

## **Mkwaja Hospital Placement Report**

### **Introduction:**

The following report is a brief summary of Mkwaja Hospital, and the basic workings of its healthcare system. The report will highlight a number of areas which represent the positive, and effective practices undertaken at the hospital, as well as areas which are in great need of improvement, and basic facilities and resources which are not present at all.

This report will also outline some basic recommendations for the hospital, to help it improve its healthcare delivery to the community, in a safer, cleaner, and more efficient manner.

The analysis and comments made in this report reflect on what I have seen in my 4 week placement at the hospital, and what I believe are realistic, practical, and achievable goals that can be met in the relative short-term.

### **Workings of the Hospital:**

The hospital is a small, 4-room building, on the south side of Mkwaja village, next to the coast. There are 3 full-time staff, who provide the 1000 plus population of Mkwaja, as well as several thousand other people from surrounding villages, with basic healthcare. The staff comprise of 1 full-time doctor, and 2 full-time nurses, working Monday-Friday, from 8 am to 3.30 pm.

The main facilities in the hospital include; 3 beds for patient assessment, 2 consultation and examination areas, 1 sphygmomanometer, 2 stethoscopes, 2 sets of weighing scales (1 adult, 1 infant), a refrigerator for vaccine storage, and a collection of needles, bandages, and other basic disposables. There is 1 main cabinet in hospital, to store the majority of medications at the hospital's disposal. This includes; antibiotics (Amoxicillin, Penicillin-V, Co-Trimoxazole, and Chloramphenicol injection), anti-malarials (Artemether + Lumefantrine), Paracetamol, local anaesthetics (Lidocaine), cream for burns, and other drugs which are not often used (Phenobarbitone tablets, and Salbutamol capsules). The vaccines administered by the hospital for the local children include; diphtheria, tetanus, polio, measles, and the BCG vaccine. The hospital also contains a significant collection of HAART medication (anti HIV/AIDS), which are presumably obtained through aid agencies, and other charitable organisations.

The hospital also has a maternity room, with a bed and stirrups for childbirth, a cot, and a set of basic surgical instruments. There are also plentiful facilities for family planning, such as boxes of condoms, combined oral contraceptive pills, depo-provera, and 'Implanon' implants.

The busiest days in the hospital are Mondays and Fridays, when the main clinics are run. The doctor undertakes the main outpatient's clinic, whereas the nurses oversee the family planning and vaccination programmes. For family planning, any villager may come in, and they will be seen by the nurse, and be asked a few basic questions, as well as having their weight and

blood pressure recorded. They can then receive their preferred method of contraception (pill, implanon, depo-injection), and leave soon after.

The women in the community seem to have a good awareness of the family planning programme, and people from other villages come in also. This reflects positively on the system of healthcare in the area, however, there is still much room for improvement in regards to getting the message out to people in villages further out, such as Buyuni and Makorora. I also noted that there were no men actively seeking contraception, in the form of condoms, despite the fact that there is ample supply. Perhaps this is due to poor awareness, in which case every effort must be made to reverse this, especially in regards to men in the 18-24 age bracket, who are not yet married.

The vaccination programme in Mkwaja is also a strong-point in the hospital's repertoire. All women are given growth charts to keep, and bring each time they have their baby checked by the nurses. There is a set of scales to record baby weight, with the result being plotted on the graph, making sure the baby's development is adequate. All vaccines administered are recorded on the baby's development card, as well as in hospital records. The cards clearly state at what age in weeks/months the child needs their vaccines, ensuring that there is no confusion or uncertainty about when a child should come into the hospital for an injection.

The vaccination programme is available for the wider community, in the surrounding areas, in the form of the Mobile Clinic. The mobile clinic is run every 3 or 4 weeks, Tuesday-Friday, and involves a small ambulance going to a specific village each day, and providing the infants there with vaccinations and growth checks. This is a positive step in healthcare provision for the surrounding population of the area, but it does fall short in some ways. There is no adult healthcare available in the mobile clinic. Thousands of people are located in areas which are in the middle of Mkwaja Hospital, and Pangani Hospital (which is the district centre). This means that anyone who needs to see a doctor will have a long, difficult journey to either of these hospitals, which inevitably results in people falling further ill, because they are unable, or choose not to see a doctor. This gives an incentive for the mobile clinic to expand, and bring more equipment and resources to each village it visits, so that the older children, and adults can receive consultations, and basic medications for their illnesses, and also be advised to go to Pangani Hospital, if the symptoms/problems are deemed to be serious. The expansion of the mobile clinic can be either through more frequent visits to villages (every 1 or 2 weeks, rather than 3 or 4), or via another vehicle and more staff, so that the extra equipment and resources can be taken to a village on any given occasion.

Outside Mondays and Fridays, the hospital still sees many patients, who come in for general problems and concerns, as well as services such as vaccinations and contraception. The facilities, and services provided are very good in comparison to other small, rural establishments in the country, who do not possess the same level of medications, vaccines, and contraceptives, and are not as soundly organised.

Mkwaja village itself is the end destination on the mains electricity line, with neighboring areas to the South and the West having very little, or no electricity at all. Therefore, Mkwaja Hospital, which has a solid power supply, and plenty of adjacent, unused land, has great potential for

development and expansion. The estimated population of the villages which are sprawled around the Saadani National Park area is approximately 16,000. Given the location of the hospital, and the obvious need for healthcare for people in this region, Mkwaja Hospital can certainly become a much larger, eminent healthcare establishment, thus giving much needed, and more sophisticated healthcare to thousands of people, who are in an otherwise dire situation.

For this goal to be achieved however, a number of areas have to be addressed, in order for the hospital to have the fundamental, basic foundations in place, so that it may take-off with its future progress. These issues will be highlighted in the following section.

### **Recommendations for the Hospital:**

*Water Supply* – one aspect which struck me on my first day at the hospital was the fact that there was no running water supply. Without any sinks to wash one's hands in, hygiene, and infection control will be an obvious complication of the lack in such an elementary facility. Therefore, the provision of a running water supply, and a sink/basin in each room should be a priority. Given that the hospital is next to the beach, such a task should hopefully not present too much difficulty.

*Alcohol gel* – following on from the issue regarding hygiene and infection control, a supply of alcohol hand gel, or something similar, is a simple and relatively cheap measure, which can eradicate transmission of potentially dangerous bacteria and viruses.

*Non-perishable equipment* – a lot of the basic equipment in the hospital is no longer in sound, safe condition. The 3 beds for patient assessment are in somewhat bad shape, with extensive rusting. The mattresses are no longer supportive, and are often difficult for some patients to get up on. Therefore, I recommend that at least 3 new beds be brought in to replace the old ones, along with new mattresses. It would be preferable if the beds were adjustable in height also, allowing patients not as mobile as others, to be able to get onto the bed for examination. Also, for hygiene purposes, there should also be disposable rolls of paper sheets attached at the head of each bed, so that after each examination, the sheet upon which the patient was lying can be torn off, thrown away, and a new sheet can be rolled down onto the bed.

In addition, 2 new weighing scales should be brought in, with 1 for each consultation room. The current set is rather perished, and a little bit inaccurate in its readings. Simple errors like inaccurate weight measurement are unacceptable, and can be easily solved.

I also recommend that the hospital invests in another sphygmomanometer. Only 1 blood pressure device is inadequate for a hospital with 2 consultation rooms. Also, any malfunction in equipment can be compensated for by having an extra sphygmomanometer.

There are also no fundoscopes or otoscopes in the hospital. Investigative equipment such as these are a core necessity in any GP surgery or hospital, and with ENT medicine being high on

the incidence chart in Mkwaja, as well as the basic need to look at one's eyes for all sorts of signs and clues to disease, it is imperative that this equipment is made available to the staff.

The hospital staff would also appreciate having some medical textbooks in the vicinity, as a way of having something to refer to if one is unsure of something. By perhaps having a Tanzanian/Swahili equivalent of the Oxford Handbook of Clinical Medicine/Clinical Specialities, and the British National Formulary (BNF), the staff can take comfort, and confidence in the fact that they have a reliable source of information and advice at hand, to guide them through any problems or uncertainties encountered with patients, and confirm that their treatment and medications they are giving are suitable, and not dangerous to the patient.

*Sharps equipment protocol* – Upon arrival to the hospital, I was shocked to learn that there was only 1 sharps bin. Venepuncture and injection procedures were being carried out, and the practitioner would have to walk through a room to reach the sharps bin. Also, general education in regards to sharps safety was lacking. It should be emphasised to all staff that safe disposal of a needle is the first, and foremost priority when doing any procedure with such equipment. I observed that the nurses would often re-cap a needle before disposing of it, or just put it back into the equipment tray, and carry on with the procedure, before disposing of everything at the very end. Such practice is very risky, and should be stamped out as soon as possible. As my placement went on, I was reassured to see that a sharps bin was made available for every room in the hospital. However, in regards to the disposal of sharps on a regular basis, the contents are simply emptied out of the box, and burnt in a man-made hole in the ground, and the cardboard sharps box is re-used. This directly contradicts the protocol, as outlined on the boxes themselves, of incinerating the whole box once it's full, and using a totally new box altogether. It is difficult to explain why this totally unsafe practice of manually emptying these boxes, and then re-using them occurs. One can only assume that the hospital simply does not have the means to have a plentiful supply of sharps bins, which can be incinerated once full. If this is the case, then the relevant authorities must act immediately to stop this happening, not only in Mkwaja, but in other rural hospitals around the country. The simplest way to do this is to provide as many boxes as necessary, to maintain sharps safety, and to develop an organised system of collection and incineration of sharps, rather than putting people at risk by simply burning them in a hole in the ground.

*Bins and bin bags* – In addition to the disposal of sharps needing improvement, the basic principle of proper disposal of medical waste and other rubbish is not adequately maintained in the hospital. There are two large waste baskets in the hospital, and these are allowed to fill up over several days, if not weeks, until they are emptied out into a hole. The main concern is that these waste bins are not lined with bin bags, and some of the contents protrude through the fenestrations in the basket. Much of the waste is going to be contaminated with blood, and other chemicals and substances, which should never come into contact with people. The fact that this waste is allowed to collect over a prolonged period of time, the practice of clean, hygienic healthcare is seriously undermined. In addition, medical waste which is not lined with bin bags will inevitably attract all sorts of insects and bugs, which is an unacceptable situation for any healthcare establishment. Therefore, Mkwaja Hospital should order at least 3 bins, which are opened via a foot-pedal, for the disposal of medical/chemical waste. There should also always

be a plentiful supply of bin bags (yellow coloured, with 'biohazard' markings), so that the safety of patients and staff is preserved.

Gloves – The habit of using gloves for many procedures such as giving injections, or drawing blood, is not fully engrained into the staff's minds. Also, there is a shortage of supply, with only 1 box in the hospital. This supply is far too inadequate, and will only propagate the bad practice of not wearing gloves for every procedure, and examinations, thus putting the staff at an increased risk of things such as needle stick infection. Therefore, all examination and treatment areas in the hospital must have gloves within easy reach. A range of sizes should also be used, as different staff, with different size hands need the appropriate gloves. This problem was often illustrated by the fact that one of the nurses would often tear his gloves when trying to put them on, as they were too small, and would therefore sometimes not bother wearing any at all.

Medications – as outlined on page 1, the hospital holds a range of medications, which are thought to be best suited to the needs of the local community. Upon my first visit to the hospital, I was pleasantly surprised at the number of drugs held in the drug cabinet, ready to be distributed to the patients. However, there are some absolutely crucial drugs which the hospital does not hold, or mention on its drug orders list. I got the impression that these discrepancies were due to the fact that many of the drugs, which are more expensive, are supplied by aid agencies, eg. USAID, in the form of HAART drugs for HIV/AIDS. But several, more basic and cheaper drugs, are not within the hospital inventory, presumably due to plain lack of financial capacity, and also due to lack of expertise, and knowledge of which drugs are best for certain conditions. This is exemplified by the fact that the hospital seems to have an endless supply of basic antibiotics (Amoxicillin, Penicillin), which are almost indiscriminately used for almost every patient, but more specialist, and effective antibiotics, such as Erythromycin, and Cephalosporins are not available at all, meaning that serious conditions like Pneumonia, are sub-optimally treated.

Cardiovascular conditions, such as hypertension, heart failure, and angina, are serious health concerns, which need expert treatment, and administration of a number of specific drugs, on a regular basis. Such medications, like Beta-blockers, Diuretics, ACE-Inhibitors, and Statins are totally non-existent within the hospital's and staff's capacity, and range of expertise. This is a worrying state of affairs, and the relevant authorities need to realise the public health implications of such a deficit in the knowledge-base of recognition, and treatment of such common, but serious illnesses.

The hospital also has some drugs which are regarded as somewhat archaic, and potentially dangerous by physicians elsewhere in the World, but readily available on the shelf in the hospital, and given without proper advice, and expertise from the doctor. An example of this was when a patient was previously prescribed Phenobarbitone, when presenting with palpitations and exertional dyspnoea. Even with stringent patient compliance, such medication is dangerous, and if it fell into the wrong hands, or there was any misunderstanding about dosage and regimen, the consequences could have been severe.

With all these points in minds, I recommend that the hospital starts to stock certain drugs, which are absolutely fundamental for the treatment of a myriad of diseases, and which are stated by

the World Health Organisation (WHO) to be part of the basic requirements for any healthcare system to be regarded as an adequate, and effective health service. The initial drugs which I recommend are:

- Aspirin
- Ibuprofen
- Dihydrocodeine
- Low dose Paracetamol (75mg)
- Cephalosporin antibiotics, eg. Cefuroxime, Ceftriaxone
- Macrolide antibiotics, eg. Erythromycin, Clarithromycin
- Diuretics, eg. Furosemide, Spironolactone, Bendroflumethiazide
- Beta-Agonists, eg. Salbutamol, Formoterol, Salmeterol
- Beta-Blockers, eg. Propranolol, Bisoprolol
- Muscarinic Agonists, eg. Pilocarpine, Bethanecol, Acetylcholine
- Anti-Muscarinics, eg. Atropine, Ipratropium Bromide,
- Acetylcholinesterase Inhibitors, eg. Rivastigmine, Pyridostigmine, Edrophonium
- Statins, eg. Simvastatin
- ACE-Inhibitors, eg. Ramipril, Captopril
- Diabetic Medications – Insulin, Metformin, and Glitazones (eg. Rosiglitazone).
- Corticosteroids, eg. Prednisolone.

By having these medications, the hospital can be more confident in its delivery of healthcare to the community, according to its needs. Patients who come in with a range of problems, will be much more likely to receive the help they need, rather than being turned away, maybe just being blindly given Paracetamol and Amoxicillin, and potentially facing a long hard journey to Pangani Hospital, which many patients in the end will not bother making.

*Basic Investigations* – The main problem I faced when seeing patients was the fact that I had no means of carrying out any investigations, in order to narrow down my range of differential diagnoses. This meant that I was treating signs and symptoms, not fully knowing whether it was just a minor problem, or the beginnings of something more sinister. Often, I would have to refer patients to Pangani Hospital to undergo the relevant investigations, and make sure that nothing serious was missed. However, as mentioned before, patient compliance in regards to going to the district hospital would have been far from 100%. I therefore also had to relay to some patients certain signs and symptoms that they would have to look out for, once they went back home, which would indicate a problem beyond the hospital's scope of management.

This system is obviously totally inefficient, and puts patient's health at risk. By having certain basic investigative facilities, problems which may need more sophisticated management can be identified, or ruled out. The equipment that I would like to see implemented as soon as possible in the hospital is:

- Urine Dipstick Analysis: a very simple, and very cheap way of detecting certain aspects of one's urine, to detect/rule out things such as urinary tract infections, haematuria, and

proteinuria, which are indicative of serious renal pathology, and conditions such as pre-eclampsia in pregnant women.

- Foetal Doppler Scanner: a relatively simple piece of equipment, which is used to detect and assess foetal heartbeat, during regular pregnancy checks.
- Fundoscopy: a fundoscope is an essential piece of kit for any doctor. Any eye problems which a patient complains about can be investigated and assessed, and certain signs, which are only seen on fundoscopy, can lead towards the diagnosis of a range of other conditions, eg. AV nipping, and retinopathy seen in diabetes, and Roth's spots seen in cardiac conditions, such as hypertension and infective endocarditis.

Computers – For any hospital to ensure that it's delivering the right healthcare to each patient, there must be a well organised system of gathering, keeping, and usage of patient records. Currently, any patient that comes in brings a simple children's exercise book with them, in order for a brief presenting complaint, and diagnosis to be written, along with the prescription of any drugs.

This rather simplistic way of trying to create 'patient records' fails quite badly, due to the fact that the vast majority of people lose the books soon after a consultation, meaning that any relevant, and important past medical history is lost for any future consultations. Therefore, the most efficient, and straightforward way of ensuring that patient records and data are kept safe, and readily accessible to the staff, is by implementing computer software for patient records, and prescription of drugs. The usage of computers will also be useful in the fact that data in regards to incidence of diseases, and the demography of patients and their problems, can be recorded, and analysed in an effective way. This will greatly help the provision of healthcare services which are tailored to the needs of the larger community, and make a real difference in the way in which core, greater public health issues are addressed.

Given the fact that the village, and the hospital have a solid supply of electricity, the provision of 1 or 2 computers (which by no means have to be 'state of the art' and overly expensive), along with the implementation of a decent software programme for patient records, should pose no real hurdles.

### **Conclusion:**

My 4 week elective placement in Mkwaja Hospital opened my eyes to the problems and difficulties faced by healthcare establishments, and patients in rural Africa, and the effect upon the health and lifestyles of many people, not just in Mkwaja, but in similar places throughout Tanzania and other parts of Africa.

The villagers were extremely grateful and welcoming towards me, in the anticipation of having someone who could help them in a way that they previously would not have experienced. But, the lack of certain drugs and equipment meant that my expertise could only go so far, before I reached a road-block in my path of delivering good medical treatment. The villagers soon became aware of this, and it helped me realise that work has to be done in this hospital, so that

the current staff, and volunteers in the future, can deliver a service which is good enough to make a real difference, and truly help the countless people in this part of the country, who desperately require proper, and adequate healthcare.

Though the lack of basic resources and facilities in an unfortunate reality, it is not too difficult at all for Mkwaja Hospital to work its way out of this current situation, and propel itself to new heights, and become a well established centre within the Saadani area. With hospitals in Pangani and Tanga to look up to, Mkwaja Hospital can work towards a real, tangible goal, and emulate, if not exceed the level set by the two large district hospitals. Much of the basic facilities are already there, and as outlined in the previous section, simple and effective improvements can swiftly bring the hospital to a level whereby it can strive to achieve these impressive long-term goals. The geographical location, being by the coast, and the solid electricity supply, as well as having 16,000 villagers spread across the area, makes Mkwaja the ideal site for such a project, and with the right approach, and careful, meticulous planning, I have no doubt that the ideas and aspirations put forward by Mr David Guthrie, will become a glowing reality, and make the hospital, and in turn the village, a shining example to other similar places throughout Tanzania.