

Accidents in Radiotherapy



International Conference on Radiation Protection in Medicine -Setting the Scene for the Next Decade

Bonn

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How safe is Radiotherapy?



- a recommended 52% of cancer patients should receive RT – 6.5 million patients per year
- 40% of patients with cancer receive radiotherapy in the UK
- approximately 150,500 episodes of RT delivered in UK per year
- of these 0.0132% (n=43) had associated reportable events

SO.....radiotherapy is a safe treatment method for cancer treatment, BUT.... the consequences can be significant when errors occur

- history of being open about accidents and highly developed reporting culture
- accidents fall into two categories
 - single patients
 - multiple patients
- accidents have two main causes
 - equipment
 - human error
- potential for error is evident throughout the entire pathway

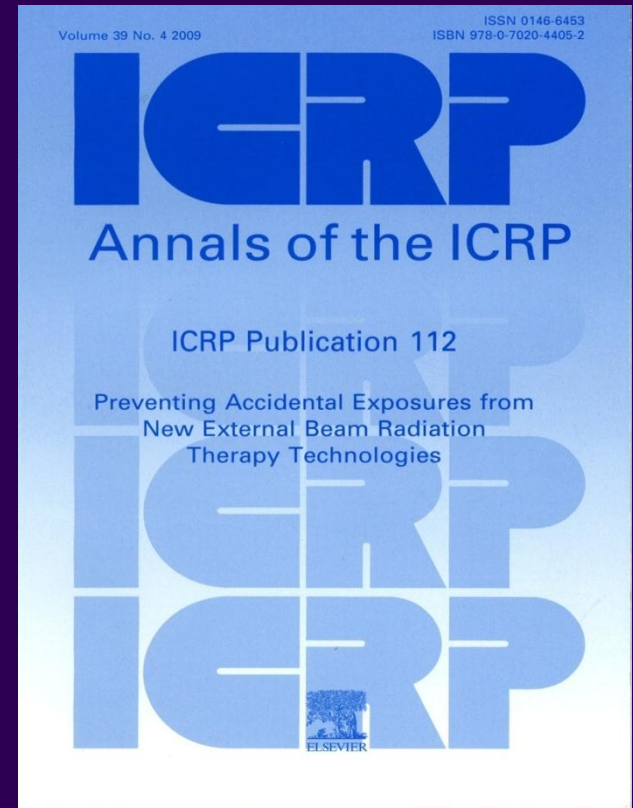
- 1988 – Devon and Exeter, 200 patients,
 - calibration error
 - 20% dose greater than intended (GTI)
- 1982 – 1990 - North Staffs, 1045 patients,
 - planning error
 - 30% dose less than intended (LTI)
- 2006 – Glasgow, 1 patient
 - calculation error
 - 67% dose GTI

- 1989-2000. Epinal. 4,900 patients,
 - commissioning of planning system
 - dose GTI dependant on energy between 3-7.1%,
- 2001-2006. Epinal. 424 patients,
 - consideration of concomitant dose
 - dose GTI 10%
- 2005-2006. Epinal, 24 patients,
 - lack of QA in TPS commissioning
 - dose GTI 20-35%

- **UK QART 1990s**
 - total quality management approach
- **IR(ME)R 2000**
 - implementing regulations placed responsibility on professionals but within management framework
- **Towards Safer Radiotherapy 2008**
 - professional initiative providing consistent terminology & classification of events.
- **HPA Initiative 2007 -**
 - clinical site visits
 - analysis of “events”

- 2007 – Ministry for Health established action plan including 33 national measures spread across 7 safety fields of action
- 2009-13 - Ministry for Health developed national cancer plan
- **ASN initiatives**
 - 2007 creation of significance scale for ‘events’
 - 2008 set of radiotherapy quality requirements
 - 2009 distributed guidelines on the notification of significant radiation protection events

- ICRP - 2009, Publication on preventing accidental exposures from new EBRT technologies
- Versailles - 2009, 1st International Conference on Modern Radiotherapy - Advances and Challenges in Radiation Protection of Patients
- IAEA –2012, ‘Safety in Radiation Oncology’ (SAFRON), development of a global safety reporting system



ACCIRAD-

EU - funded project reviewing national reporting systems

Objectives:

1. assess the implementation of the Council Directive 97/43/EURATOM (Medical Exposure Directive, MED) requirements aimed at the reduction of the probability and the magnitude of accidents in radiotherapy (Article 11)
2. develop guidelines on risk analysis of accidental and unintended exposures in external beam radiotherapy

- initial meeting in Luxembourg Feb 2012
- 6 collaborators led by Greater Poland Cancer Centre
- currently EU Member State representatives have been invited to complete a series of detailed questionnaires on current practice on approaches to risk assessment and radiotherapy error and near miss reporting.
- workshop in Poland in June 2013

Further details available at <http://www.accirad.eu/>.

- BSS Directive Chapter VII (Articles 54 – 63)
 - ‘Protection of patients and other individuals subjected to medical exposure’
- article 62 of Chapter VII of the draft BSS directive deals with accidental and unintended exposures including ‘reporting of errors’
- article 62 builds on Article 11 ‘potential exposure’ of the 1997 EURATOM 97/43 directive