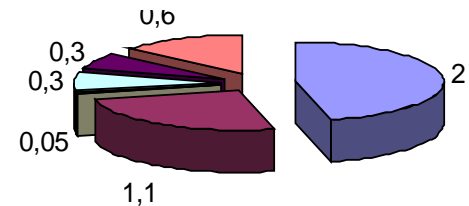
- Fast technological development
- Introduction of new equipment and methods
- Used by new groups of health professionals
- Possibilities for high doses to patient and staff
- Deterministic effects have been reported
- Radiation identified as a carcinogen (IARC)

FACTS:

- **Largest man-made source of radiation to the population**

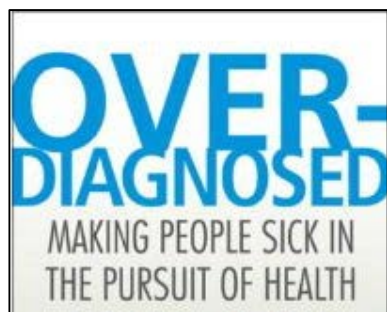
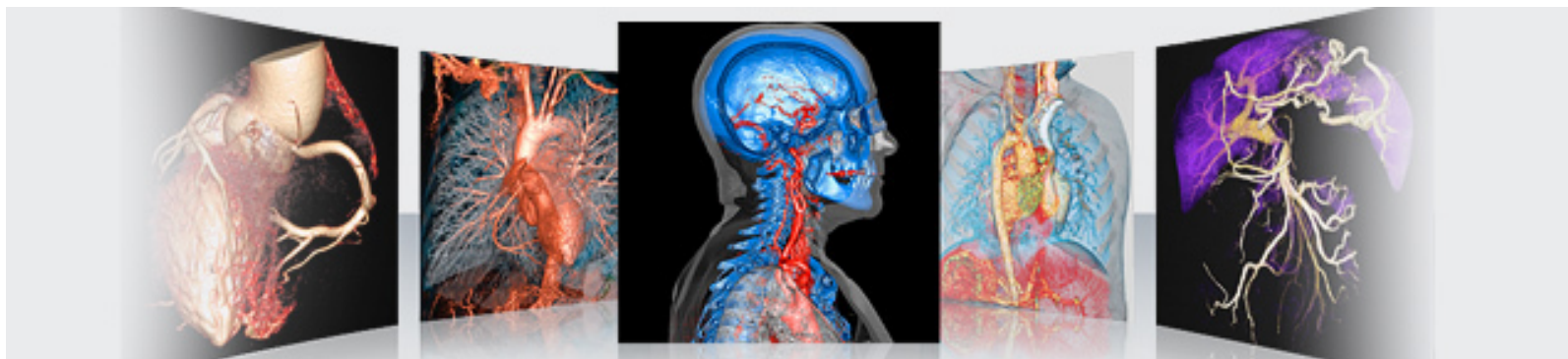


Annual dose per inhabitant 2008



Radon	Medisinsk stråling
Radioaktiv forurensning	Naturlig radioaktivitet i kroppen
Stråling fra verdensrommet	Naturlig ekstern stråling fra miljøet

An essential tool but with consequences



Over utilization/diagnosis



Health economy



Radiation burden

GOAL: Right patient to right examination at right dose

ACTIONS: Justification, optimization and dose limitation

Tools for justification and optimization

JUSTIFICATION

- Triple A-concept
 - awareness,
appropriateness, audit

NEEDS:

- Evidence based referral criteria (electronically)
- Clinical decision support systems (CDS)
- Local e-referrals systems

OPTIMIZATION

- National diagnostic reference levels (DRLs)
 - Local representative doses

NEEDS:

- Availability of dose data from modality
- Monitoring and reporting of doses
- National dose distributions

National surveillance of medical applications

Important tool for governance of radiation protection in health care

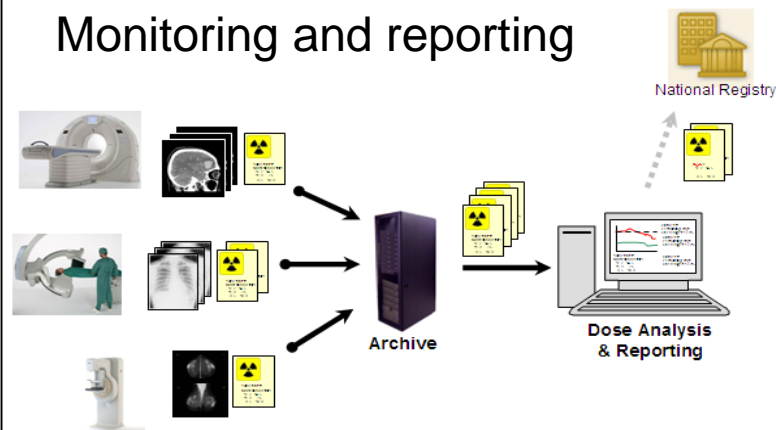
Needs:

- Electronic monitoring and reporting of frequencies and dose to national database (age and gender distributions)

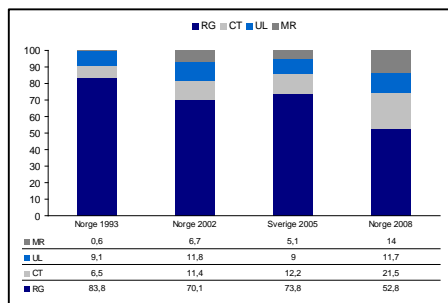
Effect:

- Surveillance (frequencies and dose distributions), trends, national DRLs, population dose

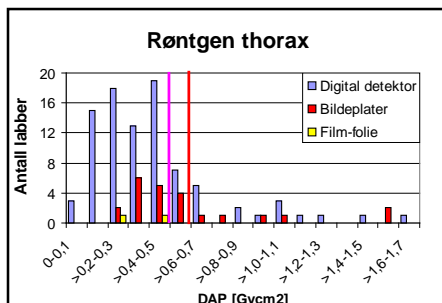
Monitoring and reporting



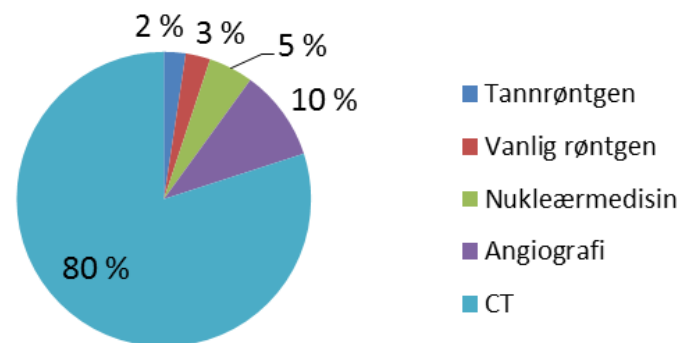
Trends



Dose distribution



Population dose from medical diagnostic



How to



Bonn Call-for-Action (Bonn Conference 2012)

Increased focus on the implementation of radiation protection in eHealth and IT-solutions

1. Enhance the implementation of the principle of **justification**
 - Introduce information technology solutions like decision support tools in clinical imaging
2. Enhance the implementation of the principle of **optimization** of protection and safety
 - Develop and apply technological solutions for patient exposure records, harmonize dose data formats provided by imaging equipment, increase utilization of electronic health records
3. Strengthen **manufacturers' role** in contributing to the overall safety regime
 - Radiation protection features in equipment and software, default instead of optional, conformance to applicable standards for dose parameters
6. Increase availability of improved global **information** on medical exposures and occupational exposures in medicine
 - Improve collection of dose data and trends on medical exposure and make data available for quality management, trend analysis, decision making and resource allocation
8. Strengthen **radiation safety culture** in health care
 - Closer co-operation between radiation regulatory authorities, health authorities and professional societies. Integration of radiation protection aspects in health technology assessment. Use of information technology for information exchange in radiation protection and safety related issues

National IT-strategy for eHealth



Political goals within health care:

- Data available for QA, health surveillance, governance and research
- Automatic reporting with no double reporting, integrated part of work flow
- IT-solutions that provide updated knowledge and clinical decision support
- Standardizing and structuring of data
- Shift from voluntarily IT-solutions towards mandatory requirements

National IT-strategy supports NPRAs needs

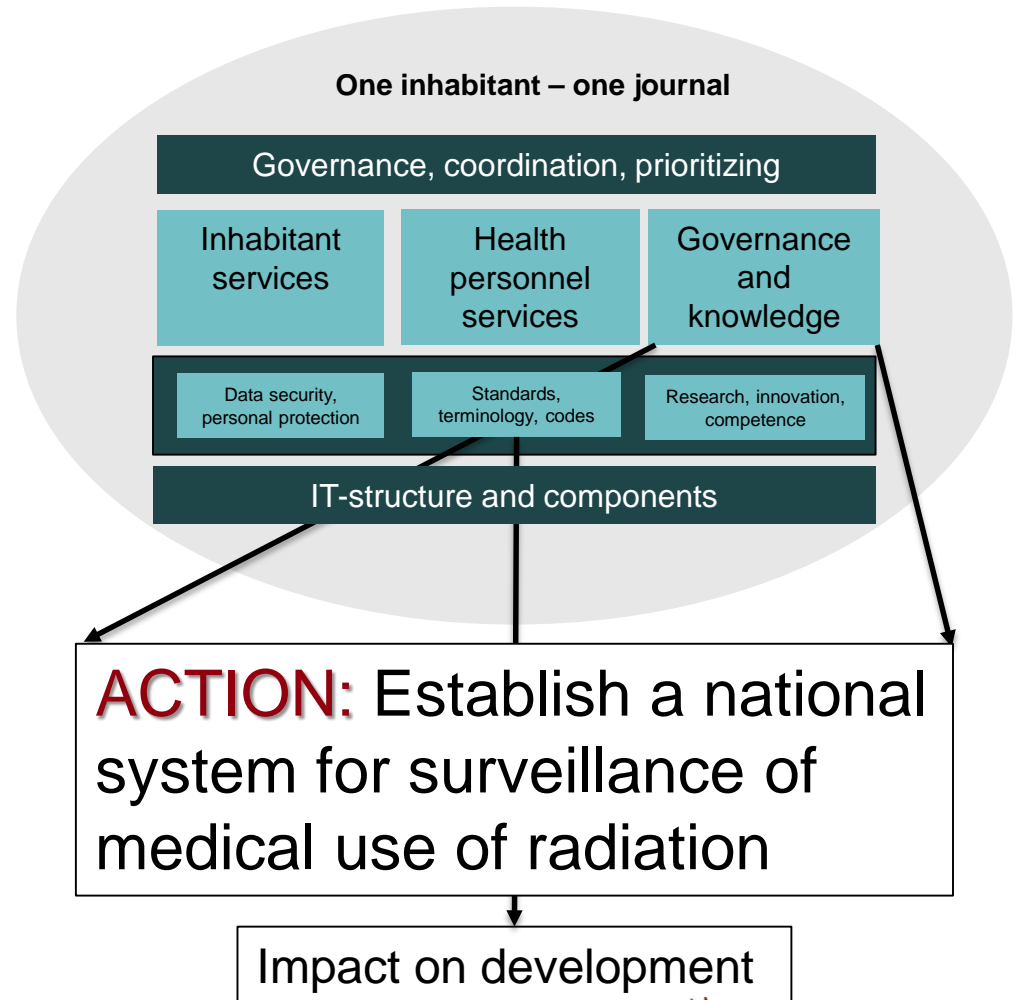
- Contacted the Ministry of Health (MoH) in 2013 and presented our eHealth project (system for surveillance of medical applications based on automatic reporting)

RESULTS

- Invited to present this project for eHealth departments in both MoH and Health authority
- Included in national strategies, action plans and working groups

National Action Plan for e-Health

Priority areas



Cooperation with National Patient Register (NPR)

NPR is a «key register»

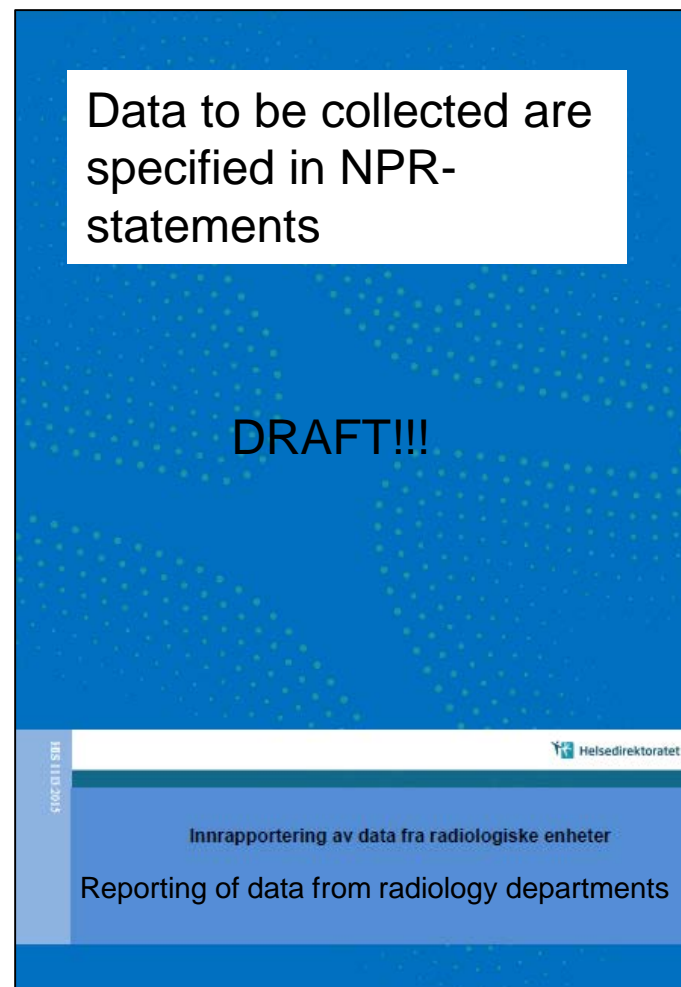
- NPR ongoing project on collecting data from radiology (no dose)
- Contacted NRPA for coordination
- Most efficient to collect frequencies and dose in same system (avoid double registration)
- Reporting to NPR is mandatory through the patient register regulation
- NPR provide aggregated data to NRPA

RESULT:

- Building a strong database for health surveillance, QA and research in radiation protection

Data to be collected are specified in NPR-statements

DRAFT!!!



Premises for success and challenges

- National anchoring of project and financial support
 - Included in national strategies but no financial support yet
 - NPR financial responsible for integrating dose in their database
- Making use of existing codes and terminology
 - Some revision is necessary
 - NRPA now included in working parties dealing with codes and terminology

Challenges

- Health care facilities access to dose data and technology to automatically monitor and report dose data
 - Equipment must support DICOM DSR and IHE REM profile
 - Establish a system to support for automatic dose monitoring and reporting in dialogue with their IT-vendors
 - No financial support yet for local investments

Planned study

- Todays status for health care facilities to provide necessary dose data from the modalities
- Availability of technical solutions to monitor and report necessary dose data
- Identify consequences (economical, organizational) by introducing dose reporting through NPR
- This study report will be used to address the need for financial support to develop IT-solutions at the health care facilities to support automatic reporting to NPR

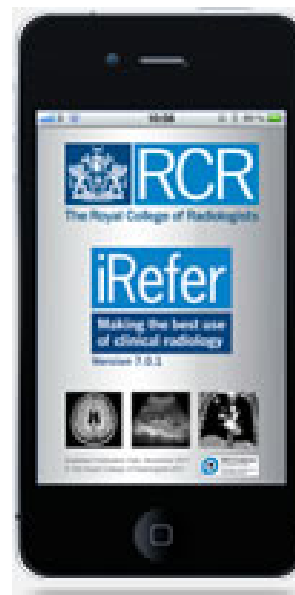
Justification and national eHealth

National eHealth strategy:

- IT-solutions that provide updated knowledge and clinical decision support

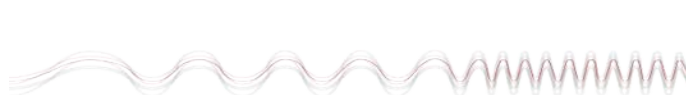
ACTION:

- Established a national core-group (NRPA, health authority, Norwegian radiology society)
- Nordic meeting in Malmö in September: focus on referral criteria and CDS
- Establish a national project
 - Pilot of iGuide?



CONCLUSIONS

- Evidence based referral criteria and CDS
- Adopt and adapt



Conclusion

- NRPA increased focus on the implementation of radiation protection in eHealth and IT-solutions
 - Included in national eHealth strategy
 - **ACTION:** Establish a national system for surveillance of medical use of radiation to support the governance of radiation protection
 - Cooperation with NPR

TAKE HOME MESSAGE:

- Get in dialogue with MoH and Health authority
- Radiation protection in national eHealth strategies can give positive synergy effects