



Clinical
Oncology

The Royal College of Radiologists

**The Royal College of Radiologists
RCR-Cyclotron Trust Visiting Fellowships 2015/16 (Clinical Oncology)**

POST-VISIT REPORT

Date for Return: This report must be completed and emailed to the RCR within months of the end of your visit

Please complete all sections of this form.

1. Name of Visiting Fellow	Dr Daniel John Saunders	
2. Name of joint Visiting Fellow (if applicable)	Dr Ekaterina Gnutzmann	
3. Institution(s) of Visiting Fellow(s)	Nottingham University Hospitals NHS Trust	
4. Name of Host(s)	Professor R Lustig	
5. Institution(s) of host(s)	Perelman School of Medicine, Hospital of University of Pennsylvania	
6. Expenses claimed	£	
7. Visit Dates (ACTUAL)	a. Start Date 19/9/16	b. End Date 23/9/16
8. 2 nd visit dates (if applicable)	a. Start date	b. End Date
9. Aims of the visit	<ul style="list-style-type: none">• To obtain a better understanding of the benefits and limitations of proton beam therapy compared with conventional photon, radiotherapy; in particular image guided IMRT.• To gain a detailed understanding and experience of proton beam planning and dosimetry for a range for tumours but particularly for paediatric, CNS, sarcomas• To inform the complex risk benefit analysis of proton beam therapy versus conventional photon therapy.• To understand the practicalities and logistics of image guided proton therapy delivery for paediatrics in order to be able to explain the pathway and processes to the children and families that I refer• To see an established proton beam facility for myself in order to better be able to explain the experience to patients and their parents	
10. Activities undertaken		

Introductory sessions including the history of the centres, current working arrangements, liaison with the Childrens' Hospital of Philadelphia.

Time spent with CHOP nursing and anaesthetic team learning about how they co-ordinate treatment between the two institutions (similar challenges which we have in the East Midlands).

Time spent on one of the gantries with therapists observing treatment including craniospinal radiotherapy, other paediatric treatments and some adult treatment indications. Particularly understanding the capabilities of their image guidance, the patient pathway, positioning, etc...

Radiotherapy review clinics with Attending Physicians (consultants), residents (registrars) and visiting medical students. Patients reviewed thoroughly but much mutual teaching and learning delivered at every opportunity. For every patient we saw, I was able to review the history and radiotherapy treatment plan in advance with plenty of time for discussion regarding the nuances in each plan.

I was able to visit (and participate in) the CHOP Tumour Boards (MDTs) for paediatric solid tumour and CNS tumours. Very similar discussions and challenges to ours in the UK. My contributions were welcomed and I also noted the amount of teaching delivered to residents during the tumour boards.

Chart rounds. Each patient who is about to start radiotherapy (PBT or photons) has their indications and RT plan peer reviewed before starting treatment, even for palliative indications. Paediatric, adult CNS, Urology Chart Rounds all participated in.

New patients consultants undertaking in an outpatient setting but also a number of new patients reviewed as inpatients at CHOP with new diagnoses of brain tumours.

A good amount of time was spent with dosimetrists learning about the intricacies of PBT planning, many of the pitfalls, and approaches adopted to overcome them. Similar but more detailed conversations with some of the more experienced PBT physicists. Concentration of paediatric cases but also adult CNS, sarcoma, breast cancer, prostate cancer. Particular time learning about the Penn Medicine approach to craniospinal radiotherapy. Challenges include artefact from any metalwork, range uncertainty (and how to overcome this), how to approach beam matching.

11. Benefits of the visit (short term)

I have a much better understanding of the practicalities of Proton Beam Therapy as experienced by patients and their families which will enable me to better inform UK patients who I refer to the Overseas PBT programme.

The experience of the Penn Medicine peer-review process for each radiotherapy plan prior to treatment has made me consider improving our own departmental quality assurance process.

I have a much clearer understanding of the potential benefits of Proton Beam Therapy when compared to conventional radiotherapy, particularly some of the uncertainties involved in PBT, the differences between Doubles Scattering and Pencil Beam Scanning, their particular advantages and disadvantages. In addition I was able to learn about situations when it is advantageous to use a combination of Proton Beam Therapy and advanced IMRT Photon Therapy to optimise therapy further.

I found it very assuring to participate in a number of Tumour Boards, both at HUP and also neighbouring Childrens' Hospital of Phildadelphia, to learn that radiation oncologists and paediatric oncologists faces similar challenges in the US, similar diagnostic and therapeutic dilemmas, but just like the UK, the team is working well together to try to obtain the optimal outcome for each individual child.

12. Envisaged benefits of the visit (longer term)

I will be able to make better-informed referrals to the UK Overseas PBT programme.

As the two UK PBT facilities become operational, it is likely that there will be increased demand for treatment with PBT. As a major referrer of paediatric cases from the East Midlands I will be better able to give advice as about the potential benefits of PBT in individual situations so as to better inform patients and their families and subsequently improve referral behaviours.

We are arranging a post-visit educational programme for centres in the East Midlands which will better inform clinicians from across the region.

As patients return to Nottingham having received PBT, I will be better able to assess and manage their acute and long term toxicities.

I made some very good clinical connections with colleagues in the US which will be useful in many years to come.

13. Please outline any problems you encountered before, during or after your visit

Penn Medicine requested a fee for our on-site visit which was not envisaged at the time of the original application. We are grateful that the cost of this fee has been met by the generous sponsorship from Nottingham Hospitals Charity.

14. When do you intend to submit an article for the RCR Newsletter?

15. Any additional comments

The two most useful activities were spending time with practising clinicians and learning about how they make their treatment choices and secondly spending time with dosimetrists and physicists to better understand the many nuances of PBT planning.

I felt it was particularly useful to spend time in a US University Teaching Hospital environment which has a strong academic tradition as well as access to both PBT and Photons in the same centre and which has an excellent understanding of the advantages and disadvantages of both treatment techniques.

Signed:



Date: 14/10/2016

Report approved by:

Professional Support and Standards Board

Date

3rd February 2017

**Please return this form to Miss Ritu Verma, Professional Standards Administrator at:
ritu_verma@rcr.ac.uk**