

The Royal College of Radiologists
RCR-Cyclotron Trust Visiting Fellowships 2019/20 (Clinical Oncology)

POST-VISIT REPORT

PLEASE NOTE: This report must be completed and emailed to the RCR within 2 months of the end of your visit.

1. Name of Visiting Fellow	Harshani Green	
2. Name of joint Visiting Fellow (if applicable)	Orla Byrne	
3. Institution(s) of Visiting Fellow(s)	The Royal Marsden NHS Foundation Trust	
4. Name of Host(s)	Valentina Gasperi	
5. Institution(s) of host(s)	Centro Nazionale di Adroterapia Oncologica (CNAO), Pavia, Italy	
6. Expenses claimed	£2458.81 (includes accommodation for 2)	
7. Visit Dates (ACTUAL)	a. Start Date 10/4/23	b. End Date 22/4/23
8. 2nd visit dates (if applicable)	a. Start date	b. End Date
9. Aims of the visit	<ul style="list-style-type: none"> ▪ To learn about clinical indications for hadrontherapy (particle therapy) - carbon ion and proton beam therapy) ▪ To understand the potential dosimetric benefits of carbon ion therapy over proton therapy and photon radiotherapy ▪ To understand the potential dosimetric benefits of proton beam therapy over carbon ion therapy and photon radiotherapy ▪ To observe CT simulation and common set up practices ▪ To observe clinical consultations with new patients and those attending for CT simulation, planning MRI and diagnostic CT/MRI ▪ To observe contouring practices and learn about local clinical protocols ▪ To attend multidisciplinary team meetings and observe collaborative practice ▪ To observe and undertake basic carbon ion planning with CNAO physicists ▪ To visit treatment rooms and observe treatment with carbon ion therapy 	

10. Activities undertaken

- Attended presentation on the evolution of CNAO, bioengineering at CNAO and radiobiology of high-LET treatments
- Observation of CT simulation; including cervical chordoma, salivary gland tumours, prostate
- Observation of clinical consultations with patients
- Observation of contouring sessions
- Attended multidisciplinary team meetings including head and neck MDT, tumour board meetings
- Observation of basic carbon ion planning with CNAO physicists
- Carried out carbon-ion planning under physicist supervision for my own MD project in primary renal cell carcinoma (RayStation)
- Observation of carbon ion treatment and imaging verification system
- Networked with clinicians and physicists at CNAO, with the aim to form longer-term connections for future collaborative work

11. Benefits of the visit (short term)

- I now understand better the respective potential advantages of carbon ion therapy and proton therapy. Equally, I understand their limitations and as such where there is no clear advantage to particle therapy or where there are additional challenges in comparison to photon radiotherapy
- This has helped me with my own research MD in renal cell carcinoma where I have planned some anonymised DICOM images from my own institution with information governance approval.

12a Envisaged benefits of the visit longer term (your own practice)

- This will help me as a consultant to understand when to consider treatment with proton beam therapy within the UK
- I hope to be able to consider the use of a chest and abdominal mask where it may be of benefit in the future
- I hope that I will be able to use transferable skills and knowledge to be able to contribute to future research in order to establish the evidence base for new indications for particle therapy

12b. Envisaged benefits to the wider group (dissemination to others in your centre/clinical oncology community/multiprofessional team)

- I aim to transfer what I have learnt about particle therapy in terms of indications, clinical protocols, pre-treatment, contouring, physics planning and treatment verification to my multidisciplinary colleagues
- This visit has highlighted when travel for high-LET treatment i.e. carbon ion therapy may be of particular benefit and I hope to be able to disseminate this knowledge to my colleagues and the wider community in the UK

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

None

14. Any additional comments

- Inside CNAO, to walk around the building you need to be accompanied by a member of staff on the whole however I understand this will be changed soon. You will need to check in and out each day and must leave a form of ID, e.g. NHS ID badge, with security (this is returned as you leave each day).
- Lunch can be provided if required in the neighbouring hospital San Matteo canteen.
- Both doctors and physicists wear a white coat in clinical areas; scrubs are available if needed.
- Maintenance of the synchrotron is once a month at the weekend so if you would like to see this, try to schedule your dates around this.

15. Do you have any 'top tips' that you would like to share with prospective visiting fellows?

- Pavia is a beautiful town, 30 minutes south of Milan. I would advise future visiting fellows to stay in the city centre where there are supermarkets, cafes, restaurants and parks nearby. It is about a 30 minute walk to CNAO from the city centre with regular buses.
- Please factor into the estimated budget that there is a cost to attend CNAO (for us this was 250 Euros per person per week)
- Consultations are in Italian. The team are excellent at teaching in English, but I would encourage being proactive with questions following observations to gain the most out of your experience.
- A timetable will be created for visiting fellows, however if there is an area of particular interest, I would advise to highlight this to them and they will schedule related activities wherever possible

Signed:  Dr Harshani Green Date: 25/04/23

Report approved by: Clinical Oncology Professional Support and Standards Board

Date: 25/5/23