

## Medical Elective at Alotau

On the 15<sup>th</sup> of December, myself and two other colleagues arrived in the town of Alotau in Papua New Guinea (PNG) for our 4 week medical elective and we could immediately see the difference between this secluded town and the busy capital of Port Moresby. For example, the weather varied between the regions. The heat was much less oppressive than in Moresby, but we learnt over the coming weeks that the climate was much like that of Melbourne; blistering hot one day, and pouring down with rain the next. This is due to Alotau being surrounded by high mountains, making the rain much more frequent than in the rest of PNG. Also, the locals are unbelievably friendly. Everyone you walk past on the street greets you warmly and some even start up friendly conversations. The kids would tug at their mothers clothes and cheekily call us 'dim dim' which is the equivalent of foreigner. By the end of our rotation we were recognized by most people in town. In addition, there is no harassment of tourists to buy local goods or products.

The town is very small, consisting of a police station, a few supermarkets, two banks, a tourist centre, Alotau General Hospital (AGH), a flight centre and a market which sells local produce and seafood everyday.

The AGH is the only major hospital for a catchment of approximately 300,000 people. In my time at AGH I was very impressed by this hospital's efficiency and skilled management of patients despite its remoteness and limited access to resources. I learnt that this hospital was initiated by one doctor and one Health Extension Officer (HEO), and at that stage, these staff were covering all fields, including medicine, surgery, O+G, paediatrics, infectious disease and emergency. I thought that was simply amazing. Now, Alotau General Hospital is fully staffed with A&E, an outpatient's clinic, a medical, paediatric, surgical, and O+G ward, a radiology and pathology laboratory, clinics specific to STI's and women's abuse, and an operating theatre. Nevertheless, there are many issues regarding medical stock and investigative tools. Also, the hospital beds were always full including, even, the on call rooms.

In my four weeks at AGH I witnessed the bread and butter of medicine in this region as well as a few unusual occurrences. In this country we were able to witness poorly managed conditions, which thus progressed to forms that we would not see back home. In the surgical ward, most admissions were due to trauma. Many patients were admitted with femoral shaft fractures, mostly due to falls from trees after trying to collect coconuts or betel nut (a nut with stimulant properties that is chewed by most of the population). The standard treatment for these is traction, in contrast to Melbourne's standard surgical procedure (either intra-medullary rod or external fixation).

During my stay at AGH I witnessed many cases of head trauma (usually due to violence) and admissions due to violence. I came expecting to see a higher rate of violence-related hospital admissions, but I was shocked by the fact that in most of these cases, the injuries were inflicted by someone known to the patient. One case was of a 21 year old male who was hit on the right side of his head by his brother during a night of drinking, causing his

right parietal bone to collapse and also heavy brain damage. While in hospital he required head surgery, a tracheostomy, a stoma and a suprapubic catheter. Miraculously, he survived without being on life support and is now bedbound, left in a decorticate state. In this case, as in most cases both surgical and medical, presentation to hospital was delayed; this man was unconscious at home for 2 days before the family decided to bring him to the hospital.

According to a review of the Intensive Care Unit (ICU) in 2011 done by the Milne Bay Provincial Health Authority (PHA), trauma was the main reason people were admitted to ICU (13%). This was followed by diabetes mellitus (12%), pneumonia (8%), gastrointestinal disorders (7%) and obstetric emergencies (6%).

In Alotau, the main admissions in the medical wards are largely infectious diseases such as malaria, tuberculosis (TB) and pneumonia. Malaria is extremely common, with all patients with fever arriving at the Accident and Emergency department (especially children) being treated for malaria (Chloroquine, Fancidar, Artmethers). Also, as blood results can take some time to be processed, therapy is always initiated before the diagnosis is confirmed. In most cases, bloods aren't even taken as they are considered a waste of time. In this hospital, 80% of children admitted with fever are due to malaria. Also, cerebral malaria is not an uncommon manifestation in the children of Alotau. Even one of my colleagues contracted malaria during our stay, but thankfully he cleared it rapidly and without any serious complications.

TB is also a serious problem with a whole ward being dedicated to tuberculosis. Rare manifestations such as TB meningitis and spinal TB are also common diagnoses. We saw two cases of TB meningitis on one paediatric ward round. In addition, a large proportion of TB cases are due to multi-drug resistant strains as a result of poor compliance to the TB treatment regime.

It was very evident during our elective that adequate medical supplies and investigative tools were a big issue at this hospital. I recall the case of a gaunt 40 day old neonate who was in special care nursery due to bowel obstruction. She was severely malnourished being only 1.7 kg due to losing weight, and had a haemoglobin of 5.5. Surgical intervention was required immediately. However, her anaemia needed to be remedied, but this was not possible because although donors were available, the blood bags were expired and new bags were being transported from Port Moresby. Other scarce supplies include glucose strips, many anaesthetic drugs, antibiotics (chloramphenicol is the main treatment choice), theatre supplies and much more. An example of limited investigative options was when I saw a man with suspected bladder carcinoma. A cystoscopy could not be performed as the cystoscope was broken and the component required would take around 2 months to arrive. Also there were times when x-ray imaging could not be performed as the machine was down. Furthermore, the lab had a very limited range of tests that could be performed. Investigations such as LFTs, TFTs, renal function tests and many antibody testings were unavailable. For all the biopsies and most blood tests, the specimen had to be sent to Port Moresby with results needing up to 6 months processing, which were, in many cases, lost in transit regardless. Despite all this, the clinical staff are

excellent, with an abundance of clinical expertise. They have learnt to deal with and effectively treat their patients without relying on tests.

A few unusual cases I observed included a male with breast cancer and a male of 20 years old with poorly treated intermediate beta-Thalassemia.

Many patients who arrive at AGH are from the neighboring islands as these areas have no high level care facilities. These patients commonly include pregnant women who are about to enter labour (as the peripartum care is abysmal on the islands with an associated high maternal mortality), those requiring surgery and those with conditions which cannot be managed by the HEOs and nurses at the provincial health centers. We heard the story of one patient during ward rounds where the father carried his child who had sustained a supracondylar fracture through jungle terrain for 7 days and then arrived in Alotau after a day long dinghy trip. Due to this extended delay in reaching hospital, initial Manipulation Under Anaesthetic (MUA) was unsuccessful.

The healthcare system is modeled from the system in north Queensland. In the past the provincial hospitals and the provincial health care facilities have been managed by different and independent parties, the former by the PNG national government appointed health minister and the latter by the provincial government. However, in 2008 a government initiative was instituted in the Milne bay province so the Alotau General Hospital was in close communication with the 143 provincial health care facilities, and thus the PHA was born. Communication between AGH and the health care facilities is coordinated by the CEO of AGH. Their main focus is to maintain adequate health standards and skills at these health centers including nurse training and skill competencies, sanitation, infectious disease control and proper ventilation.

We were given the opportunity to visit a number of these Provincial Health Centers. Centers are run by nurses and HEO's with occasional aid from visiting doctors. They are the primary port of medical call for all the villagers in that particular area, and the more serious and difficult cases are transferred via ambulance to AGH. These centers are especially important for educating the locals about preventable diseases like malaria and cholera, and general medical advice about health and wellbeing.

I was interested to learn that the average life expectancy in PNG used to be in the 70s, yet it has now dropped to the 50s-60s due to increasing lung disease due to smoking, heart disease due to poor diet, and complications due to HIV. As a response to the increasing prevalence of heart, lung and kidney disease, the 'At 40 clinic' was initiated. It was the brainchild of staff from Alotau hospital and is the only one of its kind in PNG. It is a screening program for all those at the age of 40 for the aforementioned organ related conditions. Main causes are poor diet and heavy smoking. Once picked up they can be effectively treated and preventative approaches can be taken to avoid complications in the future which would have otherwise been undetected. The chief medical officer (Dr Noel Yaubihi) expressed his belief that preventative medicine is the key, as is stressed in developed countries.

When I wasn't at hospital I was able to explore Milne bay and the surrounding provinces to enjoy the beautiful scenery and environment provided in this tropical wonderland. To the south lay a cluster of many islands including Samarai, Logia and Doini which provide excellent fishing as well as breathtaking coral formations and sea life. PNG is known for its amazing diving sites including Tawali dive resort – every diver's dream location. There are many bush and waterfall trails which will test any hikers' strength and endurance. To the north of Alotau there are many islands including Goodenuff, Latangai, New Britain and Trobriand, renowned for their cultural heritage and unique way of life.

Doing my medical elective in Alotau was a thoroughly enjoyable opportunity. Not only did I experience life at hospital and discover a spectrum of medicine unique to this tropical region, I also came to understand the life and culture of the people of Alotau. Thus I received a well rounded and fruitful experience. I would definitely recommend this area of the world to other medical students looking for their next unique elective destination. Also, I recommend PNG to those who want to take a step back from the hustle and bustle of modern life and immerse themselves in the simple but rare pleasures of time, relaxation, pristine surroundings and good company.