

# Canadian Neurosurgical Manpower: Need for Self-Determination

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In this month's Canadian Journal of Neurosciences, Woodrow, O'Kelly, Hamstra and Wallace<sup>1</sup> describe their statistical analysis of Canada's future neurosurgical manpower status. The theme is simply that Canada is training too many neurosurgeons. The authors raise a valid concern that may indeed prove true.

The American Board of Neurological Surgery (ABNS) decision to 'close the border' has clearly impacted Canadian neurosurgical manpower.<sup>2</sup> By itself, the ABNS decision that curtailed the exodus of 50% of Canadian graduates<sup>3</sup> will not necessarily lead to crisis. I believe several other factors will prove that a decision to decrease the number of Canadian neurosurgical trainees may be premature.

From the Canadian public's point of view the most compelling data to consider is that there is actually a shortage of neurosurgeons per capita. Almost all provinces are significantly below the ideal ratio of 1 neurosurgeon/129,450 Canadians.<sup>4</sup> We may be training too many neurosurgeons to fill the current number of neurosurgical positions: The logical extension is that we need to increase the number of surgical positions in Canada. I would suggest that regardless of any manpower issues, we carry an obligation and duty to ensure that the population is appropriately supported with neurosurgical services. As self-serving as it may seem, the statistics regarding patient access to neurosurgical care are robust indicators that more neurosurgical positions are needed throughout Canada. This is evident from the months of waiting before a patient with sciatica can be seen, by the need for patients to travel to other provinces to undergo radiosurgery, and by the 'luck' of having one's aneurysm coiled or clipped depending on what corner of the province one lives. Neurosurgeons should take ownership and develop a strategy to resolve this situation- and by doing so will also address the anticipated over-abundance of graduates. Indeed, this is the deeper message in the paper by Woodrow et al.

While this movement is afoot, there are several other factors that should hearten the imminently graduating neurosurgeon and the interested medical student.

From the 'supply side': The graduating pool of neurosurgeons will not be as large or competitive as it may appear. Of the over 180 residents who gained RCPSC certification in the 1990's, 28% were foreign trainees, and historically 68% leave Canada. Furthermore, if 2005 is an indication, the word is already out amongst medical students. Of the 15 neurosurgical positions offered in the 2005 CaRMS (Canadian Resident Matching Service), only 10 were filled on the first iteration. Compare this with 14 positions filled out of 15 in 2004, 17/17 in 2003, and 14/16 in 2002.<sup>5</sup> Another less palatable truth is that while there are 102 residents currently toiling on neurosurgical wards across Canada, the attrition rate in neurosurgery is such that up to 32.7% will not likely see it through completion.<sup>6</sup>

From the 'demand side': It would be inaccurate to state that efforts are not already underway to increase the number of neurosurgical brethren. Between 1985 and 2005 the University of British Columbia increased its academic positions from 8 to 15, similarly the University of Manitoba doubled their numbers from 4 to 8. These increases are well out of proportion to the respective population increases. Similar trends have occurred in community practice. In British Columbia alone, five new private practice positions have been added over the past four years. These positions could not have been confidently predicted five years ago.

The 2004 National Physicians Survey has introduced a couple of interesting caveats to the debate.<sup>7</sup> The first statistics of note relate to recent changes in work hours performed by Canadian neurosurgeons. Over the past two years 6.1% had expanded work hours, compared to 9.1% with reduced hours. On-call duty was increased by 4.5% while 10.6% reduced this chore. There is a clear discrepancy in those who have increased their work load and those who have cut back. This gap in neurosurgical services can only be filled by more bodies. Also from the National Physicians Survey comes statistics delineating patient wait-times prior to neurosurgical consultation. In the survey 24.2% of Canadian neurosurgeons stated that an 'urgent referral' would have to wait at least one week before being seen. For non-urgent referrals, 39.4% stated these patients would have to wait greater than three months. These wait-times again highlight the need (or opportunity depending on how one looks at it) for more neurosurgeons and neurosurgical resources in Canada.

Of course there are other reasons for job-openings besides retirement. This includes a large fraction of Canadian neurosurgeons who are mobile both nationally and internationally thus leaving behind opportunities for new graduates. Pure research scientists or part-time clinician-scientists have successfully reached prominence in Canadian neurosurgical echelons in the fields of neuro-trauma, spinal cord injury, functional neurosurgery, and education. These trends indicate that fulfilling careers in neurosurgery can be achieved without a full-time hospital appointment.

The delivery of health care in Canada is changing, and these changes also provide ample opportunity for innovative job creation. The private sector of healthcare delivery is growing, with recent legal support to help its propagation.<sup>8</sup> These centres provide an opportunity not only for neurosurgical consultation but also 'non-complex' neurosurgical procedures (mainly degenerative spine work). Sub-specialization as a natural trend in all surgical specialties actually requires the services of several surgeons where it once took but one. It is a testimony to the technical and intellectual advancement of neurosurgery but by its nature necessitates a larger work force.

Hope for a reversal of the ABNS decision may not be in vain. Dr. William Couldwell presented American workforce data to the American Association of Neurological Surgery in May, 2004.<sup>9</sup> In essence the study found a shortage of neurosurgeons in the United States. For example in 2003 there were 124 graduating neurosurgeons in the U.S. compared with 297 job openings. While the professed reasons for disallowing Canadian graduates were educational, one might hope, with this excess of job vacancies combined with some 'housekeeping' by astute Canadian neurosurgical residency programs, that the borders may yet again open.

We should be cautious about reacting to the impending crisis by reducing the number of residency positions. This itself creates the potential for a true neurosurgical crisis. With sub-specialization, the boundaries between disciplines is evaporating. Currently, 'medical teams' are defined not only by organ systems but more importantly by collaborative treatment strategies. There are many areas of neurosurgery arguably 'on the bubble' of being absorbed by other more populous specialties. Spine surgery by orthopedics and vascular disease by neuro-radiologists being prime examples. That neurosurgery is the field of study best suited to oversee these disease states is not a difficult argument to make. However, without a conscientious effort the actual specialty of neurosurgery could dissolve into nothing but head injury resuscitation. Every effort to maintain the specialty as a progressive and dominant force is needed. Neurosurgical presence must be maintained by volume and activity. This includes not only the maintenance of a strong quorum of surgeons, but also a field attractive to the best and brightest students. Market forces will take care of student applications and resident numbers. If we are not careful the real challenge for academic units in Canada will be to defend the positions we have, never mind giving them away.

Health care changes in Canada are a legacy of crisis management. That is, it takes the devastation of a crisis to prompt change. Perhaps the declaration of an imminent crisis can be used to similar effect. Woodrow, O'Kelly, Hamstra and Wallace should be congratulated for bringing the issue to the fore. But we should show some craft and turn the tables on what appears to be an ominous development.

Neurosurgery should stick to first principles: maintain excellence in patient care. This means advocating for increased neurosurgical resources for the Canadian population, ensuring that cross-disciplinary areas of care are harnessed by neurosurgery with expertise and commitment, lobbying for expedient care at every corner of the country, improving and augmenting our training programs into unassailable neurosurgical residencies of excellence, taking a lead in the research necessary for better health care and developing a 'business plan' for the advancement of neurosurgical health care in Canada. If we do this we won't have to worry about training too many brain surgeons.

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