

## **ELECTIVE (SSC5b) REPORT (1200 words)**

A report that addresses the above four objectives should be written below. Your Elective supervisor will assess this.

**Describe the differences in anaesthetic requirements of patients in Belize and the UK and how do the common health conditions encountered compare?**

Anaesthetic requirements of patients rely on their physiological parameters and their co-morbidities. I learnt that a significant proportion of the population are chronically dehydrated in Belize which means many patients have a degree of renal impairment. This is extremely important in anaesthesia because many of the drugs used are excreted through the kidneys. Ensuring patients were well hydrated, and doses were adjusted to account for the reduced renal function, were key aspects of their approach to anaesthesia.

The mosquito born diseases such as Malaria and Dengue are very prevalent in Belize and can result in patient's becoming anaemic and thrombocytopenic. In the UK, patient's with malaria will have their surgery postponed until their episode has resolved, or have their blood parameters optimized to reduce complications. In the Western Belmopan Hospital however, the majority of patients coming for surgery were there as emergency obstetric cases, so there was no opportunity to optimize them. This put them at increased risk of bleeding and intraoperative complications. Mosquito borne diseases are far less common in the UK, so these scenarios are dealt with less frequently and wouldn't represent large proportion of the patient population.

One aspect that made the anaesthetic requirements of patients in Belize and the UK hard to compare was the nature of the procedures that I observed. The Western Regional Hospital in Belmopan is a relatively small hospital that only has two operating theatres. The majority of procedures taking place here are obstetric emergencies and some gynecological procedures, with all other surgeries being referred to the larger hospital in Belize City. This meant my exposure was quite limited to obstetric anaesthesia, usually in an emergency setting. Many of the women presenting to the hospital had had limited or no antenatal care which meant conditions such as pre-eclampsia were often not picked up and resulted in mothers having to undergo emergency C-sections. Women also often presented very late to the hospital, which meant the anaesthetist was often under extreme pressure to induce the patient in time for surgery to save the child or mother. My exposure to obstetric anaesthesia, prior to this elective, was quite limited so I've found it difficult to compare the two settings.

**Describe the provision of peri-operative care provided in Belize and discuss how this compares to the UK.**

The nature of peri-operative care in Belize is very different to that in the UK. The resources available are far more scarce, forcing them to rely on far less advanced equipment and staffing levels in the hospitals are also significantly lower. What really struck me was that there was just one anaesthetist available each day, aided by an anaesthetic nurse, which placed an enormous amount of pressure on the individual.

In the UK a patient would typically be seen anaesthetised in an anaesthetic room adjoining the main theatre and then be transferred to the theatre post induction. In Belize however, patients were kept outside in the corridors before being directly transferred into the operating theatre and induced there. The environment is more chaotic in theatre so I can imagine the patient has a less comfortable experience.

The equipment used was also a lot more basic and patients could only have ECG, blood pressure and capnography monitoring during the procedures. This means that more complex or demanding surgical cases could not be performed in this hospital because the equipment was simply not there. What also struck me was that patients were not monitored post operatively as we do here in the UK. In the UK, following surgery a patient will be received in recovery and be closely monitored and have regular observations from the recovery staff. In Belize however, this is not the case and patients are monitored minimally.

In the UK, there are also very strict protocol for infection control and surgery. What surprised me in Belize was that often anaesthetists did not wear gloves for many aspects such as cannulation or bag valve ventilation. There also wasn't a distinct a sign in, time out and sign out, as is practiced in the UK, in line with the WHO surgical safety checklist

How do the preventative public healthcare measures differ between the UK and Belize and do they attempt to tackle similar health conditions?

The ministry of health in Belize particularly focuses on education and prevention of mosquito borne diseases. A special branch of the ministry - The Health Education and Community Participation Bureau – is responsible for the implementation of public health campaigns throughout the country and has ensured that health education has become an important aspect of the healthcare provision.

A campaign called 'Don't let a mosquito affect your life' was launched and primarily focuses on malaria, dengue and chikungunya viruses. Due to the ease by which they are spread and the possible danger they can pose, the campaigns target people of all ages and ensure that the educating messages are easily conveyed. They aim to educate people on preventative measures to reduce the chance of being bitten such as eliminating stagnant water near your home and covering your skin at dawn and dusk, as

well as educating people on how to recognise bites on their skin and encouraging them to seek medical attention if they find a bite. Furthermore, the recent surge of Zika Virus cases has resulted in them focusing the campaign on pregnant women and making them aware of the key signs and symptoms to be aware of and why it is imperative for both them and their unborn child to seek medical care.

Public health campaigns in the UK focus on very different diseases, particularly those that are attributable to lifestyle factors. Campaigns to lose weight, increase exercise and smoking cessation are a key part of preventative medicine in the UK and because Mosquito born diseases are rare in the UK, so the public health care approach is hard to compare between the two countries.

Develop my practical anaesthetics skills and gain an appreciation for how these differ in a setting where resources may be scarcer.

Working in such a resource scarce setting was very challenging for me, but also allowed ample opportunity to be fully involved in the team and help with practical aspects of anaesthesia. I became far more confident in siting cannulae and venipuncture as well being guided through basic airway management by the anaesthetists, with lots of opportunity to practice. The facilities were far more basic at the hospital which meant that the staff relied more heavily on their clinical findings when assessing the patients. Although this is very challenging, it has highlighted to me that a lot can be learnt from good clinical skills and that I should try and gain my confidence in them rather than solely relying on investigations and imaging when I start my career.