

SCHEDULE 2 – THE SERVICES

Service Specifications

1. Service name	Paediatric Photon Radiotherapy Services Sub-heading: Paediatric Photon External Beam Radiotherapy Services
2. Service specification number	230601
3. Date published	13 th June 2023
4. Accountable Commissioner	NHS England – Cancer National Programme of Care (NPOC) NHS commissioning » Cancer (england.nhs.uk)

5.	Population and/or geography to be served
5.1	Population Covered
	This Service Specification (the ‘Specification’) relates to children, including adolescents, aged 0 to 15 years up to their 16 th birthday who are within the commissioning responsibility of NHS England and who require treatment with external beam radiotherapy (radical, palliative or total body irradiation (TBI)).
5.2	Minimum population size
	The Paediatric Photon Radiotherapy Service (the ‘Service’) must serve a population sufficient to support a critical mass of infrastructure, such that it can deliver care to children with complex needs and maintain sub-specialist experience, given the heterogeneity of cancer diagnoses in this patient population. To meet this requirement, the Service may form a partnership or networked arrangement with another Paediatric Photon Radiotherapy Service. Such arrangements must be supported by a formal, written agreement between both provider organisations, as well as the relevant commissioner.
6.	Service aims and outcomes
6.1	Service Aims
	<p>The aim of the Service is to:</p> <ul style="list-style-type: none"> • Improve the outcomes from radiotherapy by delivering best practice external beam radiotherapy treatments and holistic support in a culturally appropriate way • Support children’s cancer multi-disciplinary teams to enable children and adolescents with cancer to access high-quality care at the right time and in the right place • Improve the experience of care by providing age-appropriate services and enabling access to accommodation where families require it • Reduce variation in clinical practice through standardisation, audit and the rapid adoption of best practice • Participate in clinical trials and research relating to children’s cancer.

6.2	Outcomes			
	<u>NHS Outcomes Framework Domains & Indicators</u>			
	Domain 1	Preventing people from dying prematurely		✓
	Domain 2	Enhancing quality of life for people with long-term conditions		✓
	Domain 3	Helping people to recover from episodes of ill-health or following injury		✓
	Domain 4	Ensuring people have a positive experience of care		✓
	Domain 5	Treating and caring for people in safe environment and protecting them from avoidable harm		✓
	<u>Service defined outcomes/outputs</u>			
	No	Indicator	Data source	Domain
	107	30-day mortality rate for palliative paediatrics only	RTDS Dataset	1, 3
	108	90-day mortality rate (post radical radiotherapy – paediatrics only)	RTDS Dataset	1, 3
7.	Service description			
7.1	Service model			
	<p>The Provider must ensure that the Service operates in close alignment with a Children’s Cancer Principal Treatment Centre (PTC) and:</p> <ul style="list-style-type: none"> • Has agreed and documented network arrangements, protocols and associated clinical and referral pathways detailing that it can only be accessed by tertiary referral, either from an appropriate specialist paediatric oncology multidisciplinary team (MDT) and, where TBI is required, from a children’s haematopoietic stem cell transplantation MDT. • Implements new technologies that are recommended by the National Institute for Health and Care Excellence (NICE) and gives due regard to national clinical guidelines and guidance (Section 7.9). • Is open 24 hours a day, 365 days a year. • Has a named Paediatric Clinical Oncology Lead Clinician to provide effective clinical leadership. • Has access to a specialist paediatric anaesthetic service, including on-site paediatric resuscitation, life support teams immediately available. • Has access to experienced health play specialists that are able to cover the local service needs and undertake an initial assessment as to whether radiotherapy without anaesthesia is possible. • Has access to a designated transport services for critically ill service users if the paediatric photon radiotherapy provider is not co-located with paediatric HDU/PICU provision. • Has access to on-treatment review by appropriate paediatric medical and nursing teams during treatment, either at the same hospital where the 			

radiotherapy is being delivered or clear pathways to a closely located paediatric oncology principal treatment centre for children and adolescents who become unwell during radiotherapy.

- Operates in close liaison with paediatricians / paediatric oncologists providing supportive care or concomitant chemotherapy provided onsite, or locally, during radiotherapy.
- Has strong links with specialist cancer social workers (e.g. Young Lives vs Cancer) and other agencies, including charities, which can provide support.
- Provides access to psychology support for families.
- Has a paediatric oncology multi-professional support team that includes, allied health professionals (AHPs) such as psychology, physiotherapy, dietetics, occupational therapists and speech and language therapists.
- Holds regular meetings between the members of the paediatric radiotherapy team with the paediatric oncology team to communicate about the requirements of individual patients.
- Uses externally validated quality assurance systems to underpin departmental practice.

The Provider must ensure that the Service:

- Provides the full range of conventional radiotherapy treatments (radical, palliative and TBI).
- Delivers radiotherapy in a well-equipped department with appropriate specialist paediatric and adolescent support and that is fully involved in the relevant MDTs that are responsible for planning multi-modality treatments.
- Consent or other valid authority, including pregnancy status from the age of 12 years onwards, is obtained before any examination or investigation, provide treatment, or involve patients or volunteers in teaching or research.
- Provides information to children and their families, including consent, regarding radiotherapy treatment, pathways, associated care and late effects.
- Continuously monitor risk using a governance approach to ensure that radiotherapy treatment is safe and effective through quality assurance, clinical audit, quality improvement approaches specific to paediatric radiotherapy and involvement in the teaching and training of the wider MDT.
- Provides access to the best treatment technique for each patient, even if this requires a referral to another paediatric photon centre e.g. Proton Beam Therapy, Brachytherapy, Molecular RT, with use made of national advisory panels.
- Provides access to paediatric-specific intravenous contrast enhanced planning Computerised Tomography (CT) as well as CT and Magnetic Resonance Imaging (MRI) as part of treatment planning, including where general anaesthesia is required.
- Has arrangements in place to audit new processes and monitor patient outcomes.
- Utilises improvement approaches to implement best practice, including:
 - Access to linear accelerator(s) with the facility for rotational Intensity Modulated Radiotherapy (IMRT) and image guided radiotherapy (IGRT).
 - Use of on-treatment position volumetric imaging, as appropriate, balancing risks and benefits to patient set up and monitoring.

- Participation in the national audit of clinical and dosimetry practice as part of a Quality Improvement Toolkit, via the Radiotherapy Operational Delivery Networks.
- Continuous improvement through the implementation of proven and beneficial treatment techniques in line with NHS England published clinical commissioned policies.
- Offers access to paediatric radiotherapy clinical trials/ studies, having appropriate infrastructure in place and with support from the clinical trials team, to maximise recruitment into relevant paediatric studies.
- Provides comprehensive end of treatment summaries, both target and, where clinically relevant, organs at risk dosimetry data, to inform long term/survivorship follow up requirements.

Service Users must receive care delivered by Consultant paediatric clinical oncologists that:

- Are integrated as core members of the paediatric oncology MDTs and, where appropriate to an individual's clinical practice, also the children's haematopoietic stem cell transplantation MDT (for TBI), involving a wide range of specialists responsible for determining and delivering whole pathway care plans for all children with cancer.
- Attend in person or via videoconferencing the weekly PTC MDT meetings (both primary treatment and late effects) and undertake treatment planning, weekly on-treatment reviews and peer review of contours and treatment plans.
- Advise on case selection to ensure all treatment options are considered, including screening, eligibility and onward referral for: (i) proton beam therapy (PBT); (ii) intracranial stereotactic radiosurgery / radiotherapy (SRS/SRT); and (iii) brachytherapy. This also applies to remote PTC meetings, where applicable.
- Work with the national advisory panels, where appropriate, for consideration and comment on treatment options.
- Maintain professional development, for example by participating in relevant training activities hosted by an appropriate professional body or group/network.
- Participate in national and international groups that develop clinical trials of multimodality treatment for children's cancers.
- Attend an advanced communication skills course.

In order to meet the requirements listed above, the Service may form a partnership or networked arrangement with another commissioned Children's Radiotherapy Service. Where this is the case, the arrangements, including consultant job plans, must be set out within the documented network arrangements.

There may be occasions when a child requiring palliative radiotherapy as part of end of life care could receive the treatment at an adult radiotherapy service that is co-located with a PTC or paediatric oncology shared care unit (POSCU). This must be undertaken with an agreement in place between the Service, the relevant PTC and the adult radiotherapy service. The adult radiotherapy service delivering the radiotherapy must ensure that an age-appropriate process is in place to support each individual patient. In such circumstances, the full infrastructure of paediatric specialist

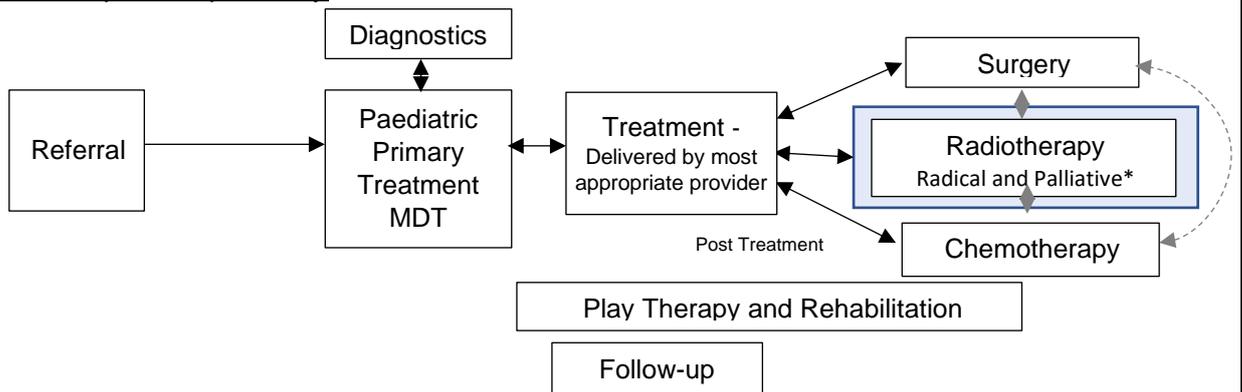
support, including health play specialists for young children and local paediatric medical care, should be in place.

This arrangement must only be used where the following criteria apply:

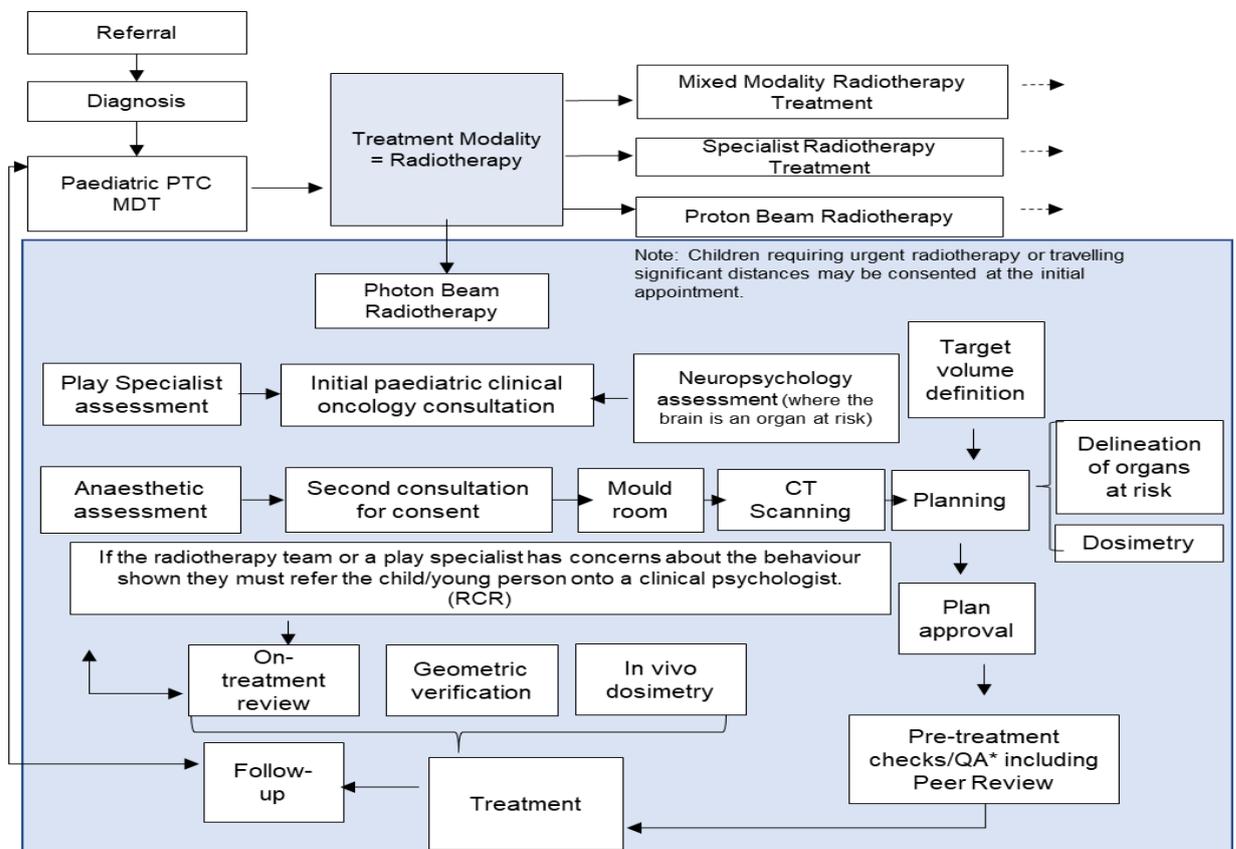
- General anaesthetic is not required.
- Palliative paediatric radiotherapy: a child requiring a single fraction or up to five treatments.
- Remote support from the Service to the on-site clinical oncology team, is available.

7.2 Pathways

Overall patient pathway



Specific patient pathway (Mixed modality = Proton and Photon, Specialist = SRS/SRT/MR/Brachy)



* Measurements must be in place to ensure that treatment delivery is accurate as intended. (RCR) (RCR)

Based on RCR Good Practice Guide for Paediatric Radiotherapy: August 2018.

7.3	Clinical Networks	
	<p>There is a requirement for providers of this Service to comply with the provisions of Schedule 2F (Clinical Networks) of the NHS Standard Contract 2022/23 The Particulars. This includes meeting the requirements of the relevant Specialised Services Clinical Network Specification.</p>	
	Clinical ODN	Link to ‘published’ network/ODN specification
	Children’s ODN	1746-principal-treatment-centres-service-specification
	Radiotherapy ODN	Operational-Delivery-Networks-External-Beam-Radiotherapy-Services-adults
7.4	Essential Staff Groups	
	<p>In addition to the workforce requirements described in the Adult Radiotherapy Service Specification, access to paediatric medical, specialist nursing and allied healthcare support is also required. The following disciplines must be part of the paediatric radiotherapy team in each Service delivery site (where a partnership exists), with time in their job plans to include an agreed list of responsibilities:</p> <ul style="list-style-type: none"> • More than one consultant clinical oncologist with appropriate subspecialisation in paediatric radiotherapy. Job plans must recognise a number of activities including: <ul style="list-style-type: none"> ○ Research, for example, acting as a principal investigator for relevant clinical trials; ○ Membership of relevant professional and peer groups, including attendance at relevant events and network meetings, such as that facilitated by the Children’s Cancer and Leukaemia Group; and ○ Programmed activities for paediatric radiotherapy, including peer review, sufficient to enable cross-cover arrangements. • A named consultant paediatric anaesthetist(s). • An advanced paediatric therapeutic radiographer, with specific training, that is integrated into the paediatric oncology MDT and takes the lead and responsibility for children and young people in the department. Individuals should be active members of relevant professional groups, including the Specialist Paediatric Radiotherapy Radiographers Interest Group (SPRRIG), and appropriate network/peer groups. • Health play specialists with specified time for the role in their job description. Adequate play specialist time must be available to cover the local service needs. • Experienced members of the medical physics team must be closely involved with all paediatric radiotherapy treatments, including clinical trials. • A medical physics expert should be involved with all treatments and as appropriate for consultation on optimisation and be able to give advice on dosimetry, quality assurance, equipment and in-vivo dosimetry. In addition, they must also contribute to the optimisation of the radiation protection of children as well as the training of practitioners and other staff. 	

	<ul style="list-style-type: none"> • A designated and appropriate key worker (e.g. CNS), in the run up to, during and after radiotherapy. • Relevant induction and extra training if required, must be provided to those taking on paediatric radiotherapy responsibilities for the first time. 																								
7.5	Essential equipment and/or facilities																								
	<p>The Provider should have access to:</p> <ul style="list-style-type: none"> • Age appropriate environment that is safe and well suited to children and adolescents to include the out-patient setting. • An identified recovery room, ideally within or adjacent to the radiotherapy department. It should be reserved exclusively for the use of children and adolescents whilst children are receiving radiotherapy under anaesthetic in the department. • Age appropriate waiting area for exclusive use whilst children and adolescents are waiting and receiving radiotherapy in the department. • Paediatric resuscitation and life support equipment. • Tissue viability services. 																								
7.6	Interdependent Service Components – Links with other NHS services																								
	<table border="1"> <thead> <tr> <th>Interdependent Paediatric Service</th> <th>Relevant Service Specification/Standards</th> <th>Proximity to service</th> </tr> </thead> <tbody> <tr> <td>Adult Radiotherapy Service</td> <td>Adult Radiotherapy Services 170091S External-Beam-Radiotherapy-Services-Delivered-as-Part-of-a-Radiotherapy-Network-Adults.pdf (england.nhs.uk)</td> <td>Co-located</td> </tr> <tr> <td>Children’s Cancer Principal Treatment Centre</td> <td>Children’s Cancer Network - Principal Treatment Centres - 1746-principal-treatment-centres-service-specification-.pdf (england.nhs.uk)</td> <td>Same town/city</td> </tr> <tr> <td>Bone Marrow Transplant</td> <td>B04/S/b - Haematopoietic Stem Cell Transplantation (Children). B england.nhs.uk</td> <td>Same town/city</td> </tr> <tr> <td>Anaesthesia</td> <td>Guidelines for the Provision of Paediatric Anaesthesia Services 2020. GPAS-2020-10-PAEDIATRICS.pdf (rcoa.ac.uk)</td> <td>Same town/city</td> </tr> <tr> <td>Intensive Care</td> <td>Paediatric Intensive Care. https://www.england.nhs.uk/commissioning/spec-services/npc-crg/group-e/e07/</td> <td>Same town/city</td> </tr> <tr> <td>Neurorehabilitation</td> <td>E09/S/d Paediatric Neurorehabilitation Paediatric-Neurorehabilitation.pdf (england.nhs.uk)</td> <td>Same town/city</td> </tr> <tr> <td>Endocrinology</td> <td>E03/S/e - Paediatric Medicine: Endocrinology & Diabetes. Paediatric Medicine: Endocrinology and Diabetes</td> <td>Same town/city</td> </tr> </tbody> </table>	Interdependent Paediatric Service	Relevant Service Specification/Standards	Proximity to service	Adult Radiotherapy Service	Adult Radiotherapy Services 170091S External-Beam-Radiotherapy-Services-Delivered-as-Part-of-a-Radiotherapy-Network-Adults.pdf (england.nhs.uk)	Co-located	Children’s Cancer Principal Treatment Centre	Children’s Cancer Network - Principal Treatment Centres - 1746-principal-treatment-centres-service-specification-.pdf (england.nhs.uk)	Same town/city	Bone Marrow Transplant	B04/S/b - Haematopoietic Stem Cell Transplantation (Children). B england.nhs.uk	Same town/city	Anaesthesia	Guidelines for the Provision of Paediatric Anaesthesia Services 2020. GPAS-2020-10-PAEDIATRICS.pdf (rcoa.ac.uk)	Same town/city	Intensive Care	Paediatric Intensive Care. https://www.england.nhs.uk/commissioning/spec-services/npc-crg/group-e/e07/	Same town/city	Neurorehabilitation	E09/S/d Paediatric Neurorehabilitation Paediatric-Neurorehabilitation.pdf (england.nhs.uk)	Same town/city	Endocrinology	E03/S/e - Paediatric Medicine: Endocrinology & Diabetes. Paediatric Medicine: Endocrinology and Diabetes	Same town/city
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	Neurosurgery	E09/S/b Service Paediatric Neurosurgery Services Paediatric neurosciences: Neurosurgery	Same town/city
	Children's Surgery	E02/S/a Paediatric surgery (and surgical pathology, anaesthesia and pain)	Same town/city
	Ophthalmology	D12/S/b - Specialised Ophthalmology (Paediatrics) B (england.nhs.uk)	Same town/city
	Proton Beam Therapy	170012/S - Proton Beam Therapy Service (Adults and Children) - proton-beam-therapy-service.pdf (england.nhs.uk)	Not applicable
	Stereotactic Radiosurgery and Stereotactic Radiotherapy (Intracranial)	D05/S/a - Stereotactic Radiosurgery and Stereotactic Radiotherapy (Intracranial) (All Ages) - SRS-SRT-Intracranial.pdf (england.nhs.uk)	Not applicable
	Brachytherapy and Molecular Radiotherapy	B01/S/b - For Brachytherapy and Molecular Radiotherapy (All Ages) – B (england.nhs.uk)	Not applicable
7.7	Additional requirements		
	None.		
7.8	Commissioned providers		
	The list of commissioned providers for the services covered by this specification can be found here . [ADD LINK TO THE COMMISSIONED PROVIDER LIST ONCE AVAILABLE]		
7.9	Links to other key documents		
	<p>Please refer to the Prescribed Specialised Services Manual for information on how the services covered by this specification are commissioned and contracted for.</p> <p>Please refer to the Identification Rules tool for information on how the activity associated with the service is identified and paid for.</p> <p>Please refer to the relevant Clinical Reference Group webpages for NHS England Commissioning Policies which define access to a service for a particular group of service users. . The specific clinical policies that relate to the services covered by the Specification include:</p> <ul style="list-style-type: none"> • Clinical Commissioning Policy: Proton beam therapy for children, teenagers and young adults in the treatment of malignant and non-malignant tumours. • Clinical Commissioning Policy: Stereotactic radiosurgery (SRS) and stereotactic radiotherapy (SRT) to the surgical cavity following resection of cerebral metastases (All ages). <p>Relevant NICE Guidance (exc. Technology Appraisals)</p> <ol style="list-style-type: none"> 1. NICE: Guidance on Cancer Services - Improving Outcomes in Children and Young People with Cancer The Manual; August 2005 Child & young people cancer CSG REP (nice.org.uk) 		

	<p>Relevant National Clinical Guidance</p> <ol style="list-style-type: none">2. Royal College of Radiologists (RCR) Good Practice Guide for Paediatric Radiotherapy; August 2018 Good practice guide for paediatric radiotherapy, second edition (rcr.ac.uk)3. Royal College of Radiologists (RCR) Dose and Fractionation Guidelines, March 2019, Radiotherapy dose fractionation, third edition The Royal College of Radiologists (rcr.ac.uk)
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