ELECTIVE (SSC5b) REPORT (1200 words)

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

Elective in Belize

For my elective, I was at the Western Regional Hospital in Belmopan, the capital city of Belize. Belize is a small country with a population of 360,000, having the lowest population density in Central America. It has a diverse population of Mestizo, Creole and Mayan communities amongst several others (The World Factbook — Central Intelligence Agency, 2016).

Between 2002-2009, the Ministry of Health in Belize began restructuring the healthcare system namely under the Health Sector Reform Project. This led to the division of the Belizean healthcare system into four regions: Northern, Central, Western and Southern (Pan American Health Organization, 2009)..

Describe the pattern of arthropod-borne illnesses in Belize and the ability of the Belizean healthcare system to prevent Zika virus transmission.

In Belize, malaria cases decreased significantly from 844 to 150 between 2006-2010. This is due to the Ministry of Health's concentrated efforts to eradicate malaria (Mitchell, 2013). For example, at the Western Regional Hospital, any patient with a raised temperature will receive a malaria test in the emergency department and if found to be positive, they will receive treatment. During 2006-2007, Stann Creek, an area in Belize, reported 50% of the malaria cases in Belize. This was a similar percentage reported by the Toledo district in 2007-2008. 10.3% of people living in the Toledo district are reliant on rivers, ponds and streams for their water making them vulnerable to waterborne diseases and the mosquitoes, which live near bodies of water or when water is stored in containers (Mitchell, 2013).

On the other hand, dengue fever has been on the rise. In 2007, there were 137 cases of dengue in Belize. This increased to 292 cases in 2009 with all four serotypes circulating. In 2009, there were 87 cases of dengue haemorrhagic fever rising to 293 cases in 2010(Mitchell, 2013). This is partly due to the fact that 25% of Belizean households do not have access to potable water and the fact that non-biodegradable waste is not managed appropriately in Belize. Containers fill with water and serve as larval habitats for Ae.aegypti mosquitoes(WHO, 2017). Chagas disease cases detected through the National Blood Bank screening programme increased from 13 in 2006 to 45 in 2010 (Mitchell, 2013). There were no cases of yellow fever between 2005-2009.

There were reports of two confirmed cases of Zika virus in 2016 with several cases being reported throughout the year. One of these cases in Cayo District was a 22 week-old pregnant woman. There have been no reported cases of Zika virus complications or deaths (PAHO, 2017). Since there is no cure for Zika virus, the Ministry of Health in Belize as in other countries has been focusing on prevention by educating people. Leaflets and posters have been produced which are used in primary care settings.

Describe the pattern of healthcare provision in Belize and how this differs to a developed country such as the UK.

As previously mentioned, the healthcare system in Belize was reorganised into four health regions. This development meant that healthcare was decentralised. The Health Sector Reform Project also introduced a National Health Insurance to provide universal healthcare to the poorest in Belize, namely the Southern region and the south of Belize City (PAHO, 2009).

Healthcare in Belize is delivered at three levels: primary, secondary and tertiary care. Primary care consists of health centres, health posts and polyclinics. Health centres and health posts provide care in rural areas. They usually have a Rural Health Nurse and sometimes, a physician. Polyclinics usually employ more staff and have a wider range of services available to them such as diagnostic services, prenatal care, immunisation and, in some cases, can offer emergency care. In each region, there are secondary care hospitals, which offer essential services such as general medicine, surgery, gynaecology and paediatrics. At the Western Regional Hospital, there is also an acute psychiatric unit. Finally, the Karl Huesner Memorial Hospital in Belize City offers both secondary and tertiary care services. It is the country's only referral centre with services in haemodialysis, neurosurgery, interventional cardiology, cardiothoracic surgery and neurology as well as the secondary care services. It receives funds primarily from the government (Ministry of Health, Belize, 2014).

Healthcare spending in Belize was $243.57 per capita in 2007(PAHO, 2009). In contrast, public expenditure on healthcare in the UK was $3920 per capita in 2007(ONS, 2017). There is robust evidence that indicates low healthcare spending correlates with a low life expectancy in the population (ONS, 2016). The country's economy is quite small and is heavily reliant on agricultural exports, tourism and more recently, petroleum. There is poverty, unemployment, slow economic growth and insufficient human resources. This means that there are insufficient resources funded by the government for public health services to meet the demand of the population (Ministry of Health, Belize, 2014).

Describe the pattern of HIV/AIDS in Belize and how HIV treatment and funding differs from that of the UK.

Case-based surveillance was introduced in 2010. This captures the individual's details and it is stored electronically. HIV testing is performed using rapid tests and confirmed with an ELISA test. Electronic information has allowed the aggregation of data for epidemiological analysis.

Since the first case of HIV was diagnosed in 1986, Belize has seen a constant increase in the number of HIV cases. Between 1986-2002, 2297 people were infected with HIV. At the end of 2003, HIV prevlance was 2.4%, the highest in Central America(WHO, 2005). By the end of 2012, the prevalence rate was 1.4%. HIV/AIDS was one of the leading causes of mortality in Belize in 2007-2011. The highest prevalence is in the demographic of men who have sex with men at 13.85%. HIV continues to affect more men than women with a ratio of 3:1(Ministry of Health, Belize, 2014).

Treatment guidelines were developed for HIV/AIDS in 2003 based on standards set by the Pan-American Health Organization (PAHO). Guidelines on postexposure prophylaxis were also developed. The Belizean Ministry of Health aims to have all HIV positive patients on treatment to reduce mortality and morbidity but also as a secondary prevention strategy. In 2015, 1,176 patients were placed on antiretroviral therapy with no difference between men and women. However, even with widespread testing 58% of newly diagnosed patients had a CD4 count less than 350cells/mm3. This highlights that access to healthcare and treatment comes at the late stages of infection; there is a lot of stigma surrounding HIV testing even more so than in the UK. At the end of 2015, 10% of those newly diagnosed had died.

Funding comes from the Belizean government and also the Global Fund, based in Switzerland, that is a partnership organisation between governments, civil society, the private sector and those affected by disease(Global Fund Overview, 2017).

Describe an interesting case of tropical disease and reflect on the learning points of the case.

Patient X

7y, Male

Seen with Mum.

PC/HPC:

Presented to ED with drowsiness and a fever 3/7. He was previously well until the fever. Then on the day he presented, he was feeling drowsy and vomited x2.

Eating and drinking, had been to the toilet in the last 24 hours.

No headache, no abdominal pain, no diarrhoea, no rash

At-term baby born with vaginal delivery, developmental milestones ok, immunisations were up to date.

PMH: No medical conditions

DHx: No regular medications, given Ace (paracetamol), no allergies

SHx: Lives at home with mother and father, no siblings

O/E:

Temp 38.5, RR 33, HR 115, BP 95/65, weight 25kg

Pale, jaundiced with dry mucous membranes

Pulse 115, regular

Chest clear

HS I+II+0, no murmurs, no basal creps, no oedema

Abdomen soft, non-tender, bowel sounds present

Treatment:

Oxygen, IV access, IV 0.9% NaCL, FBC, UEs, LFTs, CRP

Malaria test performed using rapid testing which was positive.

Tested positive for P.vivax

Treated with quinine 400mg in 5% dextrose IV

The following day the patient had rapidly recovered and was discharged home the day after with quinine and folic acid.

This was the first time I had seen a case of malaria and it was interesting to see how quickly the patient had deteriorated and how quickly they recovered once the diagnosis had been made. I learned the importance of rapid testing especially in developing countries where lab results will take time. Also, it was interesting to see how the priorities are different in the emergency department of a tropical country. If this child had presented in the UK, there would be other diagnoses that would be thought of first, the one that springs to mind is meningitis. This made me consider how the experience of a doctor is affected by the demographics of the population they work with and also the resources available to them. I have learned a lot during my time in Belize and I hope this exposure will prove invaluable as I begin my foundation training.

References

Global Fund Overview [WWW Document], n.d. URL https://www.theglobalfund.org/en/overview/ (accessed 6.8.17).

Ministry of Health, Belize, n.d. Health Sector Strategic Plan 2014-2024 [WWW Document]. URL http://health.gov.bz/www/2009-2011/848-health-sector-strategic-plan-2014-2024 (accessed 6.8.17).

Mitchell, C., 2013. Health in the Americas: Belize [WWW Document]. URL http://www.paho.org/salud-en-las-americas-2012/index.php?option=com_content&view=article&id=20%3Abelize&catid=21%3Acountry-chapters&Itemid=133&lang=en (accessed 6.8.17).

ONS, 2017. Expenditure on Healthcare in the UK - Office for National Statistics [WWW Document]. URL https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthcaresystem/articles/expenditureonhealthcareintheuk/2015-03-26#total-healthcare-expenditure-per-person (accessed 6.8.17).

ONS, 2016. How does UK healthcare spending compare internationally? | Visual.ONS [WWW Document]. URL http://visual.ons.gov.uk/how-does-uk-healthcare-spending-compare-internationally/ (accessed 6.8.17).

Organization, P.A.H., 2009. Health Systems Profile Belize: Monitoring and Analyzing Health Systems Change/Reform. PAHO.

PAHO, 2017. Zika-Epidemiological Report: Belize [WWW Document]. URL http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=35105&Itemid=270 (accessed 8.6.17).

The World Factbook — Central Intelligence Agency [WWW Document], n.d. URL https://www.cia.gov/library/publications/the-world-factbook/geos/bh.html (accessed 6.8.17).

WHO, 2005. HIV/AIDS treatment: Belize.

WHO, n.d. WHO | Dengue control [WWW Document]. WHO. URL http://www.who.int/denguecontrol/control_strategies/environmental_management/en/ (accessed 6.8.17).