Department of Anesthesia
McMaster University

Report and Retrospective
Summer 2002

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REPORT FROM THE CHAIR

It has been my privilege to sit as the Chair of McMaster University Department of Anesthesia during these difficult times. From this vantage point, the turmoil of amalgamation and health care restructuring, the issues surrounding the shortage of anesthesiologists, the consequent lobbying on behalf of highly-qualified foreign graduates, rising tuition costs and resulting changes in expectations of medical students, have been enriched by the opportunities provided to me to meet like-minded colleagues nationally and internationally. The future of the department will reflect our ability to adapt and to build on the growth that is demonstrated here in *Report and Retrospective*.

We have made considerable progress in the fields of education and research. Our profile in undergraduate medical training continues to increase with the implementation of a compulsory anesthesia rotation. The new position of undergraduate co-ordinator has been created and funded by the department to deal in part with the challenges and opportunities attending this rotation. We continue to promote McMaster's problem-based learning internationally. Post-graduate training thrives and our reputation in the field of evaluation has been strengthened through our initiatives in re-designing the Royal College Fellowship Examination and in other key areas of assessment evaluation. We continue to offer a highly regarded pain fellowship and are attracting an increasing number of highly qualified national and international candidates. The new Hamilton Health Sciences consolidated pain clinics will strengthen this fellowship experience. This clinical endeavour is a testament to the co-operation between Hamilton Health Sciences and McMaster University Faculty of Health Sciences. Our cardiac fellowship has expanded to include echo-cardiographic training facilities and consistently attracts exceptional candidates. The continuing medical education opportunity provided by our twice-yearly medical acupuncture workshops is unique in Canada. Both pure science and clinical research have been promoted by the winning of major grants from the Heart and Stroke Foundation of Ontario and from the Canadian Institute of Health Research.

The University Department of Anesthesia has played a key role in the organization of several international and regional conferences. A yearly pleasure is the presentation of the **CanAm** conference at Niagara-on-the-Lake, of which our department is a co-founder with SUNY-Buffalo. The Hamilton Regional **OPANA** (Ontario Peri-Anesthetic Nurses Association) conference, which connects nursing colleagues with current concerns in peri-operative anesthetic care was supported from its outset by our department in conjunction with the PACU nurses. The conference draws nurses from Southern Ontario and Upper New York State. The summer of 2001 saw the conclusion to the seventh session of the prestigious **International Symposium on Resistant Arteries** for which our department provided the entire and complete administrative support. It is a credit to the intelligence, dedication and skills of Bonnie Hugill, Mary Gahagan and Valerie Cannon that these conferences and meetings are successful and fulfilling. Dr David Morison's work on the planning committee of the **2000 World Congress of Anesthesia** in Montreal cannot go unmentioned.

My tenure as chair has seen the retirement of four full professors: **Dr David Morison, Dr Jay Forrest, Dr John Hewson and Dr Kari Smedstad**. All were celebrated in McMaster style and photographic evidence is presented. We wish them all continued health and vibrancy.

Report and Retrospective has been compiled from the reports of many clinical and full-time faculty and the editors and I thank all contributors. Especially illuminating is a transcript of reminiscences provided by **Dr D.V. Catton**, the first chair of the Department of Anesthesia at McMaster University. **Drs Kari Smedstad, Norm Buckley,** and **Alez Dauphin** have provided valuable and detailed accounts of practice-in-service in Nepal, Ecuador and Jamaica, and Haiti.

It is hoped that this document provides a mirror of who we are and of the climate of change in which we work.

—Homer Yang

Hypnos

(from Dr. John W. Sevegeringhaus, University of California)

RETROSPECTIVE

In preparation for the World Congress in Montreal 2000, all departments of anesthesia were asked to provide a brief historical summary of their local "firsts". This is our submission.

Canadian Firsts: Anesthesia in Hamilton

Introduction

The academic Department of Anesthesia was established in 1970 with the opening of McMaster University Medical Centre. Dr. D.V. Catton was the first professor and chair, taking the position in 1971. He held this post until 1980. Dr. Jay Forrest was the second chair from 1980 to 1990. Dr. David Morison was the department's third chair from 1990 to 1997. The fourth and current chair is Dr. Homer Yang, 1997-present.

The Faculty of Health Sciences, McMaster University has clinical campuses at the three of the four hospitals of the Hamilton Health Sciences corporation: McMaster Medical Centre, Henderson General Hospital and the Hamilton General Hospital (formerly the Civic Hospitals), and at St Joseph's Hospital. These hospitals pre-date the establishment of the medical school. However, a residency training programme at the Civics, approved by the Royal College of Physicians and Surgeons, had been in existence for a number of years prior to the creation of the academic department.

Since the establishment of the academic department, research directions have included: the pharmacology of anesthetics, physiology of smooth muscle-cells, respiratory physiology, pain management, obstetrical anesthesia, post-op nausea and vomiting, cardiovascular complications in non-cardiac surgery, resident training evaluation, and numerous clinical case studies.

Canadian Firsts in Hamilton Anesthesia

Pre-1970

In the late 1940s, Dr. Russell Fraser at St Joseph's Hospital developed Westocaine, a

procaine-based lighter-than-spinal-fluid anesthetic; this solution was used extensively in spinal anesthesia at that hospital. (This appears to be a very localized use which did not extend beyond St Joseph's, according to Dr. Catton.)

Dr. Frank Ruston, at the Hamilton General Hospital, extended the use of epidural techniques through the development of an infant epidural needle in the 1950s. He was able to demonstrate successful results on infants as young as one-day-old. [Canadian Anesthetists' Society Journal, 1954, 1(1) 37-44].

In the 1950s, Dr J.E. Marshall, and surgeon Dr Kenneth McKenzie, developed a new method of anesthesia for lobotomy, which consisted of a local block supplemented with sodium pentothal without intubation. The previous technique was to give deep general anesthetic with intubation. With the new method, patients were awake and conscious after surgery. A report of 300 successful cases was presented. (This is described by D. Catton and R. Stringer in their monograph *The History of Anesthesia in Hamilton*, 1977, self-published.—Eds)

Post-1970

The McMaster University Medical School was the first of its kind to develop problem-based learning. Members of the Department of Anesthesia, including **Drs D.V. Catton and R Browne**, were deeply involved in the development of problem-based learning for medical undergraduates in the earliest days of the school.

In 1984, the first acupuncture clinic operating in an academic institution was started by **Dr A Fargas-Babjak** as part of a multi-disciplinary pain clinic at McMaster University. As an adjunct to this service, **Dr Fargas-Babjak** introduced methods of non-pharmacological pain management to residents and began the first Continuing Medical Education Programme in Acupuncture under the auspices of an academic institution in 1999. The use of TENS by nursing staff in labour pain management was introduced at McMaster by **Dr Fargas-Babjak** after some in-house research into routine usage and compliance in 1986: we believe that this application was a Canadian first.

Dr J. Forrest has been involved in several large-scale multi-centre trials of isoflurane, with the involvement of centres in Canada, [CASJ, 1982: 29 S (S1-69)] the United States and in Europe. The involvement of McMaster's Department of Biostatistics and Epidemiology in these trials was innovative in anesthesia research.

In 1991 **Dr Alez Dauphin** at St Joseph's Hospital began a medical outreach initiative in Port- au-Prince, Haiti, a Canadian first. It includes commitments to infrastructure refurbishment, maintenance of existing structures, and education. The educational stream is innovative in that it provides a bilateral exchange: with the assistance of the College of Physicians and Surgeons of Ontario in the provision of short-term educational licences, Haitian physicians and residents visit Canada for training. This initiative has been supported by the Ministry of Health, St Joseph's and McMaster University and continues actively to this date. For his work, **Dr Dauphin** has received McMaster's Sibley Award.

In 1999, the Anaesthesia Residency Program introduced the "CLIC" program for its residents. "CLIC" stands for communication, leadership, influence and conflict resolution. The program is a 2-day workshop, adapted from the "Crew Resource Management" Course at Air Canada. It strives to teach professionals how to interact more effectively with coworkers. **Drs. Steve Puchalski and Karen Raymer** led the inaugural workshop with the assistance of **Captain Jim Houvartis**, from Air Canada. It was considered valuable enough to be included as a yearly event in the core curriculum for our residents, and is a Canadian first.

Dr Alex Jadad, in 1999 became the first anaesthetist to be elected as a Top 40 under 40 for his work in informatics and epidemiology as a professor in the Department of Epidemiology and Biostatistics, cross-appointed to the Department of Anesthesia, McMaster University.

—Kris Wilson-Yang

Anesthesia Archives

In the summer of 1999, Fred Lee, a new graduate in sociology, contacted anesthetists in Hamilton to collect reminiscences of and reflections on the development and growth of the practise of

anesthesia in Hamilton. A series of set questions was sent out to thirty-nine members and several members were interviewed. Those interviewed were asked how they began their careers with the Department, to assess the growth of the Department they had witnessed over the years, and for anecdotes, personal views and highlights. Fred was graciously invited to visit several retired staff at their homes, occasions which were valuable and interesting. After reading through the interviews, one prominent common theme emerged: each member had a sincere passion for their work: in research, teaching, and clinical service.

Thanks to Fred's work, there is an archive of information from which an informed history of anesthesia's development as a specialty, its culture, and its practise in the Hamilton hospitals can be constructed. It is hoped to expand the archive to include a complete listing of all our residents and fellows, our clinical trends and our progress in research.

—Fred Lee, Bob Lee, and Kris Wilson-Yang

Dr DV Catton spoke with Fred on July 29, 1999. Dr Catton was the founding Chair of the Department of Anesthesia at McMaster University. A transcript appears here, reproduced with permission.

Interview with Dr. D.V. Catton

Building the academic department: time and money.

"I think you need to make a clear distinction between those who taught undergraduates and those who dabbled in teaching residents. It is a very different split. When the department first started, each member of the department was expected to contribute: twenty percent education, twenty research…everyone was expected to tutor 10 weeks, 2 sessions per week, 3-4 hours each session. You can't make a living on just teaching.

"Jay Forrest and John Harries were responsible for the whole programme (four phases). Education in the department was very heavy indeed. Twenty percent of your time must be spent doing research. At the time, there were six to seven people in the department. This meant each one of us had to spend one day in the lab doing research. It was externally funded research. When it came down to dollar per faculty member, we were never worse than second (in all departments of anesthesia in Canada).

"John Rigg and Jay Forrest were the two primary clinical anesthetists. Robert Lee worked exclusively with Jay Forrest. So, twenty percent was in research and twenty percent was in education. Ten percent was in administration and fifty percent was in clinical practice (such as pain clinics, surgery, and consulting). It was important to set a fundamental structure of the department at the start.

"People joined the department with specific characteristics. John Rigg was a GFT (Geographic Full-time) and he was in a tenure stream. You see, there were many part-time people who joined the department. The medical school wanted some way to recognize the community who made contributions to the medical school. So, people like Drs. Ashworth, Browne, Bota, and Probert (all

heads of clinical departments in hospitals) were given appointments. There were no funds passed to them by the university.

"Anyway, when you're a GFT, your income comes from two sources. One source is the university. They give you a base salary. The other source is your clinical earnings. With the clinical earnings, we negotiated a 'ceiling' for their clinical earnings. This prevented members of the department from only focussing on the clinical side, but also [to] pay attention to education and research. Any clinical earning above the ceiling went to hiring new people to the department.

"At the time, there was tremendous flexibility to hire new people. The funding is different today. It would be hard to do what we did today. If we were to start the same department today, we couldn't do it. The funds are just not there.

"For the first seven years, I made a rule to never recruit anyone older than me. Young people have bright ideas and drive you crazy.

"It is fundamental to understand why a university department of anesthesia is not clinical only. The department also has research, education, and administration commitments. The answer is economical. You can't afford to do only university areas on a base salary. You need to do the clinical services too. The GPT (Geographic Part-time) only earned money through clinical service and no supplementary income from the university.

"Once the federal transfer payments to the provincial government got cut, there were little funds to continue. The clinical earnings (above ceilings) were driving the department. There was no turning back now.

"Funding is now clinically service driven. The department is self-funding. The department needed to find funding and clinical service was the way to keep the department running. This clearly affects the department's ability to do academic activities.

"I was extremely lucky to get the support from the heads of the other departments in the city. The people within the department also provided me with great support. We worked as a true department during my term as chair."

Recruitment

"I had no concept of teaching or research. I had to hire people of expertise. I targeted people: Forrest – for his rein on research; Rigg – respirology; Harries – kidney; Morison – ability to run a residency programme; Wright – he was the chairman at Queens' University and he wanted to come to Hamilton. He took over from Dr. Morison; Thistlewood – his contribution to continuing education. People would ask him to visit their operating room and train them for a couple of days; Dunn – pediatrics; Hewson – critical care/intensive care."

Departmental Structure

"The Royal College of Physicians and Surgeons lays down certain requirements. Then we set up the structure around the requirements. First, we had to ensure clinical competence in the full range of anaesthesia. We had weekly tutorials or review tutorials. One session on this topic, led by a staff member. For example, anatomy maybe 3-4 sessions.

"We had [a] joint project where McMaster and Western's residents would present papers and they would be adjudicated. The winner would get dinner or something. It was mostly research…some of it was clinical research.

"There was something called the journal club. Take three international journals and each student would choose two articles and present them in their tutorial.

"Overall, the exam results of our residents were very good. People like Yang, Pine, McChesney and Smedstad."

Town and Gown

"There could have been a town and gown but there wasn't really one. You see, I believe that the chairman should not be head of the department. It eliminated me preferring one department over another department.

"There were no clinical anesthetists at MUMC. There were at the Civics and the General. I had to try to integrate them into the McMaster community. I got tremendous advice from Fred Johnson and Bill Walsh.

"There has been the same indifference since the department started. There was little or no overt hostility in my 10-year term. Nobody refused me anything (if it was a reasonable request).

"Fundamentally, it was important to define our objectives and structure at the beginning.
There were two pillars of support in the community: Dr. Ashworth and Dr. Browne. Dr. Probert just said do whatever you want and I'll support you.... ."

Satisfaction

"Seeing a structure that worked well and was productive. I'm proud of the accomplishments of the department. Seeing the people do so well and mature. Seeing how our residents faired. That was personally satisfying."

—***Don Catton***

Farewell Party for John Riggs, 1983

(Department of Anesthesia, McMaster University)

Back Row (left to right): ***Don Catton, David Morison, Geoff Dunn, Ronnie Browne, Girish Moudgil.***

Middle Row: ***John Hewson, Jay Forrest, John Ashworth, John Rigg, Fred Wright, Angie Fargas-Babjak, Bob Lee.***

Front Row: ***Matt Bazoin, Joe Woo, Kari Smedstad, Bill Bota***

RESEARCH

Basic Sciences

Using mainly a genetic animal model for human essential hypertension, the role of vascular changes in hypertension remains a major focus of **Dr. Robert Lee's** research. This research is supported by a five-year grant from the Heart and Stroke Foundation of Ontario. Current focus is on the roles of flow-related changes and reactive oxygen species (free radicals) on vascular functions. Results from these studies have been presented at the Experimental Biology meeting held in Washington DC, and also at the Ontario Chapter of the Canadian Hypertension Society.

In collaboration with **Drs. Homer Yang and Kevin Teoh** (Surgery), a postdoctoral fellow **Dr. Yu-Jing Gao** have shown that a commonly-used vasodilator in coronary artery bypass grafting can induce apoptosis and vascular function impairment in human internal mammary artery. This has influenced vascular surgeons to switch to alternate vasodilators which may provide a better preservation of vascular functions after the surgery. Leading from this work, **Dr Gao** has won the **Basmajian Award for Excellence in Post-Doctoral Research (Non-Clinical)** in spring 2002. This is an outstanding achievement.

Dr. Lee continues to serve as Director of the Smooth Muscle Research Program in the Faculty of Health Sciences. It is consists of about 20 faculty members and their graduate students and postdoctoral fellows involved in smooth muscle research. The major activity of this program involves a weekly seminar given by the faculty, graduate students, postdoctoral fellows and invited speakers where research in progress are usually presented.

—Bob Lee

Clinical Research

Our department continues to develop clinical research programs in perioperative medicine, acute and chronic pain, and cardiovascular anesthesia in collaboration with other departments within McMaster University and in Canada. Two large multicentred randomized controlled trials: Metroprolol after Vascular Surgery (**MaVS**) and Perioperative Ischemia Evaluation (**POISE**) have been initiated through protocols developed in our department. A generous grant awarded to **Dr Homer Yang** and **Dr Karen Raymer** by Heart and Stroke Foundation of Ontario funds the MaVS study. **The Canadian Perioperative Research Network**, with **Dr. Homer Yang** as principal investigator, has received a $5.3 million grant for the POISE (PeriOperative Ischemic Evaluation) study from the Canadian Institute for Health Research . The Canadian Perioperative Research Network consists of clinicians from anesthesia, cardiology, medicine,and surgery located in academic and community hospitals across Canada. Research into chronic pain continues to have acupuncture as its focus. Acute pain research efforts are directed toward multicentred clinical trials on COX-2 inhibitors for post-op analgesia. We continue to develop research methods for systematic reviews, randomized clinical trials, and education studies in anesthesia with the Department of Clinical Epidemiology and Biostatistics.

—Peter Choi

FUNDED RESEARCH 1997-2002

Buckley N, **Korz L**. Ondansetron for chemotherapy-induced emesis in pediatrics. 2000-2001 ($24,000; Glaxo).

Choi PT, **Galinski S**, Lucas S, **Takeuchi L**, Jadad AR. Systematic review of obstetrical PDPH frequency, clinical course, prevention, and treatment. 1998-2001 ($1,250).

Devereaux, PJ, **Choi, PT**, Bhandari M, Cook DJ, Grant B, Guyatt GH, Jackowski D, Jaeschke, R, Lacchetti C, Letelier L, Manns B, Montori V, Oxman A, Schünemann H. The impact of the design and execution of randomized controlled trials on their estimate of the treatment error. 2001-2001. ($9000; Father Sean O'Sullivan Research Centre).

Fargas-Babjak A. Systematic review of acupuncture treatment of migraine and postoperative nausea and vomiting. 2000 ($36,000; Acupuncture Foundation of Canada Incorporated).

Fargas-Babjak A, Wong R, Sagar S, Nahmias C, Juriaans E. PET imaging of acupuncture stimulation. 1999-2000 ($25,000; Westin Foundation).

Fargas-Babjak A, Juriaans E, Nahmias C, Wong R, **Nandagopal M**, Pak E, Sagar S, Elorriaga Claraco A. Functional MR imaging following acupuncture stimulation at Liver 3. 2000-2001 ($50,000; Westin Foundation).

Forrest JB. Efficiency of epidural steroids in low back pain – meta-analysis. 2000 ($6,000).

Forrest JB. Efficiency of epidural steroids in whiplash neck pain – meta-analysis. 2000 ($6,000).

Forrest JB. Evaluation of diagnostic and therapeutic celiac plexus block in diabetic gastroparesis. 2000-2001 ($25,000).

Gao YJ, **Lee RMKW**. Control of vascular growth in hypertension. 1999-2000 ($69,600; Canadian Hypertension Society / Medical Research Council).

Lee RMKW. Alterations in hypertensive arteries in spontaneous hypertensive rats. 2000-2004 ($437,556; Heart and Stroke Foundation of Ontario).

Puchalski S. Clinical competence assessment project. 2001 ($12,500; Medical Council of Canada).

FUNDED RESEARCH 1997-2002 (continued)

Reeve B, **Buckley DN**, Cook DJ. Placebo-controlled randomized clinical trial of diclectin in postoperative nausea and vomiting. 1999-2001 ($11,500; Physician Services Incorporated).

Smith K, Dauphin A, Dobranowski J, Yip G, **Choi PT**. A prospective observational study using MRI to investigate cricoid pressure. 2001-2002. ($4500; Regional Medical Associates).

Takeuchi L, Cook DJ, **Choi PT**, Tarnapolsky MA. Creatine supplementation in critically ill, ventilated patients. 1999-2002 ($40,000; Canadian Anesthesiologists' Society, Canadian Intensive Care Foundation, Father Sean O'Sullivan Research Centre).

Wong R, Sagar S, **Fargas-Babjak A**. CODETRON therapy for postradiation xerostomia. 2001 ($19,918; Hamilton Health Sciences Foundation).

Yang H. Hemosol use in coronary artery bypass graft surgery. 2000-2001 ($23,451; Hemosol).

Yang H, **Choi PT**, **McChesney J**, **Buckley DN**. Postoperative nausea and vomiting in laparoscopy with sevoflurane-remifentanil versus propofol-fentanyl anesthesia. 2000-2002 ($70,000; Abbott).

Yang H, Devereux PJ, Guyatt GH, Yusuf S, **Choi PT**, and the Canadian Perioperative Research Network. PeriOperative ISchemic Evaluation (POISE) study. 2001-2007 ($5,306,074; Canadian Institute for Health Research).

Yang H, **Raymer K**. Metoprolol and myocardial Ischemia after infra-inguinal Surgical revascularization (MaIS) study. 1999-2000 ($16,000; Canadian Anesthesiologists' Society).

Yang H, **Raymer K**, Roberts R, Butler R. Metoprolol After Vascular Surgery (MAVS) study. 2001-2003 ($250,000; Heart and Stroke Foundation of Ontario).

Yang H, **Wilson-Yang K**. Endothelin levels during cardiovascular procedures. 2000 ($5,900).

CURRENT RESIDENT RESEARCH PROJECTS 1997-2002

Residents continue to participate in all areas of research and current research projects are listed here. Residents' names are underlined.

Whyte R Peachey G. ACLS Orals project survey. 2000-2002.

Reeve B, Buckley N, Cook DJ**.** Placebo-controlled RCT of dicletin in PONV. 1999-2001.

Smith K, Dauphin A, Dobranowski J, Yip G, **Choi PT**. A prospective observational study using MRI to investigate cricoid pressure. 2001-2002.

Smith K, Ladak S, Choi PT, Dobranowski J. Retrospective review of CT neck scans to evaluate relationship of the cricoid to the esophagus. 2001.

Banks M, Kanani K, Choi PT. Quality of charting for obstetrical epidural procedures. A CQI project. 2001.

Scholes C, Yang H, Wood T, Norman G**.** Residents' in-training evaluation bias by staff consultants. 1999-2000.

Ray E, Ling E. Determining the reasons for cancellationor delay of surgery: a CQI project. 1998-1999.

VanHelder T, Yang H, Patel S**,** Kontio G. Postoperative complications in major joint surgeries.1998-1999.

EDUCATION

UNDERGRADUATE

Undergraduate Curriculum

Teaching in the MD Program has always been a priority of the Department of Anesthesia. **Dr. Karen Raymer** is a member of the Unit 1 Planning Committee in the MD Program. This committee is charged with managing the day to day happenings of the medical students' Introductory Unit, and oversees the Unit's curriculum, including objectives, problems, evaluation exercises, and large group sessions. The past two years have been particularly busy as the undergraduate curriculum had to be adjusted to allow for an earlier clerkship. Consequently, Unit 1 was considerably shortened: this called for the priorizing of objectives in accordance with all of the other Units in the undergraduate program, as well as the rewriting of many problems.

Dr. Robert Lee has completed his six-year term as Chair of Unit 2 in the M.D. Program in June, 2001. Some of the notable changes he has brought to Unit 2 during his tenure include: (1) The reinstatement of OSCE (Objective Structured Clinical Evaluation) in Unit 2, with the support of funds he had raised from outside sources. Unit 2 OSCE has now evolved to become a Program OSCE. (2) The introduction of LearnLink to the MD Program as an electronic means of communication and sharing of resource materials among the students, faculty, and administrative staff. Announcements from the Program administration and student bodies are posted there. Students can also contact experts in basic sciences and clinical disciplines for information and advice through LearnLink. **Dr. Karen Raymer** is a moderator of two sites (folders) in LearnLink under Physiology and Anaesthesia. **Dr. Lee** chaired a Computer Working Group under the MD Program, which has an advisory role to the Program on the use of computers in medical education. He was also involved in the revision of the MD Curriculum which was introduced in the academic year 2000.

Several members from Anaesthesia were involved in the recent accreditation of the MD Program by the Canadian Medical Schools and the Liaison Committee on Medical Education (CACMS/LCME). **Dr. Robert Lee** had chaired a Self-Study Task Force Sub-Committee on

Resources for the Educational Programme - Computer/Information, and **Dr. John Hewson**, in his role as Associate Dean (Clinical Services), chaired a Self-Study Task Force Sub-Committee on Resources for the Educational Programme-Clinical Teaching Facilities. The MD Program was awarded a seven-year accreditation by the CACMS/LCME in 2000.

An optional Applied Physiology/Pharmacology rotation in Unit 2 of the MD Program was introduced by **Dr. H. Yang** more than eight years ago. In addition to attracting a high percentage of class participation (>90%), it consistently received positive reviews. **Dr. Greg Peachey** has organized this activity for several years, and last year, he was assisted by **Drs. Mike Parrish and Tomas Van Helder** as site co-ordinators. A courseware prepared by **Drs. Rick Kolesar and Karen Raymer** entitled *A Brief Introduction to Anesthesia* was used by the students as a resource material for this rotation. With the formal institution of a mandatory anesthesia elective this academic year, the subject domains taught in the applied physiology and pharmacology rotation and its hands-on component move to the clerkship year (***see Clerkship Rotation***).

Anesthesia remains actively involved in undergraduate teaching. Staff and senior residents have tutored Unit 2 and have served as assessors in the two OSCEs. Anesthetists take part as assessors of autobiographical submissions in the MD Admission program and serve as Student Advisors. Student Advisors are responsible for preparing student transcripts upon graduation. Several of our staff have given large group lectures to the MD undergraduate students in Units 2,4, and 5. These lectures have consistently received high rating. MD undergraduate students doing block/ horizontal electives have received supervision from many dedicated staff members.

In addition to the MD Program, **Drs. Angelica Fargas-Babjak, Norm Buckley, Robert Lee and Kari Smedstad** have also taught in the Nursing and Midwifery Programs.

—***Bob Lee***

Clerkship Rotations

A mandatory two-week Anesthesia Undergraduate Rotation was introduced for the first time this year starting on June 18, 2001. Each of the 4 sites: St. Joseph's Healthcare, Hamilton General Hospital, Henderson General Hospital, and McMaster University Medical Centre are participants in the rotation which is coordinated locally by Site Coordinators, **Drs. Phil Blew, Tomas Van Helder, Mike Parrish** and **Mary Daly**. The Site Coordinators liaise with the Anesthesia Undergraduate Coordinator, **Dr. A. Wong** who also helps coordinate the other undergraduate activities.

The purpose of the rotation is to teach the student the practical skills of resuscitation, namely, airway and circulatory management, to illustrate the practical application of pharmacology and physiology to patients of all ages and to expose the student to the broad, multifaceted discipline of Anesthesia. The students are each assigned to be supervised by two staff anesthetists over the two-week period. In addition to time spent in the operating room, they are exposed to obstetrical anesthesia, preassessment clinic, acute and chronic pain service, tutorials and departmental rounds. The mandatory text for the rotation is ***A Brief Introduction to Anaesthesia ed. K. Raymer and R. Kolesar.*** Evaluation of the student on both practical skills and knowledge is done on a daily basis as well as by a written multiple choice test. Anesthesia residents play an important role in the education process for the medical students as mentors as well as tutorial leaders. The Coordinators meet on a regular basis to assess the rotation to develop the curriculum and to ensure the rotation meets the needs of the students.

To date, twelve students have completed the rotation and the response has been very positive.

—***Anne Wong***

POSTGRADUATE EDUCATION

Post-graduate Anesthesia training program

The Post-graduate Anesthesia training program has grown in recent years to a peak of 36 residents in response to the very real shortage of clinical anesthesiologists in Canada. This has been achieved through an increase in CaRMs (Canadian Resident Matching Service)and IMG (International Medical Graduate) positions as well as support through Ontario Ministry of Health Re-entry funding and support from other external sources. We also continue to support Family Practice anesthesia trainees having an average of two per year in the program. The increase in trainees has prompted an expansion of teaching resources, resulting in the successful establishment of the Henderson site as an addition to the MUMC, Hamilton General and St. Joseph's Healthcare Clinical Teaching Units.

McMaster offers a complete and comprehensive training in anesthesia with many areas of subspecialty expertise including Cardiac, Thoracic, Neurosurgical, Pediatric, Trauma and Obstetric anesthesia as well as a nationally recognized Chronic Pain program. Residents obtain a well-rounded clinical experience at the hospitals of Hamilton Health Sciences and at St Joseph's Hospital. An inclusive academic program taking place on a full day of core seminars and presentations combines programmed content and the ability to pursue areas of interest and need.

Central to our educational program is the dedicated core of clinical teachers who continue to avail themselves for our residents. Whether involved in clinical teaching in the operating rooms and clinics, participating in seminars, journal clubs or resident evaluation, McMaster enjoys instruction from experts in all subspecialty areas. This is seen best in the prominent involvement of faculty in such extra-curricular teaching opportunities as Journal Club, Oral Examination preparation and numerous Resident research projects.

We are singular in Canada for providing novel educational experiences for our residents. These include our Communications/Professionalism program produced by **Dr Karen Raymer** in

collaboration with Air Canada. This program utilizes the experience of the airline industry in the management of conflicts and crises in an anesthesia application. Evaluation in our program takes place for both residents and faculty with the use of personal digital assistants (PDAs) as data-gathering tools. With the assistance of a PDA, each resident receives daily evaluations of their progress and a record of their clinical activities which are compiled in a central database. This provides reliable, timely evaluation and a complete record of each residents' clinical activities, allowing each resident to modify areas of clinical experience based on need. This program is the progenitor of a nation-wide PDA based evaluation system which will ultimately be used by all Canadian anesthesia programs.

Education research has also begun a presence at McMaster. We have participated in national studies investigating innovative changes in the oral exam format utilized by the Royal College of Physicians and Surgeons of Canada, including the production of a new rating scale and delivery format. The program recently received an Education Research grant of $12 000 to **Dr Steve Puchalski** from the Medical Council of Canada to study the linking of resident memory recall in oral examination. Residents also have been involved in an increased number of clinical research owing to the efforts of **Dr Peter Choi**, our research coordinator. Through his efforts, research supervisors have been identified to our residents wishing to investigate a wide variety of clinical problems. The result has been the presentation publication of resident research both nationally and abroad. Please see the list of publications appended to the departmental ***RESEARCH*** summary

Recent Changes to the Program

Other recent changes in the residency program include the implementation of a new two- month high risk obstetrics rotation. A new Anesthesia/ACLS simulator software is in use. Our Journal Club format has been expanded to encompass DM&E principles and the program oral exam format has been updated to use the new RCPSC model. A mandatory anesthesia rotation has been implemented into a restructured basic clinical teaching (BCT) year. Transesophageal echo training is presented during cardiac rotations and revised chronic pain rotations now include Henderson and St Joseph's

hospitals. In general there is expanded elective experience for all residents. In addition to their studies and their own clinical and research training, residents have accepted increased teaching involvement with medical students in OSCE testing and clinical skill teaching.

Overall, the anesthesia residency has grown in size and content. Residents are afforded the opportunity of excellent and academic instruction coupled with innovative educational means and a comprehensive clinical exposure. The strength of our program rests solely in the abilities of our clinical teachers who continue to give of their expertise. The future of post-graduate education promises to provide great challenges and McMaster Anesthesia will continue to produce exceptional training for our residents in a collegial and distinctive fashion.

—***Steve Puchalski***

Journal Club

The goal of the Anesthesia Journal club is to help strengthen abilities to critically appraise the literature as well as to socialize with friends from across the city. The journal club has been recently enhanced and expanded to include the efforts of a staff literature selection committee. This committee reviews major journals and international anesthesia conference proceedings to identify "must know" articles. Each journal club selection is accompanied by an editorial based on comparable past literature. It has been the journal club's good fortune to have some of these editorials provided by guests from outside the department, that is from hematology, critical care and other departments. Occasionally we have a short tutorial prior to the presentation of the journal articles to clarify terms commonly used in today's medical literature that are part of study design and/or data presentation. Staff who have expertise in clinical epidemiology give these teaching sessions. The participation of industry is sought for the financial support of these meetings. Pharmaceutical company representatives are invited to the sessions as part of their own continuing education. Funding is used to pay for catering and to date it can be reported that in addition to the excellent academic content, the nutritional value of these meetings has been very good indeed.

Meetings are held in staff members' homes. As a result of the new structured content, there has been a consistent attendance of between 35 to 40 people, the most of any medical speciality in Hamilton.

—***Larry Takeuchi***

Resident Exchange Days

A "Resident Exchange Day" is held in spring each year with the University of Western Ontario. This day centres around a competition for residents completing or conducting research projects. Presentations are judged and prizes awarded at a gala dinner.

Veterinary Colleagues

The University of Guelph sends one or two resident veterinarians to participate in our Wednesday Core Programmes. In the past this has been followed by visits to operating suites at Guelph for a fascinating comparison of animal and human animal anesthetic practice.

Reach for the Top

Residents plan this annual excursion into the minds and memories of their cohorts and staff physicians. Consultant anesthetists and residents are pitted against each other as two panels of selected champions answer increasingly difficult tests of recall. The winners are fêted at yet another gala dinner, complete with gentle roasting of the losers. In 2001, after a three-year drought the residents reclaimed the title and have retained it for 2002.

—***Editors***

Fellowship Training

Cardiac Anesthesia Fellowship

Academic year 2000-2001 marked the beginning of a new Cardiac Anesthesiology Fellowship at McMaster University. **Dr. Ashraf Fayad** joined the Fellowship after being on staff in Ireland. He had a successful year at McMaster and is now on staff with Hamilton Health Sciences practising Cardiac Anesthesia and Intraoperative Echocardiography.

The Fellowship program is one year in duration and consists of three clinical days of Cardiac Anesthesia, one day of research and one day in the Cardiology Echocardiography laboratory. The organization of this Fellowship allowed **Dr. Fayad** to participate in over two hundred clinical cases including coronary artery bypass graft, valve replacement and major aortic surgery. The echocardiography experience was highlighted by **Dr. Fayad's** passing grade in the Perioperative Echocardiography Examination. A passing grade in the certification exam co-sponsored by the Society of Cardiovascular Anesthesia and the American Society of Echocardiography is a significant indicator of a good Echocardiography experience at McMaster. Other activities completed in the first year of the Fellowship included authorship of a Care Report published in the Canadian Journal of Anesthesia and presentation of an abstract at the Canadian Meeting of Anesthesia in Halifax on "The Demographic Change of the Cardiac Surgery Population in Hamilton".

Dr. Stephanie Quast is the new Fellow in the academic year 2001-2002 and all indications are that she will achieve all her Cardiac Anesthesia objectives at McMaster. Ongoing planning for the academic year 2002-2003 is near completion.

—***Corey Sawchuk***

Pain Management Fellowships

A number of individuals have undertaken pain fellowships at McMaster in the years past. **Norm Buckley** spent his fellowship year studying aspects of pediatric pain management, working with **JB Forrest, Gary Rhydderch** and others including **Bonnie Stevens** in pediatric nursing before she left to do her PhD at McGill. **Dr Luc Legendre**, now at Sherbrooke in Quebec, was here at the same time. **Dr Bill Blair** (now a member of the department) and **Dr Katherine Francis-Powell** were fellows in 1991, and **Dr Cristof Signer** from Berne, Switzerland arrived in 1992-93. Many of the external visitors came because of contacts made by then Chair **Dr JB Forrest**. **Edith Villeneuve**, now at Ste Justine in Montreal, kept her clinical interest up rotating through the Acute Pain Service while doing her DM&E fellowship in 1991. **Dr Joseph Park** did a year fellowship in pain management, initiating studies with **Dr Forrest** and **Dr Beattie**, as well as spending time in Seattle

with **Dr Ready's** group, and more recently **Dr Nandagopal** and **Dr Mulcaster** have spent fellowship years focussed on chronic pain management.

Presently three fellows are attending at McMaster for advanced training in Pain Management- **Dr Raza Jokhio, Dr Ali Al-Shoaiby**, and **Dr Mohamed Almajed**. **Dr Jokhio** is working on a manual for basic day to day pain management to be available to all staff and for resident teaching, in an effort to establish a consistent approach to pain management amongst all staff, now that each and every one of the clinical staff are expected to provide daily coverage of the pain service. **Dr. Al-Shoaiby** is completing a Master's degree in Pain Management from the University of Cardiff, Wales, and **Dr Almajed** will be undertaking a clinical project.

Drs. Kahn and **Buckley** are in the process of establishing a structured educational program for the fellows in order to ensure as far as possible that they all receive worthwhile training during their stay here, and there appear to be a number of interested individuals for future positions as pain fellows. With the establishment of **Dr Kahn's** Hamilton Pain Management group, and the Consolidated Anaesthesia Pain Clinics at Hamilton Health Sciences, along with the inclusion of the Behavioural Medicine Centre in the Anaesthesia Department range of service and research, it is hoped that Chronic and Acute Pain will become a significant area of academic activity to complement the already busy clinical service.

—***Norm Buckley***

Fellowship in Thoracic Anesthesia

St Joseph's Healthcare offers a fellowship in Thoracic Anesthesia in conjunction with McMaster University. The hospital provides facilities for four thoracic surgeons. In addition to operating room experience in thoracic anesthesia, rotations are available in respirology, thoracic surgery, critical care medicine and exercise physiology. A comprehensive acute pain service provides coverage for surgical patients during the post-operative period. St Joseph's Hospital is a 600-bed hospital

affiliated with McMaster University. There are approximately 200 thoracic cases done per year. The Firestone Clinic, a large respirology clinic is present on site. **Dr Ahmed Turkistani** is our current Thoracic Fellow.

—***Fred Baxter***

Pure Sciences

Dr. Robert Lee is Chair of the Board of Comprehensive Chairs Committee in the Graduate Program on Medical Sciences. He is currently supervising one graduate student, **Filipe Tiburco**, is a member of two graduate supervisory committees. He co-ordinated the teaching of a graduate course on smooth muscle (MS758), and participated in the teaching of a course on vessel wall biology (MS733). He was the external examiner of a Ph.D. student at the University of Western Ontario and chaired a panel in the Ontario Graduate Scholarship program.

—***Bob Lee***

CONTINUING MEDICAL EDUCATION

Acupuncture

Dr Angelica Fargas-Babjak and **Dr Alejandro Ellorriaga** been invited to give many lectures and presentations drawing from the extensive experience in the practise of acupuncture. Lectures on acupuncture and the results of clinical trials, evidence for the effectiveness of acupuncture in non-pharmacological management of hypertension, pain, and in pregnancy and labour have been presented. Workshops in the use of acupuncture in whiplash and headache, chronic pain, sports injury and joint pathologies were presented in 2001 at the American Academy of Medical Acupuncture in New Orleans. **Dr Ellorriaga** presented a paper describing the McMaster Modular Approach of Contemporary Medical Acupuncture in Seoul, Korea.

Undergraduate teaching comprises lectures on non-pharmacological pain management given to nursing and midwifery students. Large group sessions in Unit 4 on neurophysiology and acupuncture are also given. Graduate and postgraduate education in acupuncture have included seminars for anesthesia residents on acupuncture and TENS neuromodulation.

Continuing medical education (CME) is a major component of acupuncture education. Twice yearly, a five-unit workshop on contemporary medical acupuncture for pain management is provided. This CME course is accredited with both the AMA and Royal College of Physicians and Surgeons and follows all recommendations of the WHO guidelines for the teaching of acupuncture. Twice yearly three-day workshops on contemporary medical acupuncture for sports injury are lead by **Dr Ellorriaga** and **Dr Scappaticci**. Acupuncture programmes are expanding to include new faculty and preceptors. Please to visit the acupuncture website at www.acupuncturecourses.com.

—***Angie Fargas-Babjak and editors***

CANAM Conference

The CanAm Clinical Anesthesia Conference is a CME event held each year in Niagara on the Lake. This event, which is a joint venture between the Anesthesia Departments at McMaster University, University of Western Ontario, SUNY Buffalo and the University of Rochester is heading into its 20th year. **Karen Raymer and Homer Yang** organize the event in conjunction with members from the three other centers.

The one-day event attracts approximately one hundred Anesthetists, CRNAs (Nurse Anesthetists), and residents from both Canada and the United States. Each year, internationally- recognized speakers join dynamic local faculty members to present a clinically-oriented academic program. Topics span the entire range of Anesthesia practice, and the conference consistently receives high marks from its attendees. Recent speakers have included **Jerrold Lerman, Prithvi Raj, Gilles Plourde, Kari Smedstad, Mark Lema, Adrian Gelb, Michael Roizen, Alex Jadad, Edward Crosby** and **Vincent Chan.**

The rising cost of holding an event in Niagara on the Lake has presented a challenge to the organizing committee. Fortunately, by increasing corporate support and trimming spending, the conference is now once again fiscally self-supporting. Apart from the high-quality academic program, the highlight of this meeting is being able to enjoy dinner and a show at the Shaw Festival, on what is usually the first warm weekend in spring, in Canada's prettiest town.

—***Karen Raymer***

OPANA

Every two years, the Department of Anesthesia/McMaster supports the organization of a Hamilton-Niagara Region conference of the "Ontario Peri Anesthesia Nurse's Association (OPANA) which is attended by 200-230 nurses from Southern Ontario and upper New York state. In 1996, **Dr. David Morison**, **Diane Brock** and **Margaret Lowe** were the founders and original Co-Chairs of the first conference. In 1998, **Dr Norm Buckley**, **Diane Brock** and **Margaret Lowe** were the Co-Chairs. In 2000 , **Terri Kitowski** replaced **Margaret Lowe** as co-Chair. **Dr Norm Buckley** and **Diane Brock** stayed on the committee.

For 2002 **Diane (Brock) Buckley**, **Terri Kitowski** and **Dr Greg Peachey** are conference Co-Chairs. Past meetings have been held in Niagara-on-the-Lake. The 2002 meeting was held at the Sheraton Fallsview Hotel in Niagara Falls. The University Department of Anesthesia has assisted in the organization of the conferences with speakers, support staff and assistance in the production of brochures, name tags, acquiring sponsors, and registration.

—***Bonnie Hugill***

CLINICAL SERVICE

HAMILTON HEALTH SCIENCES

The past year has been one of unprecedented change and challenge for the members of the Department of Anesthesia at Hamilton Health Sciences. Hamilton Health Sciences incorporates the hospitals of the former Hamilton Civics: the Hamilton General and Henderson Hospital, and the McMaster University Medical Centre. The challenges were numerous and the department has come together to face them and identify creative solutions. The report that follows outlines sequentially: the challenges we face as a department; the achievements of the past year; and an outline of what we should expect in the near future.

Challenges

Human Resources

The Department of Anesthesia provides service to 22.4 operating rooms/day across three campuses. In addition we staff preoperative clinics at each site, provide dedicated daytime coverage of obstetrics and out of O.R. pediatric sedation and have two people off after call each day. As of October 2001 these demands require 33.1 Clinical FTEs (a clinical FTE being defined as an individual working five days per week in the operating room and doing full call), we have 29.6 (up from a nadir of 25.3 in January 2001). Like all other specialties, we have an aging workforce and are anticipating one retirement per year over the next five years. This coupled with an anticipated attrition rate of 5-10% means that we have to recruit three to four people/year just to maintain current levels of service.

These human resource constraints have resulted in an operating room which has run at 85-90% capacity for the past 18 months. This in turn leads to a lengthening of elective waiting lists, and a reduction in service to the community. The boundary between emergent and elective surgery, always somewhat gray, has been shifted, with more and more work being pushed into the emergency system. This in turn translates into an emergency care system which is strained beyond capacity.

Clinical Load

Data from our hospital shows that a full time anesthesiologist in this institution spends 50 hours per week involved in direct patient care. This is in opposition to The Canadian Medical Association quotation of 39 hours for surgical specialties and the Ontario Medical Association at 42.7 hours for anesthesiologists. Of the 22 operating rooms scheduled on a regular basis, 14 of them run past 17:00 hours. Our current call schedule requires 5.5 calls per month from each full time individual, despite this we remain unable to fill the schedule without seeking remunerated "volunteers".

Financial Pressures/Organization.

We are unable to generate a competitive income for hours worked.

(1) Fee schedule rewards high turnover cases which we lack.
(2) Pediatrics will become an increasing problem, particularly with the expansion of pediatric orthopedics.
(3) Presence of learners which inevitably slows down the work we do and is inherent in a tertiary care teaching hospital.

The above factors translate into an income, which on an hourly basis, is 20% less than what other anesthesiologists in the province earn. Nothing on the horizon suggests that this discrepancy will do anything but widen. If the hospital is to maintain its regional role, it will by necessity be providing care to sicker and sicker patients. These higher "intensity" cases are not remunerative. As this discrepancy in earning abilities inevitably widens, it will become increasingly difficult to recruit high quality candidates and to retain the staff that we do have.

Accomplishments

Human Resources

The key to any department remains the people who work in it. The Department has made significant strides in reorganizing itself and positioning itself to face the challenges ahead. We have managed

to attract several young new motivated members to staff, have successfully implemented an new call schedule and secured funding for a full-time scheduling coordinator for the Department.

New Staff Members

We have had several new members join us and one old member return in the past year. **Dr**. **Binh Khong** has joined us after completing a Chronic Pain Fellowship with the Department of Anesthesia at Dalhousie University. **Dr**. **Meena Nandagopal** completed a Chronic Pain Fellowship with us in January of 2001 and has stayed on to become a full time staff member. She has developed a strong interest in acupuncture and will be pursuing her interest in this area of pain management with the Department. **Dr. Joseph Park** is another individual with extensive training and expertise in Chronic Pain Management. He has been with us as a Term Appointment and joined Associate Staff in July of 2001. **Dr. Desigen Reddy** joined us in July of 2001 as well. A South African trained anesthesiologist, he completed fellowship in pediatric anesthesia from Erasmus University in the Netherlands. He returned to practice in South Africa and emigrated to Canada in 1998, initially to Prince Albert Saskatchewan before joining us in July of 2001. **Dr. Amy Rice** has rejoined us after an extended leave of absence. Her interest and enthusiasm in obstetrical anesthesia has been sorely missed and we are happy to see her back with us again. **Dr. Ashraf Fayad** recently completed a Cardiac Anesthesia Fellowship with us in July of 2001 and has elected to join us on staff. Ashraf is well versed in intraoperative transesophageal echocardiography and will play a key role in the ongoing development of this service at Hamilton Health Sciences. **Dr. Jovan Popovic** rounds out our recruits for this year. Jovan joins us after completing a residency in anesthesia at Cornell University in New York. Subsequent to this he spent a residency year with us to gain eligibility to the Royal College Exams which he passed in June. He has an interest in regional anesthesia and will be working with **Drs. Rondi** and **Kolesar** to develop this area of our practice further.

Integrated Call Schedule

The purchase of the Physician Scheduler program from MSI Software has allowed us to implement an integrated call schedule. This has been a huge step forward from a clinical service delivery

perspective. The call schedules of the two legacy departments have now been integrated and the schedule is generated 2-3 months in advance. The program has worked well with very few glitches. The ability to plan and schedule in a predictable manner across our three acute care sites has made a significant difference to everyone's quality of life.

Funding Scheduling Coordinator

An additional asset has been the creation of a full-time scheduling coordinator position. **Tammy Gooding** has stepped into this role and is doing an excellent job. She works closely with the physicians in charge of assignments on a daily basis to ensure that we are able to match the anesthesia resources to the operating rooms, clinics and obstetrical service in a seamless fashion.

Clinical Programs

Chronic Pain Consolidation

Perhaps one of the more exciting developments has been the approval to move ahead with this initiative. Space has been identified at the Hamilton General Campus and funding for clerical and nursing support has been allocated for this effort. The new consolidated clinic will provide a one-stop shop for pain management issues. It will bring the practitioners together from across the hospital and make us one of the leading providers of chronic pain in the country. Under the leadership of **Dr. Norm Buckley** the clinic will see 8-10,000 patient visits per year. [See ***Pain Service at HHS***]

Acute Pain Service

Dr. James Paul has taken over the leadership of the acute pain service at MUMC and with **Dr. Peter Rondi** provides the medical leadership to the acute pain steering committee. James has moved with enthusiasm and vigor in his new role. We are on the cusp of implementing a hospital-wide acute pain database which will allow us to prospectively assess a variety of parameters in our

practice. The recent commitment for a consistent nurse to be available at the General Campus for the Acute Pain Service should result in a significant improvement in the quality of that service.

Acupuncture in the Clinical Service.

Twice a week, for four to six, hours patient care is provided in the pain acupuncture clinic in the 4V1 and 2F area at McMaster University Medical Centre under the direction of **Dr Angie Babjak**. An average of twelve patients are seen per week. It is hoped to expand this service to the new pain clinics at the Hamilton General site.

Transesophageal Echocardiography

The recent addition of **Dr. Fayad** to staff has added to our number of qualified echocardiographers. Under the leadership of **Dr. Corey Sawchuk** this program continues to develop, with three fully trained echographers: **Drs. Raymer, Sawchuk,** and **Fayad**. In addition a fourth echographer **Dr. T. Vanhelder** is completing training and will be sitting the American Board of Echocardiography exam in intraoperative echocardiography later this year. Members of the echo team attend echocardiography rounds with the cardiologists. In addition there are weekly departmental echo rounds and we have recently approved the purchase of equipment to facilitate the storage of echo studies digitally.

Pediatric Anesthesia

The transfer of inpatient pediatric services to the McMaster campus occurred in September of 2001. This in turn is coupled with an increase in our pediatric surgical caseload which will occur steadily over the next nine months as outpatient procedures move across as well. The recent addition of **Dr. D. Reddy** to our staff means that we now have 3 individuals on staff with a stated interest in Pediatric Anesthesia: **Dr. M. Whittier; Dr. L. Korz** and **Dr. Reddy**. Two of these individuals have post residency training in pediatric anesthesia. **Dr. Whittier** has taken a lead role in developing a pediatric anesthesia interest group. We now have regular scheduled pediatric anesthesia trouble

rounds as well as joint rounds between anesthesia, surgery and neonatology. The department continues to move ahead developing this area of expertise.

Ophthalmology

Human resources constraints have led the department to examine how it allocates its resources. A new initiative was implemented in partnership with the Department of Eye Surgery and Medicine, and the Hospital to make more efficient use of our manpower and expertise. Nurses have been trained to monitor and observe patients during eye surgery under the direction of an anesthesiologist. Working as a team, the anesthesiologist and the monitoring nurses can care for two rooms simultaneously. **Dr. Elizabeth Ling** has played a key role in the development of this program which has resulted in our freeing up three days per week of anesthesia time for other surgical services. Clinically the initiative is working well, and is an excellent example of three departments working together to identify and implement a creative program which is works well for everyone involved.

Financial Issues Steering Committee

A steering committee under the leadership of **Dr. W. Pine** has been working through the financial issues of the department with the Hospital. A detailed financial analysis of our income and workload has been performed. Comparison of this data with the available information from the Ontario Medical Association suggests that our incomes are 20% less than what they would be in a equivalently busy community hospital. In partnership with the Hospital, the Department is moving forward to meet with the Ontario Medical Association and with the Ministry of Health and Long Term Care around the creation of an Alternate Payment Plan as a potential solution to the clinical funding issues within the department.

The Future

Human Resources

The key to a functioning department remains people. We have been extremely successful to date in recruiting high quality individuals. These efforts will need to continue and hopefully we should be able to build on our previous recruitment successes.

Attrition/retirements

As outlined above, we need to recruit three to four people per year just to maintain the current level of service. Any increase in attrition will have devastating effects on the department and its ability to deliver service. **Dr. R. Kolesar** has led the development of a department document entitled: "Statement on Weekly Hours of Service and its Relationship to Physician Recruitment, Retention, and Quality of Life". It has been circulated to all the members of Perioperative Services and has resonated strongly throughout. Initiatives are underway to improve the working environment in the operating room for everyone. There is widespread recognition that we have too many late rooms and these will be scaled back as resources permit. The influx of new recruits has significantly eased the pressures on our call schedule and this should continue to improve with time. The APP group led by **Dr. Pine** will hopefully allow us to achieve a stable, equitable clinical funding base.

Subspecialty Expertise

We are well on the road to developing areas of subspecialty expertise in Transesophageal Echocardiography and Pediatric Anesthesia. The return of **Dr. Rice** to our department will provide us with a clinical and educational resource in obstetrical anesthesia to replace the retirement of **Dr. Smedstad**. Regional Anesthesia remains another area that should be developed further. The addition of **Dr. Popovic** to staff and the already present interest and expertise available from **Drs. Rondi** and **Kolesar** should help to move this initiative ahead.

Patient Safety/Quality Assurance

Anesthesia, as a specialty has been a leader in addressing patient safety issues. As a department we will be closely examining our morbidity review process and how we evaluate our practice. The department has already identified a list of "critical events". A reporting mechanism and method for review needs to be developed over the next 12 to 18 months. In addition we need to start defining quality parameters that will allow us to assess the day to day quality of our practice. The implementation of an acute pain database will be an important step in evaluating the quality of post operative pain management. In addition we need to be seeking ways to evaluate the experience of patients in the operating room and recovery areas and our role in their care.

Summary

The past 12-18 months have been a very challenging and stressful time for the Clinical Department. Numerous challenges remain, but there are processes and people in place to face them. There is a willingness to work together to identify solutions and there is an emerging feeling that the department is doing the best it can in extremely difficult circumstances given our current health care environment. We have recruited a number of enthusiastic eager young staff who are making an impact on our practice and our working environment. The issues around workload, work environment and finances remain to be resolved, but they are at least being addressed. We are developing definite subspecialty expertise in the areas of intraoperative echocardiograpy, and pediatric anesthesia. The next 12-18 months will see us move ahead in the area of regional anesthesia and in the area of patient safety and quality assurance.

—Dick McLean

Pain Service at HHS

Acute Pain Service and Nursing

The Department of Anaesthesia has supported one of the longest running Acute Pain Services in Canada. The first patient admitted to a surgical ward in Hamilton under the auspices of an Acute Pain Service arrived on Ward 4Z at MUMC in Feb of 1988. Six

members of the MUMC clinical department made up the original group of the Pain Service. As time went on the service expanded to cover all of the surgical wards at MUMC. Most of the medical wards also would accept either post-op patients or even medical patients requiring special attention to analgesia using modalities such as epidural opiates with or without local anaesthetics, PCA opiates and other techniques as required. Other clinical departments in the city expanded their activities to include post-operative pain management, offering PCA service as well as epidural analgesia.

With the increasing shortage of anesthesiologists, and following the merger of the former Chedoke-McMaster and Hamilton Civic hospital groups, the existence of the Pain Service within what had become the Hamilton Health Sciences Corporation was threatened. Recognition of the importance of this service came from the Department of Surgery in the new Corporation, and with their support a clear commitment was made by the Peri-perative Services program to support the Pain Service. This occurred with the allocation of nursing hours specifically for the provision of patient pain assessment and management following surgery. A steering committee (comprised of the peri-operative Services Director, the physician site directors of the Pain Service and representatives of the nursing staff) was struck, and developed policies and procedures to ensure consistent provision of good analgesia coverage. This has led to the development of a group of RNs from the Post Anesthesia Care Units who work with physicians to manage the Acute Pain Services at the Hamilton Health Sciences hospital sites, providing daytime coverage usually in week-long rotations. These nursing practitioners have been trained "on-the-job" as it were, by making the daily rounds with the staff physicians.

The use of staff RNs rather than a single Pain Nurse represents a deliberate change from the common model of provision of this service. It was selected consciously, based upon the rationale that it is better for overall patient care, medical and nursing practice and the education of all hospital nursing staff to have a large number of practitioners with increased skill and knowledge in the area of pain management.

Pain Nurses have presented clinical case studies at the International Pediatric Pain Meeting in Halifax, Nova Scotia. In addition, they have organized a number of very successful Annual Pain Education Half-Days for themselves and the other nursing staff in the city hospitals as well as community and palliative care personnel.

Research activities carried out under the auspices of the Pain Service over the years have included studies of ketorolac in abdominal surgery, IV infusion ketorolac for joint replacement, the effect of ketorolac on incidence of cardiac ischemia, analysis of the effects of epidural analgesia on length of ICU stay and also the effects of epidural analgesia on cardiac outcomes in non-cardiac surgery.

The major Pain Service projects currently underway are the development and implementation of Advanced Medical Directives for nursing staff on the service, and the development of an electronic database to improve clinical management and support research activities.

—***Norm Buckley***

ST. JOSEPH'S HEALTHCARE

The Department of Anaesthesiology at St. Joseph's Healthcare provides anaesthesia services to a 600-bed teaching hospital; one of four acute care hospitals in Hamilton. The Department consists of twenty full–time and one part–time anaesthesiologists. Responsibilities include staffing of eleven elective and one emergency operating rooms, Labour and Delivery (L.&D.), the Preoperative Assessment Clinic (P.A.A.U.), Paediatric Preoperative Assessment, the Acute Pain Service (A.P.S.), as well as providing anaesthesia for E.C.T. and Cardioversions. Three members of the Department (**Drs. Kahn, McChesney, and Woo**) also provide a Chronic Pain Service, two members (**Drs. Baxter & Takeuchi**) practice Critical Care Medicine and one member (**Dr. Choi**) has designated time for research activities and high risk obstetrical anaesthesia.

During weekdays, eleven elective Operating Rooms are covered. Evening coverage in the O.R. is provided by the first-call anaesthesiologist and a second anaesthesiologist, who remains until approximately 2300 hours, if needed. A third anaesthesiologist (the second- call anaesthesiologist) maintains availability to Labour & Delivery and O.R. coverage, if needed, overnight. On weekends, a first and second call anaesthesiologist provides service/coverage to the O.Rs. and L.&D.

Surgical programmes

The major specialty surgical programmes at S.J.H. include thoracic surgery (four thoracic surgeons), major G.I. surgery, hepatobiliary surgery (two surgeons), renal transplantation, and major urology and head and neck surgery. In addition there are busy orthopaedics, E.N.T., gynaecology and plastic surgery services. The Centre for Minimal Access Surgery (C.M.A.S.) is located at S.J.H.

Labour & delivery

Labour & Delivery at S.J.H. provides services for 3,600 – 3,800 deliveries per year with an epidural rate of 70% and a C/Section rate of 18%. The anaesthesia service is heavily committed to this area of the Hospital. One anaesthetist (also covering the Acute Pain Service) provides coverage on L.&D. from 0800 – 1700 hours from Monday to Friday. Night–time and weekend coverage is provided by the first call and second call anaesthesiologists.

Acute pain service

The Acute Pain Service (A.P.S.) provides coverage to the post–operative patients who are receiving epidural, P.C.A. and extrapleural analgesia, in addition to providing services to Labour and Delivery until 1700 hours each day. Patients on the A.P.S. are seen on the weekend days by the A.P.S. staff anaesthesiologist. Patients who are referred to the Acute Pain Service are seen in consultation by the A.P.S. anaesthesiologist and/or resident, if available or by the anaesthesiologist in the P.A.U.U.

Chronic pain service

The Chronic Pain Service is run by three Pain Specialists providing state-of-the-art advanced interventional pain management. Procedures offered are numerous radiofrequency lesions (facet joint rhyzotomy, sympathectomies), spinal cord stimulation and implantable intrathecal drug delivery systems for pain and/or spasticity. The Chronic Pain Service has two dedicated inpatient beds. The Service also manages neuraxonal systems for cancer patients with severe intractable cancer pain on an outpatient basis. Residents from multiple disciplines frequently do electives through this unique service.

Quality assurance

An Anaesthesia Quality of Care Committee was recently formed at St. Joseph's Healthcare. The mandate of the committee is to provide a forum for the audit of anaesthetic practice. The Committee reviews all of the following cases:

1. Acute myocardial infarction within 48 hours of surgery
2. Cardiac arrest in the O.R. or within 48 hours of surgery
3. Unplanned transfers to I.C.U. within 48 hours of surgery
4. Death within 96 hours of surgery

Meetings are held quarterly to review these cases and to discuss issues related to quality improvement. Morbidity and mortality rounds are held monthly (July and August excepted). Several audits are currently in progress.

Research and Publications

For progress in Research and Publications associated with ***St Joseph's Healthcare***, please see ***RESEARCH***.

—Fred Baxter

INTERNATIONAL INITIATIVES

Problem Based Learning

As a member of the informal network of faculty interested in the use of problem-based learning (PBL) in education, **Dr. Robert Lee** was often called upon by the McMaster Health Sciences International to meet with visiting professors and delegations from abroad to discuss the use of PBL. As such, he has met with two professors from Japan, one Professor from Argentina, one Professor from the Netherlands, one medical student from Austria, one delegation from the Fu-Jen Catholic University in Taipei, Taiwan, and one delegation from the Katmandu University, Nepal. He was invited by a hospital in Buenos Aires to visit them in April 2002 because they were interested in starting a new medical school using the McMaster PBL approach. He is currently helping Fu-Jen Catholic University to establish their PBL curriculum in their MD program. Fu-Jen is the first University in Taiwan to employ a total PBL approach in their medical curriculum. In October 2001, he was an invited plenary speaker at the 2nd Asia-Pacific conference on PBL in Health Sciences held in Kuala Lumpur, Mayaysia and has been invited to return to the 3rd Asia-Pacific conference to be held in Taipei, Taiwan in November 2002.

*—**Bob Lee***

ISRA7

With support from the University Department of Anaesthesia, **Dr. Lee** organized the **7th International Symposium on Resistance Arteries (ISRA7)** which was held in Muskoka Sands, Ontario, in July, 2001. It was attended by over 130 scientists from 18 countries. This was the first time this symposium was held in Canada. The organization of the meeting such as registration and abstract submission, was conducted mainly through the internet, and a website was established for the purpose of making major announcements regarding this symposium. Members of our office and management team were working on site for this highly lauded symposium.

NEPAL

The text of ***Dr Smedstad's*** *excellent and informative letter to* ***Dr N. B. Rana, Kathmandu*** *and* ***Dr Dennis Reid, Ottawa****, dated May 31, 2001, is excerpted here.*

Report on Work in Nepal

It is very difficult to know what to call this report. A number of titles presented themselves: "Less pain labor in Kathmandu", "Mission possible", "How to loose 12 pounds in 12 weeks while feeling 12 years younger" or "Work for fun; travel for enlightenment". But instead I will just get on with it, as I have been asked to do.

I am very grateful to the Canadian Anesthesiologists' Society and the International Education Fund for the opportunity to go to Nepal and work there. Like most of my Canadian colleagues, I had only a vague idea of the work done by the IEF of the CAS, and even less knowledge of Nepal and its health care needs and anesthesia services.

Arriving in Kathmandu on a Sunday in the end of January 2001 (2057 in Nepal), I was immediately enveloped in the Nepali society. I was met by Dr. Bisharad Shrestha and my landlord to be, Mr. Kumar Giri. I was taken to Hotel Melungtse in Maharajgunj, and installed in my penthouse for the duration of the stay. The flight from Thailand and the sight of the terraces and snow-capped mountains of Nepal was awesome, and the drive in from the airport left me with an impression of having landed in a very different world. My first day ended by attending a Nepali wedding feast, complete with colored lights and music, and exquisitely dressed, friendly and welcoming people. I couldn't eat much, but the food was very good too. I cannot say I felt at home, since all the impressions were foreign to me, but I felt wanted and settled immediately. So there I was, in Kathmandu, and my journey had really started. I was only afraid I'd never find my way around that city!

The real introduction started the next day with Dr. Shrestha taking me on an official visit to a new hospital every day for the remainder of the first week. By Friday I had a pretty good idea of the standard of care in the different hospitals, as well as the unique needs and accomplishments of the institutions and their staff. I had also begun to get a feel for the layout of Kathmandu, and seen some of the beautiful surroundings. It was winter, but warm in the daytime, and while spring was still a few weeks off, the visit to the Botanical Garden and Godavari gave me an impression of the beauty to come.

So what was I doing in Kathmandu – and how did we go about it?

My duty schedule was already in place. I am principally an obstetric anesthesiologist, and a specialist in pain management. I wanted to share this knowledge while in Nepal. It was very clear from the first week that our colleagues in Kathmandu were very experienced and knowledgeable about anesthesia in general. I was already impressed by their ability to function in the operating room at a high level of sophistication with much fewer resources than we are used to in Canada. The public hospitals' infrastructure is also under-developed in Kathmandu and, in spite of tremendous effort by the medical staff, working conditions vary enormously across the city. In spite of this, a very complicated and successful anesthesia practice flourishes. So I knew my contribution had to be within my own specialty fields, where experience is lacking in the hospital system in Nepal.

It was agreed that I would spend my clinical time in February at the Paropakar Shree Panch Indra Rajya Laxmi Devi Maternity Hospital in Thapathali. In March I would work at the Tribhuvan University Teaching Hospital. Throughout the stay, I would lecture at the Hospitals weekly and take part in several local, national and international medical conferences. I would also tutor the final year MD postgraduate students on a weekly schedule while they were preparing for their examinations. This, in short, is what I did in Nepal. Let me, however, report on these activities and others in more detail

Clinical Work

All work involved teaching. I was assigned to the Maternity Hospital five days a week for the month of February. The chief, Dr. Karki, gave me carte blanche to work as I wanted in his department. In the operating rooms, I would spend time with the consultants and the learners, who included Anesthesia post-graduate MD students (*residents)* from 1st to final year (3rd), house officers, medical students and on occasion general practitioners doing anesthesia training. We would assess the cases and develop a care plan for the individual. We concentrated on teaching regional anesthesia where appropriate. Each of the final year students spent 2 weeks with me and, over the span of two months, each of the 4 second year students were assigned to work with me for 2 weeks. All the residents became proficient in combined spinal/epidural techniques for surgery. We concentrated on drug therapy for post-operative pain relief, and monitored the efficacy of intrathecal opiates. We also discussed and practiced pain relief for labor. The sheer volume of work at the Maternity hospital, and the layout of the hospital, made it difficult to establish a working epidural service. But we practiced epidural pain relief for labor and it can now be made available when needed in special cases. The consulting staff and the students are all aware of the modern way of providing low dose epidural drugs for labor analgesia. We also concentrated on the advantages of regional anesthesia for cesarean section, and particularly so in the complicated patient. I was constantly impressed by the ability of the staff, both anesthetists and obstetricians, to manage and to save the dreadfully sick pregnant women who were admitted with obstetric complications. This hospital has 15,000 deliveries a year, about 40 a day, and a section rate of around 15%.

In the month of March, I was assigned to the Teaching Hospital. Here the numbers were more manageable, with around 3000 deliveries a year. The Chief, Professor R. Amatya, was very much in favor of establishing an obstetric analgesia service at the hospital. I worked mainly in the labor and delivery suite, always with learners. We established criteria for and introduced epidural analgesia for labor, concentrating on primiparous patients. I also worked with the other anesthesiologists introducing spinal opioids for post-operative pain in the gynecological and major surgical cases. I am proud to report that when I left we had successfully completed a series of cases

receiving epidural analgesia for labor at TUTH, and the service continues. Our cases and the outcome was analyzed and written up for presentation by Dr. Baba Raju Shrestha. We are now aiming for publication of this report.

Teaching Activities

Outside the operating room there was ample opportunity to reach an audience with the message of pain relief in labor. One cannot establish a new service, and introduce a new technique, without the full participation of the practitioners who "provide" the patients. I therefore am grateful for the cooperation and enthusiastic reception from the obstetricians and the nursing staff.

At both hospitals, the Maternity and the TUTH, the obstetric and nursing staff were very accommodating. Obstetric staff attended my lectures on obstetric anesthesia topics, and I was given an opportunity to address all the obstetricians in Kathmandu at their local specialist meeting. This was a long session, 1-½ hours, with ample opportunity for questions. I was gratified by the positive reception I received.

We had weekly meetings at the Maternity Hospital, and also at the Teaching Hospital. I held special sessions for the nursing staff at the Teaching Hospital when we were about to introduce our epidural service. Most of the nurses and nursing students attended the meeting, and I am grateful to Sister Singh and to Matron for arranging this.

The second and final year students attended my weekly teaching sessions on obstetric anesthesia held at the Bir Hospital. The last few such sessions were Mock Orals for the two final year examination candidates. They asked me to attend the real orals, and I was honored to do so with Dr. Rana's permission.

Outreach Teaching (and Learning)

I was privileged to be able to visit two Mission hospitals in the district while I was in Nepal. The United Mission to Nepal run 4 hospitals, the largest is the Patan Hospital in Kathmandu. But I wanted to see how medicine is practiced in rural Nepal. So I went by public bus to Dumre in Western Nepal, and walked up the hill to the Amp Pipal Hospital, a 5-hour trek. This little hospital was established in 1954, and first staffed by Canadian mission doctors. Dr. Helen Huston, now retired in Edmonton, spent her entire working life there. This is a place were all equipment must be carried up, including the 600 kg industrial spin dryer for the laundry, which took 14 men two weeks to haul up. The anesthesia equipment is basic, and there is no qualified anesthesiologist. Anesthesia is given by a technician trained at Patan who, while I was there, was the sole provider of anesthetic services. In this isolated place major surgery is conducted, since it is the only hospital available for miles and days of travel. I spent time in the OR discussing needs and techniques with the anesthesia provider, a good learning experience for us both.

I also traveled by UMN vehicle to the Tansen district hospital. This hospital is bigger, it has "131 beds and 160 patients". Two anesthesiologists supervise the technical and nursing staff who provide the services there. The current chief is Dr. Rico Rieder. While I was there, we installed the very first anesthetic machine in the hospital, a basic Boyle's machine purchased new from South America. I learned how the hospital had managed with the EMO draw over system for years. All the mission hospitals rely on the Oxygen Concentrator for their O2 supply. They also frequently use regional anesthesia. I was very disturbed by the incidence of tuberculosis in the outlying regions of Nepal. At Tansen there were 11 cases of TB on the medical ward the day I did medical rounds with the staff, 3 cerebral, 2 abdominal and the rest miliary pulmonary TB and empyema.

Conclusion

I cannot leave a report on academic activities without mentioning what I have learned. One cannot teach without learning new things in the process. The time in Nepal was certainly a learning experience for me from day one.

I have a new outlook on what is important in clinical practice – namely the care of the very sick patient regardless of available resources and equipment. The Nepali health care professionals know how to do this, and do it well.

I learned about medicine and anesthesia, but I also learned about coping under circumstances that we would find intolerable in Western societies.

We have had difficulties with drinking water in two communities in Canada in the last year. This is of course an endemic problem in Nepal. I learned to manage without getting sick by taking all the needed precautions to avoid contaminated water and food.

Nepal has a high illiteracy rate – about 50 % of the population cannot read or write. I do not mean to be facetious, but I have an idea how they feel. Being lost in Kathmandu, and looking at the pretty but meaningless signs, I longed for learning.

I felt like a visible minority, and solved it by dressing in Nepali style – which incidentally is more attractive and more comfortable than western dress anyway.

Travelling on the highways and byways of Nepal and Tibet, I realize that I must have a guardian angel, and that there is something to be said for traffic rules!

I also learned what it is like to experience a touch of mountain sickness, to be ataxic and unable to walk in a straight line, resulting in an old lady kind of fall, fortunately without broken bones. This

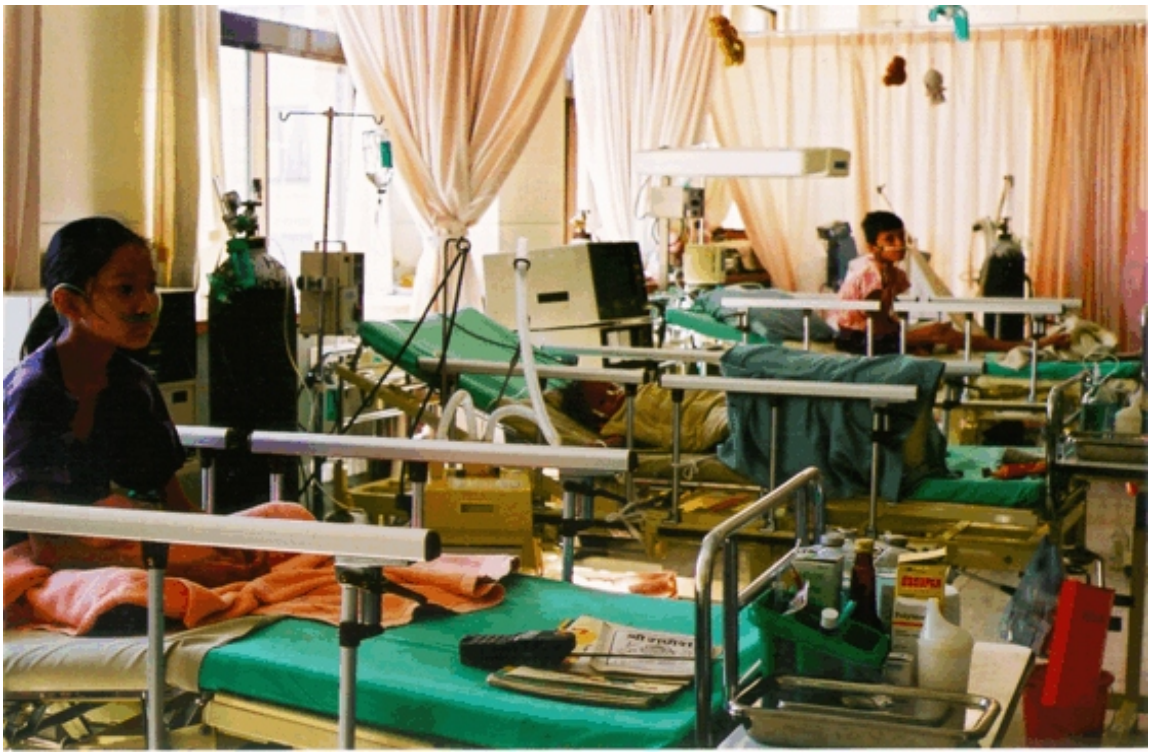
made me grateful for all the cross-country skiing I have had an opportunity to indulge in, so as to prevent osteoporosis.

I learned that it is important to take time to look around and observe life, not just rush from task to task. Happiness is found in observing a banana flower blossom to fruition in a ditch across the road. It is found in giving an enlargement to a mother and baby who posed for a photograph in a carpet factory. Fitness results from getting up at 6 am to keep pace with Mr. Giri on our daily morning rounds of the hills outside the Ringroad, or walking up 1500 meters over 10 km on narrow paths to visit a mission hospital. Or in riding an elephant so as to better photograph wild rhinos.

There are some distinct advantages to being a visiting professor in Nepal. Think about it: No car to drive – taxis are cheap and always available. No telephone – only incoming calls, which are vetted by the front desk. No pager! No night call! No housework or laundry – all taken care of. Food prepared to ones liking for a very reasonable penny. You don't need an alarm clock, the rooster next door does the job admirably.

And at work – one is treated a lot better than at home. The students are all courteous and respectful, the colleagues helpful and friendly. The learning and teaching environment is conducive to making a difference – and I guess that is the reason for going in the first place.

—Kari Smedstad



The ICU at Tribhuvan University Teaching Hospital

(Dr. Kari Smedstad)

Children at Holy St. Paul School, a private school for the disadvantaged in Kathmandu (Dr. Kari Smedstad)

A resort in the terraced hills outside Kathmandu, at Godawari (Dr. Kari Smedstad)

HAITI

The objective of the Haiti project is to improve health care delivery in that needy land.

This project is a joint venture with the people and the Government of Haiti to:

(1) build a durable infrastructure (oxygen manufacturing Plant)

(2) maintain achieved success (yearly medical supplies and visits)

(3) promote education and behaviour modification (Residents Exchange Programme).

This project has been in existence for 10 years. It is sponsored by the Sisters of St. Joseph of Hamilton and McMaster University, Ontario. Departments that are involved in supporting the Haiti project are Anesthesia, Obstetrics, Orthopedics, OR Nursing, Dentistry, and Biomedical Engineering.

Our accomplishments to date include:

(1) bringing 18 Haitian Postgraduate Physicians in Anesthesia and Obstetrics for exposure to the Canadian Medical Education system.

(2) ensuring a continuous Oxygen supply for the University Hospital through a donated oxygen concentrator, reducing mortality due to hypoxia.

(3) delivering upgraded anesthesia service at the University Hospital.

(4) establishing a Biomedical Engineering link with St. Joseph's Healthcare that has proved successful in troubleshooting.

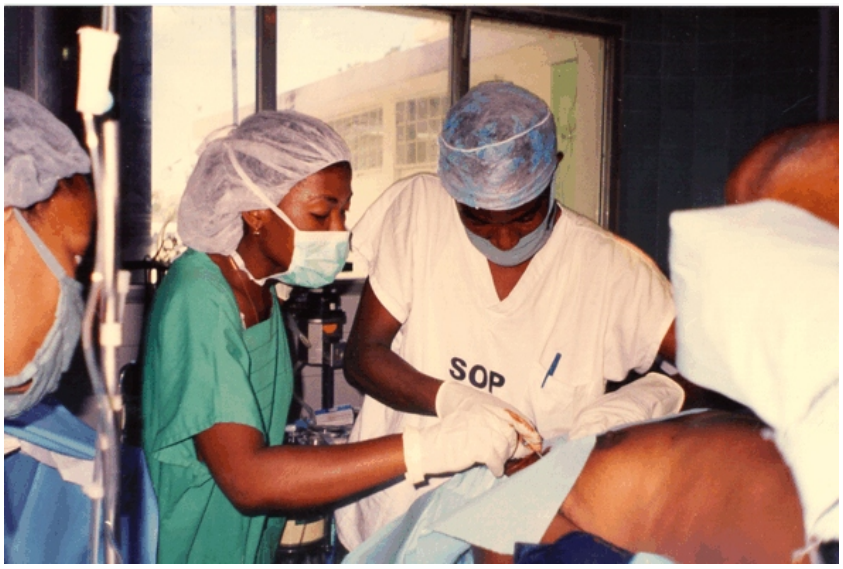
(5) sending a yearly shipment of medical supplies to sustain infrastructure.

(6) providing yearly medical training missions that assess and reinforce acquired knowledge.

Acknowledgements

To all who have made this project a success through their caring hearts.

—Alez Dauphin



Putting training into practice in Haiti

(Dr. Alez Dauphin)

The oxygen system arrives at Port-au-Prince

(Dr. Alez Dauphin)

Ecuador 2001 and Jamaica 2002

Recently I have had the opportunity to become part of a group providing medical care outside of Canada. **Dr. John Harvey**, Hamilton ophthalmologist (and son of one of Hamilton's original Fellowship anesthesiologists **Mel Harvey**) has been part of Medical Group Missions (Canada) and its International association Medical Ministry International for many years. These non-denominational Christian organizations have provided a wide variety of medical and dental services to countries around the world. In the past few years, anaesthesists **Drs Peter Choi** and **Lynn Coveney** have provided coverage for John's annual mission to Ecuador. In 2001, **Peter** and his wife **Judy** were expecting their first child at the same time as the mission was scheduled, and Lynn Coveney had moved to London and was not available for the mission, so in a fit of desperation I was permitted to accompany the group to Ecuador. I was made more useful to the group because I was accompanied by my wife, **Diane**, a PACU nurse at McMaster. In fact, there was a large McMaster contingent with three PACU nurses (**Chris Moffat, Toni Wilt** and **Diane**), plus **Olga Hewko** from the OR (who was in charge of the operating theatre arrangements for the mission), John Harvey and myself as the lone anaesthetist.

Ecuador

A total of 74 people were part of the mission for two weeks in January 2001. These included seven opthalmologists , optometrists, opticians, lab technicians, nurses, a couple who specialized in ocular prosthetics, and a large group of "general helpers" drawn from all walks of life including ministers, electricians, policemen and many others.

All supplies for the mission are donated. This includes intraocular lenses for implantation after cataract removal, sterilizing solutions, IV supplies and all necessary medications. In the case of anaesthesia supplies, Baxter and Abbott both donated intravenous fluids; Becton Dickinson donated a range of angiocaths, Abbott donated a substantial supply of propofol, ASTRA made available supplies of bupivacaine and ketamine was obtained through the assistance of B & B research funding. Datex was kind enough to loan a brand-new portable monitor with BP, ECG,

SaO2 capabilities that became the center of the anaesthesia system. Peter Choi had collected much equipment the previous years and we benefited considerably from his organizational skills and hoarding instincts.

The destination of the 2001 mission was a small town in the mountains in the south of Ecuador called Vilcabamba. After two days of travel, concluding with a six-hour mountain road bus ride that would have been harrowing if it hadn't been dark, we arrived at the town, and the next morning set up the clinic in a school in the center of the small village. There was a small hospital in the village also where we set up the pre-op clinic, the OR and recovery areas. The OR area was two small rooms with a central scrub area that served the hospital as the delivery and C-section rooms, although in the two weeks that we were there they didn't have a single operative delivery; several births occurred each day to women in the ward rooms along the hallway (without epidural analgesia, and in near silence). Into these rooms we put four operating tables (two in each); one designated for general anaesthesia cases, the other three for local anaesthesia. Most of the latter were for cataract surgery, although we had a very good retinal surgeon from Ohio who did several retinal detachment repairs while we were there. Most of the general anaesthesia was for pediatric procedures–strabismus, lacrimal duct probing and EUA. Several adults required substantial sedation for procedures including the rather longer retinal surgeries, and one enucleation in a young woman (24 years) who was blind due to very painful congenital glaucoma.

My role as anaesthetist was to provide the traditional supervision and oversight of the surgeons, perform retro-orbital and peri-orbital nerve blocks for cataract surgery in the pre-anaesthesia area down the hall, and provide general anaesthesia for the cases requiring this. We tried to do GA cases in the morning in case recovery was delayed (however unlikely that might seem). I also became by default the semi-official medical supervisor of the pre-op area to ensure that patients had received adequate pupillary dilation (the donated supplies included a wide range of

concentrations of different mydriatics) and that questions from pre-op moved down the hall to the surgeons in order to keep the flow of patients moving.

The clinic was very busy –600 to 700 patients per day, with long lines waiting at the end of each day in anticipation of the next day's clinic. Of these patients, 20 to 30 each day required major ocular surgery, and a further 20 to 30 might have minor procedures carried out in the clinic itself. Overall it was a very busy and rewarding time, offering a very different perspective on the delivery of health care and reinforcing a sense of our own good fortune in life and health.

Jamaica

In 2002, the mission destination was Jamaica, a small town called Black River 2 ½ hours through the mountains south of Montego Bay, and home to the Jamaican salt-water crocodiles. Much like the Ecuador location, the town was small although served by a number of churches of different denominations, a hospital with a general surgeon operating two days per week, several internists, pediatricians and an excellent Juicy Patty bakery. Our hotel was at oceanside, open to the sea, and the weather was beautiful. Tragically, the operating room did work from 8 til 5 or 6 every day, but since there were exterior windows that opened we didn't miss all the sun.

Once again we were very busy –500 to 600 patients through clinic every day the first week, and 600 to 800 daily the second week. Crowd control became a significant issue the second week, with a small riot on Monday; as there was a nurse anaesthetist from an eye center in Ohio whose entire practice was eye blocks, it became good use of manpower for me to supervise some of the crowd control while he did much of the nerve block work. I did several general anaesthetics for difficult patients, but operated mostly as a general helper this trip. My large son (Brendan, age 20) also accompanied Diane and me on this trip and was kept very busy directing and lifting patients between his grueling duties as Red Stripe inspector.

Total clinic visits during this trip were approximately 6000, with 240 cataract surgeries. This is particularly significant when you realize that the whole island of Jamaica has eight ophthalmologists, five of whom do cataract surgery, and last year they did 500 cataracts altogether. Patients were coming from two to three hours drive away, and line-ups for the clinic began at midnight each day the second week. Tuesday morning of the second week we went out at 0500 to find 200 people waiting; by 0800 there were probably 800 to 900 waiting, and at the end of the day 300 to 400 had to be turned away. There is some great hope that we will be able to return to the same location next year.

All things considered it is very interesting to carry on the practice of medicine in a situation entirely different than we are used to. Lost skills (taking blood pressure, feeling the pulse) re-emerge, and novel anaesthetic techniques are created. One also sees a wide range of unfamiliar pathology generated by limited access to health care. I would highly recommend the experience.

—***Norm Buckley***

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