

Canada calling

Michael Hart reflects on the highlights and challenges of undertaking an overseas Fellowship in neurosurgery during the height of the pandemic

From May 2020 to July 2021 I undertook an overseas Fellowship in functional neurosurgery in Vancouver, Canada, supported by an Ethicon Foundation Fund travel grant. The COVID-19 pandemic presented new challenges to pursuing an overseas Fellowship, including those related to travel, relocation and overall logistics. Furthermore, tests and quarantine accommodation were required.

Having said that, I feel that there wouldn't have been a better place to do a Fellowship during the pandemic than Vancouver. The province of British Columbia was fortunately relatively spared from the original first wave of the pandemic. And with its outdoor-centric and healthy-living population, Vancouver enjoyed relatively low levels of COVID-19 throughout.

The Fellowship was led by Professor Chris Honey and the programme has been running for over 20 years. Functional neurosurgery involves the modulation of nervous system activity. Historically, this involved injuring ('lesioning') key structures involved in a specific areas of the brain. Subsequently, deep brain stimulation (DBS) evolved, which involves electrical neuromodulation to provide similar effects to these lesions, but with the advantage that the effect can be titrated and reversed.

Conditions treated by functional neurosurgery include movement disorders (Parkinson's disease, dystonia and tremor), pain, epilepsy and psychiatric conditions. Currently more than 175,000 DBS systems have been implanted worldwide.

One of the attractions of the Fellowship was the variety of operations performed and conditions treated. Professor Honey's practice encompasses almost the entire range of functional neurosurgery, including lesional surgery, microvascular decompression surgery, as well as neurosurgery for pain and psychiatric conditions.

In addition, he performs procedures that are dropping out of the surgical vocabulary due to their rareness and complexity, such as trigeminal nucleotomectomy and motor cortex stimulation. Naturally, the Fellowship also includes a large and efficient DBS practice, and this clinical exposure was also a priority for me. Anything broader than this in terms of surgery – for example, non-invasive approaches – would have diluted this core experience in DBS too much.

TWIN BASES

Location-wise, the Fellowship runs from two main hospitals. The team was based at Vancouver General Hospital, a large, busy teaching hospital in the centre of the city that incorporates all main surgical



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specialties and is a major trauma centre. Our operations were done at the University of British Columbia, which encompasses a smaller, six-theatre elective hospital. This is part of the university campus in the Pacific Spirit National Park.

British Columbia has a population of around five million, conveniently similar to Scotland, where I grew up. However, the difference is in population distribution, with British Columbia essentially concentrating most of its inhabitants in Vancouver and the surrounding suburbs. Outside of this metropolitan area was a province approximately the size of France and Germany combined. This brought about unique challenges relating to communication with and transport to more remote communities.

BUSINESS AS USUAL

Healthcare in Canada is similar to the UK in that it is almost entirely publicly funded. Overall, healthcare is well funded, with a healthcare budget of approximately \$20bn CAD (approximately £12bn) per year. While it is hard to make specific comparisons as to the level of funding

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between the UK and Canada, there appeared to be a much higher usage of philanthropy in Canada.

Healthcare authorities were in the seemingly conflicted position of wishing to control the COVID-19 pandemic while also reducing waiting lists. Fortunately, we were able to continue operating at record levels throughout and performed over 80 primary DBS insertions. Possible reasons for this include operating at a geographically distinct and smaller elective hospital that did not admit patients with COVID-19.

All patients were screened prior to admission and were rarely in hospital for more than 24 hours, while the

Clockwise from top left: Vancouver in British Columbia looks over the Pacific Ocean; Michael Gavin Hart explores the great outdoors with Professor Chris Honey; view from our apartment towards Vancouver General Hospital, one of the two hospitals where the Fellowship is located

elective nature of surgery meant we presented no demand on intensive care facilities. These advantages held true for the other surgical specialties with which we shared the facility. Credit should also go to our patients, who often went into self-imposed isolation prior to surgery.

The Fellowship offered more than what is required to become a safe and effective practitioner in functional neurosurgery, both in terms of volume and training quality. I was essentially able to routinely lead all operative cases myself and run my own clinic. One of the striking features of the Fellowship was the high number of procedures that were performed. It readily became apparent that to do this one needs a highly efficient setup, with a great team and a low rate of complications.

HAPPY FAMILIES

From a personal perspective, my memories of Vancouver will be of the most wonderful family experiences. It was a joy seeing our children settle into school so well and make so many friends. The school emphasised the community feel of the Davie Village area (home of the LGBTQ2+

community) and charismatic West End, where we lived. It also prioritised teaching about the local environment.

We quickly became accustomed to the British Columbian ethos of exploring the great outdoors. During the winter months a highlight was the whole family learning how to snowboard on the local mountains, less than 30 minutes from downtown Vancouver, every weekend. We also enjoyed hiking, mountain biking and paddle boarding.

This Fellowship was undoubtedly the highlight of my training. I feel thoroughly well prepared to lead a busy functional neurosurgery service. While the knowledge and skills I have learned will serve me well for the rest of my consultant career, it will be the memories of the great team I worked with and wonderful patients I helped to treat that will endure.

It was also a wonderfully fulfilling family experience, punctuated by a reinvigoration for enjoying the great outdoors and becoming part of a truly unique city. Overall, I would highly recommend not only this Fellowship, but spending any time possible in beautiful British Columbia.