



## Editorial

## Good Practice Guide for Paediatric Radiotherapy

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It is a time of change for paediatric radiotherapy. Two National Health Service (NHS) national proton beam radiotherapy centres are under development in England: [AQ1] the first opened in Manchester in 2018 and the second will open in London in 2020. The indications for proton treatment are increasing and ultimately 50% or more of all children receiving radiotherapy will probably receive it [1]. There will be a corresponding decline in the number of children receiving conventional photon radiotherapy, meaning that some smaller centres may be unable to continue to maintain the specialised staffing required to deliver radiotherapy to children. NHS England is presently giving consideration to how many paediatric radiotherapy centres will be required in the future. The answer is not yet clear, but it will be fewer than at present. It will be important to consider carefully how referrals between paediatric radiotherapy centres are best managed following these changes in service provision, in order to ensure timely treatment for children and the best possible patient and family experience.

In addition, after decades in which paediatric oncology trials have focussed on systemic therapy, uncertainties in radiotherapy for childhood cancers are increasingly becoming the subject of randomised questions. One major example is the forthcoming European Paediatric Soft Tissue Sarcoma Group's Frontline and Relapsed Rhabdomyosarcoma trial, which will have three radiotherapy randomisations.

It is against this background that the publication of the second edition of the *Good practice guide for paediatric radiotherapy* [2], originally produced in 2012, is timely. It has been compiled by a working group including all relevant professional groups and lay members, representing the Society and College of Radiographers, the Institute of Physics and Engineering in Medicine and the Children's

Cancer and Leukaemia Group, in addition to the Royal College of Radiologists. Peer review of the recommendations was provided by those attending a meeting on paediatric radiotherapy held at the Royal College of Radiologists in February 2018, which included representatives from all UK paediatric radiotherapy centres and a range of other stakeholders. The second edition of the guide is a full revision and has updated advice and recommendations in line with contemporary radiotherapy best practice and governance.

The underlying principles, as expressed in the 10 key themes, remain, however, unchanged (see [Figure 1](#)). The principal aim of any radiotherapy service must be to provide the highest quality outcomes for all patients, and this is no different in paediatric radiotherapy. These include maximising the likelihood of local control and cure, while minimising the late effects that can affect quality of life for survivors. To do this we recommend that the best treatment technique should be offered for each child, even if it is not locally available and referral to another centre is required. Examples here include stereotactic treatments, brachytherapy and, of course, proton beam therapy. In paediatric oncology practice, enrolment into clinical trials is the norm, and radiotherapy for children should be within clinical trials where appropriate, or according to agreed standard treatment protocols where trial entry is not possible.

Safety is, of course, a paramount consideration in every clinical service. The guide requires paediatric radiotherapy services to be part of an externally validated quality assurance process. Support from experienced anaesthetic and paediatric resuscitation teams needs to be available, alongside paediatric medical and nursing care for children who may well have a range of other problems needing attention. Interdisciplinary communication, mentioned separately below, is, of course, also an essential component of safe practice.

A good patient experience requires experienced staff in all disciplines, including a designated key worker, with excellent interpersonal and communication skills, who are

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**Fig 1.** The 10 key themes of the *Good practice guide for paediatric radiotherapy*. Redrawn, with permission, from [2].

comfortable managing children and young people and their families in a developmentally and age-appropriate way. Many different professional groups are responsible collectively for ensuring a pleasant time for families and children receiving radiotherapy: dedicated play specialists and committed paediatric therapy radiographers are as important as the clinical oncologists in ensuring this.

Clear and accurate information needs to be made available to patients of different ages and their families in a variety of formats. This helps to reduce misunderstandings and the stress of an unfamiliar treatment, which is often delivered in a different hospital from the one patients are most used to. Information may need to be given repeatedly, or incrementally delivered over time, depending on an individual family's circumstances and ability to absorb new information. Interpreters will be required when English is not well understood.

Communication between different healthcare professions is as important as clear communication with patients and their families. This includes regular discussion within the multiprofessional team planning and delivering radiotherapy, as well as involvement of clinical oncologists and therapy radiographers as core members of the paediatric oncology multidisciplinary team, to ensure that each patient progresses smoothly through the paediatric radiotherapy pathway in a timely manner.

The environment within the radiotherapy department needs to be made child- and family-friendly. The entertainments and facilities both have to be developmentally and age-appropriate for the range of children seen from toddlers to teenagers. There should be separate waiting areas with toys and activities suited to children of different ages, away from the main adult areas of the department.

The radiotherapy equipment and techniques need to be up to date and appropriate, with a focus on quality,

including peer review of target volume delineation and prospective quality assurance within clinical trials. Excellent immobilisation and image guidance will increase the accuracy of treatment and reduce the need for wide planning target volume margins, thereby reducing normal tissue exposure.

Achieving these high standards cannot be done without adequate numbers of highly trained and experienced staff in all professions involved. Paediatric radiotherapy cannot be hurried, and all concerned must have adequate time specified in their job plans to do what is required. The department must have the capacity to cope with a varying demand for paediatric radiotherapy, without delays in initiating or completing treatment on time.

Education and training are of critical importance, as few trainees will be able to develop sufficient expertise in this area to take on consultant roles without additional experience and mentorship. A range of appropriate continuing professional development activities, including national and international peer-group networking, are required to develop and maintain the quality of paediatric radiotherapy. Individuals should be able to share the knowledge gained from meetings and conferences with others in their departments.

The last, but by no means least, important key theme is research and development. Clinical oncologists should not only be treating patients within clinical trials, but, ideally, they should be active with colleagues at home and abroad in developing them. What we do now we know is not perfect, and we should always be seeking to improve outcomes through the critical evaluation of new approaches.

The authors of the *Good practice guide for paediatric radiotherapy* and the parent bodies hope that those practicing in this field, and others with managerial responsibility for service provision, will find its

recommendations useful. Some principles are so ingrained in good medical practice generally, that hopefully they are universally followed, and maybe they did not need reiterating. Other aspects of this guidance may be less commonly encountered and more aspirational. It is possible that those who find their departments lacking in some respect will be able to use this document to support business cases for additional resources. An audit template will be made available on the Royal College of Radiologists website to allow departments or individuals to rate their services against the benchmark of the guide.

### **Conflict of interest**

The author declares that there is no conflict of interest.

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### **References**

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