



Welcome to the fourteenth 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 anonymised reports are submitted on a voluntary basis through the National Reporting and Learning System (NRLS) of NHS England or directly to PHE, to promote learning and minimise recurrence of these events.

Safer RT is designed to disseminate learning from RTEs to professionals in the radiotherapy (RT) community to positively 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

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 January 2015.

Helen Best
Editor

Patient Safety in Radiotherapy Steering Group (PSRT)

UK-wide participation in the national voluntary reporting system is well established. However, the PSRT continues to focus on the development of this work. As part of this, the PSRT continues to work with radiotherapy departments in Scotland and Northern Ireland to streamline their reporting mechanisms.

In addition, the PSRT is now seeking to further learning opportunities from RTEs through the proposal of taxonomies for causative factors and detection methods of RTEs. This is in line with work by the international community as new taxonomies have already been proposed and adopted for use by the IAEA and ASTRO in these key areas of error analysis. A PSRT subgroup will be formed to take the development and piloting of taxonomies forward over the winter months.

If you have any comments on how the process coding can be refined, please email the Radiotherapy Team at radiotherapy@phe.gov.uk.

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The Radiotherapy Team is based at PHE CRCE Chilton

Please note that new publications will appear on **GOV.UK** and some HPA radiotherapy webpages have been moved there: see <https://www.gov.uk/government/collections/medical-radiation-uses-dose-measurements-and-safety-advice>. The HPA website is now in the national archives, where earlier issues of the newsletter and supplementary data analysis continue to be available: <http://webarchive.nationalarchives.gov.uk/20140505133515/http://www.hpa.org.uk/ProductsServices/Radiation/Radiotherapy/WhatsRadiotherapy/>.

EDITORIAL HEADLINE

Third Reporting and Learning Survey

In June the third reporting and learning survey was disseminated to radiotherapy service providers across the UK, achieving a response rate of 75%. We would like to thank all those who contributed – the results of this survey have been analysed and should be published by PHE in December.

The analyses revealed that although all RTEs are reported locally irrespective of classification, a proportion of departments do not submit all levels of RTE to the national voluntary reporting scheme. In addition, the frequency of submissions also varied widely.

Two main areas for improvement to the voluntary reporting and learning system were highlighted by respondents to the survey. First, the TSRT taxonomies require updating to reflect the rapid evolution in practice and technology within radiotherapy. Second, causative factors and methods of detection taxonomies should be established.

RTE Data Analysis: June to August 2014

Quarterly Analysis

Submissions from 51 NHS UK RT departments contributed to this issue's full data analysis, for 1 June to 31 August 2014, which is available at <https://www.gov.uk/government/collections/medical-radiation-uses-dose-measurements-and-safety-advice>. This is a slight increase from 49 at the last analysis, reflecting the strong reporting culture that continues in the UK RT community.

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.

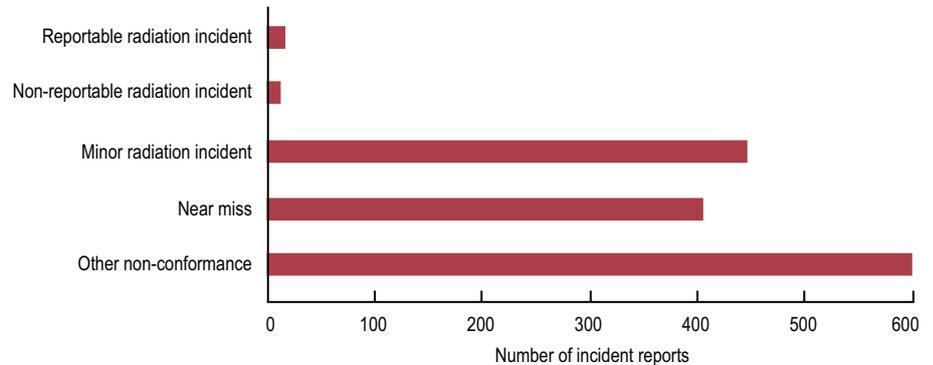
Classification of RTEs

Of those RTEs reported for the period June to August 2014, 1452 out of 1484 reports (97.8%) were classified as minor radiation incidents, near misses or other non-conformances (see Figure 1). This is consistent with previous analyses. These are lower level incidents which would have no significant effect on the planning or delivery of individual patient treatments.

Reportable radiation incidents (level 1) made up 18 (1.2%) of all reports. Both 'movement from reference marks' and 'localisation of intended volume' comprised equally 3 (16.7%) of all level 1 RTEs reported for this period. Non-reportable radiation incident reports (level 2) made up 14 of all reports (1.0%). 'On-set imaging: approval process' comprised 3 (21.4%) of all level 2 RTEs.

Of the 447 minor radiation incidents (level 3) reported, 73 (16.3%) of this subset were related to 'on-set imaging: production process', making it the most frequently occurring code in this classification. The second most frequently occurring incident at 50 (11.2%) was 'use of on-set imaging'. On-treatment imaging is discussed further in issue 12 of *Safer RT*.

Figure 1 Classification breakdown of RTE reports using the TSRT9 trigger code, June to August 2014 (1484 reports)



The most commonly occurring RTE process code in the near-miss (level 4) classification was 'accuracy of data entry', with 25 reports (6.2%).

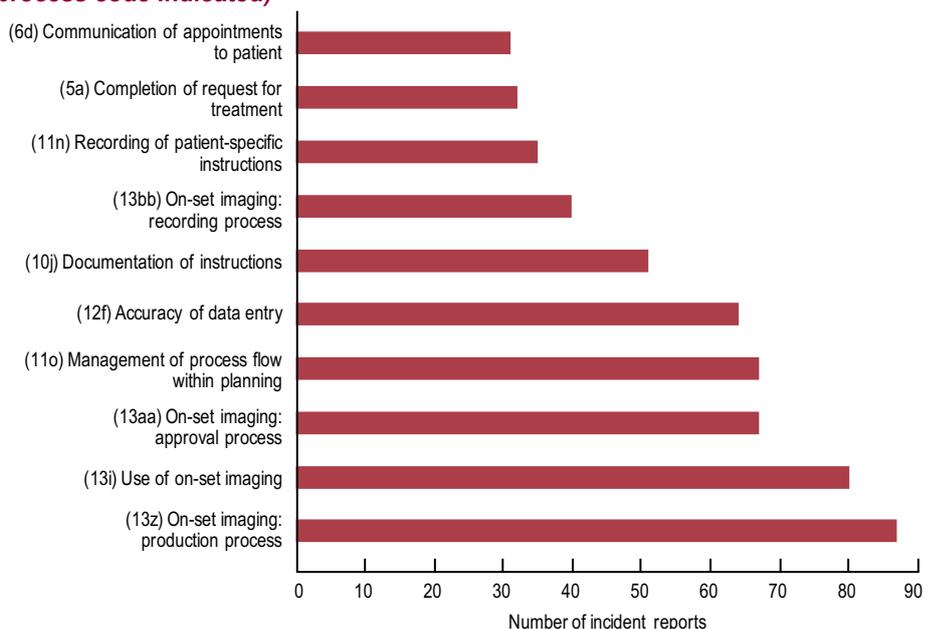
Within the non-conformance (level 5) classification 'management of process flow within planning' had 67 reports (11.2%), making this the most frequently occurring RTE in this classification.

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. Imaging process codes contributed to 274 of the reports in the main themes (49.5%), making up 18.5% of all reports for this reporting period. Imaging associated RTEs are discussed in the panel in issue 12 of *Safer RT*. Of note, 'communication of appointments to patient' contributed to 31 of the reports in the main themes (5.6%) – this is the first time this process code has been represented in the main themes and is discussed further in the *Error of the Month*.

Figure 2 RTE main themes (554 out of 1484 reports), for June to August 2014 (with process code indicated)



The data analysed is submitted by the RT community. If you have any suggestions on how the process coding can be refined, please email the Radiotherapy Team at radiotherapy@phe.gov.uk.

Process Subcodes: 12f 'Accuracy of Data Entry' and 13z 'On-set Imaging: Production Process'

A gradual decrease over the last three years, from September 2011 to August 2014, in the proportion of reported incidents concerning the process subcode 12f 'accuracy of data entry' is shown in Figure 1 (although, as the total number of incidents reported over the same period increased from 2220 to 6065, the number of the process subcode 12f incidents increased from 116 to 220 to 288). The proportional decrease may be due to increased automation of processes and an escalation in the electronic transfer of data, facilitated by new technologies.

Figure 1 Percentage of reported incidents for process subcode 12f 'accuracy of data entry', from September 2011 to August 2014

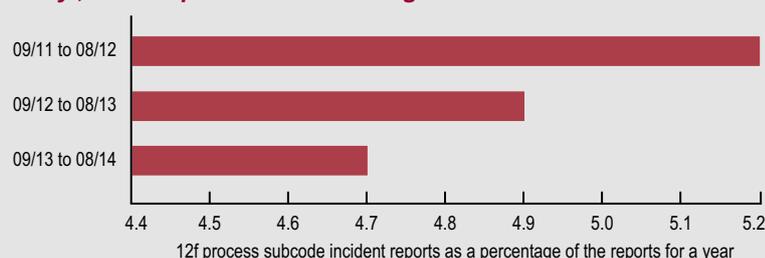
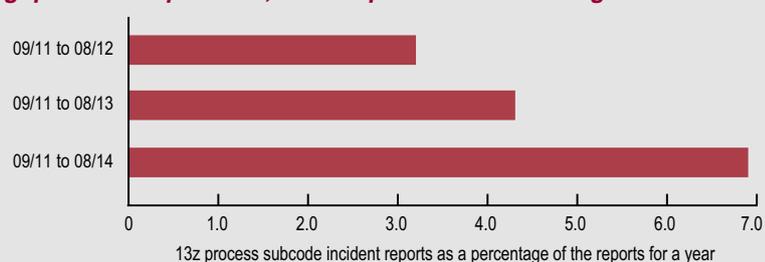


Figure 2 shows an increase in the proportion of reported incidents concerning the process subcode 13z 'on-set imaging: production process' over the past three years (with the number of process subcode 13z incidents increasing from 72 to 149 to 419). This may be due to the increase in verification imaging in radiotherapy.

Figure 2 Percentage of reported incidents for process subcode 13z 'on-set imaging: production process', from September 2011 to August 2014



Descriptions associated with the process subcodes have been summarised in the table. The nature of the 'accuracy of data entry process' subcodes has changed from errors associated with the incorrect manual entry of data and transcription to errors associated with the incorrect attachment of imported data/documentation. The descriptions associated with 'on-set imaging: production process' have been consistent across the three years.

Year	12f 'accuracy of data entry'	13z 'on-set imaging: production process'
09/11 to 08/12	Manual data in OMS entry incorrect Erroneous patient orientation entered Transcription on to treatment card inaccurate	Image not captured Exposed image unusable due to being overexposed
09/12 to 08/13	Manual transcription of field inaccurate Erroneous transcription of set up note and digital moves	Incorrect field size exposed Unsuitable positioning of imaging panel
09/13 to 08/14	Incorrect data/documentation attachment, including set up details Inaccurate manual entry of machine energy for electron treatment	

ERROR OF THE MONTH

Booking process

TSRT Process Code: Communication of appointments to patient (6d)

This code accounted for 31 (2.1%) RTEs reported from June to August 2014. This was one of the top ten most commonly occurring RTEs. Although an error in this area is not a direct radiation incident, delaying the start of treatment may influence outcomes: one department classified one such error as a minor radiation incident; 30 (96.8%) were classified as near misses or non-conformances.

This RTE is associated with the miscommunication of appointments to patients. The main themes highlighted within these reports included patients not attending due to not being notified of the appointment, miscommunication if changes were made to appointments, forgetting to telephone patients with appointments and patients receiving conflicting booking letters.

How can we minimise the risk of this RTE occurring?

Consideration to avoiding delays in start of treatment due to miscommunication of appointments with patients is required.

Points to consider

- 1 Have clear protocols and process in place
- 2 Identify the task, ensure it is clear who is responsible for the task and how its completion is annotated
- 3 Investigate the use of the oncology management system to allow efficient appointment bookings to be made
- 4 Check appointments against referral
- 5 Ensure information within bookings system is accurate to minimise patients waiting for a long time
- 6 Check the patients receive accurate appointments prior to start date
- 7 When required ensure transport and appointments match
- 8 If there are other interventions ensure cross-departmental communication

GUEST EDITORIAL

Sharing RTE Learning Departmental Experience 2

Mark Rose

Radiographer Manager

Norfolk and Norwich University Hospitals NHS Foundation Trust

Since the publication of the Francis¹ report and the subsequent Berwick² report the importance of safety in the delivery of healthcare has never been higher on the NHS agenda.

The radiotherapy service provided at the Norfolk and Norwich University Hospital has fostered an open safety culture which enhances the perception of risk and positively encourages all staff to report any incidents, errors or near misses without fear of recrimination.

In line with national recommendations³, all incidents classified as level 1 or 2 should undergo root cause analysis. The root cause analysis toolkit from the then National Patient Safety Agency has provided those responsible for investigating incidents in Norwich with the tools to achieve successful outcomes in enhancing safe practice.

Recommended actions from a detailed root cause analysis can be wide ranging, considering quality assurance and systemic variables as well as human and environmental factors. Successful and measurable safety improvements are possible when there is a commitment to implementing recommended actions with clearly communicated objectives and ongoing monitoring of the impact of any root cause analysis.

At Norwich over the past three years active monitoring of safety through using root cause analysis has led to level 1 and 2 classified incidents being

reduced by approximately half each year, with no similar reported incidents within these classifications in the current year to date.

To provide a background context to this success in improving safety, the radiotherapy dataset shows Norwich radiotherapy service as having the highest volume of attendances per linear accelerator in England and Wales, while providing a consistently high volume of some of the more complex radiotherapy work, with a figure of 50% IMRT delivery in December 2013.

It is possible to compare radiotherapy services for complexity, activity and the length of a working day. What is not possible is to accurately compare any measure of safety between radiotherapy services, although one surrogate measure could be the national reporting of radiotherapy incidents regardless of severity.

Presently we are able to make some comparisons of error reports with

the national voluntary data available from PHE. Comparing local incidents to those nationally has highlighted in the past three years a local trend of reducing high level (1 and 2) incidents to below the national average. Conversely, the number of low level (3,4 and 5) incidents reported are above the national average. Additionally, our pathway codes frequently mirror those seen in the national trends. When particular codes are reported that are not in line with the national trend, we are able to concentrate locally on that part of the pathway.

Locally, the learning is shared by regularly keeping a safety 'dashboard' up to date – this shows local information and an overall comparison with the national averages.

Reporting of incidents should not be seen as something to fear, but an opportunity to engage in shared and widespread learning.

References

- 1 <https://www.gov.uk/government/publications/report-of-the-mid-staffordshire-nhs-foundation-trust-public-inquiry>
- 2 <https://www.gov.uk/government/publications/berwick-review-into-patient-safety>
- 3 *Towards Safer Radiotherapy* (recommendation 35) www.rcr.ac.uk/index.asp?PageID=149&PublicationID=281

DATES FOR THE DIARY

7 November	IPEM, Maintaining Safety in Modern Radiotherapy, Manchester
8 November	SCoR, Whoops! Learning from Our Mistakes, London
30 January to 1 February 2015	CoR Annual Radiotherapy Conference, London
December 2014	Supplementary Survey Analysis
January 2015	<i>Safer Radiotherapy</i> , Issue 15