

## **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 pattern of disease in the paediatric surgery caseload at the Royal London and discuss this in the context of global health.**

As I was only shadowing at the Royal London in paediatric surgery for 2 weeks, it would be difficult to get a comprehensive picture of their caseload as it is a sizable centre for the speciality with multiple subspecialist teams working in the department. I spent the majority of my time with the general paediatric surgeons. As well as the standard emergency cases which are seen in every district general hospital, such as appendectomies and testicular torsions, they see a large number of elective cases. The vast majority of the cases I saw were orchidopexies or indirect hernia repairs, with a few umbilical and femoral hernias, a few percutaneous endoscopic gastrostomy insertions and a few hypospadias repairs. I suspect that most hospitals with a paediatric unit see many similar cases in otherwise well children; however as the Royal London is a tertiary referral centre, it also receives many of the more complicated cases with multiple co-morbidities. They also regularly perform neonatal surgery, and I was present for the repair of a trachea-oesophageal fistula in a one day old baby. As well as spending time with the general surgeons, I also spent two days with the orthopaedic paediatric surgeons. The first of those days, they were repairing relatively simple fractures in uncomplicated patients, but the second there were two considerably more complicated patients, both undergoing surgery at multiple operation sites for more complicated pathologies.

The paediatric surgery caseload at the Royal London is I suspect very comparable to that of most of the developed world, as well as much of the developing world. Many, if not all, of the pathologies I saw are not more prevalent in high resource settings, however the level of treatment available for them may vary considerably, as will be discussed in the next section.

**Describe the pattern of health provision of paediatric surgery at the Royal London and contrast this with other countries, or with the UK.**

The Royal London is a tertiary referral centre for paediatric surgery, and as such has expert surgeons in a variety of specialties, including ENT, general surgery, orthopaedics, plastic surgery and urology. This allows them to treat a broad spectrum of patients including some of the most complicated because of either prematurity or co-morbidity. There are only 29 centres for paediatric surgery in the UK, so most hospitals would not offer the range of services available at the Royal London. Many other developed countries also have grouped together paediatric surgical services at particular hospitals, so would have a similar system with some hospitals having very diverse and expert services and some offering no paediatric surgery at all. Hospitals in developing countries would be likely to offer considerably less sophisticated paediatric surgical services. There would probably be less focus in developing countries with resource poor healthcare on treating non-life threatening conditions such as hernias and undescended testes. There would also be less provision for such complicated neonatal surgeries, as these require sophisticated resources and highly trained surgeons to allow high success rates.

**Describe the problems and solutions presented by the current computer virus, making the computers at the Royal London unusable.**

On Friday 19th May 2017, a computer virus known as WannaCry infected many of the computers at the Royal London and encrypted all the data stored on them, making them impossible to use. The virus asked for \$300 in bitcoin to be paid for each computer in order to decrypt the data. This virus affected the Royal London particularly because of how out of date their computer operating systems and firewalls were. The hospital could not accept any new trauma cases for two days, and ambulances had to be diverted to other hospitals. As the Royal London is one of the three major trauma centres serving London and the surrounding area, that came as a major blow to their operating capacity. The vital hospital services began to function again within a couple of days, however other facilities took as long as 2 weeks to be usable. Many activities which would usually be done using computers had to be carried out on paper, creating a large backlog of work for when the computers started working again. Some surgeries had to be cancelled, as they required access to older sets of notes where the paper copies couldn't be found, or imaging and reports from radiologists. Ordering blood of specific types was a particular challenge as this had all been done electronically and it is such an important task to get right. Patients who unexpectedly needed blood in routine procedures were given O negative blood, but if it was thought likely that a patient would need blood during a non-emergency procedure, the surgery simply wasn't performed. This also meant an increase in the waiting time for some patients as fewer procedures could be done.

Although there were some practical solutions to the problems created by the encrypting computer virus, it would have been much better if it had not created the problems to start with. There is increasing focus in recent times on preventative medicine and the same principle could be applied to the computer systems used. The politicians who make decisions about such things decided not to update the operating and security systems of the computers, despite the modern frequency of cyber attacks, and they paid the price for that mistake.

What have you learned from the skills and attitudes of the clinicians you are working with which you can apply to future practice?

It seems that a large part of being a good assistant in surgery is being able to anticipate what the operating surgeon is going to do next and make that as easy as possible for them. This is something that can only really come with practice, and I had lots of opportunity on this placement to work with different surgeons and get more experience. My impression is that my skills have improved as a result. I have also benefited from the applied anatomy teaching only really possible through being involved in surgery.

I spent some time during this placement in the anaesthetic room watching inductions, and I was particularly impressed by the communication skills I saw the anaesthetists employing in a paediatric context. It is quite a skill to be able to keep a child happy and calm while you are trying to persuade them to inhale induction agents, and this was more successful in some cases than others. It seems particularly challenging given the vast age ranges and associated needs and expectations that anyone working with children has to deal with, and I definitely saw techniques and approaches that I hope to add to my repertoire in the future.