

Special Article

Training and development of anesthesia in Nepal – 1985 to 2005

[Formation et perfectionnement en anesthésie au Népal – 1985 à 2005]

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Purpose: To describe the self-sustaining anesthesia training and development program in Nepal from 1985 through 2005, and the Canadian contributions.

Methods: We examined the training program and outcome of the diploma in anesthesia (DA) and MD anesthesiology programs in Nepal over a 20-year period. Issues related to recruitment, funding, specialist training opportunities and professional development were examined and summarized.

Results: In 1985 there were seven Nepalese physician anesthesiologists in Nepal. With Canadian support of faculty members and the Canadian Anesthesiologists' Society International Education Fund, a one-year DA training program began in 1985, and a three-year MD anesthesia program began in 1996. As of 2005, 43 anesthesiologists were trained in the DA program, and 19 Nepalese completed MD anesthesia training. Thirteen (30%) of DA graduates have since left the country, compared to only two (10.5%) physicians from the MD anesthesia training program. Annual anesthesia symposia began in 1986, and the Society of Anesthesiologists of Nepal was formed in 1987. Nepalese anesthesiologists have been attending and presenting papers at international scientific meetings since 1991.

Conclusion: The devotion of Nepalese anesthesiologists in teaching and training, strong guidance from Canadian medical faculties, and local government support have contributed to the successful development of Nepalese anesthesia training programs. Establishment of the training programs has assisted recruitment of trained anesthesiologists to different regional hospitals. Finally, the formation of a national society, with an organized annual symposium has improved professional self-esteem, and raised the profile of anesthesiology in Nepal.

Objectif: Décrire le programme indépendant de formation et de perfectionnement en anesthésie au Népal de 1985 à 2005 et la contribution canadienne.

Méthode : Nous avons examiné le programme de formation et l'évolution du diplôme en anesthésie (DA) et des programmes de médecins (MD) anesthésiologistes au Népal sur une période de 20 ans. Le recrutement, le financement, les possibilités de formation par des spécialistes et de perfectionnement professionnel ont été examinés et résumés.

Résultats : En 1985, il y avait sept médecins anesthésiologistes népalais au Népal. Avec le soutien canadien des membres des départements universitaires et du Fond d'éducation internationale de la Société canadienne des anesthésiologistes, un programme de formation d'un an, pour un DA, a commencé en 1985 et un programme de trois ans de MD en anesthésie en 1996. En 2005, 43 étudiants ont été formés pour le DA et 19 Népalais comme MD en anesthésie. Treize (30 %) des diplômés en anesthésie ont quitté le pays depuis, comparativement à deux médecins seulement (10,5 %) du programme de MD en anesthésie. Des colloques annuels en anesthésie ont débuté en 1986 et la Société des anesthésiologistes du Népal a été formée en 1987. Les anesthésiologistes népalais ont participé aux congrès scientifiques internationaux et y ont présenté des articles depuis 1991.

Conclusion : Le dévouement des anesthésiologistes népalais dans l'enseignement et la formation, le grand appui des facultés médicales canadiennes et le soutien du gouvernement local ont contribué au succès des programmes népalais de formation. Ces programmes ont permis aux hôpitaux régionaux de recruter des anesthésiologistes qualifiés. Enfin, la formation d'une société nationale et l'organisation d'un colloque annuel ont amélioré l'estime de soi professionnelle et l'image de l'anesthésiologie au Népal.

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NEPAL is a small Himalayan country with a population of 25 million that lies between India to the south and Tibet (China) to the north. Attempts to introduce modern health care have been hampered by socioeconomic conditions and ineffective government policies, so that health care lagged behind that in developed countries through much of the 1900's. After 1960, more human resources and medical facilities became available, but surgical services continued to lag well behind population requirements. By 1985 there were 30 surgeons, but only seven Nepalese anesthesiologists in Nepal for a population of 16 million. Experts at the World Health Organization recommended a requirement of 27 anesthesiologists.¹

The Ministry of Health (MOH) of the government of Nepal had long recognized the shortage of anesthesiologists, even before the Institute of Medicine (IOM) of Tribhuvan University in Kathmandu inaugurated the Bachelor of Medicine and Bachelor of Surgery program in 1978. Until that time, all specialist postgraduate medical training continued to be undertaken in foreign countries. The MOH sent several medical graduates to the United Kingdom for postgraduate anesthesia training, but only four subsequently returned to Nepal.

For development of any sustainable manpower training program, retaining graduates in the country is an essential element. It was realized and thus planned to develop a diploma in anesthesia (DA) program in the country² and later an MD anesthesia program.

Diploma in anesthesia program

In the spring of 1984, the Dean of the IOM approached the University of Calgary to assist in establishing the program. Dr. Roger Maltby, from the University of Calgary, agreed to be the Canadian coordinator. The DA program started in January 1985. Continuous support was provided by a series of senior Canadian anesthesiologists to live in Kathmandu for three- to 12-month blocks over a period of three years, to provide academic support and administrative guidance to establish a self-sustaining DA program.³

Recruitment

Doctors were eligible for nomination as candidates by their employer, the IOM or MOH, provided they had served three years since graduation, had six months of supervised practical anesthesia experience, and had passed the entrance examination. Clinical instruction was provided by Nepalese anesthesiologists at three major MOH hospitals and the Tribhuvan University Teaching Hospital (TUTH) in Kathmandu. The

Canadian faculty initially provided much of the classroom teaching and administration, gradually transferring these responsibilities to the local faculty, and only provided clinical service when there was a teaching component. Interim examinations were held at three and six months, and the final examination included an external examiner from India or another neighboring country. Canadian support continued for a fourth full year, after which it was reduced to the second six months of each course until 1993, by which time the DA program was self-sustaining.

This program improved the human resource situation and anesthesiologists became available to provide services in ten hospitals outside the Kathmandu valley. The DA program remained popular until 1996 when the three-year, in-country training program for anesthesia leading to an MD was inaugurated, and the MOH and TUTH discontinued recognition of the DA for promotion to senior posts. During this period tertiary level surgical services were being introduced in the country. To cope with these higher demand services, several DA graduates were sent to the United Kingdom for higher training, and passed the Fellowship of the Royal College of Anesthetists examination. Unfortunately, only one candidate returned to Nepal, for a period of two years, before immigrating back to the United Kingdom.

Master's degree anesthesiology program

A shortage of trained physicians was also being identified in other specialties as well. In 1992, the MOH suggested using the Kathmandu MOH hospitals and TUTH to implement three-year MD programs. Dr. N.B. Rana, a senior MOH anesthesiologist, was appointed chairman of the joint task with the IOM that established terms and conditions for all specialty programs. A postgraduate medical education coordination committee (PGMECC) was formed with the Dean of the IOM as Chairman, with representation from the MOH, and coordinators from each specialty program. Programs in internal medicine, general surgery and obstetrics and gynecology started in 1994.

In 1992, when the prospect of the MD anesthesia program was also discussed, the curriculum and training requirements for MD Anesthesia were prepared by Dr. Roger Maltby, Dr. Roshana Amatya (TUTH) and Dr. Narendra Rana. Training requirements were modified according to local resource availability, taking into consideration requirements used in Canada, the United Kingdom, and the United States. In addition, each candidate was required to do a research project and submit a thesis, as a standard requirement in India. The detailed curriculum was based on the

Canadian model, with core material published from a course originating from four Canadian and four United Kingdom teaching institutions.⁴ A feasibility study was conducted by Dr. Thomas McCaughey from Canada in 1994, and the three-year degree program was started in 1996 under the PGMECC, with Dr. Rana as co-coordinator in anesthesia. Two candidates were accepted in the first year, increasing to five by 2003.

More candidates could not be enrolled in the initial years due to lack of faculty with higher qualification (MD degree or Fellowship of a Royal College), and a certain unwillingness to serve as preceptors. The rules of PGMECC required each candidate to have a preceptor (one-to-one ratio) who had held a higher degree for five years to supervise training and thesis development. The course is considered very adequate for local needs and there has been no necessity for revision of the curriculum or guidelines for the thesis. As far as Maldivian or Indian candidates are concerned, feedback has not been received.

Drs. Roger Maltby in 1997, and Dennis Reid in 1999, reviewed the program according to the Canadian Royal College guidelines. The reviewers were satisfied with the training program emphasizing the need to utilize more national resources and provide short-term extended training of MD graduates in subspecialties in centres outside the country. One of the first MD graduates undertook additional training in cardiac anesthesia at the University of Ottawa Heart Institute. The first two MD anesthesia candidates graduated in April 1999. Of the 23 candidates enrolled between 1996 and 2005, 21 successfully completed the MD anesthesia program; one candidate withdrew, and the other passed away of natural causes. Two other graduates were from Maldives. Amongst the 19 Nepalese MD graduates, 14 are currently working in Kathmandu, three are working in either zonal or regional hospitals, and two have immigrated to the United Kingdom. The most recent cohort from the program graduated in April 2005 from the jointly-run PGMECC program.

Funding

The PGMECC higher degree programs received support from the World Health Organization and Nepalese MOH. The Dean of Tribhuvan University Faculty of Medicine and PGMECC requested Canadian academic and administrative support, which was continuous for the first three and one half years. During the subsequent two years, supplementary funding was provided by the Canadian Anesthesiologists' Society International Education Fund.

Other MD anesthesiology programs

Many more government hospitals and six medical colleges under Kathmandu University (KU), five medical colleges under Tribhuvan University, one under Bisheshwor Prasad Koirala Institute of Health Sciences and one postgraduate institute under National Academy of Medical Sciences (NAMS), with a total of 13 medical colleges and hospitals, have been established in Nepal during the past ten years. The limited number of trainee posts was unable to cope with the need for more anesthesiologists. Medical graduates were again sent to neighboring countries for training. To enroll more trainees, some retired anesthesiologists have returned to work on contract to meet services and training requirements of more preceptors for the program in Nepal.

To meet ongoing requirements for anesthesiologists, the Nepalese MOH, and the Royal College of Anesthesiologists of Thailand agreed in 2001 to allow those of our DA graduates who had a minimum of five years experience, to write the Thai Royal College Examination. Candidates were required to pass the Thai Entrance Examination of Fellowship, and then spend 12 weeks in three major teaching hospitals of Bangkok for assessment and training, before being eligible for the final fellowship examination. These were the same criteria required of Thai candidates when Thailand moved from DA, to Royal College (FRCAT) training. This program helped to upgrade 14 DA anesthetists to the equivalent of MD anesthesiologists. Similarly, two Diploma holders obtained a Fellowship of the College of Physicians and Surgeons of Pakistan. Three who obtained their FRCAT, and one with a Fellowship from the College of Physicians and Surgeons had received their DA from the United Kingdom.

There are now more specialist postgraduate training opportunities in Nepal. The Bisheshwor Prasad Koirala Institute of Health Sciences in eastern Nepal, established in 1993, is an independent Royal Chartered institute for undergraduate and postgraduate studies in all branches of Medicine. MD anesthesia training started there in 1999, and now has an annual intake of five to six candidates from India and Nepal. Up to 2005, six have completed MD anesthesia, four from India and two from Nepal.

The original MD anesthesia program run by PGMECC continued until April 2005, when the students enrolled in 2002 and took their final examination. Tribhuvan University began its own enrollment for the MD program at TUTH in 2003, with four candidates recruited each year.

The NAMS was established in 2002 at Bir Hospital in Kathmandu as the main hospital authorized to con-

duct postgraduate medical education in collaboration with all government hospitals. MD anesthesiology training started there in 2003, and four candidates are now accepted each year. The first group will graduate in 2006. Diploma anesthesia graduates are exempt from one of the three year MD training period. Two DA graduates have joined the program.

Kathmandu University was established in 1990, and medical education under KU began in 1994. There are few MD programs at KU at the present time, although it is expected that from the 2005–2006 academic session the MD anesthesiology program will start at several different Medical Colleges of KU.

Until 2005, Bisheshwor Prasad Koirala Institute of Health Sciences and Tribhuvan University have operated different examination processes for the MD degree. With programs now available at NAMS and KU, it would have been ideal to have developed common entrance and graduating examinations. Until this is implemented, there remain four separate bodies holding examinations. One common aspect of all these examinations is the requirement for producing a thesis on a subject discussed and identified by the candidate, and reviewed and approved by members of a subject committee and a faculty preceptor.

Other aspects of professional development

The first Nepalese Anesthesiology Symposium was held in 1986, and was devoted to educating the audience, including invited MOH representatives, on the importance of trained anesthesiologists in health care. This symposium was guided by Dr. John Sandison from McGill University. The Society of Anesthesiologists of Nepal was established the following year, and was admitted to World Federation of Societies of Anesthesiologists membership at the ninth World Congress in Washington, DC in 1988. Since then, its members have organized an annual symposium and continuing medical education program, with World Federation of Societies of Anesthesiologists and British Council speakers supplementing their own presentations. Nepalese anesthesiologists have participated and presented papers in the South Asian Confederation of Anesthesiologists meeting in India, Pakistan, Bangladesh and Sri Lanka and other neighboring countries since 1991, and at the World Congress of Anesthesiologists since 1992. At present, most of our junior faculty members take an active role in presenting papers in national and international congresses. During these congresses, Canadian faculty have continued to provide advice and technical support, as well as occasional funding to support attendance at international meetings.

During the MD anesthesia training, senior faculty members including Dr. Elliot Rhine (University of Ottawa) helped to train our students and faculty members in neonatal and pediatric anesthesia, Dr. Kari Smedstad (McMaster University) taught obstetrical anesthesia, and Dr. Douglas Maguire (University of Manitoba) and Dr. Charles MacAdams (University of Calgary) taught and supervised critical care and cardiac anesthesia. Dr. Tom McCaughey helped with the DA program and the MD program throughout most of this ten-year span, even following his retirement.

Although the Society of Anesthesiologists of Nepal and His Majesty's Government of Nepal do not recognize the concept of nurse anesthetists, some mission hospitals still rely on trained anesthetic nurses. Dr. Tom Fell, an anesthesiologist from Olympia, Washington, USA, trained nurse anesthetists in the early 1980s at the United Mission Hospital, Patan in the Kathmandu Valley. Individual hospitals in the Kathmandu valley now provide regular training of paramedics and nurses as anesthetic assistants.

To help anesthesiologists in District hospitals, the Training Division of Department of Health Services, with coordination from the anesthesiology department of Bir Hospital, introduced an anesthetists' assistant training program in 1995, and trained nurses and paramedics from different zonal and district hospitals. Twenty-five individuals to date have completed this 12-week training program.

Discussion

Anesthesia was the first specialty training program to be established in Nepal. The expectation of the MOH and IOM was that the program would eventually produce a sufficient number of anesthesiologists for the whole country. Initially, there was concern that few physicians would choose to enter the DA program, because other specialties still offered the option of training abroad, especially in the United Kingdom. From the perspective of young physicians, training in the United Kingdom not only provided a much higher income, but led to an internationally marketable qualification. Despite the challenges, the quality of the DA program proved attractive, and an average of four candidates were accepted for each course.⁵ By 2000, there were 43 DA graduates from this program in Nepal. Among them, 19 are in MOH or TUTH posts (12 have Fellowships – 11 from Thailand, one from Pakistan; seven have a DA only). Eleven are at private hospitals (two have joined the NAMS for an MD; one has an MD degree from India). The remaining 13 individuals have left Nepal permanently.

The MD program produced 21 Nepalese anesthesiologists, only two of whom have emigrated. The primary reason for greater MD retention is a higher quality of training in all aspects of anesthesia including subspecialty and critical care. Other reasons include increased job satisfaction, equalization of status amongst other faculty colleagues, and more reasonable incomes.

Our in-country training anesthesia programs have been very successful. They have helped to fulfill the needed human resources to a great extent, and anesthesiologists have been posted to different regional hospitals. It is not always clear why one program succeeds and another fails. In this case, the devotion of anesthesiologists, the MOH and IOM in Kathmandu who prepared the DA and MD curriculum and training requirements and established posts for graduates before seeking Canadian assistance, were likely contributing factors. The Canadian faculty were all of senior academic status, and highly committed to the program, each spending a minimum of three months in Nepal. Finally, the establishment of a national society, whose members organize their own annual symposium and attend international meetings, has improved self-esteem, and has raised the profile of anesthesiology in Nepal.

The Society of Anesthesiologists of Nepal continues to identify a need for support from the Canadian Anesthesiologists' Society International Education Fund. Further work is required to develop and strengthen the recently- established specialty services of critical care, neuro- and cardiac anesthesia, obstetric and neonatal anesthesia, and chronic pain.

While some of our DA graduates who have gone to the United Kingdom to improve their knowledge and skills have subsequently settled abroad, it is our sincere hope that the current retention rate of our MD anesthesia graduates will be maintained. Despite limited emigration, the present available trained and qualified pool of anesthesiologists has been instrumental in improving access and the quality of health care in Nepal.

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