



HMS Neurosurgery Elective

I undertook a neurosurgery placement at Brigham & Women's Hospital (BWH) and Children's Hospital Boston (CHB), both teaching affiliates of Harvard Medical School. The Department of Neurosurgery at BWH is currently in its centenary year and is considered the home of neurosurgery after being founded by the late Dr. Harvey Cushing in 1913. Children's Hospital Boston is at present ranked *the* number one paediatric neurosurgery center in the USA.

I chose to do my neurosurgery elective at Harvard for three primary reasons. Firstly, to experience neurosurgery training at a center of excellence and be exposed to a large number of high quality cases encompassing the entire range of neurosurgery.

Secondly, and in light of the passage of two controversial landmark bills reforming healthcare in England and the USA, I thought it be useful to have some insight into the practice of medicine within a private healthcare system, especially as our National Health Service (NHS) seems to be heading ominously in that direction.

Finally, I wanted to be sure that neurosurgery was indeed the speciality for me by sampling the notorious 88-hour plus working week that sharply contrasts with our trainee's 45-hour EU Working Time Directive. The logic being, if I survived the gruelling USA working hours then I was deemed fit for purpose across the pond.

I observed 30 operations over my 4-week placement, from aneurysm clippings to awake craniotomy electrophysiologic mapping and tumour resection to rare bilateral pial synangiosis surgery. Aesthetically the most memorable operation was a pineal gland tumour resection in a 26 year-old female using an infratentorial supracerebellar approach. I realised the significance of positioning in neurosurgery and how it is treated with the same importance as the operation itself. Correct position allows optimal exposure of the target tissue whilst reducing post-operative peripheral neuropathy. In this case, the patient was put in a semi-seated position with her head flexed and turned to the right. All

pressure points were well padded. To witness the surrounding anatomy and observe the resection of tumour from the pineal gland that René Descartes famously described as the "principal seat of the soul." was a truly majestic moment.

I was also fortunate enough to assist in a few operations; most memorable of which was performing my first burr hole using an automatic stop craniotomy drill. I also assist in a stereotactic-guided needle biopsy of a butterfly lesion in the corpus callosum of a patient admitted direct from the Middle East. Final pathology results confirmed an aggressive WHO grade IV glioblastoma. The prognosis was poor and the patient was started on concurrent Temodar and radiotherapy.

The World Health Organisation's surgical safety checklist was plastered on every operating theatre wall and was recited like a mantra with almost religious vigour by the multidisciplinary team before each and every operation. It was introduced in 2007 after a multi-centre study proved it reduced mortality and morbidity following surgery by up to a third. It does so by strengthening inter-professional collaboration and delegating roles to the appropriate member of the team.

During the course of my time in the operating theatre, I often studied it and it dawned on me that one group of professionals were inconspicuously absent from the "team" list. The WHO surgical safety checklist did not specifically mention medical students. My typically medical student apprehension made me feel that our absence from the list translated to our poor integration into the operating team especially in the CBH operating theatres. The CBH operating theatre staff did not seem to be cognisant of the importance observing and assisting in operations is to our education and they did not sufficiently cater for it. Perhaps they were greatly concerned with protecting the confidentiality of the children to realise this. In any case the doctors, on the whole, didn't want to force the issue because that would disrupt their working relationship especially since some of the nurses had been there longer than most of the doctors. I felt that the WHO surgical safety checklist's silence on the issue only compounded the problem. And that was worrying, especially as we are the future colleagues of the rest of the "team".

One common statistic that is oft-repeated about the US health system is that 40 million people in this country have no health insurance and another 30 million have inadequate health insurance. Whilst this leaves 20% of the US population with inadequate healthcare cover, it is clear from my experience that a private healthcare model does allow patients with cover to a greater say in their medical management and provide the right environment for innovative medical advancement. However, Massachusetts was not typical of the rest of the US in that it has a long established public health insurance program for low and medium-income residents. This safety net is greatly appreciated by Bostonians I spoke to in the local area and served as the prototype on which the recently passed federal healthcare bill known as Obamacare was based.

I was amazed at the work ethic of the US neurosurgery trainees who work more than 100 hours a week, often with little supervision from the attendings. They start the day at 5:30am, complete ward rounds, attend meetings with the attendings then start surgery by 8am. To give some perspective UK neurosurgery service start time is generally 8am. This hectic working schedule doesn't seem to detract from their life-work balance as most BWH/CHB trainees are happily married or in long-term relationships, again, a sharp contrast to the trainees at my home institution (Royal London), many of whom are single and cite the demands of the UK training program as the primary reason for their life of singledom. The reason for this difference, in my mind, is to do with the shorter training program and higher remuneration in the US.