Radiotherapy Newsletter of the HPA

Safer Radiotherapy

December 2011 Issue 6

Welcome to the sixth 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 (RT) 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' – provides 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

My thanks go to all contributors to this and previous issues of *Safer RT*. The next issue will be published in summer 2012 and will be available at www.hpa.org.uk/radiotherapy. In the meantime, an analysis of two years' worth of RTEs reported to the NRLS will be undertaken and should also be published in 2012.

Kim Baldwin
My final issue as Editor

Patient Safety in Radiotherapy Steering Group

In September ten RT departments participated in a pilot to apply a new causative factor (CF) and detection method (DM) taxonomy. The departments were asked to code ten RTE scenarios using the draft taxonomies and to critique the accompanying guidance document.

Results indicated positive agreement between coding applied by the HPA and RT departments: 59% for CF and 73% for DM. The departments requested further clarification of the code definitions in the guidance and a minor refinement of the taxonomies.

Subsequently, the original ten and an additional ten RT departments (30% of UK departments) will be asked to take part in a follow-up trial. These coded scenarios will be submitted directly to the HPA for analysis rather than through the NRLS, as was stated in Issue 5 of *Safer RT*.

Our thanks to the ten RT departments for participating in the pilot.

INSIDE THIS ISSUE

The HPA Radiotherapy Team is based at CRCE Chilton

EDITORIAL HEADLINE

UK In Line With Proposed New Standards

On 29 September, the European Commission issued its proposal for a new Basic Safety Standards (BSS) Directive. This will replace a number of existing Directives, which are implemented in the UK by IRR1999 and IR(ME)R2000.

In many respects, the main requirements under the Directive are not changed significantly, especially for medical exposures. There is, however, an expansion of the current requirements relating to accidental and unintended exposures (Article 62) and this has implications for radiotherapy. The Article includes a need for studies of accidental or unintended exposures of patients, registration and analysis of potential and actual events, and sharing of information. The proposal will be subject to negotiation over the next two years and is to filter into our legislation by 2016, but the majority of the requirements are already covered in existing radiotherapy initiatives.

RTE Data Analysis: May–July 2011

National Reporting of RTEs (and Near Misses)

Patient Safety in Radiotherapy Steering Group Survey Highlights

Many thanks to all the RT departments that completed the survey, which achieved an 85% response rate. The full analysis is available at ***www.hpa.org.uk/radiotherapy***

Who is applying the TSRT terminology?

Respondents indicated that all RTEs reported within local departments are classified according to TSRT, with the majority of departments reporting minor, non-reportable and reportable radiation incidents to the Trust Risk Management Team (TRMT). TSRT process coding is applied to locally reported RTEs by 88% of departments.

Fewer departments report to the NRLS than to their TRMT, with the greatest discrepancy demonstrated for other non-conformance RTEs. Respondents cited Trust policy, a lack of staffing, no potential or actual patient harm, or belonging to the independent sector (four respondents) as reasons for not reporting to the NRLS.

Survey vs reality

Of the 51 departments, 38 apply the TSRT9 trigger code to RTEs submitted to the NRLS. ***Please, if you are submitting an RTE report to the NRLS, use the trigger code so that learning from your RTE can be shared with the wider RT community.*** To date, the HPA has received trigger-coded RTEs from 35 departments only, so please check with your Risk Manager to ensure your RTEs are reaching the NRLS.

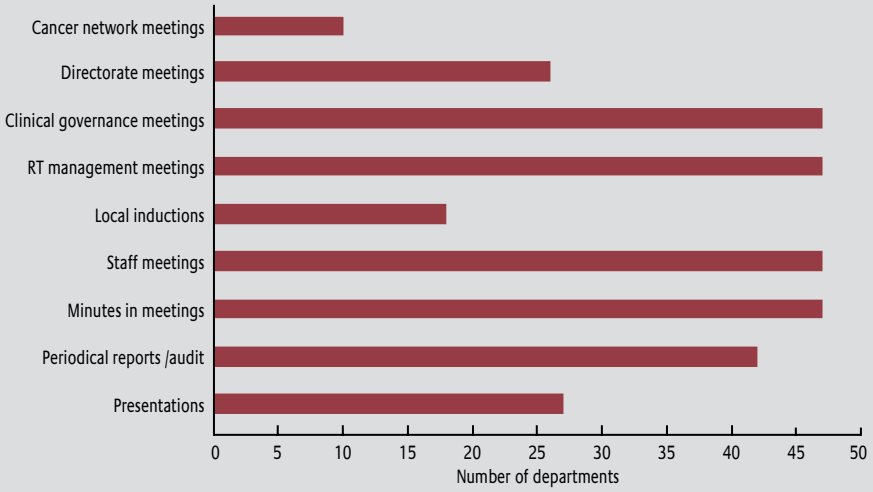
What's the delay?

Most respondents said that they report to the NRLS at least once every three months. The HPA RTE database indicates that the time between an incident occurring and an associated RTE report being received by the NRLS for this quarter's data ranged from 1 day up to 14 months. This may indicate a delay in closing RTE reports locally, resulting in a delay in reporting to the NRLS.

It is important that RTEs are reviewed, learning shared and preventive action implemented in a timely fashion.

How is learning shared locally?

Methods used by respondents for disseminating learning from RTEs (51 departments)



Quarterly Analysis

Submissions from 30 RT departments contributed to this quarter's full data analysis, for 1 May 2011 to 31 July 2011, which 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 NRLS for the period May–July 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.

Surprisingly, a reportable radiation incident in this quarter's data was due to a failure in the patient identification procedure at the treatment unit process point in the pathway.

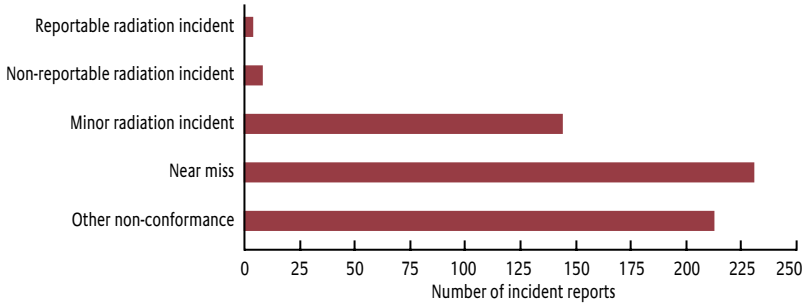
IR(ME)R Schedule 1(a) states that 'The employer's written procedures for medical exposures shall include a procedure to identify correctly the individual to be exposed to ionising radiation'.

For further advice on minimising patient identification errors see this issue's 'Error of the Month'.

A non-reportable radiation incident related to 'Verification of diagnosis/extent/stage' referral process was included in this quarter's data. Of note, 60% of this type of RTE submitted since December 2009 resulted in an inappropriate exposure of the patient. The text accompanying these RTE reports highlighted that referrals were submitted and actioned without knowledge of disease staging.

IR(ME)R Regulation 4(3a) states that 'The employer shall establish

Figure 1 ***Classification breakdown of RTE reports extracted from the NRLS using the TSRT9 trigger code, May–July 2011 (600 reports)***



recommendations concerning referral criteria for medical exposures, including radiation doses, and shall ensure that these are available to the referrer'.

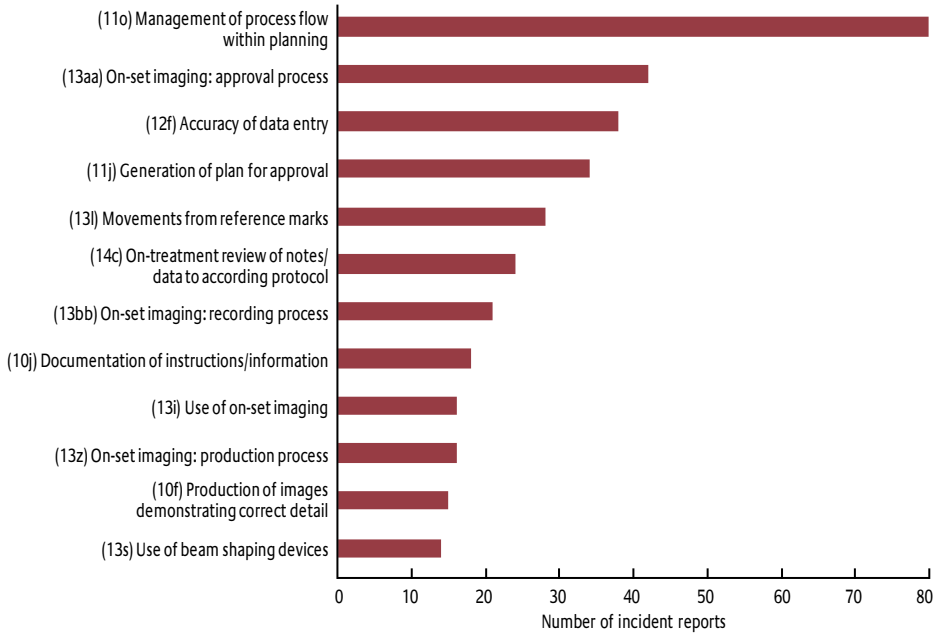
Diagnosis, histology, clinical findings and staging should be included in referral criteria as suggested by *A Guide to Understanding the Implications of the Ionising Radiation (Medical Exposure) Regulations in Radiotherapy*, available at **www.rcr.ac.uk**, in order for justification for an exposure to take place by an entitled practitioner.

Of the 600 RTEs reported, 213 were in the other non-conformance category. For this period, 107 RTEs concerned 'treatment unit process', of which 39% were related to on-set imaging. Of the latter, nearly a third were related to 'on-set imaging: recording process'. Incorrect transcription of directional shifts and omission to update the Oncology Management System with changes to isocentre position or scheduling of additional imaging were indicated as the main reasons for these errors.

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, a very similar picture to last quarter's data. The 'Errors of the Month' in previous issues of Safer RT offer advice on minimising the most commonly occurring RTEs. If your department has examples of good practice relating to RTE prevention please email the HPA Radiotherapy Team, **radiotherapy@hpa.org.uk**

Figure 2 ***RTE Main Theme (346 out of 600 reports), for May–July 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, **radiotherapy@hpa.org.uk**

ERROR OF THE MONTH

Patient Identification Process

TSRT Process Code:
4a, 5b, 9a, 10a, 11a, 11b, 12e, 12d, 13b, 13c

A reportable incident received in this quarter's data was attributed to the incorrect identification of the patient at the treatment unit process point in the pathway. Since December 2009, 31 RTEs relating to patient ID have been submitted to the NRLS. Of note, 11 RTEs were associated with the 'referral for treatment' process, one of which was a reportable incident. A further reportable incident linked to patient ID occurred at the 'communication of intent' point in the pathway.

How can we minimise the risk of this RTE occurring?

Points to consider

Guidance is available at ***www.rcr.ac.uk:***

A Guide to Understanding the Implications of the Ionising Radiation (Medical Exposure) Regulations in Radiotherapy [page 29]

Towards Safer Radiotherapy [page 37].

1. Ensure IR(ME)R Schedule 1(a) written procedure is in place for all duty holders to comply with at all steps in the RT pathway and for all patient states
2. Identify source data against which the patient ID check should be made (ie HIS label or Oncology Management System)
3. Explain the need for a patient ID procedure at each attendance to patients through information leaflets and posters positioned in waiting areas
4. Consider the correct identification of data from external sources (such as diagnostic images and clinic letters)
5. Ensure correct identification of patient data where multiple software packages or multiple treatment plans are used during treatment delivery processes
6. Implement robust patient ID of treatment accessories using source data (use bar coding where available)
7. Explore the use of new technologies to assist in patient ID (biometrics and radiofrequency emitters)
8. Monitor locally reported near miss and other non-conformance RTEs to identify further preventive action
9. Audit staff compliance with written procedure.

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GUEST EDITORIAL

Sharing Experience

Letter from Australia (and elsewhere)

David Thwaites MA MSc PhD FInstP FIPEM FACPSM FRCR

Professor of Medical Physics, University of Sydney, and Honorary Professor of Oncology Physics, University of Leeds

Moving recently from Leeds Teaching Hospitals NHS Trust, England, to Sydney, Australia – and to an academic position with an advisory component to the New South Wales State Health Department – has provided a chance to reflect on differences and similarities in radiotherapy between the two countries. Some observations from my initial 'exposure' to Australian radiotherapy follow.

Australia is consistently cited as having some of the leading national cancer outcome figures. My discussions with staff and observations of practice in more than 20 Australian radiotherapy centres visited so far indicate that the quality of individual treatments is similar to that in the UK.

Does Quality Matter?

A recent paper by Peters et al * presents results from a large phase III trial managed from Australia by the Trans-Tasman Radiation Oncology Group but with multinational patient enrolment. Its aim was to investigate combined drug and radiotherapy effects with equal radiotherapy in both arms, but this evaluation clearly demonstrates the adverse effect on outcomes of poorer quality radiotherapy.

* Peters LJ, O'Sullivan B, Giralt J, et al (2010). Critical impact of radiotherapy protocol compliance and quality in the treatment of advanced head and neck cancer: results from TROG 02.02. *J Clin Oncol*, **28**(18), 2996–3001.

However, one clear difference is a greater relative provision of linacs, recommended at one per 414 new patients per year, and an associated increasing uptake of radiotherapy. The spread in IMRT use across different centres (0–40% of radical patients) is also similar, although a greater proportion of patients overall receive IMRT, encouraged by the tariff structure.

One other area of perceived general difference is the attitude to healthcare use, encouraging early visits to GPs and early cancer diagnosis which will significantly impact on outcomes. In addition, there is a focus on progressing cancer patients rapidly from referral to treatment, which the UK has also markedly improved over recent years.

The Australian radiation protection legislation, code of practice and safety guidelines mandate requires reporting of radiotherapy incidents at a 10% level. This is similar to IR(ME)R requirements but specifically for both under- and over-doses. Discussion continues on how this should be applied to the various degrees of geographical target miss involving, as it does, unplanned dose to normal tissue. There is no detailed RTE reporting and analysis system comparable to the NPSA-NRLS approach in England and Wales.

Meanwhile, in the USA, articles on radiation incidents were appearing in the *New York Times* from 2010 into 2011. These provided one spur for a meeting on safety in radiotherapy convened by the American Association of Physicists in Medicine, whose recommendations appeared in the January 2011 issues of Medical Physics and Practical Radiation Oncology. The recommendations included

- establishing a national reporting system for errors and malfunctions for sharing experience
- encouraging external audits of radiotherapy facilities to ensure periodic peer review.

Both practices are already established in the UK. Australia too is currently considering systems of peer-review audit and accreditation and has recently set up a national dosimetric audit centre funded by the Department of Health and Aging.

Radiotherapy practice, techniques, successes and problems are common internationally and there is significant scope to learn from each other across the various national or international systems. This ought to be one of the next steps in widening shared experience for the benefit and safety of all.

DATES FOR THE DIARY

2011	8–9 December	BIR – *In-Vivo* Dosimetry and Dose Guided Radiotherapy, London
2012	27–29 January	SCoR–CoR Annual Conference, Birmingham
	9–13 May	ESTRO 31, Barcelona, Spain
	28 September	BIR – Radiotherapy Errors, London
2012	Summer	*Safer Radiotherapy*, Issue 7