

ELECTIVE (SSC5b) REPORT (1200 words)

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

ELECTIVE OBJECTIVES

OBJECTIVES SET BY THE SCHOOL

1. What is the prevalence of various retinal diseases in the United States. How does the burden of disease differ from that in the UK?

The clinics I have attended were specialist retinal genetics clinics where a majority of patients were seen for conditions such as retinal dystrophies, and other retinopathies with genetic contributing factors. However, a quick look at sources from the National Eye Institutes (derived from the Census population data) reporting the epidemiology of eye diseases states that the four largest contributors to age-related vision impairment in the United States are AMD, cataract, diabetic retinopathy and glaucoma, which are consistent with that in The State of the Nation: Eye Health 2016 report by the Royal National Institute of Blind People (RNIB) of the UK. Amongst the four, cataract is the disease with the highest burden in terms of national prevalence in both countries while refractive error, however, remains the leading cause of vision impairment in both populations. In comparison, the proportion of visually impaired and blind Americans was 1.359% in 2010 while that of the UK was more than twice as much at approximately 3.077% of the population in 2016.

2. How are ophthalmology services delivered in the United States. And what are the differences between the health systems in the United States, UK and Singapore.

Despite having just attended 2 outpatient clinic sessions, I was able to gather a general idea of how ophthalmology services are organised at the Wilmer Eye Institute, with a brief understanding of the health system in the United States. In essence, eye health is administered in a very “private” manner — patients by and large arrange their appointments via the call centre, with a fair amount from referrals by their family doctor. In cases of emergencies, a fellow from the team will be available to provide advice over the phone and determine if a patient requires immediate hospital treatment. This is something unique as patients in the UK and Singapore typically attend the emergency centre if their health concerns them. With regards to fees, they are mostly funded for by private insurance, with a majority of those over 65 additionally engaged in the federal Medicare program which covers hospital and medical services, and further coverage for drug prescriptions would require additional premiums.

In Ophthalmology, clinics are organised into different subspecialties. As patients arrive, they are streamlined into an extremely efficient process of pre-assessment such as visual acuity (VA), intra-ocular pressure (IOP) as well as imaging with fluorescein angiography (FA) and ocular coherence tomography (OCT) etc., where personalised requirements are recorded in the system by their individual doctors which informs nurses or healthcare assistants of their individually tailored assessments. Once the pre-assessment process is completed, the patients would be led into clinic rooms where they await to be seen by the attending. One particular difference I noticed was each attending had 1-2 fellows or trainees who would see patients with them and as the attending is

speaking to the patient, the fellow/trainee would open the scans on the computer and document notes and referrals in the fully electronic system or even make calls to secure appointments in advance, very much similar to how ward rounds are conducted in the UK where junior doctors take notes as the consultant attends to and examines the patient. I thought this was a very constructive way to organise clinics as trainees not only learn from the expertise of the attendings but also follow the patients' progress at the same time, which highly contrasts the scene in the UK and Singapore where trainees often see patients alone before seeking senior advice from consultants to confirm their managements plans.

The health system in the United States is vastly different from that of the UK and Singapore. To quickly summarise, the health of the UK population is maintained solely with a publicly tax-funded system called the NHS. Patients, regardless of wealth, status and background, including permanent residents as well as university students like myself, are eligible to obtain services ranging from basic generalist care to the expertise of renowned sub-specialised doctors. However, as with all modern societies, there exists a market for private doctors whose earnings are derived solely out of the fees they collect from their patients and of whom are mostly qualified specialists such as otolaryngologists and dermatologists.

Singapore, on the other hand, has a rather distinct and balanced health system in comparison with the USA and UK. On a general scale, the health system is mainly funded by the government, such that the costs to see a family or specialist doctor is subsidised by approximately 60%, with the remaining liable for payment by patients themselves. On top of this, the Ministry of Health had also put in place healthcare schemes to aid with funding the outstanding fees. These are named Medisave, a mandatory savings fund accumulated with age-dependent monthly contributions from an individual's income, and Medishield Life, an insurance plan aimed for further protection against larger medical bills from extended hospital stays and costly treatments such as dialysis and chemotherapy. Should those fail to sufficiently provide for medical care, Medifund, an endowment fund and other schemes would serve to help the needy and financial challenged population such as the elderly.

OBJECTIVES SET BY STUDENT

3. What are the patients' attitudes towards treatment, blindness and/or screening? How aware are they about research in new therapies and their impact on future clinical practice.

Our sight is one of our most important senses. Therefore, patients are understandably concerned about their treatment plans and anxious of the possibility of being blind. While some diseases may be effectively ameliorated with definitive treatments, others follow a progressive course where vision will predictably decline over time. One important lesson I gleaned with these conditions is that a sensitive approach focusing on the positives and strategies to cope with the decline form the cornerstones of management before new therapies emerge.

Having only had that many encounters with individual patients in clinics, the attitudes of patients towards research were fairly clear. There were many instances where the patients themselves seemed like experts in their disease; in one example the father of his daughter who was diagnosed with retinal dystrophy explained the condition to his wife in such a professional way that it would be possible for one to mistake him for an ophthalmologist himself. Some also quote papers or research

about recent advances in treatments. Also, many a time, patients voiced their opinion that they came to Wilmer with the hope of having an expert correctly diagnosing their condition due to frustrations with ambiguous answers provided by their previous doctors. More importantly, patients are always informed of research in novel treatments and clinical trials in progress and a majority of which are comfortable with the idea of being included in one. Therefore, patients seen at Wilmer are not only well informed but also receptive towards the idea of research.

However, it is important to keep in mind that Wilmer is one of the best, if not the best ophthalmology centres in the country and being particularly renowned for its research success, it is no wonder that patients travel from around the country in search for the expertise and upcoming treatments in this institute.

4. I wish to specialise in Ophthalmology in the future and I would very much like to explore opportunities to work in a lab and learn what the scientists do behind the scenes as well as develop specific technical skills and acquire knowledge which would certainly be applicable towards my future, all this and more while working in a new environment and appreciating the fresh culture, meeting new friends and hopefully make long lasting professional connections.

My time at the Wilmer Eye Institute has been nothing short of an eye-opening experience. From the technical skills of the immunostaining process and culturing photoreceptors to mastering basic techniques of handling and breeding mice, as well as the imaging and surgical aspects of retinal transplants, I've learned to appreciate the hard work and passion that drives scientists behind the acquisition of new knowledge through their experiments. Through my interactions with my colleagues, I also learned about the nuances of research, which has certainly helped me gain new perspectives towards embarking on an academic pathway in my medical career.

I am confident these relationships will go a long way towards my journey as an aspiring ophthalmologist, both professionally and socially, and I am extremely thankful to everyone, especially my mentor Dr Mandeep, for giving me this rare opportunity to work here, in the presence of renowned ophthalmologists and brilliant minds at the Wilmer Eye Institute.