



Welcome to the eleventh issue of *Safer Radiotherapy*. The aim of the newsletter is to provide a regular update on the analysis by PHE of radiotherapy error (RTE) reports. These reports are submitted voluntarily to the National Reporting and Learning System (NRLS) of the NHS Commissioning Board and directly to Public Health England to promote learning and improve patient safety.

Safer RT 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 PHE, 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 issues in radiotherapy

Patient Safety in Radiotherapy Steering Group – updates on the work of this multidisciplinary group (IPEM, RCR, SCoR, PHE and service users)

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

Thanks to all contributors to this issue. The next issue of *Safer RT* will be published in April 2014 and will be available at www.hpa.org.uk/radiotherapy. The HPA website will continue until further notice – look out for updates in future issues.

Helen Best
Editor

Patient Safety in Radiotherapy Steering Group (PSRT)

In Northern Ireland data is continuing to be recorded locally in the format required by the RTE database, with the aim of supplying data for analysis for 2014.

The current reporting period marks the first time we have included Scottish data in the analysis. This has brought the total number of departments in England, Scotland and Wales that use the TSRT9 trigger code in reporting RTEs to 53 out of 58.

This good news shows that there is a unified approach to error reporting across the UK.

Reporting of RTEs is a requirement of the English NHS Commissioning Board and a peer-review measure. If any departments require support please contact PHE staff at radiotherapy@phe.gov.uk.

INSIDE THIS ISSUE

RTE Data Analysis

September–November 2013

Radiotherapy Departments Reporting Increases!

Target Volume and Organ At Risk Delineation Associated RTE Reports

Error of the Month

Consent process

Guest Editorial

Target Volumes

Tom Roques

Dates for the Diary

The Radiotherapy Team is based at CRCE Chilton



EDITORIAL HEADLINE

Radiotherapy Board

The Radiotherapy Board (RPAB) was established in April 2013. The members of this group come from IPEM, RCR and SCoR, with representatives from other organisations across the UK that are closely involved in radiotherapy services.

The main purpose of the RPAB is to provide guidance, oversight and support for the continuing development of radiotherapy services in the UK.

Strategic work includes:

- co-ordinating work at a national level to support delivery of services locally
- advising on the development and delivery of safe, high-quality radiotherapy services
- developing a strategy and structure for workforce planning and training and for professional standards
- supporting and encouraging research in radiotherapy by working collaboratively with the research community

A project for delivery by spring 2014 is to update guidance on implementing in-vivo dosimetry.

RTE Data Analysis: September–November 2013

Quarterly Analysis

Submissions from 48 RT departments across England, Scotland and Wales contributed to this issue's full data analysis, for 1 September 2013 to 30 November 2013, which is available at www.hpa.org.uk/radiotherapy.

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

Classification of RTEs

Of those RTEs reported for the period September–November 2013, 1187 out of 1233 reports (96.3%) were classified as minor radiation incidents, near misses or other non-conformances (see Figure 1). This is consistent with previous analyses. These incidents would have no significant effect on the planning or delivery of individual patient treatments.

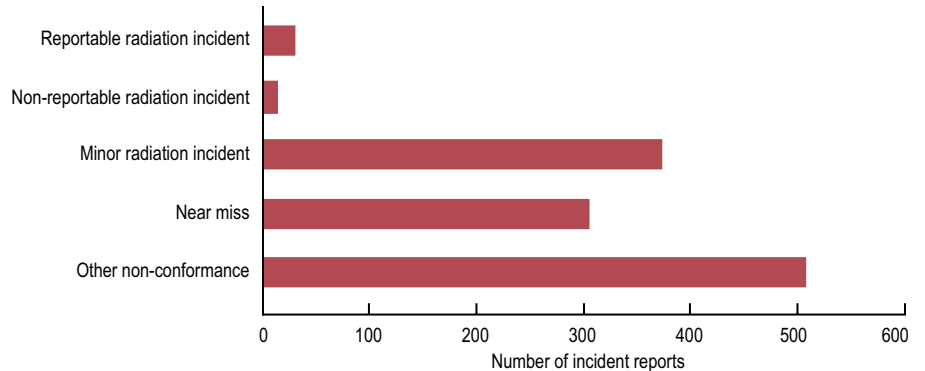
Reportable radiation incidents (Level 1) made up 31 of all reports (or 2.5%). 'Patient positioning' comprised 3 (9.7%) of all Level 1 RTEs reported to the NRLS for this time period.

Non-reportable radiation incident reports (Level 2) made up 15 of all reports (1.2%). The majority of Level 1 and 2 RTE reports related to treatment unit processes, equating to 11 (35.5%) and 9 (60.0%), respectively.

Of the 373 minor radiation incidents (Level 3) reported, 82 (29.8%) were related to the 'on-set imaging production process', making it the most frequently occurring code in this classification. The second most frequently occurring type of incident at 37 (13.5%) was 'use of on-set imaging'. On-treatment imaging was discussed further in Issue 7 of *Safer RT*.

The most commonly occurring RTE process code in the near-miss (Level 4) classification was 'recording of patient-specific instructions', with

Figure 1 Classification breakdown of RTE reports using the TSRT9 trigger code, September–November 2013 (1233 reports)



20 reports (6.5%). Since the last analysis 'pre-treatment planning process' has overtaken treatment unit processes as the most common code for these reports.

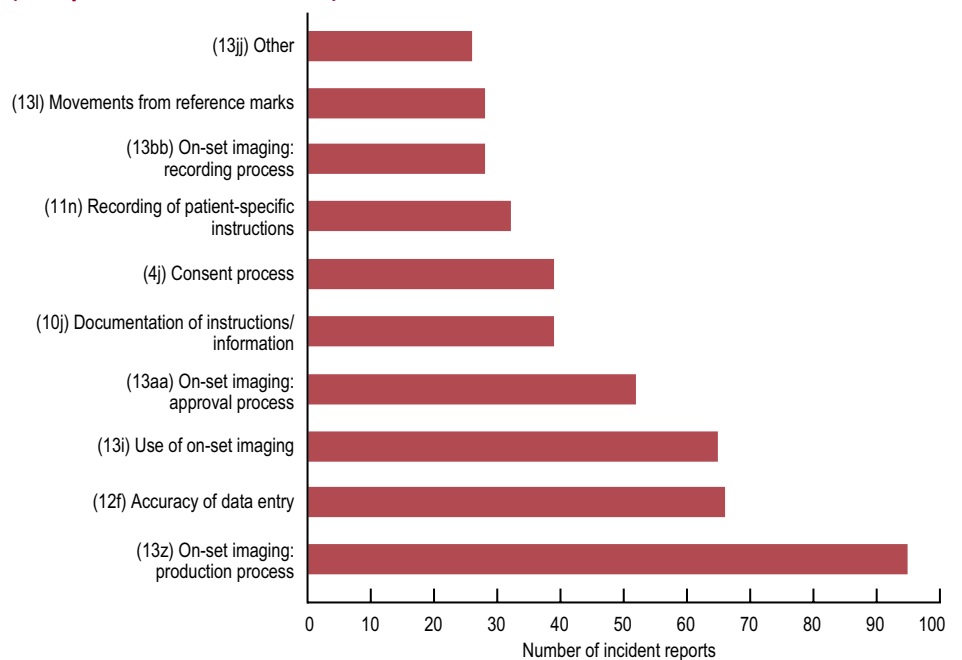
Within the non-conformance (Level 5) classification 'availability/timeliness of all required documentation' had 11 reports (2.2%) as did 'on-set imaging: approval process' had 11 reports (2.2%). These were the most frequently occurring RTEs in this classification.

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. Of note, 'consent process' contributed to 39 of the reports in the main themes (8.3%). This is discussed further in the *Error of the Month*.

If your department has examples of good practice relating to RTE prevention please email the Radiotherapy Team at radiotherapy@phe.gov.uk.

Figure 2 RTE main themes (470 out of 1233 reports), for September–November 2013 (with process code indicated)

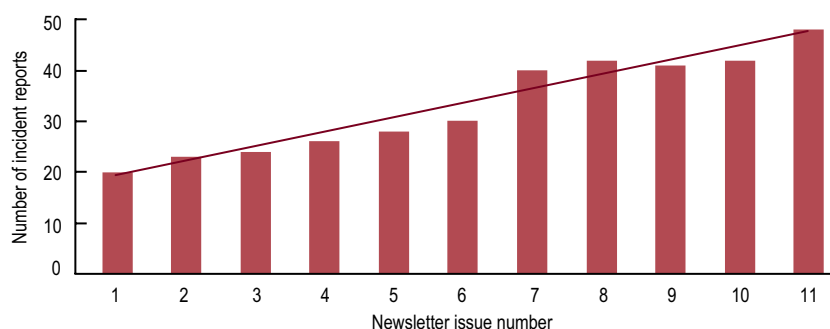


The data analysed is submitted by the RT community, therefore your comments and suggestions regarding the RTE analysis are welcomed. For further information or enquiries please contact the Radiotherapy Team at radiotherapy@phe.gov.uk.

Radiotherapy Departments Reporting Increases!

The number of radiotherapy departments reporting using the TSRT trigger coding has increased. Issue 1 of *Safer RT*, published in September 2010, analysed data from 20 departments; in the current issue that number has more than doubled, to 48, as shown in the figure. The reports from these 48 departments include for the first time data from Scotland.

Number of departments reporting RTEs using the TSRT9 trigger code, by issue of *Safer RT*



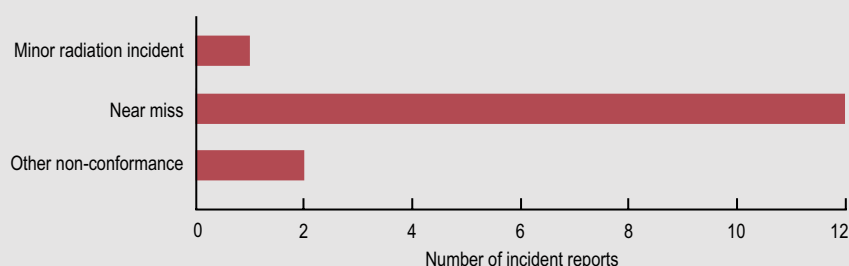
To ensure that appropriate learning from RTEs continues to be shared nationally, make sure your RTEs are TSRT9 coded. If any departments require support please contact the Radiotherapy Team at radiotherapy@phe.gov.uk.

Target Volume and Organ At Risk Delineation Associated RTE Reports

The figure shows the number of RTE reports associated with target volume and organ at risk delineation for this reporting period.

There were 15 (11i) target volume and organ at risk delineation reports in this reporting period, making up 8.6% of the pre-treatment planning process. Of note, these reports are lower level incidents.

Classification breakdown of RTE reports on target volume and organ at risk delineation, September–November 2013



Recent examples of associated reports include 'incorrect labelling', 'incorrect outlining', 'incorrect laterality' or 'incorrect growing volumes or margin requested'.

Outlining inaccuracies are discussed further in the guest editorial.

Application of codes

Consistent application of coding is key to informing local analysis and maximising learning from these events. This also ensures that learning can be shared more effectively at national and international level.

Process code	Activity code	Example
11i	Target volume and organ at risk delineation	Volume delineation inaccuracies Incorrect growing of volume Inappropriate margins requested
10c	Localisation of intended volume	Incorrect laterality

ERROR OF THE MONTH

Consent process

TSRT Process Code:
Consent process (4j)

This code accounted for 39 (3.2%) RTEs reported from September to November 2013. This was one of the top ten most commonly occurring RTEs. Of note, this has been in the top ten in four previous issues of *Safer RT*.

This RTE involves obtaining the consent of patients for their treatment course. The main themes highlighted within these reports comprise a lack of interpreters, missing information on forms including the intended benefits, and missing signatures from both patient and doctor.

Paper-based and electronic systems are both good ways to obtain formal consent.

How can we minimise the risk of this RTE occurring?

Points to consider

- 1 Have protocols in place for obtaining consent to include all patients
- 2 Complete all mandatory fields on all forms
- 3 Ensure signatures from both patient and doctor are completed
- 4 Use appropriate translators when needed
- 5 Have protocols in place for children and young people
- 6 Ensure sufficient information has been imparted to allow valid consent to be given; include the intended benefits on all forms
- 7 Ensure valid consent is given voluntarily
- 8 Have protocols in place to assess mental capacity

Further guidance

Consent to imaging and radiotherapy treatment examinations: an ethical perspective and good practice guide for the radiography workforce, SCoR (2007). Available at www.sor.org.

Reference guide to consent for examination or treatment, second edition, DH (2009). Available at www.gov.uk.

GUEST EDITORIAL

Target Volumes

Tom Roques

**Consultant Clinical Oncologist and Clinical Director for Oncology and Palliative Care
Norfolk and Norwich University Hospital NHS Foundation Trust**



The ability to deliver safer radiotherapy is perhaps seen as the province of radiographers and physicists more than that of doctors. But doctors are uniquely responsible for a process which may have the potential to result in serious unreported errors – in the least checked part of the whole radiotherapy chain.

When the technical precision is such that radiation can be delivered to millimetre accuracy with a steep dose gradient to protect nearby critical normal tissues, the risks of incorrect volume definition are high. A volume defined incorrectly may never be recognised, risking systematic errors which will be delivered – albeit

checked centrally before treatment begins. The COAST and Falcon tools (of the Royal College of Radiologists and the European Society for Radiotherapy & Oncology, respectively) allow contouring of pre-defined cases and comparison with reference answers. Online atlases are now available for a number of tumour sites and help with the definition and selection of nodal CTVs in particular. We must use all of these to make sure that as individual clinicians we are defining volumes to the very best of our ability.

Where you put the cursor on that planning CT scan may be the riskiest thing you do today

Target volumes are frequently selected and defined by a single clinician. We know from studies on all tumour types that different doctors can define very different volumes for the same patient and even that the same doctor will define different volumes on different days. The evidence that we are not always perfect at volume definition is irrefutable. It may be tempting to assume that it is other doctors who make the mistakes but this would demonstrate classic ego bias.

very precisely – by image guided IMRT. Those who need convincing should read Lester Peters' salutary TROG 02.02 paper*.

How can we mitigate this risk of errors?

Increasing numbers of high quality clinical trials build on the excellent radiotherapy trials quality assurance systems of the National Cancer Research Institute, which mean volumes and dose distributions are

There is also a need for volume definition to be treated with the respect it deserves: we need protected time in our job plans to select and define target volumes when we will not be called away to answer a bleep or to review another patient, and to have time for planning meetings to review those volumes with colleagues so we are not working in isolation. It is not easy to argue for this in a pressed NHS when we are also being asked to review inpatients daily and to prescribe increasing volumes of chemotherapy – but it is essential.

Where you put the cursor on that planning CT scan may be the riskiest thing you do today.

DATES FOR THE DIARY

January/February 2014	SCoR Annual Radiotherapy Conference, Bristol
6 March	IPEM, Flattening Filter Free Photon Beams in Radiotherapy, London
4–8 April	ESTRO, Vienna
April 2014	<i>Safer Radiotherapy</i> , Issue 12

* Peters LJ et al. 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 (2010).