

ESTRO activities in unintended and accidental exposures in radiation oncology

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Radiation Oncology Safety Committee – ROCS

Early ESTRO

- ESQUIRE I + II project (Education, Science and Quality Assurance In Radiotherapy in Europe) 1998-2003
- The sub-task ROSIS was added in 2001 after the initiative of Ola Holmberg and Mary Coffey (Task 3 EQART – European institute for Quality Assurance in Radiation Therapy)
- Invited lecture Biennial Physics meeting in 2003 Geneva

Early ESTRO

- Pre-meeting course during the annual ESTRO meeting **2004** in Amsterdam - “Risk management in Radiation Oncology”
 - O. Holmberg, J. Cunningham, T. Knöös, M. Coffey, Local and international radiotherapy incident reporting systems – learning from events within and beyond your own clinic
 - Cunningham J, Holmberg O, Knöös T, Coffey M, ROSIS – Radiation Oncology Safety Information System
- A special session was devoted for the live presentation of the web based ROSIS system (+100 participants)
- System was available from Jan 2003, +200 reports in Sept 2003

Objectives of ROSIS 2001

- To establish a **web-based** system whereby radiotherapy **incidents can be analysed in a systematic** and objective way, and the information **shared** through web-access to a centralised database.
- To enable radiotherapy clinics **to address safety issues before an accidental exposure** occurs and to create a general **culture of safety awareness** by making information available on details of incidents, near-incidents and corrective actions, submitted on-line by other radiotherapy clinics.

Text is from the final report of ESQUIRE 2003

Objectives of ROSIS 2001

- To define a **hazard classification system** and perform frequency analysis, leading to the **identification of safety-critical steps** in the radiotherapy treatment process where errors are likely to occur or be detected.
- To allow current **best practice** in incident reporting within medical as well as non-medical settings to be utilised in radiotherapy by identifying high-reliability organisations outside radiotherapy and the methods used within these organisations for incident and near-incident reporting, evaluation and feedback.

Text is from the final report of ESQUIRE 2003

The years to follow

- No ESTRO funding for maintenance and management of ROSIS
- ROSIS sponsored by the participating departments (Trinity College and Lund University)
- Symposium, workshops regular at ESTRO meetings

Working Towards Safer Healthcare Delivery
Minimising the impact of incidents in radiotherapy

- The first risk management course was given in 2005 at Trinity College, Dublin, Ireland (Endorsed by ESTRO)
- 10th course planned for September 2017

RP 181 - Guidelines on a Risk Analysis of Accidental and Unintended Exposures in Radiotherapy

- ACCIRAD is an EU-funded project. The objective of this project is to perform



- an EU-wide study on the implementation of the requirements given in the Medical Exposure Directive (Council Directive 97/43/Euratom; MED Directive) aimed at the reduction of the probability and the magnitude of accidents in radiotherapy and
- to develop guidelines on a risk analysis of accidental and unintended exposures in external beam radiotherapy, which can significantly contribute to the improvement of patient safety.
- *“Patient safety in external beam radiotherapy - guidelines on risk assessment and analysis of adverse error-events and near misses: introducing the ACCIRAD project”, Malicki et al RO 2014*

Guidelines on a Risk Analysis of **Accidental** and Unintended Exposures in **Radiotherapy**

- Greater Poland Cancer Center ([GPCC](#), Poland)
 - ([STUK](#), Finland)
 - Nuclear Safety Authority ([ASN](#), France)
 - CRP Henri Tudor ([Tudor](#), Luxembourg),
 - Fundacion Investigacion Biomedica Hosptial Clinico San Carlos (FIB HCSC, Spain)
 - European Society for Radiotherapy and Oncology ([ESTRO](#))
 - P Maingon, M Krengli
 - A number of experts e.g. Mary Coffey, Tommy Knöös

Back to ESTRO

- Task group on Quality Management in RT – the use of industry QM tools – 2010/11
 - Organised pre-meeting course at ESTRO 2011 in London
 - Management approaches in radiotherapy: The challenge to balance resources and quality for new technologies and techniques
- Two ESTRO courses on Comprehensive quality management in radiotherapy (runs every second year)
 - RISK MANAGEMENT AND PATIENT SAFETY (PS)
 - QUALITY ASSESSMENT AND IMPROVEMENT (NJ, PM)

Back to ESTRO - Today

- ESTRO has formed a committee – Radiation Oncology Safety Committee ROCS
 - Mary Coffey, Chair (IE), Eric Lartigau (F), Dirk Verellen (B), Tommy Knöös (SE) and a consultant – Ola Holmberg (IAEA)
 - An updated/new web system ROSEIS is available
 - ROSEIS – Radiation Oncology Safety Educational and Information System

- Screen dump from ROSEIS
- Pre-defined texts by dropdown and buttons
- Analysis and summary tools
- Possible to have any language
- Taxonomy similar to
 - SAFRON (IAEA)
 - RO-ILS (ASTRO and AAPM)
 - CPQR/PCQR (Canadian system)
 - Interchangeable information

INCIDENTS

From Date: 23/09/2010 To Date: 23/10/2016

SEARCH

ANATOMICAL SITE	DISEASE	DOSIMETRY SEVERITY	HOW DISCOVERED
IGRT	INCIDENT INVESTIGATED	INCIDENT TYPE	PATIENT AGE
PATIENT GENDER	TOXICITY OBSERVED	TOXICITY POTENTIAL FUTURE	

How Discovered: [How Discovered]

Table Charts User Defined Process Steps Flow Ratio

FLOW

☐ Originated ☒ Discovered

Refresh

1. Initial patient assessment and preparation 1
2. Simulation, imaging and Localization 1
3. Treatment planning 6
4. Pretreatment review and verification 2
5. Treatment delivery 5
6. On-treatment quality management 1
7. Post-treatment completion 0
8. Non-clinical quality management 0
9. Audit 0
10. Unknown 0

ESTRO's position in Europe

- ESTRO represents all disciplines within radiotherapy and with links directly to the National Societies
- ESTRO is in the ideal position to take the lead in Europe to provide information, guidance, education and training that will enable member states to comply with legislation when it is introduced.
- There is a need for a common approach to risk management and the implementation of reporting and learning systems

Summary

- Position ESTRO at the forefront of Safety and Risk Management in radiation therapy
- Collaboration with professional societies
- Preparation of guidelines and educational material
- Information and dissemination of present and future EURATOM directives