

## **ELECTIVE (SSC5c) REPORT (1200 words)**

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

I undertook my elective in Paediatric Gastroenterology at the Royal London Hospital. The reason why I chose this elective was because I thoroughly enjoyed my placement in Year 4 of medicine, which really was when my interest in Paediatrics started.

1) I have been in Whitechapel for the past 6 years and lived in east London for 18 years of my life. Thus, the population I grew up with is essentially the same as that of which I experienced in the Royal London.

According to Public Health England in 2012, the incidence of acute Hep B was 2.02/100,000 in London, compared with the national average (1.04/100,000), with the highest rates seen in Newham, Islington, Brent and Lambeth (Public Health England, 2012). Newham accounted for 2.7/100,000 cases of Hep B, over twice the national average, with Tower Hamlets 2.38 and Hackney 2.35. HepB seemed to be positive in ethnic groups, especially Asians and Afro-Caribbeans, particularly those who were born abroad (19/20 mothers tested as HepB positive antenatally were born abroad). 2/3 of those infected in London were Male, with an age distribution of 25-44.

In terms of ethnicity, those who were identified as black were six times as likely to be positive and Asians were over two times as likely to be positive. In east London, these are the two ethnicities that predominate.

Tower Hamlets is one of the London boroughs which reports less than 70% uptake of antenatal vaccination, which may account for its ranking as the fourth highest incidence of Hep B. In fact, the actual uptake of vaccine was only 49%. However, Newham had over 85% coverage of vaccine, but still is has the highest incidence of Hep B. Reasons may be numerous. Although mothers can be identified earlier via antenatal screening, this may not include immigrants who had already given birth abroad, with children already Hep B positive. Along with horizontal transmission, immigration is the main reason for the much higher rates of Hep B in the capital in comparison to the national average. This is also the reason that Universal Vaccination programmes are not provided. The reliance is rather on the identification of those mothers at risk via antenatal screening as well as outreach programmes to vaccinate those at high risk. However, as discussed below, this is not as easy as it seems. The reasons for the lack of Universal Vaccination are that the majority of the London cases are in adolescents as well as immigrants, and thus the programme will miss these people anyway (Public Health England 2012).

2) In the UK, healthcare is free to the point of need, the cost of which is paid from general taxation. This is the National Health Service, the pride of the UK, established in 1948. This is the public section of care provided, and although there is a private sector for those willing to pay, this only constitutes a small proportion of healthcare. General practitioners, or the primary care, are the first point of call and are the so-called gate-keepers, referring patients to specialist services as necessary. These specialist services are provided by hospitals, or secondary care, with A+E also being free. Most inpatient and outpatient care is free, ranging from imaging to surgical procedures. In England, there is a prescription charge for medications prescribed on the NHS (this is free in Scotland, Wales and Northern Ireland), but this charge is exempt in those over 60 years of age, under 16 years and those with low incomes. There are changes that healthcare in the UK is facing, changes that have been in motion for some time now. It will see most of the budget being controlled by CCGs, who will prioritise the money and what and when specialty services are needed.

In India, the private sector provides the majority of healthcare in both urban and rural areas. Speaking to various family members as well as patients, it is common knowledge that the standard of care provided by the public sector is very poor compared to its private counterparts. It is also common in India for irrational prescribing of drugs and unnecessary interventions. Furthermore, tribals are exempt from private and public hospitals, with minimal to no care provided for these people. The most common reason is due to just that; their tribal roots. This is grossly unjust and is why places like Gudalur Adivasi Hospital have been established, to provide free care for

these deprived members of the population. Discrimination in terms of health is something that would rarely, if ever, happen in the UK, and if it did happen, would be scrutinised majorly. The tribal population in India are treated as second-class citizens, and as a result, they suffer. This hospital has made it free for tribals to be treated, with non-tribals having to pay due to their relative wealth. Furthermore, in order to increase the self-esteem of those tribals, the vast majority of the nurses who work there are tribals, being trained by the hospital to work in the hospital.

Overall, India has a lot to improve on in terms of the public sector of healthcare, in order to provide a better standard of care so that the citizens do not have to pay for medical treatment.

3) 3) Hepatitis B, a virus that has infected over two billion people worldwide and accounts for over 500,000 deaths per year. The majority of chronic infection occurs as an infant with 90% of infected infants going on to be chronically infected, compared with only 5% of adults (Van Damme et al., 2013). Thus, universal vaccination programmes have targeted newborns and infants, and by 2012, 93% of WHO member countries had implemented such strategies into their vaccination schemes, with the exception of six European countries opting out (United Kingdom, Iceland, Norway, Denmark, Sweden and Finland), citing low incidences as reasons and preferring to only target those at high risk. Similar low incidence countries including the Netherlands and Ireland do, however, have universal vaccination (Van Damme et al., 2013).

Universal vaccination involves vaccination of the newborn at birth (within 24 hours), at 1, 2 and 12 months. This is also the case in antenatal screening, whereby mothers who are positive for HbsAg have their newborns vaccinated. This can prevent the transmission of HepB with the addition of hepatitis immunoglobulin increasing the reduction in risk further.

The six countries who have yet to implement universal vaccination have many reasons for not doing so, reasons that will be discussed below.

YES

Studies into universal Hep B vaccination have shown a massive reduction in incidence rates. 20 year studies in Italy have demonstrated a reduction of acute Hep B (from 11/100,000 to 0.8/100,000) from adolescent as well as infant vaccination (Romano et al., 2011). A similar study in Tuscany found a reduction in HbsAg from 5.1% pre vaccination to 0.6% (in adolescents) and 0% (in infants) post vaccination (Boccalini et al., 2013). This demonstrates the ability for Hepatitis B to be controlled, or even eradicated.

Although the countries who have opted out of universal vaccination have a low incidence of HepB, the epidemiology is changing, owing to the influx of immigrants from high epidemic areas. Horizontal transmission in these countries account for increasing rates of HepB, and it is very difficult to identify this population. The difficulty of targeted strategies; immunisation of those at higher risks, is multiple. Three areas; identifying, reaching and fully immunising these people is not easy. A lot of effort is needed to reach those deemed to be at high risk, including sex workers, those with multiple partners, men who have sex with other men as well as IV drug users (Van Damme et al., 2013). In addition to this, in developed countries, over half of those infected are outside this group, which adds to the difficulties inherent in targeting strategies (Van Damme et al., 2013). Furthermore, even after identification of at-risk individuals, the uptake of vaccines have shown to be very poor (Baars et al., 2009, Wouters et al., 2007). Thus, universal strategies will mean that there is not a cohort of Hep B patients from birth and thus reduce the risk of horizontal, or even vertical transmission later in life.

NO

Opponents to universal vaccination cite that acute Hep B is often mild, with little or no life threatening features. Therefore, the emphasis should be upon vaccination to prevent the development into chronic carriers. In endemic areas, the universal vaccination is needed and justified as the majority of infection is acquired during childhood, with a very high risk of development into chronicity. However, in areas of low prevalence, the infection is

transmitted via risky behaviour in young adults, in the most part, with chronicity being reached in a minority of cases (Van Damme et al., 2013) (Marschall et al., 2008). This along with immigration is the main source of infection in these areas and thus, universal vaccination would not benefit these regions, essentially vaccinating a population with an inherently low incidence (Marschall et al., 2008). Childhood universal vaccination is thus a waste of resources. As a result, measures to avoid the problem should be addressed elsewhere.

Rather than universal vaccination in Europe, where six countries do not provide such services, the focus should rather be on an effective antenatal screening programme. This will identify the population at high risk and would be a more suitable and justified allocation of resources. Furthermore, as risk groups are well known, the most logical approach would be targeted vaccination, which is both more cost-effective more effective (with a much lower NNT) than universal vaccination in low endemic areas (Van Damme et al., 2013).

The cost implications of universal vaccinations also have to be considered. Establishing such a programme in low endemic areas is not a good use of resources, however such studies have not been conducted. Calculating the cost-effectiveness is a time consuming and costly process but it must be done before any parent can be convinced into the universal vaccination programme, if it were to be implemented (Beutels, 2001).

4) I have increased my knowledge in Paediatrics in terms of gastroenterology, with the audit playing a great part in understanding the epidemiology of Hepatitis in the east end. Seeing how many immigrants have arrived to the East End with hepatitis not properly screened for or treated in their home countries and noting how well they were being managed here in Royal London made me very happy. I also gained a lot of knowledge in the Biologics audit, looking up the different trade names for the biological agents used in inflammatory bowel disease, as well as following patients progress in terms of height and weight whilst on these life-changing medications. Furthermore, I have increased my knowledge whilst writing this report in terms of the prevalence of different paediatric gastroenterological disorders in the east end as well as the reasons for why the Hep B vaccine is not universally provided. I have spent time with various paediatric gastroenterologists, gaining an insight into life as a paediatrician as well as learning about various gastroenterological disorders during clinics. This included sitting in on consultations with patients suffering from rare disorders, with unknown aetiologies including choledochal cysts as well as seeing the psychosocial impact that a course of high dose steroids had on a child's school life. I learnt that there is a very low threshold in paediatrics in terms of psychosocial impacts of different disorders, with a child psychologist being recommended if there is any doubt about the child's emotional wellbeing. I felt that this was very appropriate, with negative childhood experiences being influential in the development of a child as they grow.

## References

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