ELECTIVE (SSC5b) REPORT (1200 words)

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

During my medical elective at BC Children's Hospital, Vancouver, I have spent some time in endocrine and diabetic clinics, and some time attached to the doctor on service, reviewing the patients who are also under endocrine care on different wards, and any new admissions in the emergency department. My clinical endocrine experience prior to this consisted of 2 weeks of adult endocrinology over 3 years ago in my first clinical placement of medical school, and no paediatric endocrine. We have had endocrine teaching in a non-clinical setting in university, but even this contained little paediatric endocrinology. This opportunity has therefore offered me a broad range of new experiences, in an area where I had very little experience. This placement has been extremely interesting, mainly due to the large variety of patients and conditions seen, being able to see conditions that I had never seen before, and working with a different and friendly team in a completely novel environment. I have become more familiar with how patients are managed and followed up. This placement also allowed me to see a range of ages of children, from premature babies all the way to adulthood.

The most enjoyable and beneficial part of the placement for me has been the endocrine clinics. I was initially observing but was then quickly seeing some of the new patients and follow-up reviews myself. I was initially a little nervous and apprehensive at this, being a fairly new experience with conditions that I lacked familiarity, particularly with regards to puberty and growth staging, but my confidence has improved greatly over the past few weeks. And I have become more familiar with different differentials to consider relating to growth such as: endocrine causes, thyroid/GH deficiencies; tumours; syndromes or genetic causes; and idiopathic or constitutional delay. I have always found that I enjoy paediatrics and find it very rewarding, working with children and their families, and have enjoyed having the opportunity to see patients myself in clinic, and carry out examinations. I still do not feel confident with pubertal examinations and did not attempt any genital examinations. With thyroid examinations I also need more experience palpating abnormal and normal thyroids to be able to confidently say that something is or enlarged or not. It was interesting to see patients in clinic and to see the clinical impact of conditions which previously I had only read small amounts of information about from textbooks, such as Klinefelter's syndrome, a chromosomal condition in which affected individuals have 47 chromosomes instead of 46 and are XXY. This was also the first time that I had seen patients with such complicated conditions, or so many comorbidities. For example I saw one patient who had CRMO or chronic recurrent multifocal osteomyelitis, something I had never heard of, but also had IBD, psoriasis, an infected toe, arthritis, and a fracture of his thoracic spine, possibly due to long term steroid treatment, combined with delayed puberty resulting in a low bone density for his age. His health clearly had a great impact on his daily functioning, and limited the activities that he was able to do, highlighting to me the importance of holistic care. I was impressed by the level of morale and perseverance in some of these children, for example in another young boy who had just undergone a total colectomy for sever medically refractory IBD. It was interesting to see how these conditions affected patients' lives, such as Diabetes Insipidus and how it was managed, titrating the medication to find the correct balance, and becoming more familiar with the endocrine testing and labs. It was interesting to hear people ask specifically for the urine specific gravity, as this has nearly always been disregarded as irrelevant in different settings, often unknown of the relevance of its meaning. I was able to see a much broader range of conditions during this placement compared to my previous, and felt I was able to gain more from this, although most likely in part due to a greater level of confidence

and understanding of medicine. During my placement in the UK I saw some patients with Cushing's, hyponatraemia, diabetes, insulinoma, although my memory of the details has now faded, or buried beneath a further 3 years of medicine!

I was also given the responsibility of typing or dictating my own patient letters for any patients that I saw myself. Although I had written in hospital notes before and typed up GP clinic notes, this felt like a relatively new experience, and was good for my learning and confidence. There was some delay in getting the system up and running, and I quickly learned the benefit of keeping on top of your paperwork and not leaving things carry over from week to week if can be avoided, as this will leave to a build-up of work and stress, and a less clear memory of the details of the cases. It was interesting to see how everybody dictates a lot of their letters here in Vancouver, and that the students frequently do it during medical school, not being something that I have ever done in the UK, or indeed something that I often see anybody do in our regular practice.

I was also able to attend some diabetic clinics. We had had a fair bit of teaching on diabetes during medical school, and I had a general understanding of the sugar measurements and values, and how to manage the condition. Although I was quick to discover that there was still a lot here that I did not know, and the complexity involved, and during my first morning there surfaced multiple terms of which I was unsure, such as ISF (insulin sensitivity factor), Libra, dexcon, MDI, ratios. I am still unfamiliar with the different giving and monitoring devices used. It was therefore interesting to see how these came up in conversation during clinic, and the suggestions made by the consultant. Some of the patients seen in clinic were themselves also very interesting, and different to some of the patients I would see in the UK. It became quickly apparent from some of the kids how popular hockey really is out in Canada! But I was surprised by the level of competition and pressure placed upon them, particularly amongst young children, although it was interesting to see how this might affect a hockey player with diabetes. Clearly diet and carbohydrate intake, along with levels of activity are important factors to consider when thinking about diabetes management. And I was able to see some of the difficulties when managing patients, such as trying to control the sugars of a very keen and active hockey player who is always running high blood glucose levels, but is scared of going low during a match, so intentionally runs high, and what seemed to me like him and his dad were both more concerned with his hockey performance than his sugar levels. This was made more difficult by what they said was a high level of stigma amongst players, which I found extremely surprising amongst young boys, so he therefore kept his condition quiet, and also refused the libra monitoring device as this would not work with the hockey pads. It was interesting to see how the doctor discussed carb counting and carb ratios with patients, increasing the ratio if doses of insulin with meals were not covering the food. Many patients were offered devices such as the Libra or Dexcon, which to my understanding would allow patients to check their blood glucose levels much easier, without having to repeatedly poke their fingers, something that many of the patients found extremely appealing, particularly some of the more active ones such as one little girl who enjoyed dancing 3-4 times a week for 3 hours a time! These devices can also indicate the direction in which the blood sugars are going, and can give a warning or alarm if the sugars are getting dangerously low (Dexcon). These devices are expensive though, particularly the dexcon, and there was a lot of talk of health benefit packages/insurance related to parents work to pay for these things, something which I haven't heard discussed in clinic in the UK. I have become more accustomed with looking at blood glucose values and charts.

I also had the opportunity to sit in on a gender clinic. This was a completely new experience for me and was extremely interesting. Particularly the highly complex decision that some of these

children/young adults were forced to make, and the great impact these decisions could have for their future. For example discussing whether a male with female genitalia chooses to have a hysterectomy, meaning he will then not be able to ever have children in the future or change his mind. I was able to observe the doctor discuss gender reassignment surgeries with his patients, and the important aspects to consider around the surgery itself, such as the long periods off work, the cost of the surgery, the success/failure rates, and the possible needs for further surgery, on top of the procedures themselves, the pain involved and possible complications.

During my time with paeds endo I have participated in some PBL sessions. Initially this was not something that I was too thrilled about, bringing back memories of my earlier years at medical school and many stressful hours spent toiling away through different websites and masses of irrelevant information on the internet, in what was, on reflection, not the most efficient manner. These PBLs have been less tiresome than my memories at medical school however and more of a fun learning experience to learn a bit more about some rare endocrine topics unfamiliar to me. I have tried to put in some time to learn a bit about the conditions prior to the discussion session, but I have had the great benefit of being able to learn from listening to the highly knowledgeable endocrine team discuss the objectives, and learn from them. I have always thought that PBL is a challenging and very time consuming way of learning, but definitely has its benefits, introducing topics with discussion around a case scenario incorporating learning theories of encoding specificity and activation of prior knowledge, inducing a deeper level of learning and moving away from didactic to more self-directed learning, and discussion with others, enabling you to learn from other people and promoting an elaboration of knowledge.

I was able to attend some staff/MDT meetings during the rotation, highlighting the importance of the multidisciplinary team in the care of some of these patients. Having seen CF patients in hospital in the UK around the respiratory aspects of their care, it was interesting to attend CFRD (cystic fibrosis related diabetes) meetings, and see CF patients on the ward, gaining more understanding of how the condition affects multiple systems, and the multidisciplinary input necessary. The patients who I saw while on service were scattered around the hospital on different wards, being no specific solely endocrine ward as such. These patients therefore had input from multiple teams. Many of the patients, although may have been admitted for non-endocrine reasons and being managed by different teams, needed some input from endocrine, for example in managing their sugars or titrating and weaning their doses of prednisolone used as treatment for conditions such as IBD, cancer, or Kawasaki disease. I gained a greater understanding of the importance in being extremely careful with the dosing of steroids, particularly when decreasing the dose to reduce the chances of adrenal insufficiency following treatment.

Prior to starting this placement I knew very little about the training or healthcare system in Canada. Some differences that I can gather is that all medical students must have done a degree prior to starting medical school, and then do 4 years of medical school. Post-graduate medicine is an option in the UK but the majority do undergraduate medicine, which is a 5 year course. For me this was essentially 2 years non-clinical, and 3 years clinical, with mixed in lectures and seminars also. Following graduation from medical school in the UK, student are still not required to have chosen a firm speciality for their career, and must do at least 2 years of foundation training, in which most the jobs are fairly general medical or surgical posts, rotating around in 4 month rotations. This is before moving to a more resident like post, training towards a specific speciality. Students here go straight into their residency instead of foundation, and therefore must decide on their chosen career or speciality at a much earlier stage, and students are encouraged to do this early in medical school.

The team have been friendly and inclusive, and I have been given responsibilities and tasks of my own. Being able to clerk and examine myself, but also complete the relevant documentation has helped prepare for the world of work, as has getting used to another compute system, which vary from location to location and I have found is often one of the biggest challenges and set-backs in starting somewhere new. I have had the opportunity to practice my clinical and examination skills, and communication skills. I feel that this has been a good learning experience for me and will help increase my confidence in moving into new environments in the future. I am still unsure what exactly I want to do in the future, following my general foundation training posts, although I would definitely consider a career in paediatrics.