

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

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

**1) By far, children are admitted to hospital with consequences that have resulted from malnutrition. Malnutrition is rare in the UK, mainly due to the social infrastructure that both provide a minimal acceptable household income and also free school dinners, but in this tribal population, seemingly due to a low income, malnutrition is widespread. However, this is somewhat untrue. Both in the tribal and non-tribal populations, alcoholism is common. It is highly likely that the household income is adequate enough to feel the children at a level that they receive the maximal macro and micro-nutrients that they need, but a proportion of that income goes to alcohol, which knocks on to equal less food for the family. Thus, in response to this, a lot of in-hospital services are provided to teach the family how to budget; increasing the proportion of money that goes to feed the children. Furthermore, protein is something that is not as readily available to the tribes, and as a result, children present more with a protein malnutrition (kwashiorkor) as opposed to a protein-energy malnutrition (marasmus). Marasmic-kwashiorkor is also very prevalent. It may also be the case that something as simple as an egg is unattainable due to the alcohol intake. Other factors that contribute include children being infected by tapeworms, or having chronic diarrhoea. As a result of malnutrition, children can present with complications that range from organ failure to hypothermia to death. Furthermore, their immunity tends to be weakened and as a result, they cannot build an appropriate immune response to otherwise relatively benign infections.**

Overall, there is an active effort being made by the hospital to optimise these families in making feeding their children a priority.

**2) I initially thought that there weren't intubation facilities present in Casualty to provide assisted ventilation (although manual ventilation is present in surgery). Thus, in emergencies such as Anaphylaxis, the maximum that I thought could be done was the provision of Oxygen, Adrenaline, Chlorphenamine as well as Hydrocortisone before immediate transfer to the nearest hospital which has intubation facilities (Calicut- 3 hours away). However, I was later told that these facilities were present and used when needed. But thankfully, there have not been any anaphylactic presentations of note recently. Common paediatric emergencies include the overdose of tablets, which can be readily treated with either an antidote or observation. Furthermore, sepsis is another common complaint, with fluids, antibiotics, oxygen all being readily available. Another relatively common emergency is status epilepticus, for which both Phenytoin and Benzodiazepines are readily available and effective in controlling the seizure. Sickle cell crises are also very well managed as this hospital has a very well developed Sickle cell centre (see below).**

Traditional medication include is taught to children via song form, which include the use of pepper root in a fish curry to treat headaches as well as what type of thorn to avoid in the fields. The pepper roots are also used as an antiseptic pre-hospitally or as a standalone. Specifically, other herbs/plants used include Sida Rhombifolia, which has many applications. The leaves are pounded and used for the relief of swelling, the fruit is used for relief from headaches, the mucinoid as an emollient and the roots as a treatment for rheumatism. Cycilia pentata, also known as the Buckler-leaved moon-seed in English, is used for various ailments. These include the use of its roots for infected wounds and skin diseases including erysipelas as well as relief from pruritis. Decoction of the roots are used in the

treatment of viper bites too and root juice is used in headaches in the form of nasal drops. "Brahmi", a combination of *Bocopa monnieri* and *Centella asiatica*, are used as a memory tonic, having neuroprotective properties that have been researched in rat and mouse models of various neurodegenerative disease.

Prior to this elective, I did an SSC in health promotion at a local GP, whereby we did health checks on the local population and calculated QRISK20 scores for individuals in the Ilford community, to identify people at an increased risk of cardiovascular events in the next 10 years. I have also been part of various health promotion programmes whilst I have been in Gudalur. The main one was a diabetic screening project that was being spearheaded by one of the GP trainees taking a year out from the UK to participate in rural healthcare. It involved visiting various tribal villages around the area of Gudalur, of which the Adivasi population resided, and performing health checks that identified individuals with diabetes. Although this was the main aim of the study, to characterise the epidemiology of diabetes in the different tribal populations, it also acted as a health promotion/prevention strategy, whereby the height, weights, waist and hip circumference and blood pressure (as well as blood glucose) were measured, identifying individuals at higher risks who either had a chronic condition that was not being adequately controlled, or were only just discovered to be suffering from said conditions. This programme began in August 2014 and is reaching the final stages. I am pleased that I played an active role in providing some data to both go towards the epidemiological study, as well as identifying at-risk individuals.

3) Annually, 5200 newborns are affected by SCD in India (Nimgaonkar et al., 2014). However, this statistic does not cover the numerous ethnic groups including the indigenous tribal populations. These populations account for roughly 8% of the total Indian population, and the fact that the genetic and ethnic origins as well as the migration histories differ in these endogamous tribes accounts for the difference in the sickle cell carrier trait frequency which is around 10-33% (Nimgaonkar et al., 2014). Gudalur is situated in the Nilgiris Mountains, and is home to four different tribes (Paniyas, Kattunayakans, Bettakurumbas and Mullukurumbas). 60% of the total Adivasi population have been screened for SCD, with 11% being found to be carriers of the sickle cell trait. Of these 11%, 1.4% (137 individuals) were found to be sufferers of SCD. 14 was the median age of patients with SCD (Nimgaonkar et al., 2014).

Both community health nurses (CHN) and village health volunteers (VHV) screen individuals part for these tribes under the age of 30 by using the sodium metabisulfate test as a screening test. This compound is a promoter of sickling, added onto a blood smear, causing abnormal cells to sickle. If an individual from the local tribes and villages are found to be positive, they are then referred to Gudalur Adivasi Hospital (GAH), to undergo haemoglobin electrophoresis. Post confirmation, each patient is given a card with the results of the tests and genetic counselling and health education are provided in the Sickle Cell Disease (SCD) centre, in the hospital. The CHNs and VHVs also provide education about sickle cell disease to families and children under five years are administered pneumococcal vaccines as well as prophylactic antibiotics (oral penicillin)(Nimgaonkar et al., 2014).

Monthly check-ups are given to patients and inpatient treatment of vaso-occlusive crises (VOC) is provided via NSAIDs/opioids. Patients with at least one event of VOC are given hydroxyurea to reduce further incidences. In all, according to a recent study (Nimgaonkar et al., 2014), 11/17 quality of care parameters are met at GAH for the maintenance of patients with SCD.

Thus, Sickle Cell Anaemia at GAH has been very well set up and is at a level to provide optimum care for sufferers.

4) I feel that my experience in this hospital has not only improved my history taking skills in Tamil, but my examination skills have vastly improved. I feel that I have listened to many murmurs and refined my diagnostic skills, as well as listened to many chest sounds. I have witnessed different presentations ranging from infected scabies scars that have caused post-streptococcus glomerulonephritis to acute rheumatic fever, a condition that is rare in the UK.

As previously mentioned, my communication skills have vastly improved, especially in the realm of medical terms in Tamil. I have previously found it difficult to speak in Tamil, as I was too shy and embarrassed that my accent was not good enough. However, on witnessing other people, without Tamil as their mother tongue, I decided that it was imperative, both for my own learning as well as patient comfort, that I tried to improve my speaking skills. Listening is no problem, as I am able to understand Tamil very well. I have also picked up some words in Malayalam, the other major language spoken in this area.

My body language skills have also developed, at times when I could not directly translate instructions for examination steps into Tamil. Therefore, I just motioned to the patient how to do movements such as dysdiadokokinesis and said "like this" in Tamil.

In terms of preventative measures in healthcare, I feel that there are many things in place. I was part of numerous village visits, to screen the local tribal population against diabetes. Their BMI was calculated along with their waist and hip circumferences. After this, a fasting capillary glucose was taken as was their BP. If the fasting glucose beyond the threshold, bloods were taken for lipids and FBC. An OGTT was then performed post breakfast. This meant that the tribal population were adequately screened for cardiovascular risks as well as for the prevalent 'lean diabetes'.

## References

Nimgaonkar, V., Krishnamurti, L., Prabhakar, H. and Menon, N. (2014) 'Comprehensive integrated care for patients with sickle cell disease in a remote aboriginal tribal population in southern India', *Pediatr Blood Cancer*, 61(4), pp. 702-5.