

ELECTIVE (SSC5b) REPORT (1200 words)

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

LO1: Discuss incidence and prevalence of head and neck cancers in the US

Head and Neck cancer accounts for more than 500000 cases and 400000 deaths annually worldwide¹. There are just over 60000 cases annually in the US alone with about 13000 deaths each year accounting for 3% of malignancies in the united states². Cancers of the head and neck include: oral cavity, pharynx, larynx, paranasal sinuses and salivary glands. The most commonest being the oral cavity (389000 cases a year worldwide), the larynx (160000) and the pharynx (65000)³.

The two most important risk factors are alcohol and tobacco⁴ with one study highlighting that these two risk factors account for nearly 75% of all head and neck cancers⁵. Head and Neck cancers are twice as common among men than women and more often among those over 50. Human Papillomavirus (HPV) particularly HPV type 16 is an important risk factor for oropharyngeal cancer and tonsillar cancer⁶. Cancers at different sites have variable histopathological although Squamous Cell Carcinoma (SCC) is the most common overall.

LO2: Describe the pattern of health provision in the USA compared with the UK

The US healthcare system has been under much financial and political scrutiny. Broadly speaking health care facilities are split into 60% non-profit hospitals, 20% government owned with the rest being 'for-profit'. Healthcare spending is split into funding via government programs such as Medicare and Medicaid and private health insurance. People below the age of 65 can purchase insurance in a number of different ways, either via their employer or family members insurance or by purchasing their own private health insurance. There are a number of notable exceptions, which encompasses the children's health insurance program and the veteran's health administration.

Health insurance appears to be a major determinant of outcomes and survival particularly for certain diseases such as cancer⁷.

A number of legislations have been introduced to address the uninsured population, most notably the Patient Protection and Affordable Care Act (PPACA). This was designed to increase health equality by introducing subsidies and insurance exchanges.

Healthcare provision itself is subject to both state and federal monitoring through various organizations, most notably pharmaceutical and medical devices are approved and monitored by the Food and Drug Administration (FDA).

Remarkably despite spending more on healthcare per capita than any other country, the US healthcare system is constantly ranked as one of the worst performing health care systems⁸. This situation is unlikely to improve as healthcare spending in the US is expected to increase to 20% of GDP by 2024⁸ yet underlying financial waste is still a major issue⁹.

LO3: To appreciate the public health policy that the hospital has influenced in the US

NIH is the largest public funder of biomedical research in the world. It receives more than \$20 billion dollars of government funding per year, which is split into 2 programs: intramural and extramural research. The numbers of individual discoveries are numerous and have resulted in 8 Nobel prizes with 5 of these from the intramural program with notable discoveries being neural electrical signaling and genetic coding.

From a public health perspective, there are a number of NIH trials that have revolutionized management of key pathologies. Through the NIH funded Framingham study combined with other conditions heart disease mortality reduced by 68% from 1969 to 2013¹⁰. The NIH diabetes prevention program has also shown the enormous benefit that lifestyle changes can lower the risk of developing type 2 Diabetes in adults.

The National Cancer Institute at NIH has been responsible for numerous vaccination developments, most famously for cervical cancer with the development of Cervarix and Gardasil. As a result of NIH investigation, all infants in the US have a hearing-screening test, which has resulted in effective early diagnosis and management of hearing loss. These are just a fraction of the NIH discoveries in the past 30 years that have influenced public health policy.

Similarly health policy towards drug abuse and addiction has also been revolutionized from the NIH funded Monitoring the Future (MTF) survey which has resulted in the rate of cigarette smoking by teenage students to below 6%.

LO4: To understand the various surgical procedures in ENT/Head and Neck Surgery

The vast range of ENT procedures is an attractive part of the specialty from complex temporal bone surgery to intricate ear surgery such as stapedotomies.

Having assisted in various ENT procedures in the UK, my experience has been limited to routine ENT surgery such as tympanoplasties and tonsillectomies. I enjoyed observing these procedures however they are commonly misrepresented as the range of ENT procedures.

During my elective at NIH I was encouraged to scrub in and get involved in the operating room. The operating room has a similar layout to the UK and the theatre staffs have similar roles and responsibilities however there were significantly more research-centered interventions such as biopsies due to the vast majority of patients on protocol.

Regrettably despite examining many patients with Neurofibromatosis clinic, I did not observe any temporal bone surgery, which is something that I find fascinating. As NIH is the world's premier tertiary centre there were a number of patients with extremely rare immune deficiency syndromes that were under protocol and had associated complex ENT problems. One memorable procedure was a FESS (Functional Endoscopic Sinus Surgery) for a patient who had a fusarium fungal infection. FESS procedures use a specialized scope to remove the pathology and enlarge natural draining passages in the nose and sinuses. In surgery, technical proficiency is only one factor, with the other factor being surgical evaluation. This is an issue that the attendants at NIH have to deal with on a daily basis with some patients being operated on with rare conditions do not follow the typical surgical rulebook. Operative assessment on many of the patients at NIH is incredibly challenging with many patients often having inadequate biochemical parameters making surgical optimization challenging. Another facet of ENT surgery is thyroid surgery, which is a delicate operation as there are numerous vessels, and nerves that may be damaged. It is particularly important to assess the vocal cord function prior to

surgery as the recurrent laryngeal nerve damage is a common operative complication and hence this was a common reason for attendance to the laryngology clinic perioperatively. Teaching from all the attending's ensured I expanded my surgical knowledge base and gained a much deeper technical and practical understanding in the operating room.

References

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