Kenya and the Siaya County

Introduction:

Kenya has been strongly influenced by British settlement which started in the mid to late 1800's when European migrants arrived in the 'race for Africa'. In the early 1880's the British government declared Kenya as a protectorate and started construction of the Mombasa to Uganda railway for the purpose of expanding British domination in the area. From the 1920's onwards, political movements begin in support of Kenyan independence. In the 1950's the Kikuyu-lead Mau Mau rebellion against British rule began and a fierce guerilla war was fought until 1956 when the commander in Chief of the guerilla army was captured and executed. By 1960 the British Government accepted the need for Kenyan Independence, and this officially occurred in 1963.

Kenya has 70 different ethnic groups, some of which are very different in their customs resulting in an incredibly vibrant culture. Unfortunately corruption remains rife a tribal rivalry for power has been and continues to be, a significant source of conflict and political unrest. In 2007 the landfall win by the existing president (from the Kikuyu tribe), was heavily disputed and his party was accused of polling result manipulation. This lead to targeted ethnic violence against the kikuyu people by the Luo and Kalenjin tribes (supporters of the presidents opponent) with callous murder including the rallying of women and children in to a church which was subsequently burnt to the ground. More recently unrest has involved Somalian rebel attacks in main centers in retaliation to Kenyan military forces entering Somalia.

A fair bit of persuading and reassurance was required when I mentioned I wanted to go to Kenya for my elective to my parents. However my experience couldn't have been any further from the violence that has splattered the international section of the newspaper in the past.

My time was spent in a west Kenyan district call Siaya, which basically sits right on the equator. The predominant tribe is Luo who account for 12% of Kenya's 45 million population. Ninety percent of Siaya residents live rurally with fishing from Lake Victoria (the worlds third largest lake) and farming the main industry there.

The population in Siaya is extraordinarily young with 58% of the population under 9-years of age. However, I suspect there will be some change to the population structure over the coming years as women of childbearing age are able to access

to free long-term contraceptive methods (funded by USAid) and cultural shifts move towards smaller family sizes as the norm.

Siaya is one of the poorest and most deprived areas of Kenya with most families living below the poverty line. Unfortunately this also coincides with some of Kenya's highest rates of morbidity and mortality due to infectious disease. Infant mortality remains high and ranges from 8-20 per 100 live births. It also has one the highest prevalence's of HIV/AIDS and malaria with 83% of children under three years infected with malarial parasite at any one time during the year. Traditional practices are thought to be one of main drivers behind the high rates of HIV in the area. One of these was the traditional custom that if a man died, his brother would receive his (potentially infected) wives, of which there could be up to 5. Further, traditional herbal doctors touted miracle cures for HIV (for a high fee of course), which people would subscribe to thinking they were cured or protected from acquiring HIV an continued sexual practices which were spreading the virus around. One of the current misconceptions health professionals are battling is the myth that circumcision, which is routinely performed on school aged male children, protects them from getting HIV.
The Centre for Disease Control (CDC) have a dedicated area within Siaya District Hospital and are working hard within the community carrying out research and running eradication programs for Malaria, TB and HIV within the community.

Kenya's Health System and Health Status:

Health care provision is poorly resourced and poorly funded with only 4.5% of Kenya's GDP being spent on the health of their population. Currently the life expectancy is about 60 years.

Kenya's medical care is almost exclusively hospital based. Doctors are few and far between and no community medical service exists, except for traditional herbalist doctors and nurse run community dispensaries and health posts. You could imagine the surprise when I told my colleagues at Siaya hospital that we have specialist general

Mamma Rose 'mother to all' from Ulamba orphanage.

practitioners providing health care in the community!

Kenyan residents must not only travel large distances to see a doctor but also pay for their medical care, although some things such as surgery is subsidized by the government to varying degrees. Patients must pay for their admission, imaging, bloods, IV fluids, medications, scalpels, surgery, minor procedures, IV lures and syringes, you name it they must pay for it. The exception to this is care for under 6-year olds and antenatal care which is free, and HIV and TB treatment which is fully funded through USAID.

My Experience

My accommodation while in Siaya was at Ulamba Orphanage. It is run by a charity called Moving Mountains and is home to 32 beautiful children aged between 2 and 18 years. Staying here gave me the opportunity to be immersed in the Kenyan way of living and gain a real understanding of their culture. I learnt to cook local foods with ingredients I bought from the local markets. I have even continued to make some of the recipes, especially the chapatti, back here in New Zealand.

Orphanage children.

It was an absolute delight to be greeted by happy, smiley faces everyday. I took some sports equipment including soccer balls, netballs, touch balls and tennis balls to the children and had so much fun playing and teaching them some new games other than soccer. The children here and happy and well looked after. The older children all have their roles and responsibilities within the orphanage and prepare the meals, clean and look after the orphanage cows, goats and the younger ones. The idea is to ensure they have enough skills so that when they leave the orphanage they will be capable of looking after themselves.

Each morning I would catch a Matatu (taxi van) or probox (taxi car) to the hospital about 10km away. These vehicles are old, running on empty and often structurally held together by what looks like builders bog. They are modified to fit in as many seats as possible and are always packed to the brim with commuters as very few people own a private car. I had times when a child or a chicken was dumped on my lap and you are expected to squish up as much as possible to allow others the chance of fitting in. Perhaps some of my most entertaining memories are these rides where ridiculous numbers of people cram in on top of each other to maximize the Matatu drivers income for the trip.

Siaya District Hospital is a 240-bed hospital providing secondary level care to a catchment population of 1 million people. It provides inpatient care for medical, surgical, orthopaedics, paediatrics, obstetrics and gynaecology and maternity patients. Its outpatient services include a casualty department, voluntary counselling and testing centre for HIV/AIDS, anti retroviral therapy clinics, chest clinics (TB, COPD, asthma), mother and child health clinics, antenatal clinics, diabetes clinic, eye unit, dental clinic, ear, nose and throat, immunizations and psychiatric consultations. Its medical facilities include x-ray, physiotherapy, occupational therapy, laboratory, theatre, and pharmacy. The hospital has one resident consultant surgeon and 2 travelling consultants, one who is a physician and the other a surgeon specialising in obstetrics and gynaecology. A paediatrician visits twice weekly and an oncologist once weekly.

However my contact with the consultants was minimal over the 6 weeks as they are very rarely in the hospital. The day-to-day running is managed by 5 Medical Officers (equivalent to our registrars) and 8 Medical Officer Interns (equivalent to our house surgeons) so as you can imagine the workload is high and patient care is compromised in many cases due to the lack of manpower. They also have 9 Clinical Officers who can prescribe most drugs, admit patients, initiate basic management, do the paper work then present the patient to the doctors on ward rounds where definitive management plans are made. There are approximately 55 nurses and many nursing students in the hospital who are also very hands on.

Maternal and Child Health

This department provides pre and postnatal care and care for under 6 year olds. It also provides cervical screening and family planning services. It is relatively well resourced compared to other departments in the hospital as it is supported by USAid.

Expectant mothers can come to the hospital at any stage of their pregnancy for advice, support and medical care. A large part of this care is testing for HIV and providing HIV education. It is estimated about 9% of pregnant women are HIV positive. If they test positive, the mother is started immediately on fully funded anti-viral treatment. They also receive Tetanus toxoid, malaria prophylaxis (from 16 weeks onwards and a bed net), Vitamin E, Iron and folate tablets. They have a physical examination and blood tests for anaemia, blood grouping, serology for syphilis and TB screening. Women may come for these checks up to 6-times during their pregnancy, but many have their first contact with the hospital when in labour. Most women choose to have their babies in hospital and are encouraged to do so as the 'safest' place for birth. However home birth does occur. We occasionally had women bought to hospital by family from their home or local health post, by which time most where in a terrible state with baby's or mother and baby's lives at risk.

HIV women are well supported during their pregnancy both medically and socially. Women are encouraged to bring their child back to the hospital at 6 weeks, 6 months, 9months, 12 months and 18months for growth monitoring, HIV testing and vaccinations using a schedule which covers similar conditions as ours (with a few differences). Vaccinations are provided for polio, Diphtheria, pertussis, tetanus, hepatitis B, Haemophilus Influenzae, Pneumococcal, Rota Virus, Measles and Yellow Fever. All baby's born in hospital receive polio and BCG vaccine for TB before they leave the hospital.

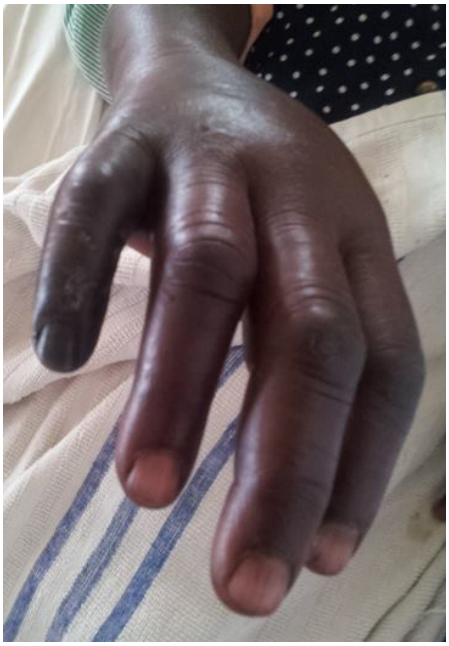
HIV is not an indication for a caesarean section (c-section) like it is here in New Zealand and most women give birth naturally. Again in contrast to New Zealand women are encouraged to *exclusively* breast feed their babies until at least 6-month. There are multiple reasons for this. Firstly infant formula is very expensive and too costly for almost all families to buy, even families considered as 'well off'. Exclusive breast feeding is encouraged as it is believed that breast milk provides the baby with some immunity from mum and mixed feeding with water or other foods risks giving the baby diarrhoeal illness which damages the lining of the gut and can increase the risk of HIV infection passing over the lining of the gut into the blood stream. HIV testing clinics were emotionally tough and I felt deeply for

women whose baby was diagnosed as HIV positive. Some women found this particularly difficult to take, especially if previous children had be fortunate enough to remain HIV negative during birth and breast feeding. The current estimated mother-to-child transmission rate is 3%. This can be decreased if the women takes anti-viral therapy as recommended which can reduce her viral load and therefore the chance of transmission.

At 6 weeks mothers are also strongly encouraged to consider long-term contraceptive methods. Again, these are free for women through USAid. By far the most common form is the Jadelle or Implanon. These are progesterone-releasing rods placed in the upper arm providing protection for 5 or 3 years respectively. I took part in this clinic multiple times and it was interesting how persuasive the nurses could be and very rarely a woman left the clinic without contraception. I was fortunate to be able to learn how to insert these devices and had inserted multiple by the time I had left the department.

General Medicine & Paediatrics

Infectious disease and HIV related complications resulted in bursting at the seams male and female wards. Malaria was a huge cause of admission and a surprisingly vicious disease. Patients would present in near comatose states from severe symptomatic anaemia and hypoglycaemia. Blood transfusions would be of huge benefit to many, however blood supplies are limited and general medicine patients are often low on the list of priorities after surgical, maternity patients and children. One patient was admitted in fulminant heart failure following malaria induce anaemia which had been severe for so long her heart literally could no longer cope and gave up. She was only 24 years old. Consequently, almost all patients presenting with unspecific symptoms have a blood screen for malarial parasites. It was certainly motivation to remember my malaria prophylaxis each day.



Necrosis of the little finger secondary to a snakebite.

At least 50% of patients on the general medical ward are HIV positive. Seeing these patients gave me an appreciation for just how important and effective your immune system is at protecting against environmental pathogens. Patients would present with cryptococcal meningitis, severe skin infections and growths, rampant TB and severe

pneumonias. Interestingly HIV patients have a high incidence of virus associated cancers including cervical, penile and anal cancers which often present late. One man in his late 30's presented with a basketball sized, fungating penile cancer which he said developed from a small non healing lesion over a period of 2 years. He had it wrapped in a small piece of dirty cloth to try and prevent leakage from the mass from getting on to his clothes. However it was possible to smell the stench coming from the cancerous wound as soon as he walked in the door. He had absolutely huge inguinal nodes, and it is almost certain he would have had further metastatic spread. Despite coming to the hospital regularly for HIV medication he had not sought help for this, instead waiting until it was too late to be able to offer any treatment. These late presentations are common. People battle on literally until their condition is effecting their ability to carry on activities of daily living. There are probably multiple reasons for this of which finances one, along with little health education and relatively difficult to access medical care.

Presentations on the paediatric ward were similar to those on the general medicine ward. There were lots of children admitted for malaria, pneumonias, meningitis, TB and diarrhoeal illnesses. While a fascinating ward it was also very heartbreaking to see a child die from conditions such as respiratory distress secondary to pneumonia and dehydration following severe diarrhoea – situations which could be easily managed with earlier treatment. Due to the high rates of malaria, sickle cell disease is common as this genetic trait confers some resistance to malaria.

Maternity

With approximately 15 baby's born a day at Siaya hospital there certainly was no shortage of work to get involved in on this ward. While a lot of my time was spent in surgery performing c-sections (of which we had about 3 to 4 a day), I did get a few opportunities to deliver babies in the delivery suite, especially after 4pm when almost everyone has disappeared off the hospital grounds. The delivery ward is very 'open plan' and consisted of 4 beds which would often have women laboring or having intimate examinations beside each other at the same time. The beds face towards windows that look out on to a common lunch spot for patients and families during the day. Little attention is paid towards patient privacy and dignity. Women are directed to a 'shower' i.e. a bucket of cold water, in the corner of the room post delivery, again with no hope of accessing a bit of privacy for themselves while they do this.

The most likely indications for c-sections were obstructed labour and previous c-sections where the risk of uterine rupture was high along the point of the previous scar. Medical officer Interns (who have been in the hospital not much longer than myself) most commonly perform these procedures and large midline incisions are made (unlike the discrete Pfannenstiel incisions we use here for cosmetic purposes) to remove the baby as quickly as possible.

Labour ward – Attention to privacy leaves a little to be desired.

I had many experiences in this department which I will never forget. One particular case was of an 18 year old women having her first baby. She had gone in to labour and seen a herbal doctor who had given her something for the pain. Unfortunately the medicine she received also decreased the effectiveness of contractions and she was admitted to hospital for a non-progressing labour. We performed a c-section however the baby had been under stress for too long, had passed meconium and could not be revived on delivery. The mother failed to recover from the surgery and within 6 days was back in theatre for wound breakdown. The midline incision had broken down and was discharging significant amounts of puss. I helped the Medical officer with the surgery and when we opened her up we found fecal matter and handfuls of pus in her abdomen. The prolonged pressure of the baby on maternal tissues had caused part of her uterus to die and breakdown. This broken down tissue then started an inflammatory response, affecting nearby tissues and she had developed a communicating fistula between the uterus and colon. We did the best we could to wash out her abdomen and suture up the intestine however it is likely this will breakdown. As the medical officer said "we are staring at a mortality'. She was probably right given the women was unable to pay for the intensive antibiotics and treatment she required. A shocking but not unfamiliar outcome of childbirth in Kenya.

Ectopic pregnancies were also a common surgical presentation. We took one young women to theatre who we thought had a ruptured ectopic however her uterus fell apart when the medical officer tried to move it out of the way in search of the location of the ectopic. As it transpired, the women had tried to induce her own miscarriage, introducing a nasty infection in to her uterus.

Post delivery of a healthy female baby by c-section for a non-progressing labour.

It certainly made me grateful for the quality of maternity care we enjoy here in New Zealand. I had just come to expect that most pregnancies would result in the birth of a healthy child who would most likely survive. Despite being one of the most natural processes on earth, so much can go wrong and it is in fact a dangerous business for both baby and mum.

General Surgery

A vast majority of my general surgical experience was dealing with the consequences of non-existent road rules, unsafe vehicles and poor drivers some of whom have not got an official license but have instead paid someone to forge them one. I arrived at 7.30am one morning to find a mass of casualties dotted all around the male and female ward from a horror matatu versus truck crash the night before. At least 15 people were lying in bed with parts of anatomy sticking in all directions they shouldn't be. Most had cardboard splits and the blood soaked bandages around there wounds which had been put on by ambulance staff more than 12 hours before. The driver of the matatu was all but unconscious and vomiting blood with a very worried family standing by his bed.

All the training clinical officers were assigned to a patient and instructed to clean their patients wounds and start fluids and/or pain relief for the patient if they had the money to pay for it *and* if there was stock available at the hospital pharmacy which frequently ran out of almost everything. Only one was taken to theatre that day for a debridement and reduction of her compound fracture of her tibia/fibula.

6-weeks of skin traction for a broken femur after a motorbike accident.

Most will spend the next 6 weeks confined to bed with skin traction unless they can afford the 6000 Kenyan shillings required to access orthopaedic surgery, when the county orthopaedic surgeon could make it to the hospital. The outcomes of skin traction are poor. Most don't reduce properly leaving the patient with a severely deformed, shortened and forever painful limb.

Another patient admitted following a motorbike accident was suspected of having a ruptured internal organ. Diagnosis was confirmed by sticking a needle (without pain relief) into the side of the abdomen and aspirating bloody fluid. We took this man to surgery and performed and open laparotomy. After removing nearly 2L of blood, the sight of bleeding was found. He had ruptured his small intestine through blunt trauma to the upper abdomen, likely from the handlebars of his bike. Traffic accidents would be a significant and almost entirely preventable cause of morbidity and mortality among the young male population in Siaya.

I also helped with hernia repairs, amputation of an leg exposed to the bone by a rampant infection and removal of a basketball sized melanoma from a lady's foot – I now know it is possible for even people with the darkest coloured skin to get melanoma. My friends at the orphanage and hospital would always watch curiously and with amusement when I would smother sunscreen all over my self. As a totally foreign concept to them, it became a bit of a running joke as most of them had never had sunburn in their life but I would always ask them if the would like some sunscreen incase they got burnt today anyway. Given the size of the melanoma I had help to remove in surgery, perhaps it wasn't such a silly idea after all.

Reflections

I cannot begin to explain the amount I got out of my 6-weeks in Siaya. I often had to run at night to avoid missing the last matatu and a long, probably very dangerous 10km walk to the orphanage in the darkness. There was so much to see and do it would have been possible to spend 24 hours a day, 7 days a week seeing new presentations and conditions.

I learnt so much and got an incredible amount of hands on experience seeing and managing conditions I had learnt about in textbooks but would rarely if ever get to see in New Zealand because our standard of care is so much higher.

However, they have been important experiences to tuck in to my tool belt for those (hopefully) rare occasions when I may come across similar presentations in New Zealand.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Client VAT No:
Date : 17/04/2014 12:59
Invoice No: 234710 Till: 00

10/ADMISSION FILE
1.00 @ 100.00 100.00

348/IV INFUSION GIVING SET
1.00 @ 20.00 20.00

402/BRANULA
2.00 @ 50.00 100.00

321/SYRINGES 2ML, 5ML
10.00 @ 5.00 50.00

277/BENZYLPENICILLIN INJ 3G(
4.00 @ 30.00 120.00

71/CROSS MATCHING
1.00 @ 170.00 170.00

A patient's bill for medical supplies during admission. Bills must be paid before treatment is received.

I left Kenya feel unbelievably motivated. In many situations I had wished I could do more and be of more help. I couldn't wait to start again back in Christchurch and to continue learning. I was looking forward to being of more use and (hopefully) feeling like we could make a positive difference for patients after spending 3 months in a situation where we could often only provide very basic and limited medical care which would improve outcomes marginally if at all. I must say, I was also looking forward to working in a health system where patient comfort was a priority and where needles weren't going to be stuck willy-nilly into abdomens and thoracic cavities with little warning let alone any pain relief.

We have a good health system in New Zealand. I think most people who travel and experience health systems in poorly resourced countries probably feel the same. New Zealanders can access the care they require to a good standard regardless of age, income, gender or ethnicity. I feel very thankful for that.

If Kenyan patients require a service only carried out at the larger Kisumu hospital, they were responsible for getting themselves and/or their own tissue/blood samples to the lab or CT scanning department at their own cost. They then were required to bring the results back themselves to the doctors at Siaya hospital to be reviewed in the next available clinic. It made me think just how efficient our service is and how much just 'happens' without really thinking about it. I hope I never forget to appreciate what we have and continue to work hard towards maintaining the best possibly level of care for *all* patients, wherever they may be in New Zealand.