

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 common diseases that affect the population of Belize and how these may change how anaesthesia is delivered and the particular precautions that might need to be taken.

One of the most important considerations when providing anaesthesia to the population of Belize is the high rate of mosquito borne diseases such as malaria and Dengue fever. These pose a variety of different problems when monitoring a patient throughout surgery due to the effects of the disease on physiology. Firstly, a lot of patients have anaemia due to the lysis of red blood cells and bone marrow dysplasia. This is often accompanied by thrombocytopaenia also. It is therefore important that a full blood count is ordered on all patients prior to surgery and correction of haemoglobin levels and platelets occurs if indicated. This step is even more critical when a patient is undergoing an operation where there is a high risk of bleeding, such as obstetric procedures.

Another important consideration in these patients is renal function. It is common that a degree of renal impairment exists due to tubular necrosis from obstruction to the microvasculature in the kidneys from lysed blood cells. Ensuring that the patient is adequately hydrated well before an anaesthetic, and limiting if not eliminating the use of drugs that are nephrotoxic is essential to the preservation of renal function. It is also pertinent to consider the potential increase in half-life of drugs that are excreted via the kidneys, especially those agents that induce a neuromuscular blockade.

In terms of gastrointestinal effects, deranged liver function tests are also incredibly common, due to the infection of hepatocytes in the parasitic lifecycle of malaria. Certain anaesthetic gases are contraindicated in this situation. Hypoglycaemia can occur as a side effect of the medication taken to treat malaria, namely quinine. This drug stimulates the release of insulin from the pancreas, which drops a patients blood sugar levels. In order to combat this, patients are often given dextrose as well as saline during procedures.

Finally, another consideration that is also often encountered in the UK is treating patients that have type 2 diabetes mellitus. Optimisation of sugar levels prior to surgery, analysis or consideration of potential impaired renal function and blood sugar monitoring throughout surgery are just some of the extra considerations needed when dealing with patients with this disease.

How is healthcare delivered to the population of Belize? How does this differ from the way in which healthcare is provided via the NHS in the UK?

The Western Regional Hospital is located in Belmopan, in the Cayo district of the country of Belize. Belmopan only became the capital of the country in 1970, following the destruction of the former capital, Belize City by Hurricane Hattie in 1961. It was built 50 miles inland, to the west of Belize City, in order to safely store all the official documents for the country. The Government of Belize moved to Belmopan shortly after its completion as well.

The Western Regional hospital has around 50 beds and two main wards - general medicine and maternity. It also has 2 intensive care beds and 4 operating theatres. The main surgical procedures

carried out in the hospital are obstetric and gynaecological, and more complex cases are almost always sent to the larger and more well equipped hospital in Belize City.

Healthcare in Belize is delivered via both public and private systems. However, the level of medical is very different to that found in the UK. The country is small with a population of around 330,000 but at least 100,000 of these people live below the poverty line. It is therefore not surprising that the funding for public hospitals is just not there. In terms of public hospitals, there are around 700 beds and 3 main regional hospitals in Belize, the Western, Southern and Northern. The Western Regional Hospital provides care for a population of around 65,000 people, and like the other public hospitals provides the specialties of obstetrics and gynaecology, internal medicine, paediatrics and surgery.

Describe local public health promotions around common diseases such as malaria, and how these are relayed to patients.

In Belize, the Health Education and Community Participation Bureau was established in 1983 with help and financial support from UNICEF. Since then, it has functioned as the branch of the Ministry of Health that is responsible for the planning and implementation of public health campaigns and education. I found that there is a large focus on public health campaigns particularly related to diseases transmitted by mosquitos. These are mainly malaria, dengue and chikungunya viruses. However, there is also a particular emphasis on Zika virus due to the sudden increase in rates of the disease across different parts of Central America.

The education and awareness of the dangers of mosquito bites and disease transmission begins at home and in school when children are young. However, with the new dangers of Zika virus becoming apparent, there has been an increase in publications aimed at the education of adults in prevention of bites and recognising diseases. There is a campaign called 'Don't let a mosquito affect your life' which produces leaflets and posters which are simple and easy to follow for those that cannot read English. As well as making the public aware of the symptoms of Zika virus, it also gives information about pregnancy and how to eliminate mosquitos from your home. These are very simple measures such as stopping littering, making sure nothing in your garden holds stagnant water, not going outside at dusk and covering yourself fully if you need to. It also stresses the importance of seeking medical attention if you are pregnant in order to test for Zika and then to offer supportive care needed.

What have you learned from practicing healthcare in such a different environment? How will you learn from these experiences to better your future practice?

The biggest thing I have learned from being in the Western Regional Hospital is that we are incredibly lucky in the UK to have such an effective health service, not only with the facilities that we have but also with the supportive environment in which we practice. Learning to adapt to conditions where there is minimal equipment and support is quite frightening at first, but in the end it does help you to become more confident in your clinical judgement when assessing and diagnosing patients. In the UK, most clinical decisions made are backed up with some sort of imaging or other diagnostics. This doesn't often happen in Western Regional Hospital as there are not the facilities and money to do so. As a result, the recognition of clinical signs for different diseases is very much at the forefront of how they practice medicine. It was fantastic to see that the healthcare staff had confidence in their own ability without the need of reassurance of a test that could potentially delay treatment. The only sad thing is that it is not their choice to work like that, it is simply because there is no other option.

However, I will definitely try to diagnose patients based on clinical findings before looking at investigation results, and hope to grow more confident and skilful as I progress through my career.