

Welcome to the fourth issue of *Safer Radiotherapy*. The aim of the newsletter is to provide a regular update on the analysis by the Health Protection Agency of radiotherapy error (RTE) reports. These reports are submitted to the National Reporting and Learning System (NRLS) of the National Patient Safety Agency (NPSA), to promote learning and improve patient safety.

The newsletter is designed to disseminate learning from RTEs to professionals in the radiotherapy community to influence local practice and improve patient safety.

Regular features include:

- **RTE Data Analysis** – undertaken by the HPA, highlighting key messages and trends identified from a three-month period of RTE reports
- **'Error of the Month'** – will provide advice on preventing recurring errors in the patient pathway
- **Guest Editorials** – are invited from those wishing to contribute to issues surrounding patient safety in radiotherapy
- **Patient Safety in Radiotherapy Steering Group** – updates on the work of this multidisciplinary group (IPEM, RCR, SCoR, NPSA, HPA and service users).

Any comments and suggestions for inclusion in the newsletter would be gratefully received. They should be sent to radiotherapy@hpa.org.uk

Thanks to all contributors to this issue. The next issue of *Safer Radiotherapy* will be published in September 2011 and will be available at www.hpa.org.uk/radiotherapy

Kim Baldwin
Editor

Patient Safety in Radiotherapy Steering Group

In the 2006 Chief Medical Officer report, Sir Liam Donaldson recommended:

“A full analysis of all past serious incidents in radiotherapy should be carried out ... to identify common causes and the scope for reducing risks.”

In response, the Patient Safety in Radiotherapy Steering Group developed mechanisms for the reporting of radiotherapy errors. This issue of *Safer Radiotherapy* marks the analysis by the HPA of 1500 RTE reports, thus helping the RT community to learn from RTEs.

Feedback indicates that advice given in the 'Error of the Month' section has positively influenced working processes in RT departments and the data analysis allows a comparison of local and national trends.

To contribute to this national patient safety initiative:

Please keep reporting your TSRT9 trigger-coded RTEs to the NRLS.

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The HPA Radiotherapy Team is based at CRCE Chilton



EDITORIAL HEADLINE

HPA Clinical Site Visit – Help or Hindrance?

Thirty-three delegates from across the UK attended the 3rd HPA Clinical Site Visit (CSV) Stakeholder Meeting on 22 March. Participants included existing service users, departments scheduled for a CSV and potential users requiring further information.

Speakers from four clinical departments across the UK shared their impressions of the CSV service. Their presentations stimulated much discussion regarding the value and development of the CSVs, demonstrating a positive endorsement by the radiotherapy community.

Discussions on the day highlighted the continued need for the flexible approach adopted by the HPA Radiotherapy Team. This would ensure the provision of support and advice pertinent to individual departments by addressing the breadth of issues encountered.

Annual stakeholder meetings are planned to ensure the CSVs continue to reflect the needs of the radiotherapy community.

RTE Data Analysis: November 2010 – January 2011

It's Good ... But Could Be Better

RTE Reporting Continues to Rise

Are your RTEs contributing to UK learning?

A search of the NPSA database was undertaken for the period December 2009 – January 2011 to establish whether the HPA is receiving all submitted RTE reports for analysis. The search was run using relevant key words and the TSRT9 trigger code. 'Patient safety incidents' * were removed from the dataset. Using the unique, anonymised hospital identifier supplied with each RTE report the data analysis showed that the NPSA has received reports from 60 radiotherapy centres during this time period.

50% of radiotherapy centres are not using the TSRT9 trigger code

Only TSRT9 trigger-coded RTEs will be analysed by the HPA and contribute to UK learning

Make your RTEs count – please use TSRT9

TSRT process code refinement

Published in 2008, *Towards Safer Radiotherapy*[†] (TSRT) supplied the classification and process coding systems currently used by the radiotherapy community. Radiotherapy technology and processes evolve rapidly and the skill mix of the professionals across the patient pathway has, and continues, to adapt in order to accommodate these changes.

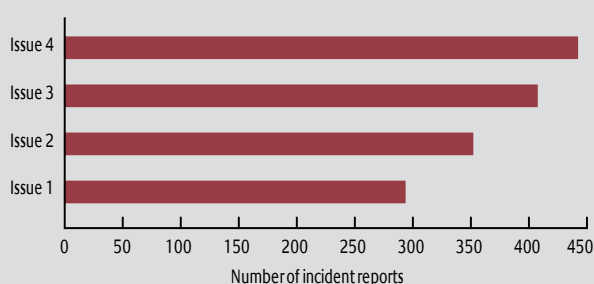
Refining the TSRT process coding to reflect this technological progress is required to ensure that RTEs continue to be coded appropriately. For example, virtual simulation is one key area where the TSRT process coding requires clarification.

We need your help

For those RTEs not easily coded, TSRT provides 'other' subcodes for each primary code. Currently only 69 reported RTEs have been coded in this way. To inform process code refinement, please submit difficult-to-code RTEs using the most appropriate 'other' subcode.

This issue of *Safer Radiotherapy* sees 30 departments now reporting RTEs using the TSRT9 trigger code ‡. The number of RTE reports submitted to the NRLS of the NPSA continues to increase, with a total of 451 reports in November 2010 – January 2011.

Number of RTE reports submitted to the NPSA using the TSRT9 trigger code, December 2009 to January 2011 (1495 reports), by Safer Radiotherapy analysis period



* NPSA. Definition of a Patient Safety Incident. Available at www.npsa.nhs.uk/nrls/reporting/what-is-a-patient-safety-incident/

† *Towards Safer Radiotherapy*. Available at www.nrls.npsa.nhs.uk/resources/clinical-specialty/radiology-and-radiotherapy/?entryid45=61646

‡ Good Practice in RTE Reporting. An ongoing series to demonstrate how to report RTEs occurring throughout the patient pathway. Available at www.hpa.org.uk/radiotherapy

Quarterly Analysis

The full data analysis for 1 November 2010 to 31 January 2011 is available at www.hpa.org.uk/radiotherapy

The analysis includes data on primary process coding and severity classification of the RTE. A breakdown of primary process codes by classification levels is also included.

Classification of RTEs

Of those RTEs reported to the NPSA for the period November 2010 to January 2011, 98% were classified as minor radiation incidents, near misses or other non-conformances (see Figure 1). These are all lower level incidents which would have no significant effect on the planning or delivery of individual patient treatments.

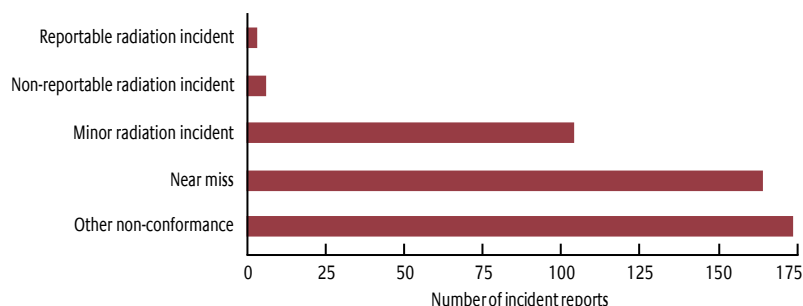
Of the 451 RTEs reported, 104 were in the minor radiation incident category. For this period, 57 RTEs concerned 'treatment unit process', of which 32% were related to imaging tasks. The accompanying text for several of these RTEs indicated the competency of staff to be a causative factor.

IR(ME)R states that:

'The employer has a responsibility to ensure that all practitioners and operators are adequately trained to perform the tasks in their defined scope of practice [Regulation 4(4)a and (4)b)], similarly practitioners and operators shall not carry out a medical exposure or any practical aspect without having been adequately trained [Regulation 11(1)].'

For further advice on 'on-set imaging: approval process' see the 'Error of the Month' in Issue 3 of Safer Radiotherapy.

FIGURE 1 Classification breakdown of RTE reports extracted from the NRLS using the TSRT9 trigger code, November 2010 to January 2011 (451 reports)



Primary Process Code

The main themes (points in the patient pathway where the majority of reported RTEs occurred) for this dataset are shown in Figure 2. 'End of process checks' for the 'pretreatment planning process' and 'treatment data entry' processes account for around a quarter of these.

When reviewing RTEs it can be seen that for many errors process failure occurs at multiple points in the radiotherapy pathway, thus indicating that 'end of process checks' play a key role in the detection of errors. Overall, 17% of RTEs reported between December 2009 and January 2011 cited 'end of process checks' within the process coding.

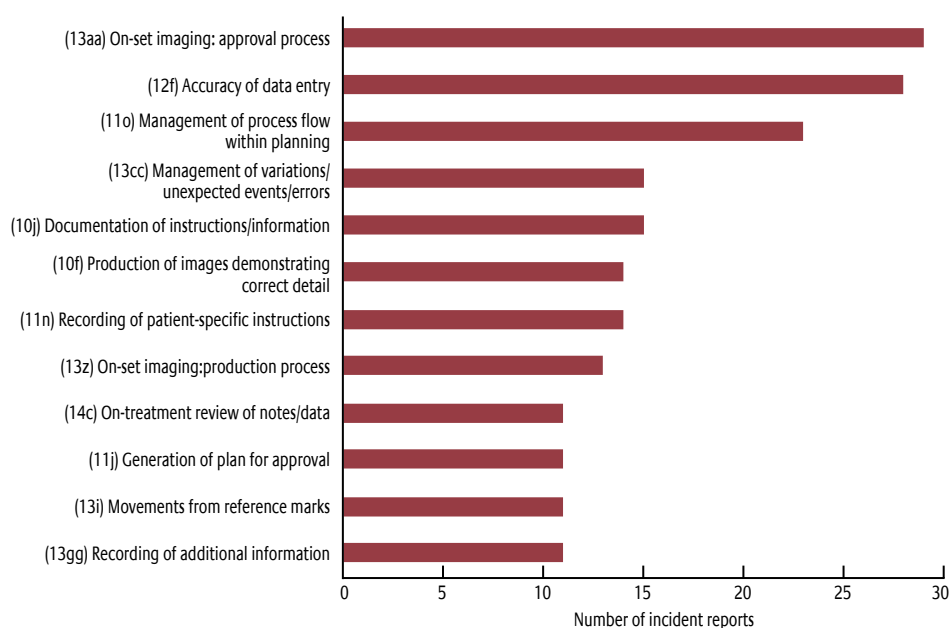
See this issue's 'Error of the Month' for further information.

Errors in transcription and detailing information within documentation are repeatedly yielding a large number of RTEs and will be discussed in a future issue of *Safer Radiotherapy*.

Secondary Process Code

Additional coding was supplied with 38% (169 out of 451) of RTE reports submitted during the period November 2010 – January 2011. Of these, 36% (61/169) occurred at the 'treatment unit process' point in the pathway with a third associated with imaging processes.

FIGURE 2 RTE Main Theme (195 out of 451 reports), for November 2010 to January 2011 (with process code indicated)



The data analysed is submitted by the RT community, therefore your comments and suggestions regarding the RTE analysis are welcomed. For further information or enquiries please contact the HPA Radiotherapy Team, Úna O'Doherty and Kim Baldwin, radiotherapy@hpa.org.uk

ERROR OF THE MONTH

End of Process Checks

TSRT Process Code:
9k, 10l, 11t, 12g, 13hh

'End of process checks' accounted for 36% of the secondary subcodes applied to RTEs for the dataset analysed here (November 2010 – January 2011).

How can we minimise the risk of this RTE occurring?

Points to consider

- 1 Ensure independent checks and verification are performed by adequately trained and entitled operators. Adhere to clear protocols that contain minimum criteria against which the results can be judged. Ensure all individuals' responsibilities and accountability are explicit [IR(ME)R Reg 5 and TSRT pages 36 and 58]
- 2 Indicate competence to undertake tasks in training records [IR(ME)R Reg 11(4)]
- 3 Involve Medical Physics Expert as required [IR(ME)R Reg 9 and TSRT page 40]
- 4 Ensure repetitive checking requiring intense concentration is undertaken for short periods in an appropriate environment with minimal distractions for staff. Alternate activities with more diverse tasks [TSRT pages 5, 9, 10 and 35]
- 5 Avoid involuntary automaticity by employing active responses and procedures [TSRT page 44]
- 6 Check a procedure or calculation using a different method (locally available software or reverse checking) to avoid making the same mistake twice [TSRT page 35]
- 7 Use locally available systems such as the Oncology Management System (protocol drivers/prompts/messages) to ensure checks are recorded and undertaken in a timely fashion
- 8 Audit and review procedures regularly to ensure the value of checks, eliminate redundancy, avoid unnecessary transcription and repetition of data [TSRT page 6]. Pay special attention when implementing new technologies [TSRT page 10].



GUEST EDITORIAL

Workforce Modelling

What are the challenges and potential benefits for patient safety?

Charlotte Beardmore

Professional Officer for Radiotherapy, SCoR

30th Anniversary ESTRO Conference

London, 8–12 May 2011

This international conference showcased the latest technological developments in radiotherapy and provided feedback on recent research and patient safety initiatives.

Coen Hurkmans gave an overview of published radiotherapy staffing guidance models from around the world. Workforce planning at a national level continues to be based largely upon patient numbers or equipment numbers.

As technology has evolved little analysis of the radiotherapy pathway has been undertaken to identify the skill sets required to ensure each stage of the process is delivered safely. The current approach to workforce modelling naturally reinforces professional boundaries within the radiotherapy pathway.

Questions raised at the meeting:

- What are the risks associated with the current approach to workforce modelling?
- Is the skills mix available to effectively challenge the traditional ways of working?
- Is learning from incidents and errors in radiotherapy contributing to the development of workforce models?

The greatest challenge as I see it is to provide a workforce model that ensures the core skills of all professionals are used effectively across the radiotherapy pathway, to produce teams that deliver high quality, safe radiotherapy to improve outcomes for our patients across the UK.

This is a big challenge as change can bring a fear of uncertainty and raise barriers. Traditional ways of working and professional boundaries can hinder the optimal implementation of new technologies. This in itself is a risk to service quality.

New and emerging technologies play a key role in workforce modelling and should provide a focus for positioning the right skills at the right point in the pathway, irrespective of professional background.

Towards Safer Radiotherapy recommends the regular review of the skills mix to ensure safe delivery of

radiotherapy. The role of inspirational leaders at a local level in this process is essential in ensuring that high quality radiotherapy is delivered safely by a competent workforce using technological advances to their full potential. This should result in improved outcomes for patients.

The Patient Safety in Radiotherapy Steering Group leads the UK work to report on trends and learning associated with RTEs. By sharing this learning, local service leaders are given the evidence to support changes in workforce configurations intended to improve patient safety within their centres.

To deliver a world-class radiotherapy service the aim therefore must be to develop an adaptable workforce, less concerned by professional boundaries and more responsive to the rapidly changing technological healthcare environment.

DATES FOR THE DIARY

12 July	BIR – IRMER Update
2 November	NRAG 2011 Annual Conference, London
8–9 December	BIR – <i>In-Vivo</i> Dosimetry and Dose Guided Radiotherapy
April (<i>published</i>)	Care Quality Commission – Ionising Radiation (Medical Exposure) Regulations 2000: A Report on Regulatory Activity in 2010
April (<i>published</i>)	NRIG Report: SBRT Guidance for Commissioners, Providers and Clinicians in England 2011
September	<i>Safer Radiotherapy</i> , Issue 5