

## MALAWI ASSIGNMENT REPORT DR. ÉVA KIS

**13. 12-12.2015-12.12. 2015**

Project title: Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)  
and European Union programme  
"Strengthening of Medical Care in Malawi"

Assignment title: Paediatric Radiology

Type of assignment: Teaching in Paediatric Radiology and clinical work

Duration: 13.10.2015-12.12. 2015

Venues: Kamuzu Central Hospital, Lilongwe  
Queen Elizabeth Central Hospital, Blantyre

**KCH, Lilongwe, Department of Radiology 14.10.2015-14.11.2015**

### The equipments of the unit:

3 **Ultrasound** machines: 2 of them are in acceptable condition but all of them are very old.

The is no special probe for paediatric examination.

**CT:** 64 slices, Philips Brilliance. It is a very good machine , it was installed in 2012..  
The the contrast injector does not work, so the examination with contrast material is limited.

There are multiple conventional **XR** machines and 1 digital.  
During the 4 weeks I spent there, none of them worked.

**Mammography:** out of order

*Laptop, projector, conference room:* available

*Computer:* only in the office of the head of the unit, reporting is manual, in one copy,  
there is no recording in US

*Wifi*: in most of the unit available

US for bedside examination in paediatrics: 2 small portable machines with cardiology probe, no pediatric probe.

CT examinations can be searched in the memory of the equipment, the reports are hand written in one copy.

**Staff:**

1 specialist radiologist, 3 junior doctors

14 Radiographers, amongst them 3 sonographers, 1 of them had proper training (in South Africa)

**Daily examinations:**

US : 50/day, 15 children

CT : 10-15/ day 14 3-4 children

Number of beds in the hospital: 900

During my stay the XR was out of order and that was a big lack. Therefore unfortunately my participation was constrained.

There are only 2 specialist radiologists in the whole country, there are 3 junior doctors in the radiology department of KCH but there is no regular training in radiology.

The clinical lead of the unit is very busy, he also reports part of the MRIs from Balantyre and CTs from other hospitals besides his daily work load.

The lead radiographer organised my daily 30-45 min long teaching sessions. We touched all of the topics of paediatric radiology with emphasis on XR and US taking into account the local availabilities.

The radiographers were very keen to learn and I shared all the teaching material with the department for further usage.

In the mornings we focused on the pediatric examinations, the junior doctors did the examinations with my supervision, this way there was opportunity for 1 to 1 teaching as well and they showed a great improvement.

*Topics:*

1. Ultrasound of the neck
2. Pediatric radiology
3. Pediatric ultrasound examinations
4. Oncology
5. Chest ultrasound
6. Interpretation of the neonatal chest
7. Interpretation of the pediatric chest
8. Neonatal chest disease
9. Pediatric chest disease
10. acute abdomen
11. Gastrointestinal obstruction
12. Liver, bile duct
13. Pediatric gastroenterology
14. Pediatric gastroenterology ultrasound
15. MSK X-Ray and US
16. Neonatal head and spine US
17. Bilateral renal masses
18. Obstructive uropathies
19. Urinary tract infections
20. Scrotal US
21. Pelvic US
22. Renal stones

The US examinations are mainly performed by the sonographers, and they asked many times for a second opinion from me.

There are daily 10-15 CT examinations, the reporting is mainly done by the junior doctors, partially by the head of the unit. Every day we talked through all of the investigations done on that day.

The clinicians come frequently to discuss the results of the CT scans but this is very arbitrary no rule applies when they come.

There was very rarely a request from the paediatric unit for bedside examination,

I have seen many very sick patients in very advanced stage of the diseases. There were basically no negative findings.

The biggest lack in the paediatric service is the lack of a suitable paediatric probe for the US examinations, thus no high quality examination can be performed.

I could get in touch with the Eastern European office of GE who sells second hand machines on a discounted price and they could supply appropriate paediatric probe for the best machine in the department. I shared this information with the head of the unit. I believe this would greatly increase the level of service for the children.

### **QECH, BLANTYRE, DEPARTMENT OF PEDIATRICS , 14.11.2015-12.12.2015**

I spent the following 4 weeks between 14.11.2015-11.12.2015 in Balantyre in the pediatric department of the Queen Elizabeth Central Hospital.

The hospital has not had a full time radiologist for a long time thus the radiology service in any unit in the hospital is disturbed. Both the pediatricians and the pediatric surgeons were very happy to have me.

#### **Equipment:**

***Conventional XR***, no fluoroscopy -Radiology Department

The XR examinations are done on the radiology department and the image are sent to the unit of the requesting clinicians. The clinicians evaluate them there and needed very little help with the evaluation. However, in the mornings I was do one presenting the images. But if there was any difficult image we discussed them.

**3 US machine**, 2 of them are portable : **Pediatric Department**

**MR 0.35 T** GE -2008 belonging to the Malaria Project

## **No CT**

*Projector , conference room - available*

*Wifi:* in most of the unit available

There is also a good Sonosite US machine that belongs to the head of the unit, to Neil Kennedy. It is usually in his office. He does the cardiological examinations with the machine and if there is need for something else then that as well. This machine was also available for me, this is the best machine but only has a cardiology probe but it can be adjusted and used for neonatal abdominal and cranial examinations with Doppler. This way even though there is no linear probe, the quality of the neonatal examinations is acceptable.

There is one portable machine on the oncology unit with one probe that is only suitable for examination of older kids. There is another very old machine that has not been used and has also only one probe. There is no Doppler on any of them.

Next to the theatre there is another old machine with Doppler but it does not have a pediatric probe either but the linear probe is of quite good quality. Only those kids can be examined here who can be transferred.

Both the pediatrician and the surgeons were very happy that a radiologist does the examinations and reports the MRIs of the children.

I saw the pediatric surgical patients once a week with the participation of the SpRs and residents. During the examination there was always some clinicians present and this way there was opportunity for the practical teaching. This is the most important part with some topping up of the theoretical backgrounds as they do the examinations themselves.

The only MRI of the country is in the hospital, 0.35 T. Its main propose is the research for malaria but they do the daily investigations on it as well. The

reporting is done by the only specialist of the country via distant reporting with a big delay.

In the daily routine the clinicians evaluate the images of the MRI as well. The images are with a very small number of sequences because of lack of time and because of the arbitrary decision of the operator. Thus there is a big limitation of the results.

We always viewed the images with the clinicians together and this provided a good opportunity for teaching.

I had teaching for the SpRs almost every day. We covered all the big topics of pediatric radiology with emphasis on US, XR and MRI. They were always very keen to learn.

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Every morning at 8 am is the handover and majority of the doctors and the medical students take part. I was always present to demonstrate the important images.

The unit has a very good atmosphere, there is a fairly good amount of doctors, 8 from the UK, Netherlands, Germany and lots of young local doctors.

The heads of the units were always there to help me if needed.

The environment is quite difficult, it is hard to organize the examinations and the machines are not suitable and of course the lack of any radiologist makes the situation even harder. The radiology service for the pediatric unit is especially hard because of the lack of appropriate probes.

There are 300 patients a day on average, 40-60 admissions. The mortality is high, 6-10 patients weekly.

Just as in Lilongwe the patients arrive in a very severe, advanced stage of the disease. In Europe it is almost impossible to meet such severe cases.

I had no relationship with the radiology department, I went and introduced myself when arrived. I offered my service and help the the lead radiographer to give talks or teachings or whatever needed or whenever they have time but they did not want to use the opportunity.

However I attended the MRI examinations and viewed the images with the pediatric surgeons and pediatricians together every day.

The biggest part of my job was to perform all the US examinations, the teaching sessions and these were very much needed. But of course the solution would be to have a radiologist on site.

I was given all the possible help for my job.

It would be a huge step ahead to have proper pediatric and a linear probe for the examinations. But there is only one suitable machine for this and that machine is also very old, so it is very questionable whether it is feasible to solve the problem only with probes.

The best solution would be of course to have at least medium category machine not necessary new but at least with proper probes.

The time spent in both places but especially in Balantyre was very useful. In Balantyre I was given all the help possible and the doctors had a very positive attitude towards everything.

The young ones and the radiographers were also very positive in Lilongwe.

I myself have also gained a lot, I faced a lot of cases that I barely meet in Europe..

In my free time I did some short travelling to the very beautiful countryside of Malawi.

I received a lot of kindness, love, interest from the locals and the colleagues. It was a fun time.

### **Recommendation**

The most important to concentrate more on training radiographers-sonographers in the hospitals.

In Blantyre, QECH - There is no radiologist in the hospital, the Department of Radiology and MRI is working without professional leadership.

The head of the pediatric department, Dr. Neil Kennedy is the Dean of the College of Medicine at the same time. As a dean he would find it the most useful to have a general radiologist in place and the College of Medicine could contract this person for long term as a clinician and a professor at the same time.

I would like to say thank you to the program of GIZ and the EU to provide the support and the opportunity.

Budapest, 15.12. 2015

dr. Éva Kis

