

ELECTIVE (SSC5c) REPORT (1200 words)

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

What are the prevalent ophthalmic conditions in St Kitts? How do they differ from the UK?

St Kitts is a small island in the Eastern Caribbean. It is 69 square miles and hosts a population of 54,000. 97% of Kittitians are of African descent and there is limited immigration to the island. This demographic demonstrates a sharp contrast to the population of 61 million in the United Kingdom, 94% of whom are Caucasian. There is a net annual migration of 318,000 people, with over eleven different major ethnic groups populating the country.

These population differences are reflected in the prevalent ophthalmic conditions in each country. In St Kitts, the most prevalent conditions are Pterygium, Glaucoma, Foreign Body trauma, Diabetic Retinopathy and Cataracts. In the UK the most common eye conditions are Conjunctivitis, Age Related Macular Degeneration, Glaucoma, Diabetic Retinopathy and Cataracts.

Pterygium was a condition that I was particularly unfamiliar with, having never met a patient with the condition in the UK. The majority of patients attending the ophthalmology clinic in St Kitts over the age of thirty years were affected by Pterygium. The condition is caused by exposure to Ultraviolet radiation and sandy or dusty environments. St Kitts is a volcanic island with a hot climate, and prolonged periods of sunshine; a conducive environment to the development of this condition.

St Kitts relies heavily on their growing tourist industry; this expanding industry has sparked a rise in construction on the island. Despite the Health and Safety regulations, very few construction workers wear eye protection. It is not surprising that a large number of patients attending the ophthalmology clinic had foreign body injuries to the eye. Metal fragments retained in the eye can cause oxidation reactions and progressive loss of vision, but lack of education on eye protection mean that an alarmingly high proportion of patients present to clinic very late. The most alarming traumatic injury to the eye that I saw in St Kitts was a case where a nine year old girl had perforated her cornea with a kitchen knife whilst unobserved. She had had to undergo emergency surgery, involving corneal repair, traumatic cataract extraction, and repair of the iris. Despite the prompt treatment, the ophthalmologist was not confident that the child would ever fully recover her vision.

I have sat in both Glaucoma and Diabetic clinics at Moorfields Eye Hospital in the UK. The majority of patients in these clinics were over fifty years old. In St Kitts, the youngest glaucoma patient was twelve years old. The condition is so prevalent that every patient attending the ophthalmology clinic underwent tonometry as part of their routine assessment. The reason behind this high prevalence is the primarily due to the ethnicity of the Kittitian population; Afro-Caribbean people are at a greater risk of glaucoma. This population are also at risk of developing diabetic retinopathy, which in itself is another major risk factor for glaucoma. Patients are expected to pay for their medical treatment at point of delivery, there is also very little patient education on either condition, therefore compliance to treatment is very low and sight loss from these conditions is common at a young age. This is in contrast to the UK, where sight loss from diabetic retinopathy and glaucoma is not an expected element of the disease trajectory. The most poignant memory from clinic was the comment from a diabetic patient in her early sixties, with a visual acuity in both eyes of counting fingers only due to

poor glycaemic control and poor compliance with glaucoma medication. This patient commented to the medical students that she was blessed to have reached her sixties without losing her sight completely. Upon questioning this comment with the ophthalmologist, I was surprised to hear that this was a common sentiment; most people in St Kitts expect to lose their vision by their seventh decade. In the UK, sight loss from preventable conditions is considered unacceptable.

Finally, in the UK, contact lenses are worn by three million people with refractive errors. I noticed that very few people in St Kitts wear contact lenses, and the ophthalmologist was loathe to prescribe them. On further questioning, he revealed that over the previous year, thirty contact lens wearing patients attending clinic with early signs of corneal perforation. The hot humid climate, combined with poor contact lens hygiene and lack of patient education on contact lens care, had resulted in the patients developing fungal eye infections, and presenting to clinic when their vision deteriorated. There are no anti-fungal eye ointments available on the island, and no provision for corneal transplants. The ophthalmologist must make up the treatment, from mixing oral ketoconazole, with chloramphenicol ointment and anaesthetic drops into a paste, in order to prevent permanent loss of vision.

How are ophthalmic services organised and delivered in St Kitts? How does it differ from the UK?

There is no National Health Service in St Kitts, however, as in the UK; they have both public and private healthcare provision. There is no National Health Service, and public healthcare provision is only free to those under the age of 18 or over 60 years. My placement was in the public system at the Joseph N France Hospital, located in the capital city, Basseterre. There was only one ophthalmologist employed on the island. Clinics ran on Tuesdays, Thursdays and Fridays. The length of clinic appointments depended on the number of patients who booked in for that day. A public clinic appointment costs the patient £10 at point of delivery. Free appointments are available for patients under eighteen and over sixty years, or those in full-time education.

There is a medication formulary in the Caribbean, which is regularly reviewed and determines which medications are subsidised for public use. The beta blocker, Timolol, is available for glaucoma, at a subsidised rate (£10 a bottle). However patients often require more than one medication. Prostaglandin analogues were not subsidised, and a bottle of this medication would cost the patient £40.

The clinic room contained a slit-lamp, the doctor's own ophthalmoscope, for which the light was not functioning. The slit-lamp was equipped with a tonometer. This did not come with disposable caps, making the risk of transmitting bacterial eye infections very high. Medications available included antibiotic, anaesthetic and dilating eye drops, and fluorescein strips. If the hospital ran out of supplies, replacements were slow. This had occurred a year previously with eye patches, and post-operative patients had to use toilet roll compresses on their eyes. Patients with refractive error had to visit the optometrist in Eye Care to receive their spectacles.

Every Monday and on alternate Wednesdays there was a theatre list. The operations performed in St Kitts include Pterygium removal, Trabeculectomy for Glaucoma, extra-capsular Cataract removal with intra-ocular lens insertion, Foreign Body removal and Chalazion surgery. There are no provisions for corneal transplants. Although there was a laser machine on the island, it was non-functioning, there were no provisions to repair it and therefore was not in use indefinitely.

During my placement I saw Pterygium, Cataract, Foreign Body and Chalazion removal operations. Although I had witnessed surgery for most of these conditions in the UK, the surgical procedures were very different. The most striking difference was the cataract surgery. At Moorfields Eye Hospital I have witnessed Phacoemulsification procedures, performed for early stage cataracts. This is minimally invasive surgery, in this procedure ultrasound vibration is applied to the lens, breaking the cataract down, the remnants are then suctioned out. In St Kitts there is no Phacoemulsification. Cataract surgery in St Kitts is extra-capsular. This method involves a larger incision to the cornea and the cataract is removed from the eye in one piece. The cataract must be mature (stage three to four) for this procedure and therefore the patient must wait for their vision to deteriorate before cataract removal. A cataract operation in the public system would cost the patient £150; a private cataract removal would be at least £500. Many people cannot afford the essential surgery required to preserve sight.

How prevalent is the use of the WHO Surgical Safety Checklist and other patient safety measures in operating theatres during ophthalmic surgery in St Kitts?

There was one ophthalmic theatre in the Joseph N France Hospital. It was utilised by the public ophthalmologist every Monday. The WHO surgical safety checklist has reduced surgical complications resulting from human error in operating theatres across the world, and there is a big drive to supply.

Non-adherence to infection control measures put the patient at an increased risk of post-operative infections, endophthalmitis and sight-loss. Maintaining sterility is paramount to safe surgery. The ophthalmic theatre was sterilised using a mop and soap. Between patients the operating table was cleaned using an alcohol solution and a reusable cloth. Scrubbing in was performed using a bar of soap. Sterilisation of the surgical site was performed using iodine, and although some aseptic techniques were observed, sterility was rarely maintained throughout the entire procedure.

In ophthalmic theatre, there was one ophthalmologist, one scrubs nurse and a circulating nurse available. Operations were only performed under local anaesthetic, any procedure requiring general anaesthetic was transferred to main theatres.

The WHO surgical safety checklist is not utilised in St Kitts. The ophthalmologist was unaware of its existence. There is no team briefing session, and team members have no opportunity to discuss potential problems regarding the patients or procedures, or debrief when complications arise.

An important aspect of the surgical safety checklist is to mark the operation site, in ophthalmology this translates as marking forehead on the side that the operation will take place. Site marking did not

take place in ophthalmic theatres. Another essential aspect of surgical safety is checking patient allergies. This was not performed in theatre and patients did not wear identification wrist-bands.

A time out is not performed, therefore all of the surgical safety checks that normally take place during the time out, do not occur. The patient, site and procedure are not confirmed. Antibiotic eye-drop prophylaxis is given before and after each procedure to minimise the risk of post-operative infections and endophthalmitis.

An official sign out discussion between team members is not performed. The turnover of the theatres between patients is very fast, so as soon as the operation is finished, sterilisation of the theatre begins prior to the next patient. In the ophthalmic theatre, only the used needles are identified; swabs and sponges are discarded immediately after use and instruments are immediately sterilised without counting.

Are provisions made for patients with low vision in the ophthalmic clinic? Can low cost solutions improve these facilities?

As mentioned previously, a high proportion of older patients have very poor vision in St Kitts. Low vision conditions affect a person's ability to carry out daily activities, and mean that unfamiliar environments can be daunting and difficult to navigate.

The ophthalmic clinic in the Joseph N France can only be accessed via the main hospital. Patients are required to walk through the main reception area, up a flight of steps, turn left along a corridor, follow an outdoor path and enter the ophthalmology building. This journey is difficult to navigate even with full vision.

Once inside the clinic building, the floors and walls are white. There are four clinic rooms and each one is entered via a small step up. It was noted that a number of patients were tripping down this step when leaving their consultations due to the low contrast between the floor of the clinic and that of the corridor.

After a few weeks I bought some black duct tape and asked the permission from the ophthalmologist and the nurse in charge to place a line of tape along the top of the steps into each clinic room, in order to increase the level of contrast between the clinic and corridor and to highlight the presence of the step. I noted throughout my remaining placement that patients were no longer tripping as they stepped out of clinic.

High contrast provisions for patients with low vision, allow them to live more independent lives and navigate unfamiliar environments more easily, increasing confidence and independence.