



Safer Radiotherapy

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The PSRT Group

From L-R Úna Findlay (PHE), Helen Best (PHE), Julia Abernethy (NHSIE), Martin Duxbury (SCoR clinical rep), Tony Murphy (Patient rep), Maria Murray (SCoR), Carl Rowbottom (IPEM), not shown in picture Petra Jankowska (RCR)

Welcome to Safer Radiotherapy (RT). 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 Improvement & England or directly to PHE, to promote learning and minimise recurrence of these events. Safer RT is designed to disseminate learning from RTE to professionals in the RT community to positively influence local practice and improve patient safety.

Published three times a year, Safer RT contains key messages and trends from the analysis of RTE reports. Any comments and suggestions for inclusion in the newsletter can be sent to radiotherapy@phe.gov.uk and would be gratefully received. Thanks to all contributors to this issue. The next issue of Safer Radiotherapy will be published in May 2020 and will be available at www.gov.uk/government/collections/medical-radiation-uses-dose-measurements-and-safety-advice

Helen Best, Editor

Patient Safety in Radiotherapy Steering Group (PSRT) update

The PSRT comprises of members from the Institute of Physics and Engineering in Medicine, NHS England and NHS Improvement, a patient representative, PHE, Royal College of Radiologists (RCR), and Society and College of Radiographers. The group has a remit to improve patient safety in radiotherapy across the UK.

Marianne Illsley, Consultant Clinical Oncologist and Medical Director, Royal Surrey County Hospital NHS Foundation Trust and RCR representative since May 2018 has stepped down from the group.

The PSRT is delighted to welcome Petra Jankowska, Consultant Clinical Oncologist, Taunton and Somerset NHS Foundation Trust and Quality and Safety Lead at the RCR as the new RCR representative. Petra will help shape the development of the PSRT's work programme.



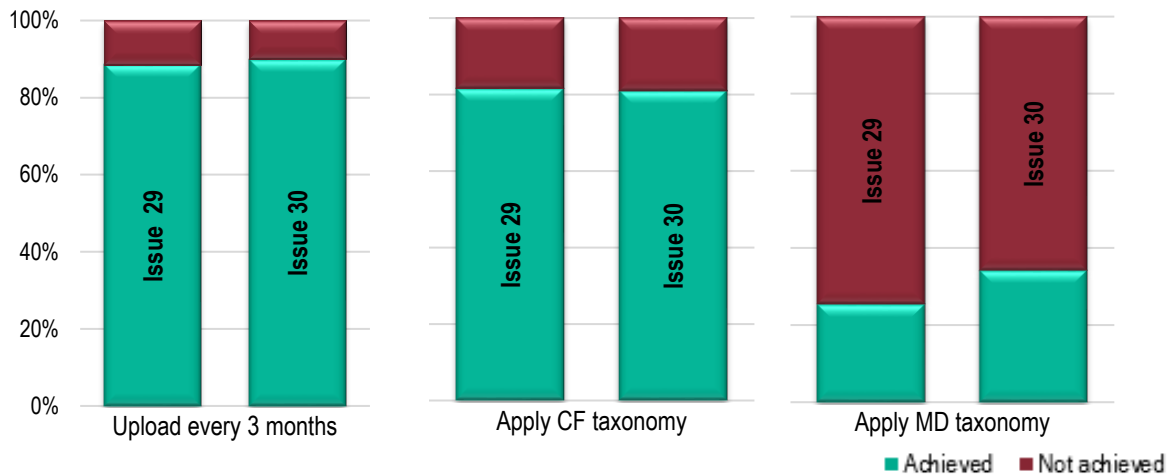
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PSRT's targets for RTE reporting

The PSRT has set targets to improve specific areas of RTE reporting by September 2020. These include 100% providers to report monthly and 100% reports to include a causative factor (CF) and a method of detection (MD) code. The following graphs indicate how we are progressing with these targets.

Help us meet these targets. For support contact radiotherapy@phe.gov.uk



IR(ME)R guidance to be published

The RT Board update to the 2008 professional body guidance on the implementation of IR(ME)R is due to be published this spring to reflect the new regulations. This will support the RT and nuclear medicine communities in the clinical implementation of IR(ME)R. Separate guidance will also be published to support the diagnostic, interventional and nuclear medicine communities.

IAEA Integrated Regulatory Review Service (IRRS) mission

Between 14-25th October 2019, a team of inspectors from the IAEA carried out a review of the UK's regulatory safety framework. This was the first full scope review in the UK covering both nuclear and radiation safety. The IAEA team assessed the UK's compliance against the IAEA Safety Standards and reviewed the regulatory responsibilities and functions of the Government

The IAEA team identified strengths and good practice in the UK's regulatory authorities including staff competence and extensive guidance. A number of recommendations and suggestions are included in the draft IAEA report to further improve nuclear and radiation safety in the UK. The report is expected to be published by the UK in early 2020. Further information is available here:

<https://www.iaea.org/newscenter/pressreleases/iaea-mission-says-united-kingdom-committed-to-enhancing-safety-sees-areas-for-further-improvement>

Links to international patient safety resources

ASTRO and AAPM RO-ILS [Quarterly report Q3-Q4 2018](#)

Autorité De Sûreté Nucléaire (French Nuclear Safety Authority) [Publications for Professionals](#)

IAEA, SAFRON [Updates on Patient Safety in Radiotherapy](#)

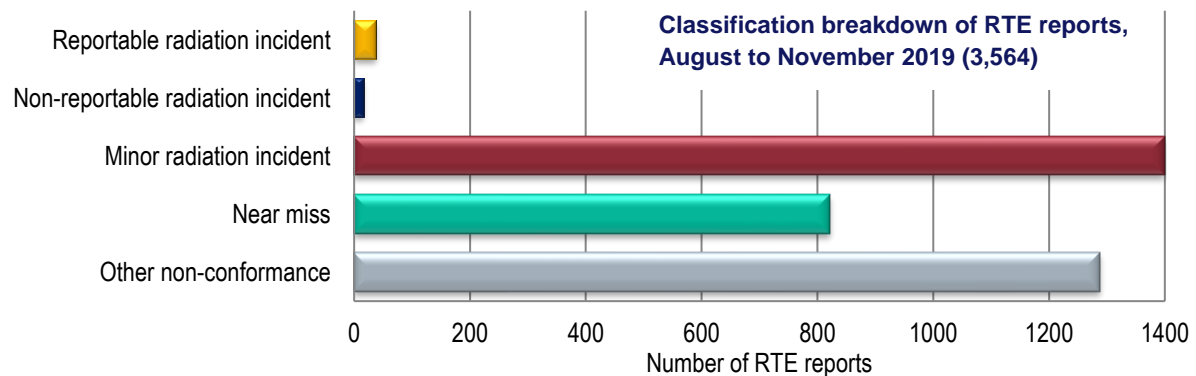
RTE Data analysis: August to November 2019

Submissions from 54 NHS UK providers contributed to this issue’s full data analysis, covering August to November 2019. Six providers have not reported or used the TSRT9 trigger code to report RTE through the NRLS for this reporting period. Three providers have not reported RTE as part of this initiative for the year December 2018 to November 2019. Help with reporting is available at radiotherapy@phe.gov.uk.

The full data analysis is available at www.gov.uk/government/collections/medical-radiation-uses-dose-measurements-and-safety-advice and includes data on primary process coding, safety barriers, causative factors, methods of detection and the severity classification of the RTE.

The following graphs may be used to support mapping of local RTE analysis against the national analysis.

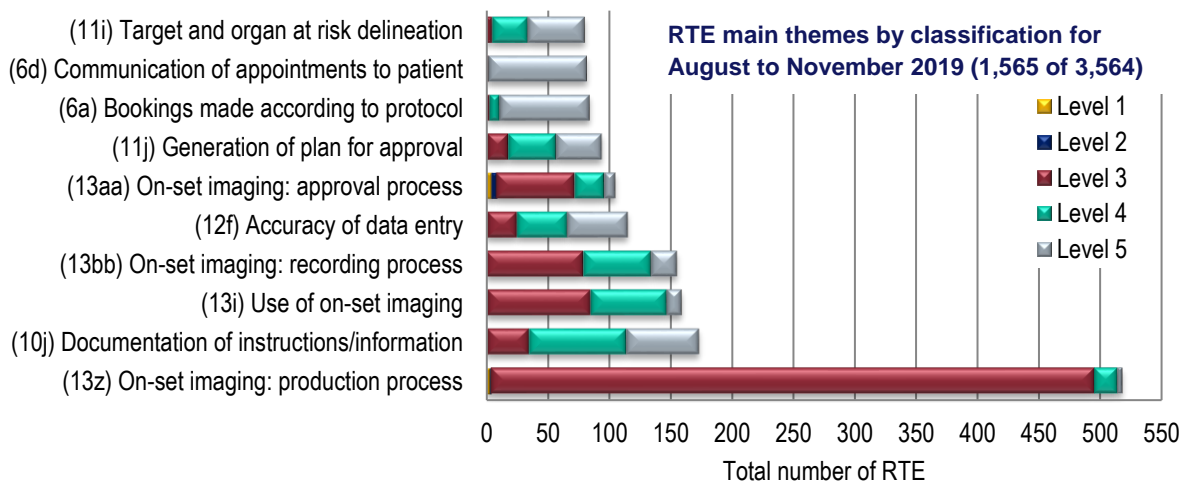
Classification of RTE



Of those 3,564 RTE reported for the period August to November 2019, 3,510 reports (98.5%) were classified as minor radiation incidents, near misses or other non-conformances. These are lower-level incidents which would have no significant effect on the planning or delivery of individual patient treatments.

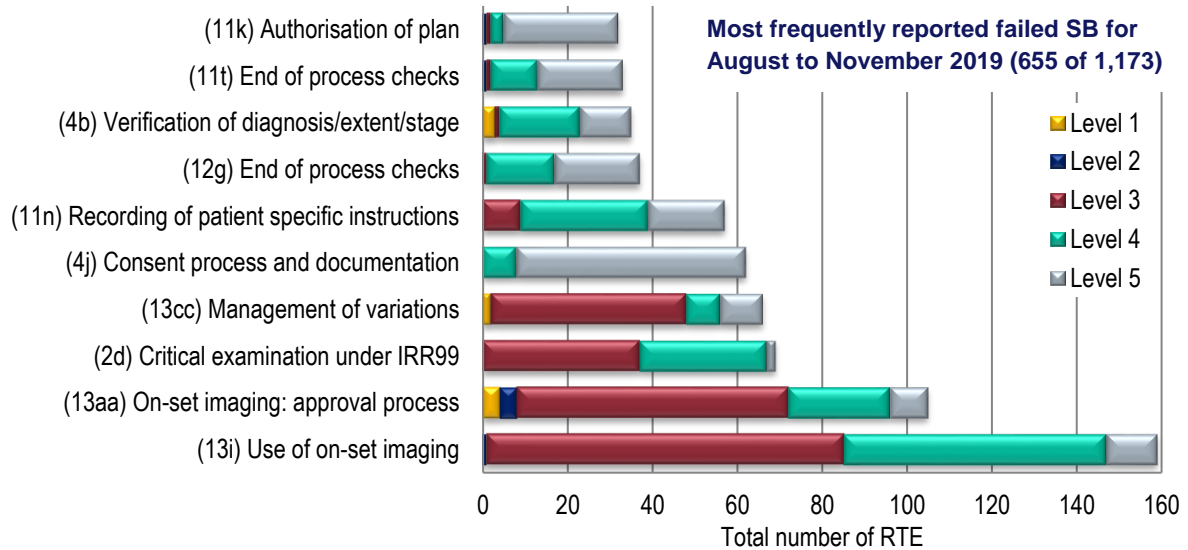
Primary process code

The main themes (points in the patient pathway where the majority of reported RTE occurred) for this dataset are shown below. Consistent with the previous 15 analyses ‘on-set imaging: production process’ is the most frequently occurring process code (14.5%, n = 518), examples of this include selecting the incorrect pre-set for an exposure. Further guidance on image associated RTE will be published as part of the PHE good reporting guidance.

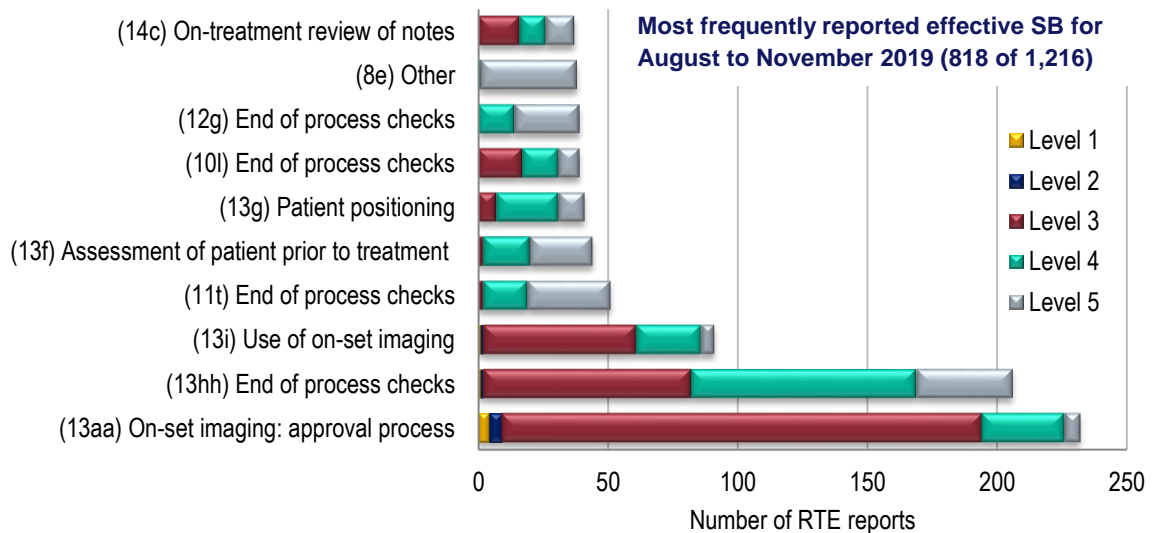


Safety Barriers (SB)

Several individual pathway codes can be allocated to each RTE report to identify all points in the pathway where the error was not picked up. All subcodes were analysed across the 3,564 RTE reports and a total of 1,173 subcodes were identified as failed safety barriers (SB). Only 29 (2.5%) of these RTE were Level 1 or 2 errors where the SB had failed. The most frequent failed SB reported is represented below broken down by classification. Treatment unit process ‘use of on-set imaging’ is the most frequently reported failed SB (13.6%, n=159).



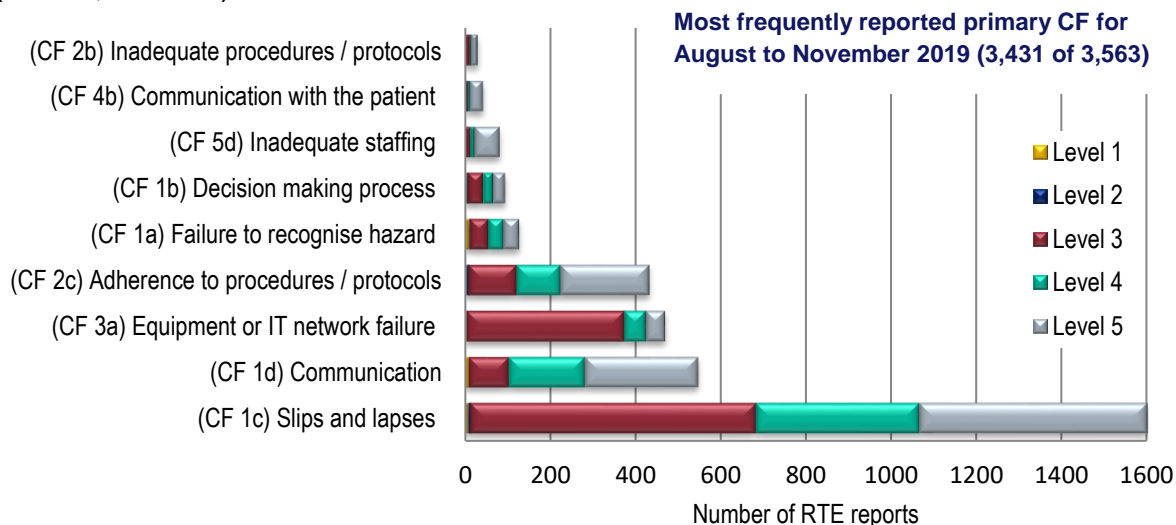
Effective safety barriers or methods of detection (MD) can now be identified utilising the safety barrier taxonomy. For the reporting period August to November 2019, 1,216 reports contained MD. The most frequently reported effective safety barrier for this reporting period was ‘on-set imaging: approval process’ (19.1%, n = 232).



Causative Factors (CF)

CF have been applied to 2,886 (81.0%) RTE reports by 47 (78.3%) providers for this reporting period. Following consistency checking, PHE coded a further 677 reports with CF taxonomy, resulting in 3,563 RTE reports for analysis. The most frequently reported primary CF are shown below; the most frequent was individual ‘slips and lapses’ (45.0%, n = 1,602). Multiple CF can be associated with each RTE; the primary CF is the root cause and the subsequent CF are the contributory factors associated with an incident. Contributory factors were indicated across 844 reports; 108 of these contained multiple CF leading to 982 contributory factors. The most

frequently reported contributory factor was ‘adherence to procedures/protocols’ (45.2%, n = 444).



Quality of reporting – Consistency checking

For this reporting period 79.1% (n = 2,819) RTE were classified and coded locally. During consistency checking PHE staff amended 14.6% (n = 411) of these complete reports, 68.6% (n = 282) of these required the primary pathway code to be amended. The table below indicates the most frequently amended pathway codes and the amended process. It is recommended that providers review all codes before assigning ‘other’ as the primary pathway code.

Initial process code and descriptor	Frequency	Process code most frequently amended to
(13jj) Other (Treatment unit process)	49	(13cc) Management of variations (16)
(13i) Use of on-set imaging	48	(13z) On-set imaging: production process (22)
(13z) On-set imaging: production process	34	(13bb) On-set imaging: recording process (12)
(13aa) On-set imaging: approval process	27	(13bb) On-set imaging: recording process (17)
(6e) Other (Booking process)	18	(6f) Communication of appointment between staff (5)
(10n) Other (Pretreatment activities/ imaging)	14	(10f) Production of images demonstrating correct detail (4)
(13m) Setting of treatment machine parameters	8	2d Critical examination under IRR99 (8)
(11v) Other (Pretreatment planning process)	8	11j Generation of plan for approval (2)

Quality of reporting – Causative factor (CF) taxonomy.

The CF taxonomy has been in place since December 2016. Since the publication of the CF taxonomy some RTE reports are received coded as the following –

TSRT9/ Level 4/ 13c/ 13l/ MD13hh/ CF1c,2c

The pathway taxonomy contains process codes 2c and 1c, therefore the above could be CF2c or pathway code 2c acceptance testing.

Please could all CF retain the CF before them for example –

TSRT9/ Level 4/ 13c/ 13l/ MD13hh/ CF1c/ CF2c

Focus on – 11i Target and organ at risk delineation (including incorrect growing of volume)

For the reporting period December 2018 to November 2019 there were 2.3% (n = 222) of all RTE coded with 11i 'target and organ at risk delineation' as the primary pathway code. Due to checking processes and peer review systems 92.3% (n = 205) of these were classified as lower level incidents (level 4 or 5) and had no effect on the patient's treatment. Only 1.4% (n = 3) were classified as level 1 RTE. Only 32.9% (n = 73) of RTE reports included method of detection. Of these 47.9% (n = 35) were end of process checks. The free text in these reports did not specify if this included peer review. Examples of this type of RTE can be seen below.

Example 1. Patient referred to radiotherapy for radical treatment to BCC on nose. Patient attended skin mark up appointment and modality, energy and field size determined. Treatment was delivered to the area as marked up. During the follow up appointment it was noted that an area of solar keratosis had been marked in error. This was a geographical miss and required reporting to the appropriate authorities and further investigation carried out.

This could be coded as – **Level 1 / 11i / 11l / 11t / MD17a / CF1a / CF1c**

Example 2. Outlining was completed for treatment of cervix and involved pelvic nodes. Patient volume was reviewed during plan peer review session. It was detected that the volume drawn did not actually cover the involved lymph node that was seen on the PET CT.

This could be coded as – **Level 5 / 11i / MD11i / CF1c**

Things to consider to reduce the recurrence of this type of RTE –

- Ensure operators are appropriately trained and entitled to complete the task of target or organ at risk delineation. Training records should be maintained and be specific to the particular task
- Produce and follow clearly defined and up to date procedures and site specific protocols, including the optimum screen resolution and nomenclature
- Ensure primary source data is available to confirm site and laterality for outlining
- Ensure all required documentation is available, e.g imaging results, histological and surgical findings
- Ensure checks are in place to confirm correct outlining and site specific peer review has been considered
- Create an appropriate environment with minimal distractions for staff
- Monitor locally reported RTE to learn and introduce corrective actions

Dates for the diary

28 Feb	BIR, Optical surface and ultrasound guidance in RT, London
13 March	BIR, Image-guided radiotherapy, London
3-7 April	ESTRO 2020, Vienna
28-30 April	SRP Annual Conference, Bournemouth
May	Safer Radiotherapy Issue 31

Patient Safety in Radiotherapy publications survey

A survey to establish how the PHE Patient Safety in Radiotherapy publications are received and read by the radiotherapy community was sent in September 2019 to all RT providers across the UK. A total of 93 surveys were returned. However, not all respondents completed all questions. The results of the survey are outlined below –

Question	Response
Which category includes your age?	55 + (n = 14) 45-54 (n = 43) 35-44 (n = 20) 25-34 (n = 11) 18-24 (n = 3)
How are you made aware of new PHE patient safety in RT publications?	Directly via the PHE gov.uk e-subscribe facility (n = 62) Communication from heads of service (n = 24) Communication from the professional bodies (n = 19) PHE presentations (n = 3) Other (n = 17) e.g. via the RTQSIG and from colleagues
In what media format do you read the PHE patient safety in RT publications?	Paper print out (n = 11) Electronic PDF (n = 69) Online PHE website (n = 41) Other (n = 2) not specified
When do you access the PHE patient safety in RT publications?	During work as part of CPD (n = 60) At work during breaktime (n = 15) In personal time outside work (n = 13) Other (n = 21) e.g. as part of professional role and when updating protocols and procedures
Do you follow PHE on social media?	Yes (n = 6) No (n = 85)
Would you use social media platforms to access PHE patient safety in RT publications?	Yes (n = 23) No (n = 68)
Which social media platforms would you use to access PHE patient safety in RT publications?	LinkedIn (n = 13) Facebook (n = 14) Instagram (n = 3) Twitter (n = 15) Other (n = 1) not specified
Do you follow any organisations related to patient safety on social media?	Yes (n = 23) No (n = 68)
Which organisations related to patient safety do you follow on social media?	CQC (n = 9) HIS (n = 2) HIW (n = 0) IPEM (n = 5) NHSE/NHSI (n = 7) BIR (n = 7) RQIA (n = 1) RCR (n = 6) SCoR (n = 15) Other (n = 4) included HSE, HIQA and IAEA
Other comments	Print out the relevant publications and put into our radiotherapy staff room for colleagues to read

The results of this survey indicate that PHE should continue to promote the publications within the PHE social media site and use the e-subscribe facility as outlined on the first page of this document.

Guest Editorial

Is radiotherapy safety taken as read?

Tony Murphy

Patient safety representative



Who am I?

In 2010 I applied to the RCR to be a patient/public representative within Clinical Oncology. The application was based on my knowledge and empathy for people affected by brain and spinal tumours. As the PALS manager at The Walton Centre in Liverpool I had met nearly a thousand people with a brain or spinal tumour (and/or their relatives). I realised there was a need for peer support and further information, so set up and ran, a brain tumour support group.

Patient experience

During attendance at National Radiotherapy Implementation Group (NRIG) meetings I offered to produce the first draft of the national Patient Experience Survey. At the time it never occurred to me to include a question such as, 'Was the radiotherapy you received safe?' There were questions about side effects, about speaking to someone about 'your worries and fears' - but this wasn't intended to cover worries about mistakes or near misses in the planning and delivery of the RT itself.

Safety in a wider context

Can safety be viewed in a broader sense? Is performing a small number of site specific plans annually potentially unsafe? Is resistance to the adoption of new treatment techniques safe? If peer review of outlining is resisted (for whatever reason), could treatment have been 'safer'? The reasons for the above may be down to personalities, resources, trust financial position/tariffs, etc. but can impact on patient safety negatively as actual or near misses.

National Learning and Reporting System

I have witnessed first-hand as the patient representative of the PSRT since 2010, the thoroughness of the regulations and the commitment of staff to deliver radiotherapy safely and the significant, but not quite total, commitment of providers to report RTE nationally.

Numbers of serious, reportable incidents is mercifully very small. The number of minor incidents and near misses could be interpreted as high – but are a sign of openness and professional acknowledgement of wanting to improve. Learning from these RTE is a key component of the national reporting and learning system. This learning can include individual teams holding sessions on 'error of the month' or mapping local RTE data against the national analysis.

Conclusion

Having a patient representative on the PSRT allows the views of patients to be taken into consideration when setting the work programme, goals and completing work. I'd like to finish by praising the passion and sincerity of the small number of employees in PHE and volunteers from the professional bodies on the PSRT in their efforts to provide a safer patient experience.