

Neurosurgery in Australasia (Australia and New Zealand)

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Australia is a country of 23.5 million people, while New Zealand, our neighbour, has a population of 4.5 million. In each country, the population has access to universal healthcare. In Australia, 55% of the population attends government hospitals and 35% are managed in private hospitals. The dawn of Australasian neurosurgery can be traced back to World War I. At that time, two medical graduates, Hugh Cairns (1) in Adelaide and Hugh Trumble (2, 3) in Melbourne, both enlisted. Cairns served in Gallipoli with the ANZACs and then moved to France where Trumble was also working in field hospitals. In 1921, they travelled together through Europe. Hugh Cairns, a Rhodes Scholar, subsequently settled at the London Hospital and later he became the first Nuffield Professor of Surgery at Oxford's Radcliffe Infirmary. From 1926 to 1927, supported by a Rockefeller Scholarship, he worked with Harvey Cushing at the Peter Bent Brigham Hospital in Boston. The Oxford school subsequently had a large influence on Australasian neurosurgery. Trumble, "an inventive genius"(2), but a very private man, returned to the Melbourne Alfred Hospital where he set up the first neurosurgical clinic in 1929. Shortly after, Leonard Lindon, with the assistance of Trevor Dinning, set up a neurosurgical clinic in Adelaide. Rex Money settled in Sydney, commencing a neurosurgical unit at the Royal Prince Alfred Hospital in 1938 and Murray Falconer opened his unit in Dunedin in New Zealand in 1943. The first meeting of the Society of Australasian Neurological Surgeons, later the Neurosurgical Society of Australasia, was convened at the Royal Melbourne Hospital on 18 and 19 April 1940. There were eight founding members including three from Melbourne - Frank Morgan and Albert Coates and Hugh Trumble. There were three members from Sydney including Rex Money, Gilbert Phillips and Douglas Miller while Leonard Lindon from Adelaide and Donald McKenzie from Auckland made up the eight. Their next meeting would not be until 1945 and, in 1948, Hugh Cairns briefly returned to Australia. During the next decade, neurological units were established in Melbourne at St Vincent's

Hospital, the Royal Melbourne Hospital, the Alfred Hospital and Prince Henry Hospital. A unit was established in Adelaide, while in Sydney units were set up at the Royal Prince Alfred Hospital, St Vincent's Hospital and Prince Henry Hospital. Geoffrey Toakley opened Brisbane's first unit at the Mater in 1955 and Ken Jamieson followed the next year at the Royal Brisbane Hospital. In time, New Zealand would have units in Auckland, Wellington, Christchurch and Dunedin. The Royal Children's Hospital in Melbourne was headed by Reg Hooper, a talented pediatric neurosurgeon, while the Adelaide Children's Hospital was headed by Donald Simpson, and Sofer Schreiber subsequently developed the service in Sydney. The founding fathers of the Neurosurgical Society of Australasia had included Douglas Miller and Leonard Lindon, both of whom became Presidents of the Royal Australasian College of Surgeons. The College was established in 1928. It became the responsible body for developing surgery in Australia and New Zealand. In time there would be ten subspecialties including neurosurgery. In 1954, an examination and diploma were launched in neurosurgery. The College subsequently delegated the supervision of the post-graduate educational programme to the Neurosurgical Society of Australasia. The Board of Neurosurgery, including nominations from the College and the Neurosurgical Society, supervised the selection of trainees, the training programme and the subsequent final exit examination. Initially this was a four-year training course, but current training can extend from five to nine years. The long period of training has closed down the need for younger neurosurgeons to travel overseas until they have completed their final exit examination. By 1965, 62% of surgical graduates were fully trained in Australia and New Zealand and, by 1980, it was expected that all trainees would rotate around the national units before they were approved to sit the final examinations. Today, we have 231 neurosurgeons practicing in Australia and 20 practicing in New Zealand. 12% of the surgeons are female and there are 55 advanced trainees now in the

training programme. While neurosurgery was in its infancy in Australia and New Zealand in the 30s to the 50s, it was necessary for advanced trainees to travel to Britain. Hugh Cairns, at the London Hospital and later at the Radcliffe Infirmary in Oxford, was a popular choice. Neurosurgeons passing through his units included Douglas Miller, Gilbert Phillips, Frank Morgan and John Curtis. Later trainees in Oxford included Donald Simpson, Michael Fearnside, Gavin Fabinyi and Andrew Kaye. Valentine Logue, Lindsay Symon and David Thomas in London at the Queen Square unit, John Gillingham in Edinburgh and John Pickard in Cambridge also provided attractive neurosurgical programmes to our trainees. With the increasing visits of North American neurosurgeons to Australia, access to units in North America was opened up. Our trainees moved to Harold Hoffman in Toronto, Thor Sundt and Edwards Laws in the Mayo Clinic in Rochester, and to Charles Drake in London, Ontario.

Neurotrauma and Road Traffic: Neurotrauma and road traffic injuries have always been close to the heart of neurosurgeons. Prior to 1970, the mortality rate for road accidents in Australia was 30.4 per 100,000 population and the death rate per 10,000 vehicles was 8 (1964). Neurosurgeons and the Trauma Committee of the Royal Australasian College of Surgeons worked effectively from 1969. Mandatory seatbelt legislation was advocated and introduced into Victoria in 1972 followed by random breath testing of drivers for alcohol in 1983 and mandatory helmets for motorcycle riders. This effective public advocacy resulted in the death rate of 30.4 per 100,000 falling to 7.6 per 100,000 and the death rate per 10,000 vehicles fell from 8 to 1. Neurosurgeons involved in this project were led by Noel Dan, Donald Simpson and Boris Selecki, who were active members of the Trauma Committee of the Neurosurgical Society of Australasia (1983). The Australian neurosurgeons, under the leadership of Douglas Miller, took an early lead in developing neurosurgical networks and clinical education in the early 50s. In 1955, the Australian government introduced the Colombo Plan and encouraged Douglas Miller to work in South East Asia. He became a close friend with Hsiang-Lai Wen in Hong Kong, Tham Cheok Fai in Singapore, Udom Poshakrishna in Bangkok, and B Ramamurthi in Madras as he moved fairly constantly around the region accompanied by Kevin Vanderfield. Douglas Miller developed a particularly close association with Keiji Sano in Tokyo. In 1964, the first Congress of the Asian Australasian Society of Neurological Surgeons was convened in Canberra. Douglas Miller was elected as the first President and another Australian, Keith Bradley from Melbourne, became Secretary General. The founding countries included India, Hong Kong, Philippines, Pakistan, Japan and Thailand as well as Australia and New Zealand. Australian

neurosurgeons have continued to have a close involvement in the continental associations.

In 1987, Geoffrey Toakley, was President of the Seventh AASNS Congress in Brisbane. Leigh Atkinson became the Secretary General of the society until 2003. He also became Treasurer of the World Federation of Neurosurgical Societies until 2003. Then, in 2001, under the presidency of Noel Dan, the World Congress of the WFNS was held in Sydney. Andrew Kaye was the scientific convener. Today, the mantle of leadership in Australasian neurosurgery rests with Andrew Kaye, the James Stewart Professor of Surgery and the Professor of Neurosurgery at the Royal Melbourne Hospital. Andrew Kaye was the Foundation Editor in Chief of the *Journal of Clinical Neuroscience* established twenty years ago. He has built up a large well-funded laboratory with focused interests in brain tumour research. He is supported by an active group of neurosurgeons in the unit. He has been awarded the Medal of Honour of the World Federation of Neurosurgical Societies for "outstanding contributions to neurosurgery". He is currently the President of the Asian Australasian Society of Neurological Surgeons and the Vice-President of the World Federation of Neurosurgical Societies.

Other notable leaders in Australasian neurosurgery include the pediatric neurosurgeon, Wirginia Maixner at the Royal Children's Hospital in Melbourne, the vascular surgeon, Marcus Stoodley at Macquarie University in Sydney and the functional neurosurgeon, Terry Coyne, who is the Incoming President of the Asian Australasian Society for Stereotactic and Functional Neurosurgery. In addition, Mark Dexter at the Westmead Hospital in Sydney is the current President of the Neurosurgical Society of Australasia, and Bruce Hall in Brisbane is the representative of Australasian neurosurgeons on the Council of the Royal Australasian College of Surgeons. Increasingly women are taking leadership roles in Australasian Neurosurgery and these include Kate Drummond in Melbourne, Teresa Withers at the Gold Coast and Sarah Olson in Brisbane. The Royal Australasian College of Surgeons and the Neurosurgical Society of Australasia are responsible for the standards of neurosurgery in both countries. In Australia, a surgical audit process has been set up to continually review surgical outcomes and mortality. In addition, the College requires mandatory continuing professional development to be fulfilled by each neurosurgeon in both countries.

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