Incorporating the Cochrane Shanks Jalil Travelling Fellowship and the Sir Howard Middlemiss Travelling Fellowship 2017

The International Travelling Fellowship has allowed me to learn about Pakistan as well as experience delivering Radiotherapy in a low/middle-income country where resource management is challenging and access to healthcare is limited.

Following the award of International Travelling Fellowship in May 2017, we began the organisation of the program. Initially we planned to travel to Lahore in March 2018, however the visit was put back by SKMCH&RC due to a joint commission international (JCI) visit [https://www.jointcommissioninternational.org].

During the 12 months prior to the visit we held meetings on two occasions, with the International Committee at the Royal College of Radiologists to update on our progress. We had ongoing email contact with our host centre to ensure we tailored our visit to their needs but to keep to scholarships aims/objectives and wrote 5 days of lectures and set up a FCR part 2 mock exam. We designed a course certificate with help from Graphic design team at Queen Elizabeth Hospital Birmingham. We set up an online application for the course [https://www.hospitalcharity.org/shop/product/final-frcr-part-b-clinical-oncology-course-and-mock-exam]. We also organised Continued professional development (CPD) points.

Cultural Aspects

We had planned to travel to our host centre in March 2018, however the visit was delayed by our hosts. This caused us to revise our plans. Obtaining a visa for travel was challenging in requiring two visits in person to the Pakistani embassy. Members of my family were apprehensive about my travels due to media reports of devastation and troubles in neighbouring Afghanistan, however I found Pakistan to be a gem. My first impressions on the flight to Lahore was a country of warm, kind and patriotic people. I sat beside two older Pakistani gentlemen who couldn’t do enough to make sure I was comfortable and were proudly telling me about their country. This sense of national pride was felt most strongly when I visited the “Wagah” (Pakistan - India) border. At sunrise and sunset there is a flag raising/ lowering ceremony on Pakistani and Indian sides of the Wagah border which is watched by crowds of people. Young families on holiday and groups of young men and all in-between gathered to see the ceremony, see Figure 1.
I have made friends and was lucky enough to see some beautiful historic sites such as the 15th century Lahore Fort and Badshahi Mosque, see Figures 2-3.

Figure 1 – Wagah border ceremony

Figure 2 - View from Lahore Fort
Figure 3 – Badshahi Mosque - a Mughal era mosque
Host centre

Shaukat Khanum Memorial Hospital and Research centre (SKMH&RC) is a charitable organisation established under the Societies Registration Act XXI of 1860 of Pakistan by cricketer Imran Khan. After his own mother died from cancer, his vision was to establish a centre where cancer can be diagnosed and treated. Pakistan has government and private hospitals. SKMH&RC is the first specialist Cancer Tertiary centre in Pakistan in a private sector but is largely charitable. Due to charitable donations SKMH is able to support chemotherapy and radiotherapy free for over 70% of the patients.

It has 195 inpatient beds, including ITU and surgical facilities. Having visited the wards, they are well equipped, for instance, when I visited the children’s ward it has play areas, play therapists and relevant Allied Health Professionals.

The security is tight, with all bags being searched on entry into the hospital and into intensive care and children’s care facilities.

The aim of our trip was to give series of lectures in the radiotherapy department for radiographers, physics and physicians to help develop Volumetric modulated Arc Radiotherapy (VMAT) and Stereotactic ablative radiotherapy (SABR). SKMH has machines with VMAT capabilities, and they are soon to have 4DCT scanner therefore the institute aims to SABR techniques soon.

The second aim of our visit was to deliver a FRCR part 2 teaching in the form of a revision course. “You give a poor man a fish and you feed him for a day. You teach him to fish and you give him an occupation that will feed him for a lifetime.” (Chinese proverb.)

During the course of discussion with SKMH, we improvised this as a formal teaching course incorporating a Mock exam as well with the aim of nominal fee money to be given to the charities. Unfortunately the pickup rate was low due to which we had to waive off the fee to encourage attendance. The course was opened to be attended by any interested clinical oncology trainees across Pakistan.
Radiotherapy training in Pakistan

Discussions with local Clinical Oncology trainees in Pakistan outlined to their training pathway. Following medical school graduation, training is generally in one hospital. They do a house officer year followed by 4 years of Oncology residency then 2 years of site specialisation as a Fellow, as shown in Figure 5. There are local Radiotherapy Fellowship of the College of Physicians and Surgeons Pakistan (FCPS-II) examinations, which all local trainees take.

Many Consultants within the department at SKMH have also taken MRCP and FRCR exams and spent a year of Fellowship training in the UK.

Four of the Fellows attending the lectures had recently sat FRCR in the UK, one of whom had left her daughter aged two for two weeks to attend. They can sit FRCR in Hong Kong but otherwise there is no centre closer. Fellows explained that FRCR revision courses prioritise UK trainees therefore they struggle to get on UK based FRCR courses. They have no protected teaching time during the working week consequently they were extremely grateful for the FRCR revision programme we delivered.

Figure 5. Flow diagram of Pakistan Radiotherapy training
Detailed account of the visit

Day 1

On the first day of SARB/VMAT lectures there were 25 attendees; a mixture of radiographers, physics and physicians. They were given time off from their working routine to attend these lectures. See Figure 4 for attendance sheet.

Figure 4 - attendance sheet

Figure 4A – Morning attendees

Figure 4B – Afternoon attendees
Lectures generated lots of discussion. Concepts such as no fly zone and patient eligibility were discussed at length. Questions from Radiographers about patient positioning for poor Performance status patients, to me, demonstrated a lack of understanding as for whom we use SABR. This reinforced the importance of the RCR funding our trip to deliver SABR lectures as there is little experience of these techniques in Pakistan. On reflection through my training I take for granted the exposure to new machines and progressive technology. See Facebook posts from @Clinical Oncology course SKMH Lahore, 13th May, Figure 5.

After lunch Dr Sundus Yahya and I went to the hospital canteen to meet the CEO, Dr Faisal Sultan, he was eating lunch with two residents! Not a sight I was expecting. He welcomed us to SKMH and showed great interest in our program.

The afternoon’s lectures were on Breast radiotherapy planning and IMRT techniques. Resources are limited at SKMH and Clinical Oncologists at SKMH made it clear that implementing Breast IMRT is years down the line for them. Hot topics of conversation that afternoon, were those that occur in any radiotherapy department, such as treatment of the axilla and SCF and breast boosts. Clinical Oncologists at SKMH use an unconventional Breast boost fractionation. Otherwise they are using forward planning techniques in line with UK practices.

Dr Yahya spent time discussing the difference between forward and inverse planning IMRT. All these conversations were very helpful for me as an intermediate level registrar.
Figure 5. Facebook posts from day 1 of SABR lectures

Clinical Oncology Course SKMCH Lahore
23 hrs

Day 1, Dr Yahya talks about Breast SARB

Clinical Oncology Course SKMCH Lahore and Tabinda Sadaf

Like Comment Share

Write a comment...

Day 1 of our visit to SKMH&RC lectures are underway...

Clinical Oncology Course SKMCH Lahore and Tabinda Sadaf

3 Shares
Day 2

On the second day of lectures Dr Yahya delivered a talk on SABR to the abdomen, explained the use of compression devices for abdominal compression in the planning process. The dose drop off was explained and generated discussion as to how lesions close to the spinal cord are treated within The Queen Elizabeth hospital in the UK. Other interesting discussions included the use of enemas versus oral laxatives in bowel preparation, much the same discussion that occurs across the globe in radiotherapy departments.

Dr Yahya moved on to talk about the use of SABR in T1 and T2 Prostate cancer (within trials). This generated discussion about the use of brachytherapy in early prostate cancer.

The afternoon’s lecture was on SABR for lymph node disease. Attendees were made up of the same group as the previous day with additional Physics staff who appreciated the set up and dose discussions regards SABR. See Figure 7.

Figure 7. Day 2 of lectures
Day 3

On the third day Dr Yahya gave lectures on SABR to the residents who had not attended Day 1 lectures, whilst I spent time with radiographers who explained they have a 3 shift system as Linac machine’s work 8am-11pm. This demonstrates the difference in practices to overcome the challenge of limited resources. Due to the extra burden on the machines they reportedly break down more than many Western European machines.

I spent time with a brachytherapy physicist who explained they do 5 HDR insertions per day using iridium gamma Varian machine with remote loading of Iridium 192. With the work load being approximately 80% treating endometrial cancers and 20% cervical cancers. Other fellows I spoke to from other centers in Islamabad said they see almost 50% cervical cancer 50% endometrial cancer.

The head physicist showed me the four Linacs. Two are Varian 6Mv/15Mv with EPID imaging capabilities. One machine has 6-18MeV electrons. They don’t have Kilovoltage machines which later explained the inability of trainees to use this for radiotherapy treatment delivery particularly in skin cancers. He explained the CT-SIM room has been commissioned for Cone beam CT which they hope to have installed and commissioned in 6 months' time. Then plans for delivering SABR/VMAT will be carried set out.

Sharing patient experiences

On day 2, I saw a 3-year-old boy who had travelled from Afghanistan. He received radiotherapy under anesthesia to the right femur for sarcoma. He and his father had travelled for 2 days to SKMH to receive treatment, leaving behind the rest of the family. Also having a little boy at home, I found this distressing.

Following the patient contact, during our discussion, we decided to do a snap shot survey of availability and access of diagnostics and oncology services to patients in Pakistan with the aim of publishing it. After discussing with Dr Yahya, permission was sought from Lead Medical officer. See Figure 8
Together with a Physicist, we met patients on treatment in a confidential setting, verbal consent obtained and all recorded data was anonymized. He interpreted in Punjabi, Urdu and Pashto and we asked their consent. We went on to ask 5 simple questions. This showed lack of oncology services and the distance patients have to travel to access these. We have written the survey and aim to publish it in a peer reviewed journal.

I thoroughly enjoyed meeting patients and having some patient interaction.

The Radiotherapy department went out for lunch en masse. As trainees are employed by the hospital there seems to be a sense of family amongst the department and trainees.

After lunch we had a radiotherapy contouring workshop, going through cases in an OSCE style. Trainees were formed of small groups and cases were allocated to them to contour (background history and scans were given). This included head and neck cancers, GBM, Lung cancer, prostate cancers. We were joined by Dr. Arif Jamshed who is an examiner of
Radiotherapy exams in Pakistan. We are very grateful to the local consultants who shared their cases and helped deliver the contouring workshop. See Figure 9.

Figure 9. Facebook post of contouring workshop

Later that day, I accompanied the oncall resident after hours. The Oncology wards are divided into palliative, pediatric and general medical wards. The hospital has a large 30 bed Intensive care unit. The 4 oncology wards have private rooms and 2 bed rooms, I did not see any nightingale/open wards. The chemotherapy unit used beds and seemed to have a lot of space. Basic hygiene appeared very good.
Residents admit patients who self-present to clinics, there are protocols for accepting patients whom are triaged to prioritise radically treated patients or who are on treatment.

All other specialties are off site, should a patient need specialist input they are transferred to another hospital. Although the internal medicine ward deals with medical problems associated with Oncology.

I had another tour of the linac machines this time from a trainee's perspective. We discussed the differences in training, differences in patient demographics and co-morbidities. To state the obvious, the risk factors of alcohol and smoking, that we see so prevalently in Western Europe are almost obsolete with chewing betel nut being top of the list of risk factors for head and neck cancer. See Figure 10. The prevalence of cervical cancer (from anecdotal conversation) is higher. National data base lacking, with most hospitals collecting cancer registry within their own institutions. There is no national screening program and no established GP service therefore first presentation is often late.

Figure 10 Betel nut being sold in Lahore
On the fourth day, we started the FRCR revision course for Fellows sitting FRCR but was also attended by oncology trainees from other hospitals of Pakistan (including Combined Military Hospital [CMH], Institute of Nuclear Medicine & Oncology [INMOL] etc.

This was set up specifically to teach FRCR part II curriculum and develop basic radiotherapy skills, see flyer Figure 11. There were 15 Residents and Fellows in total 10 from SKMH and other hospitals in Lahore, 2 from Islamabad and 2 from Rawalpindi.

I had circulated the flyer via Facebook, Instagram and Dr. Butt at SKMH had contacted Fellows. One of the trainees from Islamabad (5 hours drive from host institution) travelled with her 6-week old baby who was in the care of her mother. This demonstrated the interest the course had generated locally.
We had three consultant colleagues dialing in from the UK to deliver lectures for which we are extremely grateful. This included Dr Laura Pettit (Consultant Clinical Oncologist, Royal Shrewsbury Hospital), Dr Yakhub Khan (Consultant Clinical Oncologist, University Hospital Birmingham (QEHB), UK).
Coventry and Warwickshire) and Dr Habib Khan (Consultant Clinical Oncologist, Royal Shrewsbury Hospital). Time zones were exploited for the purpose and the skype video connection worked well. The lectures were very well received. We had discussions about exam technique and case based discussions took place. See Figure 13.

Figure 13. Facebook post of FRCR part 2 video lectures from Dr Petitt and Dr Khan

Clinical Oncology Course SKMCH Lahore is with Muhammad Habibullah Khan and Sundus Yahya.

4 hrs • View

FRCR talks on Breast cancer, Colorectal cancer and upper GI cancer via video call from site specialist Clinical Oncologists from the Royal Shrewsbury Hospital UK.

Plus site specialist Clinical Oncologists talking about gynaecological, skin and CNS cancers
Day 5

The following day, Dr Y Khan delivered lectures of Lymphoma and Urology (see Figure 14). Dr S Yahya delivered lectures on FRCR examination format and clinical skills examination techniques, Dr L Petitt talked about Head and Neck cancer and I delivered lectures on Lung cancer and Palliative radiotherapy planning.

Written feedback demonstrates that interactive video sessions were very popular with the attendees (mentioned in the comment section on 5/15 feedback forms). Attendees also commented on how good the interactive case based discussions were. One of the attendees commented that they had never had case based teaching like this before.

We also provided the department with current updates on immunotherapy. We focused on Immunotherapy side effects, as Immunotherapy is not widely used in Pakistan due to significant associated cost except from being used in a small number of patients in the private setting

Figure 14. Facebook post of video lectures

---

Clinical Oncology Course SKMCH Lahore
May 18 at 5:59pm ·  
One of Today’s video lectures from Dr Y Khan from University Hospital Coventry & Warwickshire hospital UK

---

Session with Royal College of Radiologists Visiting Team

General Pathology

- Unique biology - margins of Reed Sternberg cells/k
- as rare as 3% of total tumor in
- infiltrates into diffusely in-affected
- Survived by non-malignant intracellular in immune micro-environment

218 people reached

Like Comment Share

6
Later that afternoon, we had a presentation session where attendance certificates were given out, with closing remarks from Dr Ather Kazmi (Head of Radiotherapy department) see Figure 15. The RCR approved the certificate (see Figure 17). The course had 5 continuing professional development (CPD) points assigned per day (per RCR scheme, Fourth edition - RCR(16)2).

Figure 15. Facebook post of Certificate presenting ceremony.

Clinical Oncology Course SKMCH Lahore
May 21 at 4:07pm · 22
Certificate presentations by Dr Sundus Yahya with Dr Sumera Butt Dr Tabinda Sadaf thank you SKMH Charity GALA for hosting The Royal College of Radiologists visit

22 people reached
Boost Post

Like Comment Share

Waheeda Imad Khan
Figure 16. Facebook post of the last day of the FCRF course lectures

Clinical Oncology Course SKMCH Lahore

May 18 at 5:50pm

Final day of the FCRF part 2 revision course at SKM Lahore

1,212 people reached

Like Comment Share

Michelle Sophia Godfrey, Mohammed Butt and 12 others
Day 6

The final day at SKMH was spent doing mock exams and vivas. Mock exams were set up in 5 examination rooms with 8 minutes per case with 4 cases and a rest station. Stations included; SCC of the left cheek, left breast lump on radiotherapy treatment, SCC of the pharynx with a palpable neck node and a relapsed sarcoma of the buttock plus a rest station. Local oncologists worked hard to keep a case bank and requested patients to travel that morning to take part in the exam.

Trainees were examined by consultants including Dr Yahya, Dr Kazmi, Dr Butt, Dr Sadaf.
I acted as timekeeper with the help of 3 Fellows, who like myself, were not immediately taking FRCR part 2. For us as observers, we learnt about the format of the examination and saw how candidates act under pressure.

We then proceeded to vivas which consisted of 3 stations, each with a UK based consultant Clinical Oncologist and a SKMH Clinical Oncologist. Each station had 4 cases. The day ended with individual feedback, given to each candidate.

**Written Feedback**

**Lectures**

100% of attendees found the SABR lectures ‘very useful’ and 100% would recommend to a friend. Below are some of the comments left on feedback forms

‘What aspects were good?’
- Open discussion and exchange of practice ideas of radiotherapy
- SABR techniques, protocols, contouring aspects
- Patient positioning and immobilisation for SABR
- Facilitators are interactive with the attendees hence involve them all
- Informative
- Interactive
- Helpful in understanding modern techniques
- Wonderful opportunity
- Great help for us
- We are very keen to do this again
- Lung SABR was good
- The way of delivering compact knowledge was great

‘What could improve the course for next time?’
- Handouts
- Senior Physicist should visit our hospital with RCR team
- Distant learning should be set up
- From a tech point of view the videos of SABR should be included in the lectures to better understand the process
- Institution should have to interact on a regular basis
Include more basic knowledge
Please being Physicists
It should be made regular

Figure 18. Email from medical director of SKMH

Dr. Aasim Yusuf <aasim@skm.org.pk>
Fri 01/06/2018 10:28

To: Yahya Sundus (UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST);
Cc: Dr. Sumera Butt <sumera@skm.org.pk>; Dr. Tabinda Sadas <tabinda@skm.org.pk>
PRICE Louise (THE ROYAL WOLVERHAMPTON NHS TRUST); Dr. Ather Kazmi <akazmi@skm.org.pk>
Radiation- Muhammad Abdul Rafay <rafay@skm.org.pk>

Dear Dr Yahya,

Thank you very much for organizing this. We are very grateful to you and to Dr Price for the enormous effort you have made and the commitment you have shown to get this done.

I would also like to thank the Royal College of Radiologists for all their help and support in developing this programme.

Best wishes,

Aasim Yusuf

FRCR lectures and Mock exam:

The written feedback provided by candidates, 100% found the FRCR preparation lectures ‘Very useful’, 100% would ‘recommend the course to a friend’. Of the attendees 53% were planning to take FRCR examinations and 100% of those found the lectures useful for FRCR examination preparation. 4 candidates had previously sat FRCR part 2 in the UK (3) and Hong Kong (1). Emails received are shown in Figure 19.

Detailed feedback:

‘What aspects were particularly good?’
- Teaching and exam guidance was excellent
- All sessions are interactive
- Teaching is exam focused
- Informative enough to cover the basic knowledge and tumours
- Thank you for arranging and waking early in the morning to teach
All explanations on skype sessions and presentations are very good
I learned a lot
Including everyone in discussions
Case based teaching
Excellent
Good pace
Concise
Targeted
All presentations were very good

‘What could improve the course for next time?’
More skype sessions
Please bring more Consultants for teaching
More time needed

Figure 19. emails from trainees

Mon 21/05/2018 05:39
Inbox

To: PRICE, Louise (THE ROYAL WOLVERHAMPTON NHS TRUST);

Good morning

Yes, it was really a great course, all sessions were very helpful and thanks to the teachers who gave time for online lectures.

Thank You...
Take care
Sidra
Closing remarks (Dr Yahya, Dr Price)

The focus of this report has been to give a detailed account of our Fellowship visit. We wish to thank “The Royal College of Radiologists, International Committee” for allowing us this opportunity to visit Pakistan, a beautiful country with warm patriotic people and great food. This has been a brilliant opportunity to make connections and to reflect upon availability of resources and facilitates in different parts of the globe.

Most importantly it allowed us to make a difference and impart knowledge in a low/middle income country with very limited teaching and training resource.

I have learnt how the geography and social impact of being in a different country effects the delivery of health care, which will stay with me during my practice as a Clinical Oncologist. I have learnt how FRCR part 2 exams are carried out, seeing mock exams first-hand will stand me in good stead for FRCR part 2. Preparation of lectures for Consultants to review has fantastic revision. Indeed being part of the course audience was instrumental in my FRCR preparation.
Additional comments from Dr Yahya

I join in Louise thanking college for this wonderful opportunity.

Despite being a very draining exercise (from preparing to delivering lectures) all day at a stretch it was all worthwhile in the end. The lack of resources and training opportunities was fairly obvious and the keenness of the attendees kept us going.

Although not all attendees were planning to take the FRCR, towards the end of the visit I had many who showed their interest to take the exam to further their skill and knowledge.

Louise travelled for this course during her Maternity leave leaving little Thomas with daddy which itself was commendable. She produced high quality lecture material reviewed by me and also delivered lectures on the course.

We delivered the first ever Clinical Oncology (FRCR) course in Pakistan to which I take great pride in, and I thank the host institution sincerely for not only supporting the course but also for providing the audiovisual aids and looking after us during our visit despite it being very hot and Ramadan.

I also am very grateful to my colleagues Dr Pettit, Dr Y Khan, Dr H Khan in UK, who contributed to this charitable work.

Last but not the least thanks to Amy who supported us throughout.

We plan a second visit and hopefully a second FRCR course before May 2019. The aim would be to continue supporting the department following their installation of cone Beam CT scanner and implementation of IGRT (Image guided radiotherapy) as well as to continue supporting the trainees in developing clinical oncology skills and keeping their practice up to date.