NEUROLOGY

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Objective 1:

What are the Main Neurological Conditions in Inner City Boston? How does this differ from Inner city London?

Neurological conditions are similar in Boston and London. As a city in the USA that has a similar economical and world climate, common conditions such as meningitis, Parkinson's Disease and Alzheimer's Disease are all prevalent in both cities. However a condition that I had not seen before in London, but seemed particularly prevalent in Boston was Lyme Neuroborreliosis. Lyme disease (named after the town Lyme, in nearby Connecticut) is a possible outcome from being bitten by a tick, carrying the *Borrelia Burgdorferi* bacteria. It is realisation that it is a disease of particular preference of the East Coast of America, especially the islands, Cape Cod, and Massachusetts. I saw surprisingly many patients with the features of Lyme Neuroborreliosis, including erythema migricans, facial nerve palsies, and lymphocytic meningitis. Although Lyme disease occurs in the UK, it is mainly obtained in forest areas, rather than a city.

Objective 2:

How are Neurology Services Delivered In the Private Healthcare led System in Boston? How does this system Compared to NHS delivered services in the UK?

A main observation I gained from my time in Boston was how over half of patients admitted either had no healthcare insurance, or had prolonged stays in hospital meaning time was running out under their insurance requirements. This is obviously not an ideal situation, for patients and doctors to be worried about insurance aspects of the patients' admission, as opposed to their medical conditions. Nursing rounds were held everyday, and the majority of discussions taken place were in respects to that patient's insurance condition. Nevertheless, when thinking about a private healthcare system, it is sometimes the case to prescribe medications that are not in stepwise progression; instead, sometimes starting with the most powerful drug first. As well as this, drugs are often licenced in the USA first, sometimes years before the NHS and NICE approves of a drug use in the UK.

Objective 3:

Describe any differences in Management of Multiple Sclerosis Between Boston and London, and the reasoning behind them.

I spent some time in MS clinics in Boston and London as something to target specifically in terms of trans-Atlantic comparisons. Massachusetts General Hospital was not the main site of MS specialists, and was rather located at the Brigham Women's and Children Hospital. Nevertheless, I spent time in the clinic of the only MS Specialist at MGH, knowing that services may be more limited there.

I found two pharmaceutical differences in the management of MS, these drugs being Aubagio (teriflunomide) and Tecfidera (dimethyl fumerate). Both of these drugs are being used in the USA,

and are still subject to NHS appraisal in the UK. Both of these new drugs are oral agents, bringing the number of oral medications for MS in the USA up to three. In the UK, we still have only one agent, Gilenya (fingolimod). Many patients in the USA with newly diagnosed MS are being offered oral agents as a first time treatment, as they are easier to fit into a typical lifestyle, and are more tolerated than injectable agents. In the UK, Gilenya can only be prescribed once Beta- interferons are tried, and seen as non-optimal treatments in patients still relapsing on the medication. That means patients are having to tolerate injectable agents for longer while we await NHS appraisals. Although people do not mind injections, many patients do, and injectibles also have their own side effects such as injection site reaction.

In London, MS clinics are held together with MS specialist nurses. These nurses are assigned to patients, to help with any questions that they may have, and provide support when they are at home. At the clinic I attended at MGH, such nurses were not available, due to financial limitations (although at the Brigham, where the bulk of MS clinics occur, such nurses are available). To combat this variation, the drug companies offer the services of MS specialist nurses, providing patients with help away from the clinic. However the advantage of the system of London compared to MGH is that the nurses know the patients personally, fully involved in not only the medical needs of the patient, but also the social needs. Such a system does not exist at MGH.

Objective 4:

Improve my knowledge of Neurology and identify key differences in Management of Neurological Conditions between the USA and UK

I feel my time in MGH Boston was widened my knowledge of neurology. As well as this, I was exposed to conditions I had never encountered before, and had opportunities to talk to patients about their conditions. The training of Harvard medical students was very intense in the neurology department, and I received training in aspects I had not learnt before, such as the management and examination of a comatose patient and emergency neurological conditions. I have become more confident in the neurological exam, as well as interpreting head CT and MRI scans. As well as this, I have identified differences in the management of conditions between the UK and USA, not only pharmaceutical, but also social management. I have been fully exposed to the privatised healthcare system, and seen both its advantages and flaws, not only for the patients, but also the difficulties is poses for the doctors treating them.