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England

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Radiotherapy Data Set v5.0 (RTDS) Implementation Guidance

National Information Standard (SCCI0111)

About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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Published November 2015
PHE publications gateway number: 2015475





This information standard (SCCI0111) has been approved for publication by NHS England under [section 250 of the Health and Social Care Act 2012](#).

Assurance that this information standard meets the requirements of the Act and is appropriate for the use specified in the specification document has been provided by the Standardisation Committee for Care Information (SCCI), a sub-group of the National Information Board.

This information standard comprises the following documents:

- Requirements Specification
- Change Specification
- Implementation Guidance (this document)

An Information Standards Notice (SCCI0111 Amd 13/2015) has been issued as a notification of use and implementation timescales. Please read this alongside the documents for the standard.

The controlled versions of these documents can be found on the [HSCIC website](#).

Date of publication: November 2015.

Document information:

Title	Radiotherapy Data Set: Implementation Guidance
SCCI reference	SCCI0111 Amd 13/2015
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Amendment History:

Version	Date	Amendment History
0.1	01/08/2015	First draft for comment
0.2	07/08/2015	Draft amended following HSCIC team comments
0.3	27/08/2015	Draft amended following pre-ISAS review by HSCIC team
0.4	23/09/2015	Draft amended following ISAS review and comments
0.5	06/10/2015	Draft amended following SCCI meeting and ISAS recommendations
0.6	09/10/2015	Draft amended in light of ISAS consolidated review comments
1.0	03/11/2015	Publication Version

Reviewer:

This document must be reviewed by the following:

Name	Organisation	Version	Date
Dr Jem Rashbass	Director, National Disease Registration, Public Health England	V1.0	03/11/2015

Approvals:

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1. Introduction

The management and delivery of the national Radiotherapy Data Set (RTDS) standard and data set (SCCI0111) until 31 March 2016 lies with the National Clinical Analysis and Specialised Applications Team (NATCANSAT), which is based at The Clatterbridge Cancer Centre NHS Foundation Trust.

With effect from 1 April 2016 the management and delivery of the standard and data set lies with Public Health England (PHE). Apart from two minor format changes to two data items, there are no changes to the number and content of the required data. The only significant change is that the data submissions are required to be delivered to PHE and not to NATCANSAT.

This document provides guidance for data providers and their systems suppliers for:

- the planned approach during the period leading up to the transfer of the management of the standard and the data set
- guidance on operational implementation beyond 1 April 2016.

Data providers and their oncology management system (OMS) suppliers are required to prepare their resources, systems and processes to cooperate with the transitional requirements during the transfer of the standard and thereafter will be expected to meet the detailed requirements and conformance of the standard as set out fully in the Requirements Specification. Support for data providers and OMS suppliers is available from senior members of the RTDS Project Team or through the local network of data liaison staff detailed in Section 5 below.

2. Purpose of the Standard

The Radiotherapy Data Set (RTDS) standard is an existing standard (SCCI0111) and has required all NHS Acute Providers of Radiotherapy to collect and submit standardised data monthly against a nationally defined data set since 2009.

The purpose of the standard is to collect consistent and comparable data across all NHS Acute Providers of Radiotherapy Services in England in order

to provide intelligence for service planning, commissioning, clinical research and the operational provision of Radiotherapy services across England. PHE will receive, validate, quality assure and integrate the data received from across all regional radiotherapy providers to provide a timely and definitive analytical resource. This will be linked vitally to data captured from other national cancer data sets (Cancer Outcomes and Services Data Set **COSD SCCI1521** and the Systemic Anti-Cancer Therapy Data Set **SACT ISB1533**) to support key service metrics to track progress in the provision of radiotherapy and other cancer services. The added benefits of integrating the data collection and analytical functions will be cancer site-specific analyses of outcomes by patient and treatment variables, allowing for a better understanding and appreciation of the specific role of radiotherapy in improving outcomes compared with other treatment modalities.

Cancer data collection by the National Cancer Registration Service (NCRS) within PHE is covered by section 251 of the NHS Act 2006, which allows the Secretary of State for Health to make regulations to set aside the common law duty of confidentiality for defined medical purposes. These permissions are subject to annual review by the Confidentiality Advisory Group (CAG) of the Health Research Authority, which advises the Minister. The NCRS permission to receive, hold and process patient identifiable data without individual consent under these regulations was renewed in November 2014 and will be reviewed again in November 2015 (PIAG 03(a)/2001). The NCRS will advise the CAG of the change in management of the data set and standard as part of this review.

3. Requirements and Impact

All Providers of radiotherapy services to NHS patients in England **MUST** collect each of the required data items for the RTDS data set (see Requirements Specification) and the required data from the Outpatient section of the Commissioning Data Set (CDS ISB 0092) (see Requirements Specification), using the appropriate format and coding, for every patient receiving teletherapy, brachytherapy given using automated remote after loading machines and all other brachytherapy given for the treatment of malignant disease.

The **Radiotherapy Data Set** should be submitted to **Public Health England** by the 15th working day of each month or a quality assured return which meets the critical QA criteria by the 20th day of the month. (See section 6 – Submissions Schedule).

Data for the standard will continue to be collected by radiotherapy radiographers and practitioners treating patients with radiotherapy, and clerical staff supporting them. The data set is routinely collected using Oncology Management Systems (OMS) associated with radiotherapy machines.

The items in the data standard are already collected in radiotherapy facilities, and there are no new items proposed for version 5.0. Data is extracted directly from radiotherapy equipment software (verify and record systems, or radiotherapy management systems) for production of the standard.

In advance of v5.0 of the standard becoming operational in April 2016, and during the period September to December 2015 PHE will fund and provide technical support to all radiotherapy centres who may require it to consolidate the extraction, validation and submission process. This process and the consequent submissions will be compared to the existing data extraction, submission, quality assurance and reporting methods that are required using the NATCANSAT toolkit. The aim of this technical support will be to implement and stabilise data extracted from the Oncology Management Systems (OMS) in use at each site into the data format required by PHE for RTDS with effect from 1 April 2016.

Data will be generated from the hospital oncology management and patient administration system using agreed and tested extract processes. The NATCANSAT RTDS data extraction and submission toolkit products will be replaced by the development of equivalent generic PHE extraction methods. Where necessary, on-site technical support will be provided by PHE to ensure the timeliness and accuracy of the data extraction, quality assurance and submission for RTDS to PHE. There will be thorough testing of the new methods through October 2015 to March 2016.

The data will then be validated, quality assured, collated and reported on by the NCRS within PHE using an online submissions and reporting portal (see www.api.encore.nhs.uk).

Each radiotherapy attendance will need to be reported using the Standard Commissioning Data Set (CDS) plus an additional 'Radiotherapy Tail' (please see the RTDS Requirements Specification section 9.19). Attendance specific information is taken from the Oncology Management Systems (OMS) at each Radiotherapy facility, and combined with demographic and other 'non-attendance specific' information taken from the Patient Administration System (PAS) to generate the required file. This avoids duplication of entry of radiotherapy attendances into PAS and OMS.

All radiotherapy attendances should be reported to PHE using the radiotherapy attendance record and RTDS.

Outpatient Commissioning Data Set (OPCDS) can be generated from the Radiotherapy Attendance Record by filtering records with 'Yes' in the outpatient attendance indicator field.

Commissioning Data Set (CDS) records for admitted patients receiving radiotherapy should be generated through PAS in the normal way.

4. Overview of Implementation Plan and Timetable

I Engagement of all 50 radiotherapy centres in England

Time period: July to August 2015

The data liaison leads in each of the NCRS offices have made contact with all radiotherapy providers to talk through how the change in the management of the standard and the data will affect their individual centre. Issues to be addressed are in the following range:

- verification of radiotherapy machine manufacturers, range of equipment and oncology management systems
- current data extraction, validation and reporting methods
- secure key management and technical working contacts
- offer of technical support from PHE
- request extraction and secure transfer of current data set for testing purposes
- local use of current range of quality reports
- use of linked data set with the Outpatient Commissioning Data Set for Payment by Results/payments
- access to historical RTDS database

II Secure and test data extracts from radiotherapy centres

Time period: July to October 2015

Receive test data extracts from all radiotherapy centres to identify and resolve validation, import and reporting issues for each centre. NCRS development team will scope and begin to design the method of importing and integrating RTDS data into the national ENCORE cancer registration system. The team will also scope an online upload portal and a national RTDS data timeliness and quality reporting portal to sit alongside the national reporting portals for the Cancer Outcomes and Services Data Set (COSD) and the Systemic Anti-Cancer Therapy Data Set (SACT).

III Deliver technical solutions

Time period: September to December 2015

NCRS development team will build and deliver the upload/import portal with built in validation and launch the RTDS reporting portal to meet the current range and standard of reports already available.

IV Parallel data receipt and reporting

Time period: December 2015 to March 2016

NCRS and NATCANSAT teams to receive data extracts (beginning with December extracts) from RT sites to allow comparison of upload, validation and reporting functions and consistency of results.

V Go live

1 April 2016 sole management of the RTDS standard by PHE – effective launch date.

The implementation project is summarised in the Gantt chart below.

Implementation project summary

	07/15	08/15	09/15	10/15	11/15	12/15	01/16	02/16	03/16	04/16
Secure Data Liaison Visits to all RT Centres										
Secure Test Data Extracts from all RT Centres										
SCCI RTDS standard application & ISN publication										
Develop/deliver data mappings and ENCORE import function										
Build, Test and Deploy Reporting Function										
Build Test and Initiate data load function in Web Portal										
Dual data collection and reporting with NATCANSAT										
PHE RTDS Standard Management go-live and Standard Conformance Date										

5. Implementation Support

The **Project Board** for RTDS is the Radiotherapy Information Strategy Group (RISG). The RISG oversees the transfer, implementation and future development of the standard, holding the project team to account and ensuring that the requirements specification and conformance requirements are adhered to.

The **Project Team** for RTDS, which is operationally responsible for working with data providers and OMS suppliers, is drawn widely from across PHE's specialist resources.

Management lead	Stephen Raynor, head of registration NCRS
Technical development lead	Alan McDonald, senior infrastructure support manager NDR
Dataset and reporting lead	Barry Plewa, deputy head of registration NCRS London
Data management/security lead	Dr Brian Shand, software developer NDR
Analytical leads	Sarah Lawton, senior analyst NCIN Nicola Cooper, senior analyst NCIN Caroline Brook, head of registration Northern & Yorkshire Dr Margreet Luchtenborg, principal analyst NCIN
Data liaison lead	Karen Graham, national head of data liaison, NCRS
Data extraction lead	Michael Sharpe, data liaison manager, NCRS
Project co-ordinator	Elsita Payne, head of registration NCRS North West

In addition to the project leads and their access to resources and expertise in their teams, additional specialist resources will be engaged to build technical capacity for web development, system development and reporting portal development.

The implementation project will provide technical capacity and expertise to set up the service working with radiotherapy centre technical personnel, where needed, to build extraction tools to obtain the nationally defined data set from radiotherapy equipment and oncology management systems.

Additionally, the NCRS has a national team of data liaison staff based in local offices (see table 1 below) who will co-ordinate communications and relationship management with each of the radiotherapy centres nationally throughout implementation and subsequently in support and maintenance of the standard.

Data providers in the radiotherapy centres and system suppliers can access implementation support from the senior members of the national project team or from the local data liaison teams.

Requirements and impact

All providers of radiotherapy services to NHS patients in England **MUST** collect each of the required data items, using the appropriate format and coding, for every patient receiving retherapy, brachytherapy given using automated remote after-loading machines and all other brachytherapy given for the treatment of malignant disease.

From April 2016, all providers of radiotherapy services to NHS patients in England **MUST** submit a return of radiotherapy data by the 15th working day of the each month. In advance of the standard becoming operational in April 2016, and during the period September to December 2015, PHE will fund and provide technical support to all radiotherapy centres who may require it to implement a data extraction, validation and submission process. This process and the consequent submissions will be tested and compared to the existing data extraction, submission, quality assurance and reporting methods that are required using the NATCANSAT toolkit. The aim of this technical support will be to implement and stabilise data extracted from the Oncology Management Systems (OMS) in use at each site into the data format required for RTDS with effect from 1 April 2016.

Data will be generated from the hospital oncology management and patient administration system using the agreed extract processes.

The data will then be validated, quality assured, collated and reported on by the NCRS within PHE using an online submissions and reporting portal.

Table 1. Radiotherapy centres and NCRS local liaison teams

Trust Code	Trust name	NCRS Office
RHQ	Sheffield Teaching Hospitals NHS Foundation Trust	East Midlands
RTG	Derby Hospitals NHS Foundation Trust	East Midlands
RWD	United Lincolnshire Hospitals NHS Trust	East Midlands
RWE	University Hospitals of Leicester NHS Trust	East Midlands
RX1	Nottingham University Hospitals NHS Trust	East Midlands
RDE	Colchester Hospital University NHS Foundation Trust	Eastern
RGN	Peterborough and Stamford Hospitals NHS Foundation Trust	Eastern
RGQ	Ipswich Hospital NHS Trust	Eastern
RGT	Cambridge University Hospitals NHS Foundation Trust	Eastern
RM1	Norfolk and Norwich University Hospitals NHS Foundation Trust	Eastern
RWH	East and North Hertfordshire NHS Trust	Eastern
RAJ	Southend University Hospital NHS Foundation Trust	Eastern
RA2	Royal Surrey County NHS Foundation Trust	London
RAL	Royal Free Hampstead NHS Trust	London
RAP	North Middlesex University Hospital NHS Trust	London
RF4	Barking, Havering and Redbridge University Hospitals NHS Trust	London
RJ1	Guy's and St Thomas' NHS Foundation Trust	London
RNJ	Barts Health NHS Trust	London
RPY	The Royal Marsden NHS Foundation Trust	London
RRV	University College London Hospitals NHS Foundation Trust	London
RWF	Maidstone and Tunbridge Wells NHS Trust	London
RXH	Brighton and Sussex University Hospitals NHS Trust	London
RYJ	Imperial College Healthcare NHS Trust	London
RBV	The Christie NHS Foundation Trust	North West
REN	The Clatterbridge Cancer Centre NHS Foundation Trust	North West
RXN	Lancashire Teaching Hospitals NHS Foundation Trust	North West
RNL	North Cumbria University Hospitals NHS Trust	Northern & Yorkshire
RR8	Leeds Teaching Hospitals NHS Trust	Northern & Yorkshire
RTD	The Newcastle Upon Tyne Hospitals NHS Foundation Trust	Northern & Yorkshire
RTR	South Tees Hospitals NHS Foundation Trust	Northern & Yorkshire
RWA	Hull and East Yorkshire Hospitals NHS Trust	Northern & Yorkshire
RHW	Royal Berkshire NHS Foundation Trust	Oxford
RNS	Northampton General Hospital NHS Trust	Oxford
RTH	Oxford University Hospitals NHS Trust	Oxford

RA7	University Hospitals Bristol NHS Foundation Trust	South West
RA9	South Devon Healthcare NHS Foundation Trust	South West
RBA	Taunton and Somerset NHS Foundation Trust	South West
RD1	Royal United Hospital Bath NHS Trust	South West
RD3	Poole Hospital NHS Foundation Trust	South West
REF	Royal Cornwall Hospitals NHS Trust	South West
RH8	Royal Devon and Exeter NHS Foundation Trust	South West
RHM	Southampton University Hospitals NHS Trust	South West
RHU	Portsmouth Hospitals NHS Trust	South West
RK9	Plymouth Hospitals NHS Trust	South West
RTE	Gloucestershire Hospitals NHS Foundation Trust	South West
RJE	University Hospital of North Staffordshire NHS Trust	West Midlands
RKB	University Hospitals Coventry and Warwickshire NHS Trust	West Midlands
RL4	The Royal Wolverhampton Hospitals NHS Trust	West Midlands
RRK	University Hospital Birmingham NHS Foundation Trust	West Midlands
RXW	Shrewsbury and Telford Hospital NHS Trust	West Midlands

6. RTDS Submissions Schedule

The NCRS will provide regular reports on the timeliness and quality of providers' conformance to the standard to all providers and to the Radiotherapy Information Strategy Group.

The following submissions schedule provides the definitive dates for providers' submissions to meet conformance to the standard. Submissions are due 15 working days post the month end to which the data submission relates or a quality assured return which meets the 'critical' quality assurance criteria by the 20th working day of the month.

The submission will undergo quality assurance and validations and feedback will be delivered to the provider allowing time for corrections and resubmissions within a further five working days. The submissions must meet both the timeliness and the critical quality assurance tests advised in the Requirements Specification (section 10).

While late submissions will still be required and will be accepted, repeated failure to maintain the submissions schedule will be reported to the Radiotherapy Information Strategy Group for their advice on escalation to remedy the problem.

Data month	Submission date for quality assurance (15 working days post month end)	Submission deadline (20 working days post month end)
April 2016	20/05/16	27/05/16
May 2016	21/06/16	28/06/16
June 2016	21/07/16	26/07/16
July 2016	19/08/16	26/08/16
August 2016	21/09/16	28/09/16
September 2016	21/10/16	28/10/16
October 2016	21/11/16	28/11/16
November 2016	21/12/16	30/12/16
December 2016	21/01/17	28/01/17
January 2017	22/02/17	01/03/17
February 2017	21/03/17	28/03/17
March 2017	21/04/17	28/04/17

7. RTDS Glossary

Term	Acronym	Definition
4D Adaptive Radiotherapy	4D ART	The ability to take account of the tumour shape in the three physical dimensions plus the fourth dimension of change with time. It can work well for tumours in areas of the body that may move during treatment, for example due to breathing.
Brachytherapy	BT	Is the delivery of radiation using sealed sources that are placed close to the site that is to be treated. Isotopes used in brachytherapy can be applied directly to the tumour by surface applicators inserted into body cavities and tubular organs via specially designed delivery systems (intracavitary and intraluminal therapy) or inserted directly into a tumour (interstitial radiotherapy).
Cancer Outcomes and Services Dataset	COSD	The COSD is the national standard for reporting cancer in the NHS in England. It replaced the previous National Cancer Dataset and includes the former Cancer Registration dataset and additional site-specific data items relevant to the different tumour types.
Chemoradiation		Chemoradiation is when chemotherapy and radiotherapy is given together. Chemotherapy may be given intravenously via a pump or orally during part of the radiotherapy course. Radiotherapy and chemotherapy treatments may also be alternated between each other.
Extensible markup language	XML	Extensible markup language (XML) is a set of rules for encoding documents in machine-readable form.
External Beam Radiotherapy	EBR	Radiation therapy given 'from a distance'. This includes most conventional radiotherapy given using linear accelerators. Includes electrically generated and radioisotope beams.

Image Guided Brachytherapy	IGBT	Image guided brachytherapy (IGBT) uses cross sectional image data to create 3D models. This allows clinicians to more precisely plan and deliver the radiation to the target while sparing surrounding health tissues.
Image Guided Radiotherapy	IGRT	IGRT is any imaging at pre-treatment and delivery, the result of which is acted upon, that improves or verifies the accuracy of radiotherapy. IGRT encompasses the whole range of imaging from simple to more complex imaging that allows direct visualization of the tumour and surrounding tissue. Using scanning during treatment enables verification of tumour position in relation to adjacent soft tissue organs
Intensity Modulated Radiotherapy	IMRT	IMRT is a high precision form of radiotherapy. It moulds (conforms) the shape and dose of the radiation precisely to the volume of tumour tissue that needs to be treated, reducing exposure to healthy surrounding tissue. Doses can also be varied to different areas at variable risk of harbouring tumour deposits.
Intra-operative radiotherapy	IORT	IORT applies therapeutic levels of radiation to a target area while the area is exposed during surgery.
Linear Accelerator	LA	A radiotherapy machine capable of generating high energy penetrating x-ray and electron beams for the delivery of radiotherapy.
Magnetic Imaging Resonance	MRI	MRI is a medical imaging technique, which makes use of the property of nuclear magnetic resonance (NMR) to image nuclei of atoms inside the body. This allows greater clarity of soft tissue structures.
Molecular Radiotherapy	MRT	MRT is the treatment of disease with radiopharmaceuticals. It delivers high radiation doses to a specific target and spares healthy organs from serious side-effects.
National Cancer Intelligence Network	NCIN	NCIN uses the information collected about cancer patients for analysis, publication and research. NCIN is one of a number of health intelligence networks operated by PHE.

National Cancer Registration Service	NCRS	The NCRS is the national cancer registration service for England collecting cancer data from all NHS providers of cancer care in England. It is part of PHE.
Oncology Management System	OMS	A database associated with a radiotherapy machine, which verifies treatment to be delivered against preset criteria and tolerances, and records the details of treatment delivered.
Patient Administration System	PAS	A database that stores demographic and clinical administrative details of patient attending a hospital.
Positron Emission Tomography	PET	PET scanning is a nuclear medicine imaging technique that produces a three-dimensional image or picture of functional processes in the body.
Proton Beam Radiotherapy		Proton Beam Radiotherapy uses a high-energy beam of protons rather than high energy X-rays to deliver a dose of radiotherapy. Proton beam treatment directs the radiation dose to precisely the depth where it is needed, with minimal damage to surrounding tissue. The treatment is therefore particularly suitable to complex childhood cancers.
Public Health England	PHE	Executive agency of the Department of Health.
Radiotherapy Data Set	RTDS	The data standard.
Stereotactic Body Radiotherapy/Stereotactic Ablative Radiotherapy	SBRT/SABR	SBRT or SABR refers to the precise irradiation of an image defined extra cranial lesion associated with the use of high radiation dose in a small number of fractions.
Stereotactic Radiosurgery	SRS	SRS refers to the precise irradiation of an image defined lesion, similar to SABR, but given as a single fraction. It has become the standard treatment for a number of cranial treatments.