

ELECTIVE (SSC5b) REPORT (1200 words)

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

1. What are the prevalent ophthalmic conditions in the UK and to what extent does this reflect global ophthalmology concerns?

During my 2 weeks at the Royal Free and the Whittington, I was able to sit in on a wide variety of clinics, including general ophthalmology, oculoplastics, medical and surgical retina, corneal, glaucoma/laser and casualty clinic, as well as attending cataract and adult squint lists in theatre. It provided such a valuable insight into the common presentations of eye disease in the UK - one that far superseded my largely textbook-based knowledge.

I was able to take histories and use the slit lamp to examine a huge variety of patients. Some of the more common presentations included lid lesions such as chalazia and blepharitis, acquired nasolacrimal duct obstruction, dry eye (one of the most common), conjunctivitis (allergic and infective), keratitis (including the classic dendritic appearance of HSV infection), cataract and posterior capsular opacification, diabetic and hypertensive retinopathy, macular degeneration, and raised intraocular pressure.

Unfortunately, a last minute funding crisis meant cancelling my trips to Tanzania for 2 weeks and to Johns Hopkins Wilmer Eye Institute for 4 weeks, which would have really helped gain a more comprehensive understanding of the challenges we face globally. However, I instead gained a renewed appreciation of the amazing medical services in the UK, and how these are in stark contrast to other areas of the world. I was actually quite shocked to find out just how scarce ophthalmologists are in other parts of the world, and particularly how high the rates of preventable blindness are. Even what we might think of as relatively simple problems, such as the prescription of corrective lenses for refractive error, are major contributors to preventable visual impairment and blindness worldwide. A sobering statistic from the WHO Vision 2020 initiative that 89% of visually impaired people live in low/middle income countries stresses the importance of tackling eye disease on a global scale.

Whilst some of the most prevalent conditions are common to the UK and globally, such as cataract, glaucoma and ARMD, the real challenge worldwide seems to be the provision of services, poverty, malnutrition and poor hygiene. At this point, I haven't been able to truly appreciate this crisis by helping in developing countries myself, but it is certainly something I aim to do over the next two years.

2. To explore the different forms of health provision between different hospitals in the UK and to explore differences in general versus paediatric ophthalmology.

Again, this objective was originally developed in the context of comparing health provision between Africa, the USA and the UK, but having now spent 2 weeks at a different hospital, the Royal London, I was able to appreciate the consistency of high quality eye care that we have in London (despite the overbooked and understaffed clinics of the NHS!)

It was also very interesting to contrast general adult (at the Royal Free/Whittington) and paediatric ophthalmology (at the Royal London). Although nurses of course play a hugely important role in both, the paediatric clinics introduced me to orthoptists and optometrists (and after a week I can finally tell

you who does what), and the importance of multidisciplinary communication and coordination. Where my slit lamp examination technique was becoming more sleek in the adult department, examining children took it to a whole new level of challenging. As did instilling eye drops. Even tasks as simple as visual acuities became a mix of trying to make it as entertaining as it could be and pondering just how well a six year old knows their alphabet (not always well, as it turns out).

3. To develop an understanding of public health concerns in ophthalmology, with an aim to develop research ideas into addressing public health issues surrounding ophthalmology.

The guide provided by the university for this objective was that it should be global or public health related. I was looking forward to delving further into the global aspects of ophthalmology, but being based in the UK, I decided I needed to shift my focus to public health concerns - but I wasn't really aware of any. As I started looking into it, I found something in the literature I had never considered before - the fact that myopia may be a preventable disease. WHO cites that nearly 50% of preventable visual impairment is due to uncorrected refractive error, making it the leading cause of visual impairment globally, and there has also been a myopia epidemic in Southeast Asia, with rates as high as 80-90% in school leavers. As myopia is not a benign disease - leading to increased risk of complications such as retinal detachments, myopic macular degeneration and glaucoma - I felt this made for a reasonable public health concern, even in the UK where we have access to corrective treatment.

I'm now working on a literature review of the current evidence into the prevention of myopia, and how we might use disruptive technology to help with this in the future.

4. To gain a solid foundation in ophthalmology and the related clinical skills, and to develop my portfolio for a career as an ophthalmic surgeon.

Since deciding to pursue ophthalmology in my final year of medical school, I have won 1st prize for Best Speaker at the Annual Student and Trainee Ophthalmic Conference for a 10 minute oral presentation on my review of the role of virtual reality in the prevention of paediatric amblyopia. I was also one of two top scoring candidates to be invited to the second stage viva of the Ernest Withers Prize, and achieved a place in the top 10% of the 2018 national Duke Elder exam. Whilst I feel these academic achievements will help build my portfolio, I can't actually overemphasize the amount I have learnt from this clinical experience, and how much more there is to learn.

During my time at the Royal Free, the Whittington, and the Royal London, I was fortunate enough to be taught by some exceptional doctors. Even in overrunning clinics I was amazed at the willingness to teach, to be asked questions, and to guide a student through slit lamp examinations. Thanks to the dedication of a number of trainees, I was also able to finally see the retina and optic disc using a hand-held lens on the slit lamp!

A real passion for the speciality came across in the excitement of showing me findings ranging from collarettes, corneal ulcers, zoster ophthalmicus, RAPD, neovascularisation, drusen, PCO... And that passion was infectious. I genuinely feel so excited to continue working towards a career in ophthalmology!