

## ELECTIVE (SSC5c) REPORT (1200 words)

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

# Elective Report

*Paediatric Surgery at Kentucky Children's Hospital*



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I spent my elective at the University of Kentucky Children's Hospital in Lexington. I spent the entire 6 weeks on the general paediatric surgery service, which enabled me to see as broader range of conditions as possible, rather than specialising too much. I chose this because this elective enabled to spend more time in a speciality that interests me, while providing an insight into a completely different healthcare system to the one I'm used to being in at home, in the hope that the experience helps me to make decisions about my career in the future.

The objectives for my elective were as follows:

1. Describe the pattern/prevalence of MRSA soft tissue infections in Kentucky. How does this differ to the rest of the U.S./the UK?
2. How is paediatric healthcare provided in the U.S., and how does it differ to the UK?
3. To describe an initiative or scheme that has been put in place to attempt to decrease the incidence of MRSA in the USA, including any specific actions taken within paediatrics.
4. Personal goals; experience a broad range of paediatric surgery and clinical scenarios, appreciate the pros and cons of both healthcare systems in the UK and US, reflect on diverse range of specialty, improve clinical and diagnostic skills.

1. In the USA, the CDC estimates that the incidence of invasive MRSA cases in 2012 was around 23.99 per 100,000. They also show a decreasing trend; around 59,000 in 2012, dropping from a previous figure of 82,000 in 2007/8 (figures from the emerging infections program) (1).  
However these figures are only estimates, as it is not a requirement in all states to report MRSA cases. Kentucky is one of these states, and therefore it is difficult to find numbers for cases in Kentucky. What the CDC values do show, is a decreasing trend in cases, which is positive, however, it would be more helpful if it was a requirement that every state reported their cases.

In the UK however, it is mandatory to report all cases as part of a national surveillance program, now run by the CCGs (clinical commissioning groups). Mortality and morbidity has dropped significantly; bed days relating to MRSA bacteraemia has fallen from 17.7 cases per 100,000 in 2007/2008, to 3.2 per 100,000 in 2011/2012 (Department of Health) (2). The NHS, bound by cost limitations, is now focusing on screening patient groups that are at highest risk of poor outcomes, for example; oncology, vascular, renal, neurosurgery, ICU, NICU.

There may be several reasons why rates are higher in the states, for example, education, or increased antibiotic usage, and this is something that could be explored in more depth to identify target areas for reducing these numbers. In my short time here on elective, I have seen numerous MRSA abscesses that required incision and drainage, and it is clearly a problem that needs targeting.

2. In the US, healthcare all revolves around having insurance, with the whole system privately run. Obamacare, which was passed in 2010 aimed to increase the quality and affordability of insurance, and therefore lowering the uninsured rate of the population.  
Primary care does exist in the form of family doctors, which are the equivalent of GPs in England. However, family doctors are in short supply (the number of residents training has dropped from 3,293 in

1998 to 1,172 in 2008, according to National Residency Matching Program data) and seem to be used less as primary contract in healthcare. Family doctors are paid significantly less than their counterparts in other residency programs, and along with very long work hours, there is no incentive to train in this specialty.

What is more common is for children to have their own paediatrician; one who often follows them from birth until the age of 21, and this is who parents take their children to when they're ill. The paediatricians then refer on cases as necessary.

This is a contrast to healthcare in the UK, where children are all generally under the care of a GP rather than a paediatric specialist.

At face value, it is easy to appreciate the advantages of a child being treated by a doctor that specialises in children, rather than a doctor who is more general and may have relatively little experience of paediatrics. Children can present differently to adults and get sick quick, and this can be missed if inexperienced. However, the NHS healthcare system heavily relies on GPs in the primary care setting, and they currently have a large workload; this is unlikely to change. I think that paediatricians in the primary care setting would have its advantages, even within the current NHS service, as they could work alongside the GPs and spread the workload.

3. In the US, there have been no national measures put in place to decrease the incidence of MRSA, and likewise within Kentucky. However, on the topic of MRSA, the CDC (The Centre for Disease Control) recommends the following simple measures to try and minimise spread:

- proper and frequent handwashing
- Keep cuts clean and covered until healed
- Avoid contact with others wounds and bandages
- Avoid others razors, towels and other personal items
- Place a barrier, eg, a towel, between skin and shared equipment
- Wipe surfaces of shared equipment before and after use

This information applies to everyone; both the public and healthcare professionals. Additionally, it targets healthcare professionals with aims to decrease risk factors and ensure appropriate measures are taken when dealing with risk factors, such as indwelling catheters, ET tubes, long lines, and long lines. Barrier protection is encouraged where MRSA infections are confirmed, and increased awareness of antibiotic overuse is recognised.

The CDC has also shown Kentucky to be among the highest antibiotic prescribing States, among other southeast central states such as Tennessee, Mississippi and Alabama; a concern with resistant MRSA on a rise, and a potential topic for improvement.

In 2010 there was a national initiative to decrease MRSA rates in Veteran Affairs (VA) hospitals. They introduced an MRSA bundle nationwide in VA hospitals in 2007, consisting of the following:

- hand hygiene for patients, workers and visitors
- nasal surveillance for MRSA
- contact precautions for patients colonised/infected with MRSA, eg, gloves and gowns
- infection control becoming the responsibility of everyone who had contact with patients, giving ownership to all in the healthcare setting (3).

While no formal initiatives have been launched in paediatric hospitals, many points from the VA setting are replicated in a paediatric setting. Hand hygiene is strongly emphasised to both staff and patients, and contact precautions are used when necessary. It is especially critical in settings such as the neonatal unit, where compromised babies have invasive devices in situ for significant amounts of time. Here, nurses have a sterile hour, where each area is closed off and cleaned down to ensure sterility and minimise infection risk.

A recent paper analysed skin and soft tissue infections (SSTIs) between Jan 2010 and June 2011 at Kentucky Children's hospital, and found an average of 74.2% of SSTIs were infected with MRSA (4). Interestingly, the majority of children were white (72.3%) girls (57.3%), with an average age of 44 months. A reason for this demographic has not been elucidated too, however any cause identified may be a target for future preventative measures. Parents are currently counselled on hygiene measures, for example, regular nappy changes and thorough cleaning, and they are also put in touch with infectious disease doctors who can help them to eradicate MRSA from their home.

4. Personally, I feel that I have gained a lot from this experience. I have seen patients of all ages during my stay, and been able to follow them from admission to discharge. This gives a satisfaction and completes the learning experience. Because I've been part of general paediatric surgery, I have been able to expand my knowledge in many different areas of general medicine, and having had little experience of paediatric surgery, have gained insight into common surgical conditions; how to spot them, and how to manage them. I have been on resident and attending ward rounds, seen patients in clinic both pre and post op, seen new patients as they enter via the emergency department, and been part of many of the common paediatric surgeries, all enabling me to improve my clinical and diagnostic skills.

The US and UK systems, while share many similarities, are strikingly different to work in and be part of. Kentucky is a relatively poor area of the states, with families travelling hours to receive medical care for their children. From what I have seen during my stay, the treatment received and the facilities are second to none, however this comes at a price. Obamacare is working to ensure everyone has insurance, and I certainly never saw anyone who didn't receive the care they needed. The facilities, as I have elucidated to, really impressed me, and I would be interested to know how some of the extras, such as music therapy, are thought to impact patient outcome.

The working day in America is also substantially different to the UK. They start work earlier and work for longer each day. The work ethic is much more intense. These hours extend to the medical students; as I've been here I've been able to learn more about the medical training here, and they are required to do long hours 6 days a week (I can only speak for surgical rotations). The experience has been interesting, engaging and informative, and I am looking forward to starting my F1 job, and I feel more equipped to deal with the demands of the job.

References regarding MRSA data:

1. <http://www.cdc.gov/mrsa/tracking/>
2. Dep of health - [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/345144/Implementation\\_of\\_modified\\_admission\\_MRSA\\_screening\\_guidance\\_for\\_NHS.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/345144/Implementation_of_modified_admission_MRSA_screening_guidance_for_NHS.pdf)

3. Jain, R., Kralovic, S.M., et al, 2011. Veterans Affairs initiative to prevent methicillin-resistant Staphylococcus aureus infections. N Engl J Med. 364(15):1419-30.
4. Min invasive drainage paper - Wright et al,

Word count (without objectives and references):  
1,506.