# EXTERNAL ROTATIONS FOR RADIOLOGY RESIDENTS: AN INVALUABLE EXPERIENCE

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Radiology is one of the most dynamic and rapidly evolving medical sciences of the modern era. What started as simple x-rays has now become a much diverse science comprising of Computed Tomography (CT), Magnetic Resonance Imaging (MRI), Ultrasound, Interventional Radiology (IR), Fluoroscopy, Mammography and Nuclear Medicine in addition to digital x-rays. A complete Radiology Unit should have all these facilities so that residents have adequate exposure to all these imaging devices. Unfortunately this is not the case in most of the radiology training institutes in Pakistan.

Broadly speaking radiology units in Pakistan can be divided into two groups: those in the Government sector and those in the Private sector: each of the two has its own merits and demerits. For example the Government sector, due to lower cost, caters for most of our population and gets the bulk of diseases including the 32.6% of the population who is living below the poverty line. However, due to financial issues most of the government institutes cannot have latest machinery for newer modalities like MRI and Interventional Radiology which can cost into the millions. So while exposure of conventional radiology and ultrasound is more than enough, the residents working in government setup usually lag behind in the newer modalities such as IR and MRI.

On the other hand, in private institutes where latest machinery is available the cost is so high that it is beyond the reach of the common man. So the residents there, while having a fair exposure to the modern technology and cross sectional imaging have a lot to cover on the conventional side. Moreover some institutes cater for a specific field and thus are stronger in that area and weak in others. In order to bridge these gaps some of the institutes such as the Aga Khan and Shaukat Khanum Hospitals send their residents, in their last year of training, for 2 monthly rotations in any radiology institutes of their choice provided it is recognized by the College of Physicians and Surgeons (CPSP) although this is not a requirement of training by the CPSP.

Feed backs of residents who did their rotations revealed that residents found it a very useful practice. It not only enables them to see the working styles of different radiology departments but also gives them a chance to compare themselves with the other residents so they know where they stand. Furthermore, it gives them a chance to interact with other Radiology Professors and get an idea of their methodology and reporting styles. All this helps in broadening their horizons and better equips them for the final FCPS examination.

One dilemma however that the residents face is how to decide where to go so as to get the maximum benefit of this rotation. To answer this question a survey was carried out from residents of different radiology departments and also from those residents who had done their rotations. The best strategy that came out from this survey is that a resident should first identify his weak points and then plan accordingly so as to rectify his weaknesses. Following is a run down on the strong points of different radiology units in Pakistan so that it is easier for the residents to decide where to go to get the maximum benefit.

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### AGA KHAN UNIVERSITY HOSPITAL (AKUH), KARACHI:

AKU should be the first choice for all the residents for a number of reasons, most important of which are:

- A very well organized unit having state-of-the-art equipment in all imaging modalities.
- Largest faculty of radiologists under one roof, many of whom are on CPSP examiners' panel.
- Separate Interventional Radiology, Neuroradiology, Pediatric and Women Imaging sections doing dedicated work of their specialties.
- Many of the latest techniques and procedures such as spectroscopy, diffusion, perfusion and susceptibility weighed imaging in MRI and cardiac CT and CT colonoscopy are being done here.
- Teaching sessions, Journal Clubs, clinicopathological meetings, seminars and film viewing sessions in FCPS exam format are being conducted on a regular basis.
- Adequate exposure to all sorts of pathologies i.e. tumors, infections, congenital anomalies and complicated surgical cases etc. is available.
- Use of Picture Archiving and Communication System (PACS) reporting system.

#### SHAUKAT KHANUM MEMORIAL CANCER HOSPITAL AND RESEARCH CENTRE (SKMCHRC), LAHORE:

For oncological imaging Shaukat Khanum Hospital is without doubt the best choice as the latest imaging modalities are being used here for the diagnosis, treatment and follow up of oncological cases. In addition, for image guided biopsies (Ultrasound and CT) it also has the widest variety in addition to having their own Interventional Radiology unit where interventional procedures are being done routinely. Further more, with the first ever CT/ PET machine in Pakistan about to be launched soon by Shaukat Khanum Hospital, it becomes all the more important for residents to come here for rotation.

#### SHIFA INTERNATIONAL HOSPITAL (SIH), ISLAMABAD:

A relatively newer setup, still it is one of the few radiology units in Pakistan where all modalities are available under one roof. For those residents who live in Islamabad, Rawalpindi and Peshawar, SIH is the best option for improving their cross sectional imaging like CT and MRI as well as getting a fair idea of Interventional radiology.

### PAKISTAN INSTITUTE OF MEDICAL SCIENCES (PIMS), ISLAMABAD:

One of the largest radiology units in the government sector, PIMS provides the most diverse conventional x-ray variety of the diseases of the common people. It also has a well organized Pediatric section catering for a large population. For all those who seek to improve their conventional x-rays, PIMS is a good option.

## KARACHI X-RAYS AND CT SCAN/ULTRASOUND CENTRE KARACHI:

A smaller setup yet very popular among radiology residents for rotation, mainly for the extensive and very well organized collection of X-ray films arranged in system wise manner with a solved key to every film within the film jacket. For all those who need a short cut to improve their conventional x-rays, this is probably the best option. Also with the recent installation of a CT scanner it also provides a decent coverage of the cross sectional imaging as well.

### SINDH INSTITUTE OF UROLOGY AND TRANSPLANTATION (SIUT), KARACHI:

Last but not the least SIUT is ideal for those who wish to improve their uroradiology. All renal related pathologies, renal transplants, their complications and all the urology related interventional procedures are being done in SIUT using the modern day technology.

(Please note that these are institutes from which the survey was conducted. There are other recognized radiology units in Pakistan but could not be included in the list as adequate information regarding them could not be attained.)

#### **RECOMMENDATIONS:**

In view of the positive response of the residents regarding interdepartmental radiology rotations, we recommend that this practice of sending radiology residents for outside rotations should be adopted by all the radiology departments in Pakistan. We hope that this survey will not only help the future residents to decide where to do their rotations but also in the longer run will better prepare them for the final FCPS examination and help them in becoming better radiologists. Goodluck!

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