

# **Proton beam therapy clinical research discussion meeting**

**Sadler's Wells Theatre, 2 June 2014**

## **Meeting attendees**

### **Meeting Chairs**

Adrian Crellin (National Clinical Lead for Proton Beam Therapy and NCRN National Specialty Lead - Radiotherapy Research)

Neil Burnet (NCRI Clinical and Translational Radiotherapy Research Working Group - CTRad)

### **Manchester:**

Tim Illidge (clinical oncology)

Ranald Mackay (physics)

Ed Smith (clinical oncology)

Gillian Whitfield (clinical oncology)

### **Oxford:**

Maria Hawkins (clinical oncology)

Bleddyn Jones (radiation oncology/biology)

Tim Maughan (clinical oncology)

Gillies McKenna (radiation oncology/biology)

Carolyn Taylor (clinical oncology)

Claire Timlin (physics)

### **Birmingham:**

Paul Sanghera (clinical oncology)

Jason Cashmore (physics)

### **UCL/UCLH:**

Richard Amos (physics)

Derek D'Souza (physics)

Ruheena Mendes (clinical oncology)

Syed Ali Moinuddin (radiography)

Gary Royle (physics)

Julia Solano (service management)

### **Other centres/organisations:**

Elizabeth Bisdee (DH; programme manager)

Helen Bulbeck (CTRad; lay representative)

Iain Foulkes (Cancer Research UK)

Andrzej Kacperek (Clatterbridge Cyclotron Eye Service)

Melanie Kay (NHS England; commissioning)

Michelle Kwok-Williams (Leeds; clinical oncology)

Jenni Macdougall (NCRI Secretariat)

Uwe Oelfke (Institute of Cancer Research; physics)

Alf Oliver (CTRad; lay representative)

Roger Taylor (Swansea)

## Executive summary

The forthcoming introduction of proton beam therapy (PBT) is an important national investment for the UK, and we aspire to become world leaders in PBT. As well as planning the clinical service, it will be essential to have a well coordinated research agenda that can make the very best use of this new technology for patients. This meeting brought together key stakeholders within the research community, to begin a process of discussion on how we can shape and deliver a coordinated national agenda around PBT research. There was considerable enthusiasm amongst the delegates to develop a collaborative approach to research questions in PBT.

Procurement is under way for NHS facilities at the Christie and University College London Hospitals (UCLH), with target of first patient treated in 2018. Oxford is also seeking funding to develop a PBT facility with a specific research rather than clinical service delivery focus. There are some financial and technical milestones to be completed prior to the start of construction of the facilities, but plans are progressing steadily.

Some underpinning requirements were identified for research to happen. Outcome measures and standardised minimum datasets need to be pre-planned and standardised across the service. Good image guidance needs to be integrated from the outset. A clear process to support excess treatment costs of PBT is also needed, as well as research costs, and a process to ensure appropriate referrals.

It was felt that research in PBT should not be about equivalence studies between photons and protons – the priority is to focus on what can be achieved with protons that cannot be done with other types of radiotherapy. It sits alongside, not in conflict with, studies to optimise outcomes of photon radiotherapy. The list of clinical indications and resulting case mix will be a strong driver of what research can be done.

Oxford shared a proposed approach to tackling specific PBT clinical questions. There is a lot of preparatory work needed before a clinical trial can be started (evidence gathering and literature reviews; planning studies) and after trial results are reported (health economics). It was agreed that it is essential that all stakeholders understand the sequence of research steps that is likely to be required, and that funding channels are identified to support all stages of work.

Particular topics that were discussed in detail were hypofractionation and comparative planning studies. For hypofractionation, it was considered important to learn as much as we can about this with photons in the run-up to PBT introduction; the number of fractions has a clear impact on cost and capacity so any additional information that can guide this would be helpful. In the case of PBT planning, this was seen as a vital area to work on, and one where collaboration (nationally or internationally) would be of real benefit. The possibility of creating a bank of comparative plans was raised.

Cancer Research UK (CRUK) presented a summary of their new strategy and proposed new funding streams. They were clear that radiotherapy is seen as both a success story over the past 5 years and an area still ripe for growth. CRUK is very open to ideas being brought to them about how to drive PBT research, whether as working groups or in other ways, and encouraged the community to approach them.

It was agreed that a consortium approach is needed to take forward the national PBT research agenda, and that while this would be highly multidisciplinary, many of the first steps probably fall in the physics domain. CTRad will initiate the setup process, but it will need those at the meeting to step into lead roles and coordinate bids for funding later in the year. To find out about next steps or get involved, you can contact the CTRad Programme Manager for further details ([carolyn.chan@ncri.org.uk](mailto:carolyn.chan@ncri.org.uk)).