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SSC 5c Part 2: Paediatric Infectious Disease and HIV.

1) Describe pattern of paediatric HIV in Malawi

HIV prevalence in Malawi is approximately 11.9%, as per the results of the most recent survey conducted within ANC clinics. This equates to approximately 93,000 children between the ages of 0-14 years living with HIV in the country. In addition to this, it is estimated that there are over half a million orphans aged 0-17 years, as a consequence of the HIV epidemic, living in Malawi. Co-incidental poverty, food insecurity and poor access to healthcare compound the effects of infection and pose particular management challenges. Many children are diagnosed with HIV during an acute hospital admission for conditions such: pneumonia, malaria, malnutrition and diarrhoeal disease.

The nature of vertical transmission, which represents the overwhelming majority of 'mode of infection' in the paediatric population, requires innovative pre and postnatal diagnostic and management strategies for both mother and infant, to reduce rate of HIV transmission. At present, as a consequence of 'preventing mother to child transmission' initiatives, the incidence of paediatric HIV is falling (according to Malawian Ministry of Health statistics). However incidence of new infections in adults is expected to continue increasing.

2) Describe service provision for paediatric HIV in Baylor COE

The Baylor COE in Malawi operates as the outpatient paediatric HIV clinic for Kamuzu Central Hospital and as the referral centre for the whole country. In addition, it offers inpatient paediatric care for HIV infected and exposed children and works with government health facilities and physician services to provide outreach programs and mentorship initiatives, such as: Tingathe/PMTCT (preventing mother to child transmission) and MPHATSO. BIPAI Malawi also undertakes several projects including: teen club - a program established to provide support specifically to adolescents making the transition from paediatric to adult care. In addition to this, BIPAI also aids the government with the national scale-up of paediatric HIV services by serving as a primary consultant to the Ministry of Health, as well as participating in a number of Technical Working Groups.

Clinically the BIPAI program is organised into 5 levels: 1) Clinical care at the COE, 2) Clinical care at Lilongwe outreach sites, 3) Clinical care, staff education and training at all other outreach sites in the central region and 4) at other, more distant sites in the north and south of Malawi and 5) Participation at the national level in paediatric HIV care policy-making. The clinic also acts as an entry-point for a family clinic programme, in which all family members have access to care and ART (anti-retroviral therapy), co-trimoxazole and mosquito net prescriptions.

Within the COE, patients are seen on a regular basis for review, disease monitoring and medication refill. The clinic provides a 'one-stop shop' where services such as: social work, psychosocial counseling and HIV counseling and testing are also available. In addition, patients are encouraged to book emergency appointments within the clinic for any acute medical problems.

Guidelines for the progression of care of vertically infected infants, from birth to adulthood, have been developed according to both local and national standards, in order to address the unique needs of HIV management in this population. They include protocols for: initiation of ART: based on age, clinical status and CD4 count; HIV testing milestones for infants in whom breastfeeding may obscure true results; and a number of measures to address the psychosocial aspects of: disclosure, understanding and transition into adolescence and self-sufficiency with regard to disease management. In addition, initiatives such as the T2 program are being set up to improve education and employment prospects in this group and address the relationship and safe sex considerations

particular to adolescents living with HIV. Alongside this, the clinic also offers basic medical care and a separate outpatient therapeutic feeding programme.

3) Discuss how paediatric nutritional problems affect HIV presentation and management.

Malnutrition is a significant problem in the paediatric population of Malawi with 15% of under 5's being moderately or severely malnourished and 53% moderately to severely stunted. The prevalence of HIV in this group, no doubt compounds and exacerbates the effects of malnutrition. The relationship can be symbiotic: with opportunistic infections affecting food absorption and metabolism, whilst poor food security, as a result of socioeconomic circumstances, plays a role in worsening disease manifestations. However, it should also be noted that: even in children who are otherwise well, HIV infection alone can contribute to poor growth and weight gain and it is suggested that children with asymptomatic HIV infection may require up to 10% more energy than those who are uninfected. This is reflected in the guidelines for nutritional assessment, monitoring and management in this patient population.

Whilst dietary supplementation does not improve the elevated mortality and morbidity of the co-affected population in those whose dietary intake is sufficient, it has been observed that HIV-infected children do benefit from high dose vit A supplementation and the addition of zinc to ORT for the treatment of diarrhoeal illness. Guidelines also suggest that caregivers should be counseled on how to manage symptoms that interfere with normal appetite, eating and digestion such as: oral sores/thrush and gastroenteritis. Part of this care responsibility involves education for improved recognition of these conditions, as well as recommendations for dietary modifications over symptomatic periods. Opportunistic infections may increase energy requirements by up to 30%, and clinicians must be vigilant for treatable causes of growth faltering such as: tuberculosis and other infections.

Severe wasting is a common clinical presentation of HIV and whilst HIV-infected children should follow the same treatment program as uninfected children - both in the nutritional rehabilitation unit and as an outpatient, initiation of ARTs is essential for those who do not respond as expected to standard nutritional therapy.

4) What did you learn from this elective period and how will it affect your future career decisions?

I really enjoyed working with the Baylor team in Lilongwe. This was my first experience of medicine in a resource poor area and I learned a lot from the experience. The Baylor Clinic is an incredible initiative and I felt privileged to have been able to observe and participate in the work they are undertaking, even for such a short time.

My experience at Kamazu Central Hospital was a real eye-opener. The wards were very understaffed and resources limited. This effected every element of patient care, from hygiene and infection control through to the psychosocial aspects. The clinical condition of the patients, even those who were unstable, was not always able to be monitored and the resources to treat and maintain patients in many cases simply was not there. One of the most shocking things was the absence of ventilators - leaving mothers to manually bag their own children. As a consequence of these limitations children often die from conditions that would have been preventable and/or treatable at home. I believe one of the biggest challenges of working in such an environment is reconciling with your limitations, including: appreciating that your time and attention in itself is a

resource and one that must be spent in a utilitarian way: doing the most good for the most people. This can sometimes feel tantamount to giving up on certain children, or not giving them the attention that they really need, which is an issue that we do not have to face at home.

I still feel passionately about working in underserved areas abroad and with humanitarian teams in the future, more so for seeing the demand for medical staff in this example. My rotation with BIPAI Malawi, has given me a flavour of some of the issues involved in this line of work, and I believe it will have prepared me better than any experience in the UK would have been able to do. I hope in the future that I might be able to contribute my skills in my chosen field in a similar if not the same setting.