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Controversies

An article in our last issue has turned out to be particularly controversial: it was written by Dr Maurice Lee entitled “Anaesthetic Assistants for Nepal.” I have never been to Nepal and do not know Dr Lee and published the article in good faith. However, a number of senior Nepalese anaesthetists felt it unfairly portrayed them and the work they do. In the correspondence section of this issue, I reproduce, unchanged, the email they sent me. I also received an email from Prof Roger Maltby of Calgary in Canada but who has worked in Nepal for many years. He fully supported the Nepalese anaesthetists and so I have published his email also.

Prof. Maltby also suggested that I republish two articles that he co-authored about anaesthetic training in Nepal: one appeared in the first issue of World Anaesthesia News (WAN) over 10 years ago and the other, more recently, in the Canadian Anaesthetic Society Journal. I leave it to you, the readers, to form your own opinions as to what is the most appropriate model of anaesthetic training in that country and would, especially welcome further comments from those among you who have worked there.

I also received an email from Paul Fenton, an anaesthetist whom I much admire, and who has spent the greater part of his professional life working in Malawi where, as prof. of anaesthesia, he established, among many other things, an anaesthetic training school and wrote a textbook on anaesthesia for Malawi. Paul feels that WAN is giving undue publicity to the Glostavent and its manufacturer, Diamedica. I asked Robert Neighbour, the managing director of Diamedica if he would care to reply and I publish his email. By chance, I also received a submission from Dr Frank Boni, an anaesthetist from Ghana about the Glostavent. He describes his and his colleagues’ initial scepticism about the Glostavent and their change of mind when it proved reliable when other machines failed and praises the manufacturers for making more than a dozen modifications to the machine that they had suggested to make it more suitable to their needs.

I have to admit a conflict of interest: I have worked in the same department as Dr Roger Eltringham who has done much of the developmental clinical work on the Glostavent but also must say that I have received no submissions on other machines that might be suitable for developing countries or for use in difficult circumstances. If anyone knows of other comparable machines, I would be delighted to hear from them.

This issue also contains a variety of article from around the world that I am sure you find of interest. I hope you have the time to read them and to continue to support the work of the World Anaesthesia Society.

Bill Casey
Editor
Anaesthesia and Cri du Chat Syndrome

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Introduction
Cri du chat syndrome was first described by a French paediatrician Lejeune in 1963 who coined the term “Cri du chat” (cry of a cat). The syndrome results from the deletion of chromatin from the short arm of chromosome 5. The incidence ranges from 1:15000 to 5:50000 live-born infants. The recent prevalence suggests an incidence of 1 in 37,000 live births. The hallmark clinical features include high pitched monochromatic cry, microcephaly, a broad nasal bridge, epicantthic folds, micrognathia, abnormal dermatoglyphics and a severe psychomotor and mental retardation. We report the anaesthetic management of a 33-year-old male having Cri du chat syndrome who presented for dental surgery.

Discussion
Cri du chat syndrome is an inherited disorder caused by partial deletion of the short arm of chromosome 5. The clinical features at birth are low weight, microcephaly, round face, large nasal bridge, hypertelorism, epicantthic folds, downward slanting palpebral fissures, and mild flexion contracture of the extremities. A comprehensive examination of his respiratory and cardiovascular system could not be carried out since he was uncooperative. His ECG and chest X-ray were normal. Haematological investigations were normal. A karyotype study done in early childhood reported that the short arm of chromosome 5 was missing (Figure II).

Case report
A 33 year old male weighing 40 kg with Cri du chat syndrome was scheduled to undergo scaling of his teeth and a wash out of his oral cavity under general anaesthesia. He had learning disabilities, a distorted face, micrognathia, microcephaly, low set ears, down slanting eyes and scoliosis (Figure I).

As the patient was uncooperative, he was premedicated with 10mg of oral midazolam and kept under close supervision. After 45 minutes he was calm. In the operating room, ECG, pulse oximetry and NIBP monitoring were started. Intravenous access was established using a 22g intravenous cannula. Propofol 50mg and fentanyl 100μg were administered along with sevoflurane.

The patient could be ventilated without any difficulty. Milvacular 20mg was then administered. Laryngoscopy with aMcCintosh laryngoscope revealed a large and floppy epiglottis that completely covered the glottis (grade III).

The glottis was visible with anterior pressure using a McCoy laryngoscope. Nasal intubation was carried out with a 6.5mm I.D, North Pole, cuffed tube (figure III). Anaesthesia was maintained with 60% N2O in 40% O2 and 2% sevoflurane.

His temperature was monitored and an i.v. fluid warmer and a warming blanket were used. The surgical procedure took approximately half an hour. He was successfully reversed at the end of the surgical procedure. His intra-operative and post-operative course was uneventful.
down turned corners of mouth, low set ears, micrognathia, abnormal dermatoglyphics and a typical cry.

During the neonatal period, problems such as asphyxia, cyanotic spells, impaired suction and hypotonia may occur. During infancy, problems such as severe psychomotor retardation, malformations, cardiac, neurological and renal abnormalities, peri-auricular tags, syndactyly, hypospadius and cryptorchidism may become obvious and the child may have recurrent respiratory and intestinal infections.

The epiglottis is typically small, flabby and hypotonic whilst the larynx is small, narrow and diamond shaped. These abnormalities along with neurological, organic and functional alterations together with the characteristic cat-like cry suggest the diagnosis. Interestingly, as the child grows older the larynx becomes more normal in appearance and the cat-like voice diminishes. 

The anaesthetic concerns for a patient having Cri du chat syndrome include anatomical abnormality of the airway, mental retardation, hypotonia, congenital heart disease and hypothermia. Because of learning disabilities these patients are generally uncooperative and preoperative sedation is warranted. However, hypotonia of the pharyngeal muscles may predispose these patients to an increased risk of airway obstruction.

We gave midazolam to sedate the patient but he was kept under close observation. In view of the proposed surgical procedure, we had planned to use general anaesthesia with endotracheal intubation for this patient.

The airway was assessed under propofol and sevoflurane anaesthesia and then endotracheal intubation was accomplished successfully. Castresana et al described the anaesthetic management of 15 month old baby for ligation of a patent ductus arteriosus (PDA). However they couldn’t intubate the child and surgery was performed using laryngeal mask airway. Brislin et al anaesthetised a 33 month old baby for ligation of a PDA. They performed an awake intubation. However, in the literature we could find no reports describing the anaesthetic management of an adult.

Judicious use of muscle relaxants is warranted for maintenance of general anaesthesia, as no association between this syndrome and malignant hyperpyrexia or succinylcholine induced hyperkalaemia has been reported and previous authors have used pancuronium and vecuronium to provide muscle relaxation. We, however, chose to use mivacurium in view of its short duration of action and spontaneous metabolism.

Our patient did not have any congenital heart disease although 30% of such patients can have congenital heart disease and they should receive appropriate bacterial endocarditis prophylaxis. Patients with Cri du Chat syndrome are prone to developing hypothermia during surgical procedures and so temperature monitoring should be used and normothermia maintained. We used a warming blanket and fluid warmer. Post operatively, these patients need to be observed for a longer time in the recovery room as recovery from anaesthesia may be prolonged.

In summary, a patient with Cri du chat syndrome should undergo a thorough pre-operative physical examination with special emphasis on the airway. Meticulous planning of the airway management and the judicious use of muscle relaxant are essential for a successful outcome.

References

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I woke in the dark to the unmistakable sounds of semi automatic fire and the dull crump of exploding grenades. The fighting seemed to be in the north of the city and I wondered which way the rebels were moving. The mission wasn’t supposed to end like this.

The opportunity to work in “post conflict” Burundi with Medecins Sans Frontieres (MSF) had promised to be different to my previous experiences with the Red Cross in the civil wars of Cambodia, Somalia and East Timor.

Burundi is the smallest and one of the poorest nations in Africa. It is a landlocked country and lies on a rolling plateau at a height of about 1700 metres between the Congo, Rwanda and Tanzania. With a population of about 8 million, it has the second highest population density of any country in sub Saharan Africa with about 315 people per square kilometer. Ninety percent of the agriculture is subsistence. Extreme poverty continues to fuel the ethnic violence between Hutus and Tutsis.

After a more than a decade of civil war and slow simmering genocide, a peace process was in place in late 2006 and a cease fire had been signed in the capital Bujumbura. By mid 2007 MSF was preparing to leave Burundi and were withdrawing their support for two hospitals and a number of projects in the districts. My mission was to train three Burundian nurses to give anaesthetics in the hospital of Kinyinya in the remaining months of the MSF presence in the country.

Why MSF? I had worked along side them on my other missions with ICRC and wondered what working with them would be like. I suppose the motivation was a little more complex, but in essence that was the major reason for choosing Doctors without Borders.

MSF was formed in 1971 and offers assistance to populations in distress, those suffering from natural or man made disasters and to victims of armed conflict. It is a humanitarian, non governmental, not for profit organisation providing medical assistance to vulnerable people in need. Increasingly however MSF, as with other agencies, is moving beyond a purely “Emergency” role into the “Development area”. Many humanitarian organisations have similar charters, so what is different about MSF? MSF is volunteer driven, and very responsive to the ideas and opinions of field staff. Testimony or witnessing is an important part of the mandate. MSF volunteers “witness” by serving as an international presence in crisis areas and by raising public awareness about the populations they serve. In extreme situations the witnessing process extends to openly criticizing or denouncing breaches of international conventions. This last resort is used when other political processes have failed and MSF is aware of mass violations of human rights, for example the forced displacement of populations, genocide or other crimes against humanity.

Volunteer means just that. You receive a small stipend for a 3 to 9 month mission. My mission earned me slightly more than I receive for two days at my University Teaching hospital in Tasmania. This volunteer ethos selects a very motivated group of professionals and has led to quite a unique development of the organisation.

Kinyinya hospital is a small district hospital in south eastern Burundi on the border with Tanzania. The hospital provides service for a population who are almost exclusively subsistence farmers living along the border with Tanzania. During the protracted civil war between Hutus and Tutsis there were effectively no health services in this area as the Ministry of Health support had largely collapsed and other NGOs were unwilling to work in the region. The area had been highly unstable due to frequent incursions of rebels from bases in refugee camps across the Tanzanian border and counter measures from the Burundian army, which included targeting of civilians.

Some demographic Burundi facts and figures include: population 7.5 million, 45% under 15, life expectancy 46/48, infant mortality 114/1000, maternal mortality 1,100/100,000, fertility rate 6.8, per capita health expenditure $3, 79% population access to water, 36% population access to sanitation, adult literacy rate 59.3%, Human Poverty Index 78/102 countries, average per capita income 100$, 54% population living with less than 1$/day, 3 doctors per 10,000, 7 hospital beds per 10,000, 25% births attended by skilled personnel, malaria prevalence 27,400/100,000, TB prevalence 602/100,000, HIV/AIDS prevalence 3132/100,000. Curative surgical services might not seem to be a high priority in this country.
The Kinyinya hospital is equipped with one theatre and a room for minor procedures. Over a month about 100 major and 80 minor procedures are performed. The Kinyinya case load included 40% O & G (Caesareans, ruptured uterus, retained placenta), 25% trauma (fractures, wound debridement) 25% “infection and neglect” (abscess, burns, osteomyelitis) and 10% elective cases (infant hernia repair, hysterectomy). Emergency Caesarean Section is the most common operation.

The majority of the cases were done with IV or IM Ketamine. A few of the Caesarean Sections were done under spinal bupivacaine. No cases were intubated, not even upper midline laparotomies or a three day old neonate with an omphalocoele. The non-functioning anaesthesia machine was a relic from a previous era. There were no circuits, cylinder oxygen or Halothane. This was a hospital where there was no “laryngoscope” (apologies to David Werner). Theatre equipment included a single Ambu foot suction pump, an oxygen concentrator and a couple of good operating lights. Fractures and other minor surgery were done in the minor ops room or outside in the companionway as part of the surgical outpatients clinic. Here Ketamine anaesthesia was given without oxygen, suction or a tipping trolley. I wondered whether it really mattered in the Kinyinya circumstances?

In the context, was it something worth changing?

Surgical outcome had probably more to do with the difficulty and expense of getting to the hospital, lateness of presentation and the quality of the postoperative care than anything else. Quality of surgical care is dependant on so many resources and medical knowledge is perhaps not the most important resource for simple life saving surgical care.

I was depressed on returning home from Africa. I felt that there was so much more to do. However a number of patients survived who might well have otherwise perished and there are now three Burundian nurses who can give a safe Ketamine anaesthetic for Caesarean Section.

Haydn Perndt
Hobart, September 2008
David F Morrell: A profile

Born in Port Elizabeth, South Africa in 1944, Dave Morrell graduated M.B. Ch.B. from the University of Cape Town (UCT) in 1969. After internship he spent five years in rural general practice in East Griqualand. There he became interested in anaesthesia and returned to his alma mater to specialise. Once on the specialist register he advanced rapidly to become a Senior Lecturer at UCT and Principal Specialist at Groote Schuur Hospital. In 1981 he was appointed Director of the Anaesthetic Research Laboratory where his growing interest in pharmacokinetics led to him setting up a successful gas liquid and high pressure liquid chromatography unit. His other major interest at that time was in the fast developing field of computer technology where early on he realised its potential and became a competent computer programmer. David was renowned as an exceptionally skilled, unflappable clinical anaesthetist particularly in the field of cardiac anaesthesia.

Between 1989 and 2000 he was the Professor and Head of the Department of Anaesthesia at the University of the Witwatersrand and Chief Anaesthesiologist at the Johannesburg Hospital. Using his charm and interpersonal skill he built up a dynamic department, and has inspired many trainee anaesthetists and encouraged research at all levels of care.

David Morrell has made an enormous contribution to Medicine in South Africa (SA) over a period of many years. Apart from heading a busy department, he has been a member of the National Council of SA Society of Anaesthesiologists (SASA) from 1984, serving on many subcommittees and becoming President from 2000–2001. He was a Councillor of the SA Medical Association, Chairman of their Committee for Fulltime Practice, a member of their Board of Directors and President in 2003. David played a major role in the College of Anaesthetists where he served as Committee Member, Secretary and then Chairman. He also served the Colleges of Medicine of SA where he was a member of the Finance and General Purposes Committee, the Examinations and Credentials Committee and the Council. He served as Honorary Registrar (1995–1998) and as President of the Colleges of Medicine of SA (1999–2002).

His leadership role has been recognised by many international and national bodies. David has received Honorary Fellowships from the Faculty of Anaesthetists of the Royal College of Surgeons in Ireland, the Royal College of Anaesthetists in London, the Royal College of Physicians and Surgeons of Glasgow, the Academy of Medicine of Malaysia, The College of Physicians and Surgeons of Pakistan, the Royal Australasian College of Physicians and the Academy of Medicine of Singapore and in 2004 the Fellowship of the Colleges of Medicine of South Africa. He is an elected member of the Medical and Dental Professions Board of the Health Professionals Council of SA.

Dr Morrell currently works as Principal Anaesthetist and Head, Department of Anaesthesia, Livingstone Hospital, Port Elizabeth. He continues to teach, inspire and examine registrars and medical officers in training and is active in medico legal work as Assessor and Expert Witness at Inquests, Criminal and Civil trials, and Health Professions Council Professional Conduct Inquiries.

The outstanding role Dave played as Chairman of the Organising Committee for the very successful 14th World Congress of Anaesthesiologists held recently in Cape Town, epitomises the integrity, energy and charisma of the man who has played such a significant role in the field of anaesthesia in South Africa.

His recreational interests include wildlife, particularly ornithology and indigenous trees. He is married to physiotherapist Margie and has three children.

Peter Gordon
Professor Michael F James was born in Bulawayo, Rhodesia (now Zimbabwe) in 1946. He received his medical degree from the University of Birmingham after studying at the University College of Rhodesia and Nyasaland. His outstanding academic record gained him a Nuffield Trust Scholarship to Birmingham University during his final year of study. During his student years he received a full blue for hockey and cricket and a half blue for badminton from the University, and represented Rhodesia in hockey. He also developed an interest in drama and English literature.

Mike completed his postgraduate anaesthesia training in Southampton in 1974-5 before returning to Zimbabwe to take up a position as lecturer in anaesthesia in Harare. The clinical skills he developed in Rhodesia/Zimbabwe together with his intellect provided excellent grounding for his future academic yet practical career in anaesthesia. In Harare, his intellectual curiosity led to him to explore the effects of altitude on anaesthetic equipment. He was appointed Head of the Critical Care Unit in Harare in 1978, a post he held until leaving Zimbabwe to take up the Chair of Anaesthesia at Hillbrow Hospital and the University of the Witwatersrand in South Africa in 1984. In 1990 he was awarded a PhD by this University for his thesis entitled “The role of magnesium sulphate in the control of catecholamine induced cardiovascular disturbances”.

In 1988 he was appointed Professor and Head of the Department of Anaesthesia at the University of Cape Town. Apart from possessing excellent clinical and practical skills, he is also an exceptional theoretician, researcher and teacher. The university recognized his teaching ability by awarding him their Distinguished Teacher award in 1998. This excellence in teaching and presentation can to some extent be attributed to his amateur theatrical experiences.

His major areas of interest include anaesthesia for vascular surgery and endocrine conditions, critical care, obstetrics and coagulation. He pioneered the use of magnesium sulphate to control autonomic instability in patients with phaeochromocytomas, preeclampsia and tetanus. He has the largest personal series in the world of patients with phaeochromocytoma requiring anaesthesia. Recently Professor James extended his long-standing interest in intravenous fluids and he is leading a prospective, placebo controlled, protocol driven study to examine whether colloids are or are not superior to crystalloids as a resuscitation fluid. He has 140 peer-reviewed scientific publications, has written 17 chapters in textbooks and has presented at innumerable international meetings.

Mike James is an acknowledged leader in the anaesthesia in South Africa. He is a founder member of the Critical Care Society of South Africa, a Past President of the College of Anaesthesia of South Africa and a long standing council member and immediate Past President of the South African Society of Anaesthesiologists. He has organized several National Congresses and as Co-Organizer of the Scientific Programme in the recently held 14th World Congress of Anaesthesia he played a major role in making this marvelous event the success it was.

He is one of the giants of South African anaesthesia, who through his scholarship and research has consolidated South Africa’s position on the world stage of anaesthesia.

He is married to fellow literature enthusiast Debbie and has three children. He retains his avid interest in sport and still plays club cricket.
A plea for realism in Africa

Frank Boni
Accra
Ghana

For the past twenty years I have been a consultant anaesthetist at both Kumasi and the Korle Bu hospitals in Ghana overseeing the activities of the anaesthetic departments of two large (1500 bed) teaching hospitals. I have also been involved in training and supervising the nurse anaesthetists who work in district hospitals all over the country.

Those of us practicing in Africa face many difficulties which we feel are not always appreciated by colleagues working in modern European and American hospitals. One of the most persistent problems we have is that of persuading manufacturers and donors that we require equipment which is designed for our particular circumstances. We have sometimes been hesitant to point this out in the past as it seemed ungrateful to indicate that equipment which has been generously donated may in fact be of no use to us. For example, the large Drager and Fabius machines look superb and give an extremely favourable initial impression. However they are not designed for our environment and once we start to use them we soon discover that they cannot be maintained satisfactorily, break down easily and are then rapidly discarded. This problem is not unique to our hospital but is the same in many hospitals throughout Africa. Our pleas to be offered something that can actually cope with our own problems seem to be persistently ignored and it sometimes seems to us that we are forever destined to have to make the best use we can of inappropriate equipment that was designed for others.

Five years ago we received a welcome donation of three anaesthetic machines from the Association of Anaesthetists of Great Britain and Ireland (AAGBI). They were called Glostavents and although they did not look particularly eye catching we were nevertheless assured that they would be ideal for our situation. My colleagues were reluctant to use them at first on the grounds that they looked somehow different from those to which they were accustomed. However, as other more sophisticated equipment inevitably failed we found ourselves compelled to use Glostavents with increasing frequency. As the staff became more familiar with them, they gradually began to shed their initial suspicions and came to realize that they not only worked but were easy to operate and were very reliable. They were particularly proving useful as emergency back up machines to get us out of difficult situations, for example, when there was a failure of electricity. We soon came to the conclusion that they were the best stand alone anaesthetic machines available for regional and district hospitals.

There remained, however, some residual reluctance to use them as first choice because there were still a number of desirable features that were absent and which precluded their widespread popularity. I asked my colleagues to record their complaints and misgivings and soon we had a list of unsatisfactory features that we felt needed attention. These included difficulty ventilating small children, delays in changing the source of drive gas in the event of an electricity failure and difficulty autoclaving the Laerdal valve.

The Laerdal valve itself was unpopular because of its bulk and its proximity to the patients airway and it was felt to be especially cumbersome with small children. These complaints were conveyed to the manufacturers, Diamedica, together with our suggestions for improvements and a request that they receive attention.

We did not have high expectancy that our pleas would receive favourable attention because, in the past, our suggestions to the manufacturers always seem to have been ignored. Although it is the anaesthetists who have to cope with the difficulties caused by inappropriate equipment it seems that the relevant decisions as to what is supplied are made by those who are not directly
involved or who have vested interests.

Much to our surprise, on this occasion the manufacturers seemed not only to have listened to us but seemed to have implemented our suggestions. During a recent visit to the UK, I was shown the current version of the Glostavent and was pleasantly surprised to discover that almost all of our suggestions had already been incorporated and the whole machine upgraded. (See table 1) It now looks as elegant as any of the more expensive machines on the market (See Photograph) and I was delighted to be told that the improvements had implemented without any additional cost.

The accompanying table lists all the modifications that have been made as a result of the suggestions of anaesthetists in Ghana and in other parts of Africa. Now that we have a satisfactory machine it is my sincere hope that the manufacturers of other medical equipment will also heed the advice from those having to face additional difficulties that are unimaginable to those in wealthy countries.

I know of many anaesthetists in hospitals throughout Ghana and Nigeria who would love to use the Glostavent but do not have the necessary funds although it clearly represents better value for money in our situation than any other anaesthetic machine.

I hope that governments and donor organizations will listen to those of us who are ultimately responsible for the safety of our patients and will allocate funds to enable this versatile machine to be available to us.

Table 1. LIST OF IMPROVEMENTS IN THE GLOSTAVENT.

1. **Vaporizer.** Larger volume reservoir.
2. **Breathing system.** Altered lay-out with valve at anaesthetic machine away from patient’s airway.
3. **Reservoir.** Modified to increase conservation of oxygen and facilitate change from draw over to continuous flow mode.
4. **Oxygen concentrator more powerful.** Oxygen output increased to 8 L/min and air output to 8 l/min with improved flow meters for each. This enables other circuits to be used.
5. **Ventilator.** Re-designed with interchangeable adult and paediatric bellows to facilitate ventilation in small children. Triggered breathing function added.
6. Self inflating bag added to inspiratory limb.
7. Scavenging unit added to expiratory limb.
8. Oxygen flush added.
9. Transfer of source of driving gas from concentrator to cylinder occurs automatically in an emergency. No need for intervention by the anaesthetist.
10. Oxygen flow meters enlarged and simplified.
11. Emergency lighting installed on top of machine.
12. Upgraded UPS to cope with larger power fluctuations and extend emergency electrical supply time.
13. Automatic drain introduced into air system to prevent obstruction by condensation.
14. Work station improved with better lay-out and corrosion resistance.
15. Addition of trays for drugs and writing surface.
17. Larger battery to prolong use of ventilator when electricity fails.
Letters to the Editor

Dr. Maurice Lee’s article “Anesthesia Assistants for Nepal: Developing an essential care” (World Anaesthesia News, March 2008) provides a first world overall view and his opinion on anesthesia needs and training in Nepal. The article implies that the paradigm must shift from physician anesthetists (anesthesiologists) towards a model of Anesthesia Assistants (AA) that accepts a possibly lower standard of care delivered to a far wider population.

We share his concern about solving the problem of trained anesthesiologists for providing care in the interior of Nepal. Many district hospitals have no basic facility at all. Is it just the shortage of anesthesiologists or does he visualize training paramedics to become Surgical or Gynaecological Assistants, who could then operate in these areas? Nepal’s three-year postgraduate MDGP training programme (since 1981) includes surgery and three months anesthesia but Dr. Lee’s visualization of MDGPs to cover all areas of the health sector has not fulfilled the objectives.

Dr. Lee comments that the first among the hurdles in developing an AA programme are Nepal’s physician anesthesiologists who according to him, for a number of reasons, have raised objection to the programme. We have never objected to the training of AAs to be assistants. If it was so we would not have started such a program in early 1990’s. We did not object to the training at Mission Hospital at Patan and Tansen also, where graduate nurses were trained to give anesthesia, but with an anesthesiologist also on the hospital staff to supervise. What we object to is the idea that the training qualifies them to be independent practitioners and the surgeon will help them if they get into difficulty.

We must decide why we want AAs. First when we started AA training, it was purely to assist the anesthesiologist. Later, due to their training and exposure, they also handled the cases in the absence of an anesthesiologist. Later more NGO’s were interested in this type of training so AA training started for the “safe motherhood” programme. For this also we, along with the SACA (South Asian Confederation of Anesthesiologists) Anesthesiologists, decided how they should be trained and what will be their level of knowledge. But now it seems that NGOs are interested in training AAs to do most of the anesthetic work independently.

Our concern is that the academic background of Nepalese AA trainees is very different from the American Society of Anesthesiologists (ASA) criteria that accepts AA formally and registers them: –

Anesthesiologist Assistants (AAs) are highly skilled health professionals who work under the direction of licensed anesthesiologists to implement anesthesia care plans. AAs work exclusively within the anesthesia care team environment as described by the American Society of Anesthesiologists (ASA).

In order to be admitted to an AA program, the applicant must have achieved a bachelor’s degree with prescribed prerequisites typical of premedical course work. Specific requirements include general and organic chemistry, advanced college maths, general and advanced biology, and physics. Applicants must then take either the (MCAT) or the (GRE).

Does Dr. Lee think our AAs meet these criteria?

He writes that at present only staff nurses and health assistants qualify to be trained as AA in Nepal, but that the rural hospitals have many more community medical assistants who, if trained, are more likely to remain in rural areas. Will Dr. Lee recommend these community medical assistants turned AA to practice in his own country?

Nepal did not lose hope of providing a safe anesthesia service and quality care in early 1980s when there was only a handful of Anesthesiologists in the country. With help from Canadian friends – Calgary University and Canadian Anesthesiologists International Education Foundation – a formal anesthesia training programme for physicians
Letters to the Editor

started in 1985 as a one-year DA program in one place. Now our three-year MD programmes are still continuing in four places and interest of graduates for this is maximum. Till now our country has produced more than 150 anesthesiologists. Two thirds are all practicing in Nepal and one third of them are now serving in developed countries. When physician anesthetists are trying so hard to serve and provide safe anesthesia for their people, a comment from someone who is just visiting for a year or two is very hurting to our feeling.

WFSA is striving for providing a safe anesthesia to all wherever they live. To see a comment in WFSA publication by a developed country anesthesiologist that a second grade service (lower standard of care) to the poor and underdeveloped country like ours be acceptable is disheartening.

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Nepal

Here is more background information on Nepal. BM Shrestha returned to Nepal from UK training in 1981 and published an article recommending anaesthesia training in Nepal in the Nepal Medical Association Journal. He told me years later that this was ignored by those in high places, perhaps because the University of Calgary had helped the Nepalese to establish their first medical school in 1978 and the Dean of Medicine wanted Canadian help to establish their first specialist program. Once the DA program started in 1985 BM Shrestha contributed enthusiastically and was a power behind the 3-yr MD Anaesthesiology program from 1996 onwards. I coordinated the Canadian contribution to the DA program 1985-94 and to the MD program 1996-2000.

In the early 1980s Tom Fell, an American anesthesiologist, trained two Nepalese nurses to be nurse anesthetists at Patan Hospital, a United Mission to Nepal hospital in Patan which is a city across a bridge from Kathmandu. I think he worked there for three years, as did subsequent mission anaesthesiologists. He did a very good training job, presumably up to US standard, for those nurse anaesthetists to work in that hospital and with an anaesthesiologist always available. Sometime later, Patan Hospital became nominally a government hospital but its administration appeared to largely be mission staff from overseas. It was quasi-autonomous and could employ the nurses even though they were not recognised by the ministry of health.

BM Shrestha had high regard for those two nurse anaesthetists. In 1990 Archie Brain gave me several paediatric LMAs to take to Nepal. I demonstrated them to Prof Shrestha at a rehabilitation hospital for orthopaedic and plastic surgery funded by Terre des Hommes, a Swiss charity. The two nurse anaesthetists also worked there on his days. Some of the children had gross head and neck burn contractures from old burns. I gave him case record forms on which to record details of LMA use. Nearly a year later he sent 81 completed records. On my next visit to Kathmandu he and I put together his first ever paper for a major meeting - the world congress in The Hague in 1992. What impressed me was his insistence that the names of the two nurse anaesthetists, who had collected the data from their cases, must also be on the paper. That is a very long-winded way of showing how much Prof Shrestha respects well-trained nurse anaesthetists and what he and his colleagues object to is the bizarre program that Maurice Lee proposes. I wondered what the title should be for graduates of his program should be, certainly no nurse anaesthetist and I could only come up the descriptive term “anesthetoid.”

You are welcome to reprint my 1997 in WAN. You will find updated information in the following article.

Kind regards,

Roger Maltby
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Helping to establish anaesthesia training and development in Nepal

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Nepal is a small Himalayan country with a population of 20 million that lies between India to the south and Tibet (China) to the north. Training of health care personnel in Nepal dates from 1972 when the Institute of Medicine (IOM) of Tribhuvan University was established in Kathmandu. In 1976, at the request of the IOM, the head of Obstetrics and Gynaecology at the University of Calgary conducted a World Health Organisation (WHO) feasibility study for a medical school in Kathmandu. For several years after the medical school opened in 1978, faculty from the University of Calgary paid short term visits to supplement teaching and later assisted in establishing a postgraduate program in general practice.

The Kathmandu valley is at an altitude of 1300m and has five major hospitals. The older ones are three government hospitals (Bir, Maternity, Kanti Children’s) and the Military Hospital. Tribhuvan University Teaching Hospital (TUTH) was built and equipped by the Japanese government in the early 1980s. There are nine government hospitals with surgical facilities outside the Kathmandu valley in the Terai, the southern plain bordering India. Two of these are 150-200 bed regional hospitals and seven are 25-50 bed zonal hospitals. In 1984 there were six trained anaesthetists in the whole of Nepal, all in Kathmandu at Bir Hospital and the Military Hospital. The regional and zonal hospitals all had surgeons and obstetrician-gynaecologists but no trained Nepalese anaesthetists.

**Diploma in Anaesthesia (DA) Program**

The Nepalese Ministry of Health (MoH) recognised the lack of anaesthetic services and that only six of the anaesthetists who trained in the United Kingdom and elsewhere since the 1960s had returned to Nepal. The original planning of the Diploma of Anaesthesia (DA) Program began when the Director General of Department of Health Services, the Head of Anaesthesia at Bir Hospital (Dr. N.B. Rana) and the Director of TUTH met with the Rector of Tribhuvan University. They decided to start a one year DA program in Kathmandu. The curriculum was prepared; the Ministry of Health established posts for physician-anaesthetists in Kathmandu and in regional and zonal hospitals and agreed to recognise the DA as a specialist qualification for promotion.

In the spring of 1984 the University of Calgary was approached to assist in establishing the program. Dr. J.R. Maltby agreed to be the Canadian co-ordinator, without any previous experience of a program appropriate for conditions in a developing country. Furthermore, there was no Nepalese program director with whom to correspond in the intervening months. The initial three year agreement provided for a continuous series of senior Canadian anaesthetists, starting in January 1985. Each Canadian would be in Kathmandu for three to twelve months to provide academic support and administrative guidance to establish a self-sustaining DA Program. A brief outline of the proposed assistance was sent to the head of each of the sixteen Canadian University Departments of Anaesthesia. Some of those who volunteered had worked in developing countries but, perhaps more importantly, all had experience in either Royal College examinations, research or administration, as well as in residency training. Advice was sought from personal contacts in Canada and the United Kingdom. Canada has no nationally certified one year training program in anaesthesia, so training requirements and old examination papers for the London (UK) DA were obtained from the Faculty of Anaesthetists of the Royal College of Surgeons (now the Royal College of Anaesthetists).

**Recruitment**

Anaesthesia was the first speciality program to be started in Nepal. The expectation of the MoH and IOM was that it would eventually produce sufficient anaesthetists for the whole country (27 was the number recommended by WHO in 1984). From the point of view of the young physician, however, training in the UK not only provided a much higher income but led to an internationally marketable qualification. All other specialities still offered
those possibilities, and there was therefore concern that few physicians would wish to enter the DA program. Nevertheless, the quality of the DA program proved attractive and an average of four candidates were accepted for each course. By 1994, there were more than 40 trained anaesthetists in Nepal, with at least one in each surgically equipped hospital.

Candidates were nominated by their employer, the IOM or MoH, provided they had served three years since graduation, had six months supervised practical anaesthesia experience, and had passed the entrance examination. Clinical instruction was provided by the Nepalese anaesthetists in MoH hospitals and TUTH in Kathmandu. The Canadian faculty initially provided much of the classroom teaching and administration, gradually transferring these responsibilities to local faculty, and only provided clinical service when there was a teaching component. Interim examinations were held at three and six months, and a final examination at which an external examiner from India or another neighbouring country was present.

Two early DA graduates were selected for higher training in the UK with the expectation (subsequently unfulfilled) that they would return to Nepal as leaders and teachers. Canadian support continued for a fourth full year, after which it was reduced to the second six months of each course until 1993.

**MD Anaesthesiology Program**

In 1992, the Minister of Health suggested using the Kathmandu MoH hospitals and TUTH to implement three-year Masters Degree programs. Dr. N.B. Rana was appointed chairman of the task force which included members from the IOM. Terms and conditions were laid down for all specialty programs. A Postgraduate Medical Education Co-ordination Committee (PGMECC) was formed with the Dean of the IOM as Chairman, representation from the MoH, and co-ordinators from each specialty program. Programs in Internal Medicine, General Surgery and Obstetrics and Gynaecology started in 1994.

The curriculum and training requirements for MD Anaesthesiology were prepared by Dr. J.R. Maltby, Professor R. Amatya (TUTH) and Dr. N.B. Rana in 1992. A feasibility study was conducted by Dr. T.J. McCaughey from Canada in 1994, and the program started in 1996. At the request of the Dean and PGMECC, Canadian academic and administrative support will be provided for the first three years.
Special Article: Training and development of anesthesia in Nepal – 1985 to 2005

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Abstract
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.

Introduction
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.

**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.

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 conduct 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. 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.

Acknowledgments

We thank the Canadian Anesthesiologists’ Society International Education Fund and volunteers for constant support, Dr. Tom McCaughey for his devotion in establishing the program, Dr. Dennis Reid for his help in reviewing the MD anesthesia program and examining our candidates, and Dr. Roger Maltby for his advice in preparing this article.

References


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Dear Sir

Am I right in thinking that the Glostavent has the monopoly on being the ‘right’ machine for developing countries?

I ask because in the last three years, most editions of World Anaesthesia Newsletter have carried articles about teams, apparently representing WFSA, going round the world pushing sales of this apparatus in hospitals large and small.

The word ‘Glostavent’ appears 118 times in WA newsletters 2005-8, surely a most welcome bit of free publicity for the manufacturers, Diamedica.

Agreed, the Glostavent is well suited for tertiary referral hospitals with ICU’s to give respiratory support, but has any cost-effective trial been carried out - e.g. comparing the outcome of controlled versus spontaneous breathing during major surgery - and do Penlon or other equipment manufacturers with cheaper anaesthesia machines have an opinion on this apparent conflict of interest?

Over several years I have questioned the justification for placing ventilators and complex electronics in remote district hospitals when all that is required is a simple inhalation anaesthesia apparatus which allows spontaneous breathing with oxygen. I have never received a satisfactory reply and I don’t believe there is one.

I have worked in or visited many isolated operating theatres in developing countries in the last 30 years - similar to the places where the Glostavent is now being placed - looking at the books and the operative outcome and collecting data. Hardly ever does one come across a patient where controlled ventilation would have made any difference - those who died mostly bled to death and putting them on a ventilator would even have hastened their demise.

Most hospitals in developing countries have very small budgets; a ventilator must come at the expense of other, cheaper, health projects. Far more important than having a ventilator is to train staff to give safe anaesthesia. This comes cheaper than a ventilator but even so, is often unaffordable.

The argument that it is some development aid agency, not the government, that is paying is invalid - there is no such thing as a free anaesthetic machine.

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Reply from Robert Neighbour, Managing Director, Diamedica

Thank you for the opportunity to reply to Professor Fenton.

As Managing Director of Diamedica I am naturally very grateful to him for drawing attention to the exceptional degree of interest there has been in the Glostavent® anaesthetic machine. I also recognise the exceptional contribution that Professor Fenton has made in the developing world and his commitment to safe anaesthesia in these areas. However, rather than implying criticism of the editorial policy, as seems to be the case, I believe the editor should be warmly congratulated on highlighting a subject of major significance to anaesthetists throughout the developing world.

The principal of the Glostavent® was originally conceived by Dr Eltringham in 1995 in an attempt to provide a versatile anaesthetic machine which would enable inhalational anaesthesia to be administered safely in the most difficult conditions. There have been many similar machines on the market but none universally accepted. Diamedica became interested in promoting the Glostavent® in 2003 and has been continually consulting with users in the developing world in order to meet their requirements. I am extremely grateful to all of those who have given us the benefit of their opinions, including Professor Fenton, and also the various authors that have reported their experiences in the World Anaesthesia and in other journals. We have been able to incorporate many of their suggestions and have made many modifications in the design, without losing sight of the original principles.

The article from Dr Boni in this issue lists no less than seventeen improvements in the Glostavent® which have been made in the last five years since he first began using it in Ghana. The modifications have been made without a price increase in the last four years. I would like to take this opportunity to acknowledge our gratitude to those who have suggested these improvements.

Many experts have requested modifications which have great merit but it is impossible to include them all and it is obvious that a single design cannot be ideal for every conceivable situation. We have therefore concentrated on producing a basic design that we feel would be suitable for an isolated district hospital. Smaller hospitals can be catered for by a version of the Glostavent® which has all the advantages of the standard machine but without the ventilator and a portable emergency unit is also available.
During a recent visit to Ethiopia, I was introduced to Seppo Lahdeaho, who is the Administrator of this State of the Art Medical Centre/Hospital in Addis. They have an urgent need for Specialist Anaesthetists. The centre was established by the Myungsung Presbyterian Church, Korea, to provide quality health care to the people of Ethiopia and to train medical personnel, partly as recompense for the assistance given by Ethiopia during the Korean War. Collaborating parties are Heukeland University, Bergen, Johns Hopkins University and Velore Christian Medical College. Evangelical commitment is NOT necessary to work there, but any one considering going must feel comfortable in a religious environment.

The hospital opened in November 2004 and is missionary funded, with all surgical specialities including neurosurgery and ICU. There are currently 80 beds with a planned extension up to 300, 2 modern well equipped operating theatres, a neonatal unit, and paediatric burns unit. It is the largest private hospital in Ethiopia and has become the main referral hospital for most clinics in the country. It is staffed by locally trained doctors assisted by volunteers from Europe and the US as well as visiting surgical teams such as Operation Smile. Volunteers are welcome to stay as long as possible but one month is the minimum. Accommodation and food are provided and an honorarium, possibly up to $400 US per month is paid but not the airfare or insurance premiums. The living conditions are very good and are suitable for families with children. There are simple supermarkets in Addis where all basic needs can be cheaply purchased.

The theatres have modern equipment for surgery including operating microscopes and scanners. The anaesthetic machines were Korean, of traditional design with all monitoring facilities. There is a good supply of basic drugs such as Thiopentone, Ketamine, Propofol, Suxamethonium, Pancuronium and Vecuronium, and spinal Bupivacaine. The ICU doubles as a post operative ward and is also well equipped.

There is a varied and challenging case load. On the day of my visit the operation lists included laparoscopic cholecystectomy, craniotomy, hydrocephalic shunts, thoracotomy and reconstructive orthopaedic procedures. There are out of hour’s emergencies, including obstetrics with an epidural service.

The staff consists of 1 Consultant, 4 anaesthetic nurses trained at the Black Lion Hospital and 8 theatre nurses. There is so much of interest to do in Ethiopia, a magical country of extreme contrasts; it has a cultural, historical and linguistic identity distinct from the rest of Africa. including 8 UNESCO World Heritage sights. Within easy reach of Addis, there is Bahir Dar, base for Lake Tana Monasteries and the source of the Blue Nile, Gondar with its famous Royal walled enclosure, castles, palaces and decorated churches, not forgetting the rock hewn churches of Lalibela high up among wild craggy mountains, There is also hiking, camping and bird watching in the magnificent Simien Mountains or the southern rift valley lakes.

Ethiopia is far removed from the established images of famine, desert landscape and poverty, but there are beggars and a walking museum of pathology at the tourist sites.

Persons interested in volunteering to work in Anaesthesia here, should contact Sappi Lahdeaho at PO Box 5773 Addis Ababa, telephone 00251-11-32011 701, E-mail, pahdeaho@ethionet.et, pahdeaho@telecom.net.et, seppolahdeaho@yahoo.com as soon as possible. The anaesthetist is Dr Kinfu, bkinfu@yahoo.com. The website is still being constructed at www.mcmet.org.

If I can help further, please contact me at gd407@btinternet.com, telephone 0207 378 0395.
The Scotland/Malawi anaesthesia project - building an infrastructure

This article describes the processes involved in organising 16 anaesthetists, two emergency medicine doctors and two resuscitation-training officers from Scotland to provide a programme of ongoing training for those responsible for the delivery of anaesthesia and intensive care in Malawi.

Existing infrastructure
Malawi has only three physician-anaesthetists to serve an estimated 13 million people. As a result, the majority of anaesthetic care is provided by non-medically trained anaesthetic clinical officers (ACOs) who are highly motivated and provide a clinical service despite extremely difficult circumstances.

Medical facilities in Malawi vary enormously between districts—most are district general hospitals, some without basic monitoring such as pulse oximetry.

A few centres provide basic critical care facilities with an ad hoc mixture of ventilators, pumps and a limited supply of life-saving drugs, and even the larger ‘teaching’ hospitals have only occasional access to central lines and inotropic support. We visited the local intensive care unit in Blantyre which, despite limited resources, manages patients of all ages and with conditions ranging from gastrochisis to multiple trauma.

In the obstetric units, a single midwife may be expected to manage an antenatal ward with up to 80 women or a postnatal ward with up to 60 mothers and babies. Under these circumstances it is clearly impossible to closely monitor seriously ill women and tragically many die unobserved due to complications of eclampsia, massive haemorrhage, sepsis and malaria.

Towards sustainability
Last year we delivered the first Scottish refresher course in obstetric and paediatric anaesthesia and trauma management. 16 ACOs were taught by four anaesthetists from Scotland using advanced life support group (ALSG) training models. The course was very well received and the delegates expressed keen enthusiasm to participate in similar courses in the future.

In collaboration with Mr Cyril Goddia, Head of the School of Anaesthesia in Blantyre, we began the process of building a Malawian faculty to ensure that after all our efforts the refresher courses become self-sustainable. The first step in this process involved inviting some of last year’s most promising delegates to become instructor candidates.

A faculty of 20 instructors was subdivided into four separate faculties to cover the clinical courses and an inaugural ‘Teach the Teachers’ course

Nineteen of the faculty are currently working in Scotland and one brave SpR from Oxford joined the ranks.

We ran three three-day courses concurrently, comprising obstetric anaesthesia, paediatric anaesthesia and intensive care medicine. After completing one course, most of the delegates rotated through the two remaining courses with a compensatory ‘rest day’ between each. Four potential instructors attended a one-day ‘train-the-trainers’ course during the first ‘rest day’. This course was designed by Dr Kate Grady on behalf of the Advanced Life Support Group in conjunction with the Liverpool School of Tropical Medicine...
and was adapted for our use by Brian Carlin, Deputy Director for Education at British Association for Immediate Care, Scotland (BASICS). The four instructor candidates were supported and assessed whilst they taught on their remaining two courses.

Course suitability
The course material was developed in close collaboration with the head of the School of Anaesthesia. The course format consisted of interactive lectures, scenarios, tutorials and small group discussions. The delegates were, on the whole, well read and had a good grounding of basic principles and practice of anaesthesia.

Over the two-week period we taught 41 ACOs, six intensive care nurses, three ward nurses and 13 midwives. Their experience varied enormously – some wanting basic practical knowledge and some (mainly from the hospitals with some form of critical care) were keen for more in-depth discussion of issues such as Adult Respiratory Distress Syndrome (ARDS) and sepsis. Our trip coincided with the introduction of defibrillators to the country (donated by Lanarkshire Health Board); therefore we spent a considerable amount of time teaching safe defibrillation.

In addition, the blood transfusion service has recently started to produce blood components, so we added a session on blood component therapy. Feedback was obtained during and after each course and we constantly adapted the content to try to meet the needs of delegates. The delegates were enthusiastic in their participation and their wish to share new knowledge with colleagues back at their base hospitals. They were all supplied with a textbook for each course as well as a CD with copies of the lecture slides used on the course (produced and copied by the Wrathall/Stott printing press on the final evening of the course!). In addition, some protocols from our base hospitals were taken as templates to be adapted for use within their own departments.

With grateful thanks
I would like to thank all the faculty members who worked so hard before and during the course. Some took annual leave to come and teach for two weeks. Others were granted special leave from their hospitals and we are very grateful for that. All faculty members funded themselves, although we hope to be able to reimburse some travel expenses.

Sincere thanks also to Drs Paul Fenton, Iain Wilson, Bruce McCormick, Kay Chidley and Moyna Bill for their sound advice during the planning of these courses. Thanks to ALSG Manchester for kind permission to use MOET and APLS course materials.

It would not have been possible to run these courses without significant contributions from our sponsors. I would like to formally thank the Royal College of Anaesthetists for the generous donation of £2,000. This money contributed towards the travel and subsistence costs for the 54 candidates and the shipment of materials and textbooks to Malawi.

I would like to take this opportunity to thank our other generous donors: Scottish Society of Anaesthetists, Scottish Intensive Care Society, Scottish Government Humanitarian Health Fund, Association of Anaesthetists of Great Britain Ireland, Syner Med, Almond Anaesthetic Group, Crosshouse Hospital Intensive Care Unit, Newport-on-Tay Charity Ceilidh, ‘Swig and Jig’ Charity Ball, Sponsored sporting events and personal donations from friends, family and colleagues. Lojigma International Ltd, Dalgety Bay, Fife donated 100 sets of ‘theatre greens’.

Faculty members
Catriona Connolly (Dundee), Brian Carlin (BASICS Scotland), Colin Donald (Emergency Medicine, Dundee), Hilary Edgecombe (Oxford), Chris Hawkesworth (Crosshouse Hospital), Jacqui Howes (Inverness), Drew Inglis (Southern General, Glasgow), Pamela Johnston (Dundee), Barry Klaassen (Emergency Medicine, Dundee), Caroline McQuillan (RTO, Stirling), Rose McRobert (Glasgow Royal Infirmary), Samantha Moultrie (St John’s, Livingston), Vince Perkins (Dumfries), Richard Price (Southern General), Michaela Salvador (Aberdeen), Steve Stott (Aberdeen), Jo Thorp (Monklands), Lyn Walton (Dundee), Nigel Webster (Aberdeen), Wayne Wrathall (Dumfries).

Malawian delegates who completed the three courses in November 2007
Prof Emilio Ovuga, PhD
Dean, Faculty of Medicine, Gulu University, Uganda

International announcement on behalf of Gulu University

Gulu University situated two kilometres from the northern outskirts of Gulu town was established in 2002. The Faculty of Medicine was subsequently established at the Regional Referral Hospital (GRRH) in 2004. The first group of students in the Faculty of Medicine is currently in their third year.

Students at the faculty are highly motivated and eager to learn. The faculty follows a semester system of learning and teaching and follows traditional systems of medical education which relies heavily on clinical supervision and apprenticeship. The faculty uses two teaching hospitals to conduct clinical training, GRRH and at St Mary's Lacor hospital which is a private, not-for profit hospital located 5 km west of Gulu town.

The curriculum is community-orientated in line with the university’s motto of transforming communities for better health and prosperity. Gulu University’s Faculty of Medicine occupies a unique place in the history of Uganda as it shoulders the responsibility of engaging in research required to foster recovery, reconstruction and rehabilitation in the post-conflict Northern Uganda in order to offer high quality medical education that is comparable to those in other institutions and to meet international standards of medical care.

The Faculty of Medicine at Gulu University is keen to host professors or other academics on sabbatical leave in each of the following critical areas: Anaesthesia, Dermatology, ENT, Internal Medicine, Reproductive Health, Ophthalmology, Pathology, Paediatrics, Radiology and Surgery.

The duration of each sabbatical is expected to range from four months to twelve months. It is planned that this arrangement will last for a period of three to five years during which time the university will have built up its capacity to conduct medical education using its own staff.

Successful international applicants will be expected to conduct research, publish jointly with Ugandan colleagues and provide clinical care at Gulu Regional Referral Hospital after being registered by the Uganda Medical and Dental Practitioners’ Council.

Accommodation for the duration of the individual stay, local travel facilitation and free health care will be provided.

THET is unable to financially support this post or any travel related to it.

For more information about Gulu University, please visit www.guluiv.ac.uk

If you are interested in this position and would like to discuss it further, please contact the Dean of the Faculty of Medicine at Gulu University, Professor Emilio Ovuga at Emilio@gmail.com

If you would like to contact someone at THET for a preliminary discussion about this position, please contact John MacDermot at john@thet.org
What is the World Anaesthetic Society Doing?
Report from the World Anaesthesia Society

1. Publications

*Update in Anaesthesia*

Edition 24.1 was published in June and is the first ‘new-look’ Update, with a significant refashioning of the cover and contents. In addition it contained the new Update Short Reports section, featuring original research, audit and case reports.

Edition 24.2 is due for publication in December 2008 and will be 200-page themed special edition of Basic Science articles. As agreed at the last IRC meeting this will be jointly supported by the WFSA and the AAGBI. Work is well underway.

Russian and Mandarin editions are produced regularly and work on Portuguese, Spanish and French versions is underway. An edition in Persian (for distribution in Iran and Afghanistan) is planned.

*Anaesthesia Tutorial of the Week (ATOTW)*

Tutorials continue to be published on a weekly basis, with the distribution gradually growing.

Both Update and ATOTW will be featured on the WFSA website – this subsection of their site is currently under construction.

2. WAS website – www.worldanaesthesia.org

The educational resources (Update and ATOTW) have been organised and are far more user-friendly. Due to the labour-intensive nature of upkeep for a site of this nature, future focus will be towards the WFSA site as our main publication site.

3. Publicity

*WAS seminars*

Satellite seminar to be held at the AAGBI WSM in January 2009. The speakers include Isabeau Walker (Ugandan survey of paediatric anaesthesia), Ellen O’Sullivan (Global Oximetry Project) and Mai Wakatsuki (Experience of working overseas).

Bruce McCormick
Chairman, WAS
World Federation of Societies of Anaesthesiologists (WFSA)
At the World Anaesthetic Congress, held in Cape Town, in March 2008, there were a series of changes in the officers of the WFSA. Angela Enright (Canada) became the new President of the WFSA, David Wilkinson (UK) became the Secretary and Jerry Fontenot (USA) became the Treasurer. The new Chair of the Executive Committee is Dr Florian Nuevo (Philippines).
Dr Enright, the former chair of the Education Committee has been succeeded by Dr Jannicke Mellin-Olsen (Norway) while Dr Iain Wilson continues (UK) as chair of the Publications Committee where it has been joined (by, among others) Dr Isabeau Walker (UK).
I am sure that we all wish them well during their tenure in office.

Dr Carrim Jackaria
At the annual meeting of the Mauritius Society of Anaesthetists in September 2008, Dr Jackaria was presented with the Royal College of Anaesthetists (RCoA) Jubilee Medal. Dr Jackaria received a scholarship to study medicine in the UK many years ago. He spent five years at the University of Aberdeen and was unable to return home until he qualified: the journey home took too long and was too expensive for him to return during vacations. After he qualified, he returned to the UK to study anaesthesia at the University of Liverpool where he proceeded to become a Fellow of the Faculty of Anaesthetists of the Royal College of Surgeons, the predecessor of the RCoA.
When he returned to Mauritius, he was instrumental in founding the Mauritius Society of Anaesthetists and was its first President, a post to which he was re-elected on several occasions. He also initiated an annual educational meeting of the Society that attracted visiting lecturers from South Africa, India and Europe. The Mauritian anaesthetists were the first specialty on the island to establish such an annual meeting and it did much to raise the profile of anaesthesia.
Dr Jackaria was presented with his medal, much to his surprise, by Dr Anna Maria Rollin who was, this year, the visiting lecturer from the UK.

A New Anaesthetic Site to Check
Dr Rod Taylor, an Australian anaesthetist, is preparing a website aimed primarily at Australian anaesthetists working in rural areas. The address is www.anaesthesiacases.com.au and it is well worth a visit: you are likely to find the “Coffee Break” section particularly interesting.

4th All African Anaesthetic Congress (AAAC)
The 4th AAAC will be held at the Kenyata International Conference Centre, Nairobi, Kenya between 12-17 September 2009.
The main theme is: Anaesthesia, Intensive Care and Pain Management in Africa: Present and Future. Sub-themes are:
1. Palliative Care
2. Geriatric Anaesthesia
3. HIV/AIDS
4. Traditional Medicine
Further information and registration details can be found at www.aaackenya2009.org
Useful Information

World Federation of Societies of Anaesthesiologists (WFSA)
21 Portland Place, London, W1B 1PY
United Kingdom
Tel: (+44) 0207 631 8880
Fax: (+44) 0207 631 8882
Email: wfsahq@anaesthesiologists.org
Website: www.anaesthesiologist.org

Courses in Anaesthesia for the Developing World
Oxford (UK): July (annually).
Contact: Dr. M. Dobson
Department of Anaesthesia
John Radcliffe Hospital
Headley Way
Headington,
Oxford
OX3 9DU
United Kingdom
Tel: (+44) 01865 221589
E-mail: michael.dobson@nda.ox.ac.uk

Bristol (UK): December (annually).
Contact: Dr. James Rogers
Department of Anaesthesia
Frenchay Hospital
Bristol BS16 ILE
United Kingdom
Tel: (+44) 01179 701212
Email: james.rogers@nbt.nhs.uk

Remote Situations, Difficult Circumstances, Developing Country Anaesthesia
Hobart or Launceston (alternate years), Tasmania, Australia
Contact: Dr Haydn Perndt
Royal Hobart Hospital
GPO Box 1061-L
Hobart, TAS 7001
Australia
Email: haydn.perndt@utas.edu.au

Primary Trauma Care Foundation
An organisation training doctors and nurses in the management of severely injured patients in the District Hospital,
Contact: PTC Foundation
Oureniqua House
313 Woodstock Rd
Oxford, OX2 7NW
United Kingdom
Email: ptc@nda.ox.ac.uk

PTC Chairman:
Dr Douglas Wilkinson
douglas.wilkinson@nda.ox.ac.uk

PTC Administrator: Annette
(admin@primarytraumacare.org)

Durbin plc
This organisation has bought ECHO and now supplies drugs and equipment to developing countries.
Contact: Durbin plc
Durbin House
180 Northolt Rd
South Harrow
Middx. HA2 0LT
United Kingdom
Email: www.durbin.co.uk

Equipment collection and distribution to the developing world
Carelift International Inc.
185 Walnut Street (Floor 22)
Philadelphia PA. 19103
USA
Tel: (+1) 215 535 3590

Dr. William Rosenblatt
REMEDY
Dept. of Anaesthesia
Yale University School of Medicine
333 Cedar Street, New Haven
CT 06510
USA

Book Aid International
39–41 Coldharbour Lane
Camberwell
London
SE5 9NR
United Kingdom
Tel: (+44) 0207 733 3577
The organisation is interested in receiving recent complete sets of journals and newish text books. These are collected free and distributed by Rotarians.

Society for Education in Anesthesia
International members are invited to join this Society that promotes techniques and excellence in the teaching of Anesthesia.
520N Northwest Highway
Park Ridge, Illinois 60069-2573
USA
Tel: (847) 825 5586
Fax: (847) 825 5658
Email: sea@asahq.org
Web: www.seahq.org

The TOKTEN Project
Expatriate nationals returning to their country of origin are invited to apply for the post of project expert. Each project is sponsored by the United Nations who would meet the cost of international travel and pay a subsistence allowance ($90/day). Applications should be made to the Minister of Health of the host developing nation.

Technical Assistance at Low Cost (TALC)
A unique charity that supplies low-cost healthcare, training and teaching material to raise the standard of healthcare and reduce poverty worldwide.
Contact: David Moreley
Institute of Child Health
GUILFORD STREET
LONDON WC1N 1EH
UNITED KINGDOM
Web: www.talcuk.org
Douleurs sans Frontieres (DSF).

**Goals:**
1. To participate, to create or to encourage any structure involved in the treatment of pain and suffering (cancer pain, AIDS, acute pain, etc.)
2. To search for therapeutic methods, to provide training and to propagate knowledge about pain and suffering especially in developing countries.

For further information contact:

Douleurs sans Frontieres
Docteur Alain Serrie
Hôpital Lariboisière
2, rue Ambroise Paré
75010 Paris,
France
Tel: (+33) 1 49 95 81 77
Fax: (+33) 1 49 95 69 98
Email: alain.serrie@lrb.ap-hop-paris.fr

or

Docteur Jacques Meynadier
Centre Oscar Lambret
BP 307 - 59020 Lille cedex,
France
Tel : (+33) 3 20 29 59 89
Fax : (+33) 3 20 29 59 97
Email : j-meynadier@o-lambret.fr

The International Committee of the Red Cross (ICRC)
The ICRC acts to help all victims of war and internal violence, attempting to ensure implementation of humanitarian rules restricting armed violence.

Contact: ICRC,
Recruitment Division
19 Ave. de la Paix
CH-1202
Geneva
Switzerland
or your local society.
Email: http://www.icrc.ch

International Anesthesia Research Society (IARS)
2 Summit Park Drive 140
Cleveland, Ohio 44131
USA
Tel: 216 642 1124
Fax: 216 642 1127
Email: amaggiore@iars.org

Commonwealth Medical Awards
Available to citizens of Commonwealth countries for limited periods of postgraduate study within the UK. Applications should be addressed to the:

Medical Awards Administrator
Commonwealth Scholarship Commission
36 Gordon Square
London WC1H 1PE
United Kingdom

Job opportunities in the developing world
These are listed in a bimonthly magazine produced by the International Health Exchange and on it’s website.

Contact:
IHE / RedR
1 Great George St.
London SW1P 3AA
United Kingdom
www.ihe.org.uk

Overseas Doctors Training Scheme (UK)
Anaesthetists seeking recognised training posts in the UK should apply to the:
Bernard Johnson Adviser
Royal College of Anaesthetists
8 Russell Square
London WC1B 4JX.
United Kingdom
Tel: (+44) 020 7637 4104
Email: odts@rcoa.ac.uk

US volunteers wishing to spend periods working in developing countries
Contact either:
Dr. Lena Dohlman
Health Volunteers Overseas
c/o Washington Station
PO. Box 65157
Washington DC
20035-5157
USA
Tel: (+1) 202 296 0928
Fax: (+1) 202 296 8018

or
Committee Chair
Overseas Teaching Program
American Society of Anesthesiologists
520 N. Northwest Highway
Park Ridge, IL 60068-2573
USA

Medecins Sans Frontieres (MSF)
offers assistance to populations in distress, to victims of natural and man-made disasters and to victims of armed conflict. They require volunteers for both long and short-term projects. If you are interested in obtaining more information, contact them at:

MSF
64-74 Saffron Hill
London
ECIN 8QX
United Kingdom
Tel: (+44) 020 7404 6600
Email: office-ldn@london.msf.org

or
11 East 26th St.
Suite 1904
New York
NY 10010
USA
Tel: (+1) 212 679 6800
Email: www.msf.org or www.uk.msf.org
The SOROS Foundation will consider applications from anaesthetists in Eastern and Central Europe for support for limited periods of study in the UK. Applications should be made in advance to the branch office of their country of origin whose address may be obtained from:

The Soros Foundation
400 West 59th Street
New York
NY 10019
USA
Tel: (+1) 212 548 0600
Fax: (+1) 212 548 4600
E-mail: osnews@sorosny.org

WHO Liaison Officer
Dr M Dobson
Nuffield Department of Anaesthetics
The John Radcliffe Hospital
Headington Way
Headington
Oxford
OX3 9DU
United Kingdom
Tel: (+44) 01865 221589 / 741166
Fax: (+44) 01865 221593 / 453266.
E-mail: michael.dobson@nda.ox.ac.uk

World Anaesthesia
This organisation works to improve standards of anaesthesia throughout the world. In conjunction with the WFSA, it produces two publications, World Anaesthesia News and Update in Anaesthesia* (an add-on textbook) published twice-yearly. The annual subscription is £35, €50 or $60. For further information:
Contact:
Mrs Busola Adesanya-Yusuf
World Anaesthesia Society
Association of Anaesthetists of Great Britain & Ireland
21 Portland Place
London W1B 1PY
United Kingdom
E-mail: secretary@worldanaesthesia.org
Website: www.world-anaesthesia.org
* also available at:
www.nda.ox.ac.uk/wfsa

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EX2 5RB
United Kingdom
Tel: (+44) 07795 323383
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E-mail: info@sumographics.co.uk

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GL6 6TS
United Kingdom
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Fax: (+44) 01452 812162
Email: wfcasey@doctors.org.uk

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## Anaesthetic websites to try

### Resources

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<th>Resource</th>
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<tbody>
<tr>
<td>Anaesthesia &amp; Critical Care Resources on the Internet</td>
<td>www2.eur.nl/cgi-bin/accri.pl</td>
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<tr>
<td>Anaesthesia UK</td>
<td><a href="http://www.anesthesiak.uk.com">www.anesthesiak.uk.com</a></td>
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<tr>
<td>Anesthesia Web</td>
<td><a href="http://www.anesthesiaweb.com/">www.anesthesiaweb.com/</a></td>
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<tr>
<td>Anesthesia International</td>
<td><a href="http://www.geocities.com/anestint">www.geocities.com/anestint</a></td>
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<tr>
<td>Armenian Society of Anaesthesiologists</td>
<td><a href="http://freenet.am/~armaneist">http://freenet.am/~armaneist</a></td>
</tr>
<tr>
<td>Bandolier (Evidence-based Medicine)</td>
<td><a href="http://www.jz2.ox.ac.uk/bandolier">www.jz2.ox.ac.uk/bandolier</a></td>
</tr>
<tr>
<td>Cyber Medical College</td>
<td><a href="http://www.cybermedicalcollege.com">www.cybermedicalcollege.com</a></td>
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<tr>
<td>Developing Anaesthesia (Australia)</td>
<td><a href="http://www.developinganaesthesia.org">www.developinganaesthesia.org</a></td>
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<tr>
<td>Gasboys (&amp; gasgirls)</td>
<td><a href="http://gasboys.net">http://gasboys.net</a></td>
</tr>
<tr>
<td>Illustrated Regional Anesthesia</td>
<td><a href="http://www.nyora.com">www.nyora.com</a> or <a href="http://depts.washington.edu/anesth/regional/welcome.html">http://depts.washington.edu/anesth/regional/welcome.html</a></td>
</tr>
<tr>
<td>Indian Anaesthetists Forum</td>
<td><a href="http://www.theiaforum.org">www.theiaforum.org</a></td>
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<tr>
<td>Primary Trauma Care Foundation</td>
<td><a href="http://www.primarytraumacare.org">www.primarytraumacare.org</a></td>
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<tr>
<td>Society for Education in Anesthesia</td>
<td><a href="http://www.seahq.org">www.seahq.org</a></td>
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<tr>
<td>The Trauma Organisation</td>
<td><a href="http://www.trauma.org/">www.trauma.org/</a></td>
</tr>
<tr>
<td>Virtual Anaesthetic Machine</td>
<td><a href="http://www.vam.anest.ufl.edu">www.vam.anest.ufl.edu</a></td>
</tr>
<tr>
<td>Virtual Anaesthesia Textbook</td>
<td><a href="http://www.virtual.anesthesia-textbook.com">www.virtual.anesthesia-textbook.com</a></td>
</tr>
<tr>
<td>Virtual Libraries and Museums</td>
<td><a href="http://www.virtuallibrariesandmuseums.com">www.virtuallibrariesandmuseums.com</a></td>
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<tr>
<td>World Anaesthesia Online</td>
<td><a href="http://www.worldanaesthesia.org">www.worldanaesthesia.org</a></td>
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### Journals:

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<th>Journal</th>
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<tr>
<td>Anaesthesia</td>
<td><a href="http://www.blackwell-science.com/ana">www.blackwell-science.com/ana</a></td>
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<tr>
<td>Anaesthesia and Analgesia</td>
<td><a href="http://www.anesthesia-analgesia.org">www.anesthesia-analgesia.org</a></td>
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<tr>
<td>Anaesthesia and Intensive Care</td>
<td><a href="http://www.aaic.net.au">www.aaic.net.au</a></td>
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<tr>
<td>Anesthesiology</td>
<td><a href="http://www.anesthesiology.org">www.anesthesiology.org</a></td>
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<tr>
<td>British Journal of Anesthesia</td>
<td><a href="http://www.bja.oupjournals.org">www.bja.oupjournals.org</a></td>
</tr>
<tr>
<td>British Medical Journal</td>
<td><a href="http://www.bmj.com">www.bmj.com</a></td>
</tr>
<tr>
<td>NEJM</td>
<td><a href="http://www.nejm.org">www.nejm.org</a></td>
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### Journals published by Blackwell, the publishers of numerous anaesthetic and pain journals including the BJA and Acta Anaesthesiologica Scandinavica are available free of charge to those working in developing countries at [www.blackwell-science.com/anaesthesia.asp](http://www.blackwell-science.com/anaesthesia.asp)

### Associations:

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<tr>
<td>American Society of Anesthesiologists (ASA)</td>
<td><a href="http://www.asahq.org">www.asahq.org</a></td>
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<tr>
<td>Association of Anaesthetists of Great Britain &amp; Ireland</td>
<td><a href="http://www.aagbi.org">www.aagbi.org</a></td>
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<tr>
<td>Australian Society of Anesthetists</td>
<td><a href="http://www.asa.org.au">www.asa.org.au</a></td>
</tr>
<tr>
<td>Douleurs Sans Frontieres</td>
<td><a href="http://www.douleurs-sans-frontieres.org">www.douleurs-sans-frontieres.org</a></td>
</tr>
<tr>
<td>European Academy of Anaesthesiology</td>
<td><a href="http://www.eaa-euro-anaesthesiology.org/">www.eaa-euro-anaesthesiology.org/</a></td>
</tr>
<tr>
<td>International Anesthesia Research Society</td>
<td><a href="http://www.iars.org">www.iars.org</a></td>
</tr>
<tr>
<td>International Society for Anesthetic Pharmacology (ISAP)</td>
<td><a href="http://www.isaponline.org">www.isaponline.org</a></td>
</tr>
<tr>
<td>International Society for the Study of Pain</td>
<td><a href="http://www.isap-pain.org">www.isap-pain.org</a></td>
</tr>
<tr>
<td>International Trauma Anesthesia &amp; Critical Care Society</td>
<td><a href="http://www.itaccs.com">www.itaccs.com</a></td>
</tr>
<tr>
<td>National Confidential Enquiry Into Patient Outcome and Death</td>
<td><a href="http://www.ncepod.org.uk">www.ncepod.org.uk</a></td>
</tr>
<tr>
<td>Obstetric Anaesthetists Association</td>
<td><a href="http://www.oaa-anaes.ac.uk">www.oaa-anaes.ac.uk</a></td>
</tr>
<tr>
<td>Royal College of Anaesthetists</td>
<td><a href="http://www.rcoa.ac.uk/">www.rcoa.ac.uk/</a></td>
</tr>
<tr>
<td>Society for Ambulatory Anaesthesia</td>
<td><a href="http://www.sambahq.org">www.sambahq.org</a></td>
</tr>
<tr>
<td>Society for Critical Care Medicine</td>
<td><a href="http://www.sccm.org">www.sccm.org</a></td>
</tr>
<tr>
<td>Society for Computing and Technology in Anaesthesia</td>
<td><a href="http://www.scat.org.uk">www.scat.org.uk</a></td>
</tr>
<tr>
<td>South African Society of Anaesthesiologists</td>
<td><a href="http://www.sasaanweb.com">www.sasaanweb.com</a></td>
</tr>
<tr>
<td>World Federation of Societies of Anaesthesiologists</td>
<td><a href="http://www.anesthesia-societies.org">www.anesthesia-societies.org</a></td>
</tr>
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</table>

The Editor would be delighted to hear of other sites that might be of interest and to learn of any site addresses that are incorrect or no longer functioning.
World Anaesthesia Society
Application Form

WAS aims to:
- Support anaesthesia and the education of anaesthetists in the developing world through training, material and equipment.
- Act as an advocate in dealings with governments and agencies involved in anaesthesia and resuscitation overseas.
- Maintain a network of appropriately trained and experienced anaesthetists in order to assist members and advise those intending to work in the developing world.

The current subscription is £35 per annum ($60, €50). and we encourage all our UK based members to pay by direct debit. Direct debit forms can be downloaded from the WAS website (www.worldanaesthesia.org). Members based outside the UK and should please complete the credit card form.

Name: 
Address: 
Hospital: 
Telephone: work: 
home: 
mobile: 
E-mail address: 
Job Title: 
Speciality: 
Grade: 

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