



**The Royal College of Radiologists
RCR-Cyclotron Trust Visiting Fellowships 2013/14 (Clinical Oncology)**

POST-VISIT REPORT

Date for Return: This report must be completed and emailed to the RCR within 2 months of the end of your visit

Please complete all sections of this form.

1. Name of Visiting Fellow	Carmel Anandadas	
2. Name of joint Visiting Fellow (if applicable)	N/A	
3. Institution(s) of Visiting Fellow(s)	The Christie NHS Foundation Trust	
4. Name of Host(s)	Dr Jason Efstathiou	
5. Institution(s) of host(s)	Massachusetts General Hospital	
6. Expenses claimed	£2000	
7. Visit Dates (ACTUAL)	a. Start Date 4/8/14	b. End Date 15/8/14
8. 2nd visit dates (if applicable)	a. Start date	b. End Date
9. Aims of the visit	<ul style="list-style-type: none">• To gain knowledge and clinical experience in the use of proton beam therapy in day to day practice.• Understand the indications and patient selection for proton treatment.• Gain knowledge of the principles of proton treatment planning, dosimetry and verification.• Experience patient follow up after proton beam therapy and compare this to current 3D conformal and IMRT photon treatment.	
10. Activities undertaken		

<p>Attendance at multidisciplinary clinics and tumour boards across different disease sites including urology, breast, CNS, paediatrics and retreatment scenarios for patients undergoing proton beam therapy. Experienced new patient assessment and the consent process. Observed patients being recruited into clinical trials comparing protons vs IMRT/CRT for urological and breast cancer.</p> <p>Attendance at proton rounds to assess selection of new patients for proton beam therapy.</p> <p>Attended on treatment and follow up review clinics for patients undergoing proton therapy and observed toxicity evaluation and how it differs to photon therapy.</p> <p>Experience the practicalities of patient set up and verification processes for patients undergoing proton beam therapy. (e.g. 2D imaging, vision RT). Observation of proton beam treatment with fixed beam, double scatter and pencil beam scanning techniques.</p> <p>Given first hand experience of planning patients using different software systems for both double scatter and scanning beam/pencil beam proton treatment.</p> <p>Spent time with dosimetrists and planners observing the considerations that go into developing a proton beam therapy plan. Reviewed and assessed treatment plans with clinicians. Attendance at chart rounds to peer review radiotherapy treatment plans for patients undergoing proton beam therapy. Contributed to discussions about how things are done in the UK.</p> <p>Spent time with engineers and proton physicists looking at maintenance and calibration techniques for existing proton machine as well as their considerations when commissioning a new single gantry proton treatment machine.</p> <p>Attendance at tutorials on proton treatment given by Attending radiation oncologists in Urological, Paediatric and Breast cancer, head of dosimetry, proton physicists and treatment radiographers. Attended a formal lecture on the history of proton therapy. Also attendance at daily residence teaching and weekly grand rounds.</p>
<p>11. Benefits of the visit (short term)</p> <p>Deeper understanding of the physics and practical clinical uses of proton therapy.</p> <p>Improved knowledge of the dosimetric advantages that proton therapy offers over IMRT in carefully selected radiotherapy plans.</p> <p>The limitations and challenges of proton therapy planning and delivery and techniques developed to overcome this. Development and assessment of robustness of proton therapy.</p> <p>Better understanding of the optimum indications for proton therapy and thereby prioritising patient selection within the setting of resource constraints.</p> <p>Invaluable experience of a differing healthcare system in comparison to the NHS.</p>
<p>12. Envisaged benefits of the visit (longer term)</p> <p>Clinically relevant experience for my new consultant post at a future proton centre as it transitions to a UK service.</p> <p>Insight into some of the relevant issues that need addressing when developing a proton centre. Evaluating different treatment delivery systems (e.g. PBS vs double scatter beam), feasibility of treatment delivery (e.g. spot size of PBS vs time to delivery) and robust verification processes.</p> <p>Invaluable professional links with MGH, which allows for sharing proton experience and best practice as well as potential future proton research collaboration.</p> <p>Information and experience I am able to share with patients, carers and colleagues after experiencing a proton beam therapy service first hand.</p>
<p>13. Please outline any problems you encountered before, during or after your visit</p> <p>None.</p>
<p>14. When do you intend to submit an article for the RCR Newsletter?</p> <p>2014</p>
<p>15. Any additional comments</p>

This fellowship was an experience of a lifetime for me and enabled me not only to gain a greater understanding of proton therapy in practice but also reflect on my own practice as a doctor and see the true value of the NHS we work in. It has led me to consider other treatment approaches and alternative innovative concepts that I would consider adapting to my practice going forward in the UK. I appreciate this rewarding experience and would highly recommend it as a valuable training opportunity.

Signed: Carmel Anandadas

Date: 14/9/14

Report approved by: CO PSSB

Date 18/09/2014