Department of Anesthesia

Annual Report

2010-2011





In Memoriam

DR. EMERSON AMOS MOFFITT LEAVES A LEGACY IN THE DEPARTMENT OF ANESTHESIA



Dr. Emerson Moffitt helped pioneer open heart surgery, published 224 cardiac studies, delivered 255 presentations worldwide, helped found the Maritime Heart Centre and is the namesake of many prestigious awards in addition to the recipient of an unknown number of national and international research, clinical and teaching awards. He was a mentor, teacher, leader, gentleman and lifelong learner.

"'Moff' as we all knew him was a gentle man, a man of staggering accomplishments and yet still fascinated by his field. As a role model he has no equal and I am one of the hundreds of Dal grads who only wish they could have spent more time with him. He had the ability to make us feel lucky to be working in anesthesia and determined to give of our best, as he did, every day," wrote Dr. Andrew Clark upon hearing of Dr. Moffitt's passing.

For 20 years, **Dr. Emerson Moffitt** was a formal and informal leader in the Dalhousie Department of Anesthesia, acting with a compelling mix of authority, respect for all and kindness. He retired in 1991 but continued to contribute to the department and to the Faculty of Medicine as professor emeritus, active member of the Dalhousie Medical Alumni Association and executive member of the Association of Dalhousie Retirees and Pensioners.

He is described by his former colleagues as a pioneer, scholar and gentleman.

Prior to enjoying a stellar career in anesthesia, Dr. Moffitt attended the University of New Brunswick, earning athletic letters in soccer, basketball and hockey in addition to high academic honours. His university years were interrupted in 1944 by service in the Fleet Air Arm of the Royal Navy as a pilot. In 1951, he graduated from Dalhousie Medical School and began working as a general practitioner in North Sydney, NS. He joined the staff of the Mayo Clinic in 1954. After almost 20 years, he returned to Dalhousie Medical School as part of the Department of Anesthesia in 1971. He is recognized as the founder of the modern Dalhousie department, serving as head from 1973 to 1980. He is also recognized as a founding champion of provincial guidelines for the practice of anesthesia, implemented in Nova Scotia, and modelled across Canada.

In 1980, Dr. Moffitt resumed his research and clinical practice and was appointed Associate Dean of Clinical Affairs at Dalhousie Medical School. In the role he served as the connection between the Dean of Medicine and the clinical departments and hospital administrations in Halifax and Saint John, New Brunswick.

Dr. Moffitt was a constant support to the Department of Anesthesia up to his last visit, which he made while very unwell, when he gave the department his extensive collection of journals as a gift.

"To those of us who have followed him, we will always be inspired by the courage and kindness that was his nature," says Dr. Tom Coonan, Department of Anesthesia member, former department head and long time colleague of Dr. Moffitt's.

The 2010-2011 Department of Anesthesia Annual Report is dedicated to the memory of Dr. Emerson Moffitt, 1924-2011.

Vision and Mission

OUR VISION:

A culture of excellence in anesthesia clinical practice and programs, research and education.

OUR MISSION:

To deliver anesthesia services through up-to-date clinical care based on the latest evidence (research) and knowledge (education).

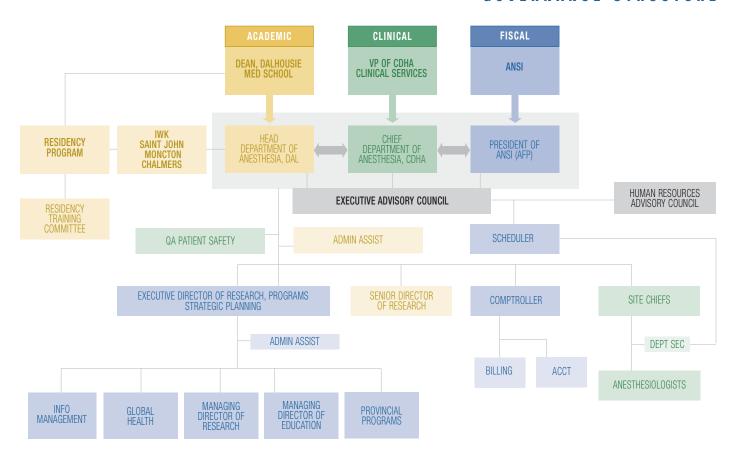
THE DEPARTMENT OF ANESTHESIA BELIEVES THAT

- Patients are entitled to safe, evidence informed, humanistic care
- Lifelong learning is a prerequisite to safe, competent care and professional, compassionate clinicians
- Scholarly curiosity is fundamental to the improvement and enhancement of patient care
- Stewardship of local and global resources is a departmental responsibility
- Transparency and accountability in combination with creative thinking and leadership are imperative to the department's quest for excellence



The Department of Anesthesia

GOVERNANCE STRUCTURE



THE DALHOUSIE UNIVERSITY DEPARTMENT OF ANESTHESIA INCLUDES:

106 anesthesiologists at the QEII Health Sciences Centre, the IWK Health Centre, Saint John Regional Hospital, Hants Community Hospital, and the Dartmouth General Hospital

Residents	27
Anesthesia Assistants	18
Anesthesia Technologists	26
Administrative and Support Staff	22

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Message from the Chair

The following report reflects the Department of Anesthesia's ability to continue to strengthen in times of transition and challenge.

You will read about the individual and collective achievements in patient care, education, research and global health that spur the department's advances toward its vision of a culture of excellence in anesthesia clinical practice and programs, research and education — a vision that will place our department among the top five in Canada.

You will also learn about how the department is addressing human resource challenges, contributing to academic funding plan (AFP) negotiations, preparing for postgraduate accreditation, and strategizing to meet demand for patient care amid an uncertain economic climate.

I am very proud of what the Department of Anesthesia has accomplished in the last year. When given the opportunity to head our department on an interim and later permanent basis, I was most enthusiastic about working together with its members to move the department forward.

I am very fortunate to head a department whose members are highly skilled, committed, collaborative and, most importantly, share a belief that patient care is our first priority and should guide all decision-making. These traits and values have enabled the department to provide anesthesia care for more procedures this year than last, to effectively address human resource challenges, to implement its accountability agenda, to attract clinical fellows and to enjoy continued national and international research success.

Department of Anesthesia members touched the lives of tens of thousands of patients of all ages in 2010-2011. In this report, we have included stories from just a few of the people who have received anesthesia care in the last year. Their stories will help give you a glimpse into the work we do.

As a final note, I would like to thank Mike Murphy, department head and chief 2005-2010, for his leadership of the department to September 2010. His vision, strength of character and commitment to the department and its members helped lead us to where we are now. I look forward to leading the department in its next chapter.

Sincerely,

Dr. Romesh ShuklaDepartment Head

Alshuke

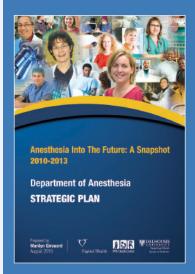


Department of Anesthesia Strategic Plan

SETTING THE DIRECTIONS FOR NOW AND FOR THE FUTURE

SNAPSHOT

The Department of Anesthesia first established a strategic plan in 2007, bringing together more than 100 members of the department to develop a shared vision, mission and priorities. The department's strategic plan is reported on, revised, updated and added to annually, effectively making it a "living document" that guides the department's actions in all areas: patient care, education, research and global health.



The department produced the first public snapshot of its strategic plan in 2010, which outlines strategic outcomes and key actions. Excerpts from the strategic outcomes and key actions are outlined at right. The complete document, *Anesthesia Into the Future: A Snapshot 2010-2013*, is available on the department's website, http://nsanesthesia.ca.

OUTCOME: A cadre of well supported and renowned clinicians who provide world leading anesthesia services and programs in support of Capital Health's mission.

KEY ACTIONS:

- A process that disseminates new, useful evidence as it relates to best clinical practices
- Identification and implementation of improvements to the Same Day Admission Clinic
- Facilitation and scheduling of a national/international patient care standards/ outcome meeting
- Expansion of the Regional Block Service so as to facilitate patient accessibility
- Integration of Pain Management Services to allow for seamless, efficient patient care
- Recruitment of high calibre anesthesiologists while at the same time maintaining the current pool of skilled talent
- Implementation of an accountability framework

OUTCOME: A cadre of renowned researchers who are well supported by a transparent and accountable Office of Research possessing an appropriate infrastructure designed to facilitate research endeavours.

KEY ACTIONS:

- Grants totalling one (1) or more million dollars
- Representation on editorial boards of journals
- 30 or more publications in peer-reviewed journals
- 40 or more presentations at local, national and international conferences
- 80% or more publications are collaborative
- 30% or more research projects are collaborative
- An accountability framework report

OUTCOME: A cadre of renowned educators who are well supported by a transparent and accountable Office of Education possessing an appropriate infrastructure designed to facilitate educational endeavours.

KEY ACTIONS:

 A fellowship program that continues to grow so that new learners can access departmental expertise

- A mentorship program encompassing all new staff thereby providing awareness and access to various departmental resources, coaching opportunities and networks
- A journal club that is active, topical and engenders critical thinking
- Continuing professional development opportunities that are based on identified needs and futuristic thinking/trends
- Simulation-based learning activities as an adjunct to traditional teaching methodology
- · A residency program that continues to attract the brightest talent
- An undergraduate experience that nurtures future candidates for anesthesia residency
- An accountability framework

OUTCOME: A Global Health Program that educates and builds capacity in developing partner countries.

KEY ACTIONS:

- Delivery of Global Outreach Course: Anesthesia in Challenging Environments
- Pre-departure briefing process/manual
- Global health fellowship
- Rwandan partnership and Kybele project
- Biomedical engineering assessment and support
- Rwandan documentary
- Outreach sessions to national and international partners/colleagues

OUTCOME: Administrative support that facilitates a culture of excellence and the department's mission.

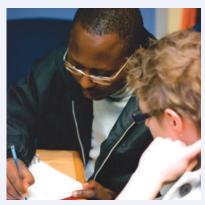
KEY ACTIONS:

- A recognition strategy that acknowledges staff contributions
- A performance development system that nurtures departmental talent
- Communication strategies that keep departmental staff and the broader community informed and up-to-date on anesthesia activities, accomplishments and initiatives
- Strategic partnerships that enable the aims and objectives of the department's agenda
- Operationalization of an information management strategy with up-to-date, stateof-the-art technology, processes and systems
- Implementation of accountability frameworks and supporting databases









2010 Strategic Planning Session



A key part of Anesthesia's annual strategic planning sessions is the opportunity for department members to define the priorities for the year. At the October 2010 session, more than 60 faculty members and staff defined the following initiatives and/or areas as priorities:

CLINICAL

- Continue with academic funding plan (AFP) discussions/negotiations
- Plan human resource requirements based on departmental needs
- Increase M&M rounds frequency
- Review quality assurance/ improvement infrastructure
- Assess Same Day Admission Clinic
- Track short notice cancellations and identify approaches to decrease/ eliminate

EDUCATION

- Continue accreditation preparations
- Broaden the educational mandate to include all department members
- Implement the Office of Education accountability framework
- Support simulation planning and work within the department
- Determine the Office of Education budget with adequate allocation
- Conduct a departmental needs assessment

RESEARCH

 Develop strategy on cultivating collaborations

- Continue to procure required space
- Develop multi-vear financial plan
- Incorporate research experience/interest in selection criteria for residents (CaRMS)

GLOBAL HEALTH

- Support two Rwandan residents for sixmonth training period in department
- Develop an evaluation tool/method to evaluate Rwandan experience
- · Recruit a global health fellow
- Explore the development of a global health stream in the residency program
- Establish a model for academic global health programs
- Raise awareness nationally, internationally
- Explore possibility of partnership with Kybele to help with Rwandan work

STRATEGIC PARTNERSHIPS

- Secure cross appointments with the Division of Neurosurgery
- Work with colleagues to further the simulation education agenda

INFORMATION MANAGEMENT

• Complete Innovian implementation (phases I & II)

- Develop applications for education and acute & chronic pain
- Automate the department's billing process
- Complete repository (for Saturn and Innovian data) so that data is automatically captured in repository at end of day
- Develop outcome studies

COMMUNICATIONS

- Improve inclusivity of all internal audiences
- Develop an external communication strategy so as to raise department's profile
- Explore better/new uses of technology
- Better utilize the intranet as the central communication tool
- Evaluate internal communication strategy

ADMINISTRATION

- Back fill vacant positions
- Work on role clarification with departmental staff
- Continue to provide goods and services within budget
- Provide professional development opportunities
- Implement performance management process

A Year of Change, Growth and Opportunity

DR. MIKE MURPHY BIDS FAREWELL

September 2010 marked the end of **Dr. Mike Murphy**'s tenure as Head & Chief, Department of Anesthesia. Dr. Murphy was instrumental in improving international recruitment, establishing the department's strategic plan, building strategic partnerships with national and international organizations, and fostering transparency, accountability and collaboration within the department. He is recognized as a progressive, politically savvy and charismatic leader who earned department members' respect while leading them to create and work toward a collective vision.



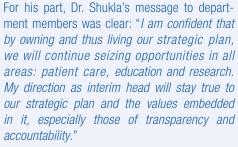
"I believe that once an organization has a vision that, by its very creation, is owned by its members, good leaders run ahead and open doors so that others can move toward realizing their vision. I also believe that great leaders surround themselves with good people and give them room to run; do more listening than talking (most of the time!); and should "kick the tires," to keep abreast of what is happening—this helps to pick up issues and concerns early on before they develop into a backroom palace revolt. I like to think that I held true to these principles throughout the last five years."

Dr. Mike Murphy, Head & Chief, Department of Anesthesia, 2005 – 2010.

Dr. Murphy took on the role of Chair, Department of Anesthesia, at the University of Alberta in October 2010.

DR. ROMESH SHUKLA NAMED INTERIM HEAD & CHIEF

Dr. Tom Marrie, Dean, Dalhousie Faculty of Medicine. Chris Power. Capital Health President and CEO, and Anne McGuire, IWK Health Centre CEO, named Dr. Romesh Shukla interim Head & Chief, Department of Anesthesia, in September 2010. In the joint announcement, they recognized Dr. Shukla for his strong leadership of women's and obstetric anesthesia at the IWK, his professionalism and his long-standing commitment to the department and its members. They also noted. "...his reputation as a team player and his good working relationships with the current heads of Capital Health, the IWK Health Centre and the Faculty of Medicine, make him an obvious choice as interim leader. We are confident he will maintain the current momentum in the department, in accord with its strategic plan, and ably prepare the way for a permanent successor."





Editor's note: Dr. Shukla was appointed Head & Chief of the Department of Anesthesia for a five-year term in April 2011.

A CHANGE IN GOVERNANCE

As interim Head & Chief, Department of Anesthesia, **Dr. Romesh Shukla** instituted an Executive Advisory Council and Human Resource Advisory Subcommittee in early 2011. "When it comes to governance, I support a shared approach, one that values and utilizes the knowledge and advice of many," says Dr. Shukla.

The executive advisory council serves to advise Dr. Shukla on all clinical, academic, management and budgetary matters, including human resources; approve policies; recommend strategies for continual patient care improvement; and identify opportunities for collaboration in keeping with the department's strategic plan. The Human Resources Advisory Subcommittee supports the Executive Advisory Council by making recommendations on the need for and recruitment of anesthesiologists.

DEPARTMENT RELEASES FIRST ANNUAL REPORT



The Department of Anesthesia embedded transparency and accountability into its strategic plan vowing to operate according to those values. With the production and release of its first annual report in 2010 covering the 2009-2010 year and a commitment to continue annual reporting, the department can check another "to do" off of its transparency and accountability list. While many organizations are legally bound to produce annual reports, the department is not. Its willingness to do so stems directly from its commitment to transparent and accountable operations.

HARNESSING THE POWER OF INFORMATION

The Department of Anesthesia is moving toward a future where all medical documentation will be managed by electronic information systems. Following its commitment to state of the art technology, processes and systems, the department implemented a new anesthesia information system, **Innovian**, in 2010.



Innovian hosts and provides physicians with access to an incredible amount of information, everything from a patient's height and weight to who delivered anesthesia care, what care was provided, when and for how long. While a patient is in the OR, Innovian records physiological data, such as blood pressure and heart rate, every 15 seconds. It links to other information systems throughout Capital Health and the IWK enabling physicians access to lab results, diagnostic scans, x-rays and other tests the second they are available. It also records quality indicators such as body temperature following surgery and incidents of vomiting.

All of this better enables the department to capture data it uses to improve patient care and safety and to conduct research.

FUNDING BOOST FOR NSCPCCN



The Nova Scotia Chronic Pain Collaborative Care Network (NSCPCCN) will receive a cash injection of more than \$230,000 over the next three years. The funding will come from the Nova Scotia Department of Health, Pfizer Canada and Purdue Canada. The NSCPCCN and the QEII Foundation have cultivated the companies' interest in the project since the QEII Excellence in Research Gala in 2009.

The NSCPCCN was started in 2008 and is the only network of its kind focusing on chronic pain in Canada. The mentor/mentee network connects primary care physicians in Nova Scotia with experts in chronic pain. Its aim is to enhance primary care physicians' knowledge of chronic pain treatments and their comfort level when treating patients so that people across Nova Scotia receive quicker, easier and closer-to-home access to chronic pain treatment.

The new funding will enable **Dr. Peter MacDougall**, founder and director of the network, and his team to further expand the NSCPCCN across the province. To date, the network has been established in the Capital Health District, Amherst, Cape Breton Regional Health, and Antigonish.

To learn more about the NSCPCCN, visit http://communitypainnetwork.com/

ACADEMIC FUNDING PLAN EXTENSION

The Department of Anesthesia's academic funding plan (AFP), under which it has operated since 2005, was extended for one year beyond its 2010 expiration year. An academic funding plan in this case is a contractual agreement among the department, the Nova Scotia Department of Health & Wellness, the Dalhousie Faculty of Medicine, Capital Health, the IWK Health Centre and DoctorsNS that outlines the parties' clinical, education and research obligations and an accompanying fee structure.

The extension enables the department to continue to provide excellent patient care, education opportunities and world-leading research under its current academic funding plan while awaiting negotiations on an operations agreement for the coming years.

In the spring of 2010, the Nova Scotia Department of Health & Wellness commissioned an independent review of all academic funding plans in the province. The review was conducted by Deloitte and culminated in a report to government entitled, *Academic Funding Plan Agreements: Governance, Compliance and Financial Processes.* In its response to the report, the Department of Health & Wellness noted the report will provide a guide for future AFP templates, governance and negotiations.

NEW HIRES & RETIREES

RETIREES

Janet Dorey, Administrative Assistant to the Head & Chief (right.)

HIRES

Dr. Sylvie Aucoin (*locum*), Lecturer, staff anesthesiologist (QEII Health Sciences Centre)

Jane Bolivar, Managing Director of Education (*acting*)

Dr. David Bond, Assistant Professor, staff anesthesiologist (QEII Health Sciences Centre)

Dr. Vladimir Cerny (*locum*), Professor, staff anesthesiologist (QEII Health Sciences Centre)

Shawna Gray, Finance Assistant

Dr. Andrei Khorovets, Associate Professor, staff anesthesiologist (QEII Health Sciences Centre)

Dr. Rochelle MacLellan (*locum*), Assistant Professor, staff anesthesiologist (QEII Health Sciences Centre)

Dr. Sarah McMullen, Assistant Professor, staff anesthesiologist (QEII Health Sciences Centre)

Dr. Ambrose Ng (*locum*), Lecturer, staff anesthesiologist (QEII Health Sciences Centre)

Dr. Sarah Nickolet, Lecturer, staff anesthesiologist (QEII Health Sciences Centre)

Dr. Brian Norman, Lecturer, staff anesthesiologist (Dartmouth General Hospital)

Lea Ockrant, Administrative Assistant to the Head & Chief

Dr. Matthias Scheffler, Assistant Professor, staff anesthesiologist (QEII Health Sciences Centre)

Dr. Jeanette Scott, Fellow, QEII Health Sciences Centre

Abena Amoako Tuffour, Global Health Coordinator



LONG SERVICE AWARD RECIPIENTS

Dr. William Gallacher, Associate Professor, staff anesthesiologist (QEII Health Sciences Centre)

Dr. Orlando Hung, Professor, Medical Director of Research, staff anesthesiologist (QEII Health Sciences Centre)

Dr. Patty Livingston, Associate Professor, Medical Director of the Global Health Office of Anesthesia, staff anesthesiologist (QEII Health Sciences Centre)

QUALITY ASSURANCE AND PATIENT SAFETY

The Department of Anesthesia includes a dedicated quality assurance office charged with monitoring and improving the quality of anesthesia care delivered at Capital Health. Sample activities include monitoring compliance with established practice guidelines, morbidity and mortality reviews, and tracking and reviewing all deaths within 48 hours of anesthesia care.



The Quality Office also facilitates communications with patients or families who have complaints or concerns related to anesthesia care, including support and advice to staff members.

The department's quality assurance and improvement efforts align with its Clinical Accountability Framework adopted in early 2010; the Quality Office tracks, analyzes and reports on data in keeping with the targets outlined in the framework, e.g. tracking and reporting all cases where a patient's body temperature falls below 36 degrees (clinical accountability target #12). In 2011, the Quality office will establish more systematic data collection and reporting for additional clinical accountability targets.

BEYOND THE OPERATING ROOM: ANESTHESIA SUPPORT FOR BRACHYTHERAPY

The Department of Anesthesia began providing anesthesia care in support of brachytherapy* at the QEII Health Sciences Centre in early 2010. The partnership with the Department of Radiation Oncology includes the provision of anesthesia services on the brachytherapy unit — a site remote from the main operating rooms — up to two days per week. The type of anesthetic administered and anesthesia care provided varies by patient. The anesthesiologist, however, must be on-site for the duration of the treatment and be immediately available to the unit throughout the recovery period.

The new partnership points to what the department foresees as a growing need for the provision of anesthesia care outside of the operating room (in areas that meet the necessary safety standards). The department has similar partnerships with the divisions of cardiology and endocrinology & metabolism.

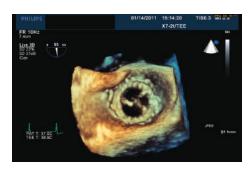
Protecting patient safety

To minimize the inherent risks of providing anesthesia care in external sites, the department recently passed guidelines specific to the provision of anesthesia services for radiologic and endoscopic procedures outside of the operating room. In anticipation of a growing need for the provision of anesthesia care in remote sites, broader guidelines will be developed in 2011.

*Brachytherapy is a cancer treatment where a radiation source is placed inside or next to the area requiring treatment.

Patient Care

BETTER TECHNOLOGY FOR TRANS-ESOPHAGEAL ECHOCARDIOGRAMS



At the QEII Health Sciences Centre, ten subspecialized anesthesiologists perform about 1,000 transesophageal echocardiograms (TEEs) each year to help in the diagnosis and treatment of a host of cardiac problems including valve disease, ventricular dysfunction, endocarditis and aortic pathology.

The diagnostic procedure, which uses ultrasound to examine the structure of the heart and its related structures, provides a real-time, accurate assessment of the heart in the preoperative, peri-operative and post-operative periods. Recent advances in probe technology and faster computer processors have now enabled the cardiac anesthesia team to produce three-dimensional images with the acquisition of two Philips ultrasound machines and 3D probes. This equipment allows the cardiac anesthesia team to provide the most up-to-date diagnostic support for the patients and surgeons.

PRE-OPERATIVE CONSULTATIONS FOR BETTER PAIN CONTROL AND MANAGEMENT

In late 2010, the acute pain team began consulting before surgery with patients who have a higher tolerance for pain medications, particularly opioids such as morphine, to better plan for pain control and management during and following surgery. In the consultation, the acute pain team collects the patient's pain and medication history and discusses options for pain management. The pre-surgery consultation enables the acute pain team to develop a customized peri-operative pain plan, which increases the probability of effective pain control and management.

Patient Experience

In 2010-2011, department members provided anesthesia care to tens of thousands of patients at the QEII Health Sciences Centre, the IWK Health Centre, Hants Community Hospital, Dartmouth General Hospital and Saint John Regional Hospital. Here are the stories of two of the people who benefited from the care we provide, but also who have helped shape and continually improve that care.

AROUND THE BLOCK

You could say **Kevin Joudrey** has been around the block. Five times to be exact. In just two years, Kevin received five regional blocks to help control his pain following knee surgeries.

"I hope to never have to go through a surgery without one," he says. He's speaking from overwhelming experience. Kevin has been through 22 surgeries, most to repair and replace a shattered knee.

"Regional anesthesia provides patients with better options for managing pain," says **Dr. Jennifer Szerb**, Director of the Regional Anesthesia Service. "We've shown that a regional block, in combination with other anesthetic, lessens a patient's recovery time. It enables patients to be more mobile and alert following surgery and delivers lasting pain control reducing the need for opioids such as morphine," she explains.

"A block prevents the thrashing, throbbing pain after surgery that I would normally have felt and I can manage to go eight, nine, ten hours [after surgery] without other pain medication, like morphine," he notes. "I've been on so many different pain medications that I'm always anxious to reduce the types and amounts I have to take."

Kevin's first experience with Dr. Szerb and the regional anesthesia team was in 2009. His fifth and most recent block was in December 2010. "The consideration the team has given me is almost as important as the pain control I received," says Kevin. "They listened to me and gave me the respect I felt I needed."

The number and complexity of Kevin's surgeries has made him somewhat of a legend in the medical community and his hometown of Salmon River, just outside Truro, Nova Scotia. His ordeal, spanning more than 30 years, started in 1977 when an accident jammed him between two cars. Years of working as a mechanic, crawling on concrete floors; playing outdoor sports and a bit of self-neglect took their toll on his joints and exacerbated his arthritis. His most recent surgery was a rare procedure involving tissue and bone from a deceased donor to replace his knee for the third time.

"You have to live what I've experienced to really understand how much I appreciate the regional anesthesia service and the people who run it," says Kevin. "The advances that have been made in this area are amazing to me. Things are much better now than in the past."

Regional anesthesia is characterized by the loss of sensation in a specific region of the body, caused by the injection of local anesthetic around a peripheral nerve or the spinal cord.

The regional block team performed 3200 blocks in 2010-2011.



Kevin Joudrey with Dr. Jennifer Szerb

Patient Experience



TREATING CHRONIC PAIN

Helen Tupper measures the cost of life's pleasures in pain rather than dollars, time or effort. That's the way it has been for more than 40 years. Helen is a mother, wife, friend and artist. What undermines everything, however, is her lifetime of pain.

"When faced with a decision to do something I enjoy, I ask myself 'Is it worth it?"," says Helen. "I weigh whether the activity is worth the pain I will suffer during and after. Most often it is, but there are many things I simply can't do." For years, the contemplation was constant, and for activities from making cookies, to going to the grocery store, to hosting dinner parties.

Helen's chronic pain began with the botched lift of a patient. As a registered nurse, she had many successful lifts, but this one was different. In a matter of seconds, Helen felt piercing pain — as if from a fire poker — in her back. The incident led to her first of many hospital stays and years of self-doubt, guilt, ridicule and stigma. Helen has felt that same fire-hot, piercing pain thousands of times since.

"I often worried about what impact my pain, which I came to see as an illness, was having and would have on my children. It seemed they were missing out on so much, including precious time with their mother," says Helen.

After years going from one doctor appointment and opinion to another with little relief there came a turning point when she met **Dr. John Clark**, Medical Director of Pain Management Services and, later, **Dr. Mary Lynch**, Medical Director of Chronic Pain. Both worked with Helen to find a combination of drugs that helped. It didn't come easily or miraculously.

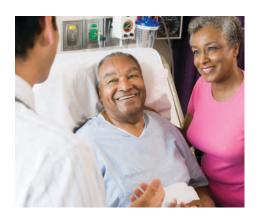
"The right regime of medications has taken a lot of my pain away — not all but certainly enough that I feel I can enjoy life without suffering pain as a consequence," says Helen. "I am very grateful to Dr. Clark and Dr. Lynch, and have come to recognize that many people are working hard to bring an end to chronic pain."

While pain has shaped Helen's life, she hasn't let it control her. Looking at her children, now adults, she says, "I can see what I've taught them is perseverance, compassion and a true appreciation for life."

The chronic pain research and treatment team at Dalhousie and the QEII Health Sciences Centre treats thousands of Nova Scotians experiencing pain each year. Part of the Canadian Pain Trials Network, the team conducts research studies on an ongoing basis to help find new ways of treating pain.

Patient Care by the Numbers

PATIENT CARE BY THE NUMBERS 2010-2011



In 2010-2011, anesthesiologists provided anesthesia care for more than 47,000 procedures at the QEII Health Sciences Centre, the IWK Health Centre, the Saint John Regional Hospital, the Dartmouth General Hospital and the Hants Community Hospital.



Within the anesthesia specialty, there exists a number of subspecialties for which anesthesiologists receive extended skills training to provide the necessary anesthesia care.

Department of Anesthesia subspecialty areas include:

- Anesthesia for liver, kidney and kidney pancreas transplantation
- Blood management
- Cardiac anesthesia
- Neuroanesthesia
- Pain management
 - Chronic
- Acute, including regional block
- · Pediatric anesthesia
- Thoracic anesthesia
- · Women's & Obstetric anesthesia

A great majority of the anesthesia care provided for the 47,000 annual procedures was performed at the QEII Health Sciences Centre and IWK Health Centre.

The following is a breakdown of OR procedures by anesthesia subspecialty area for the 2010-2011 fiscal year:

Anesthesia for liver, kidney & kidney pancreas transplantation	90
Cardiac anesthesia	2,020
Neuroanesthesia	1,078
Pediatric anesthesia	5,385
Thoracic anesthesia	872
Women's & Obstetric anesthesia	3,968
General anesthesia*	33,069

*In addition to the surgical procedures represented above, tens of thousands of others performed during the 2010/2011 fiscal year required general anesthesia support. Those include orthopaedic surgeries, ENT (ear, nose, throat) surgeries, ophthalmological (eye) surgeries, urological surgeries and others.

Outside of the OR, two of the Department of Anesthesia's largest services are **Blood Management** Services and Pain Management Services. Here is a breakdown of their numbers:

Blood Management Services

 Consults at the QEII Health Sciences Centre

Pain Management Services (adult services)

at the QEII Health

Sciences Centre

 Acute inpatient consults 900

- Regional blocks performed 3,200 at the HI Site. QEII Health Sciences Centre
- · Chronic pain inpatient consults at the QEII Health Sciences Centre
- Patients seen by the 5,820 chronic pain team
- New referrals to the chronic pain team

945

95

Department of Anesthesia ANNUAL REPORT 2010-2011

Education

OFFICE OF EDUCATION PRIORITIES AND KEY ACTIVITIES

The Office of Education recorded its priorities and key activities through an inclusive strategic planning session held in October 2010. They include:

- Prepare for accreditation
- Broaden the educational mandate to include all department members
- Implement the Education Accountability Framework
- Support simulation planning specific to anesthesia
- Determine the Office of Education budget with adequate program allocation
- Conduct a departmental needs assessment

The next step to ensuring the Office of Education meets the education needs of Department of Anesthesia members is to produce an accountability report which will outline not only the priorities and key activities but also outcomes and targets.

RESIDENCY PROGRAM CHANGES IN LEADERSHIP

Dr. Janice Chisholm assumed the role of Postgraduate Program Director as of July 1, 2010, following **Dr. Narendra Vakharia**'s five-year term. Dr. Chisholm brings a wealth of enthu-siasm and experience to the position.

The department and all of its residents over the last five years have noted Dr. Vakharia's stellar service to education in this very important role. Thank you!



Dr. George Kanellakos is now in the role of Associate Residency Program Director, serving a two-year term.



KUDOS TO OUR FACULTY



Undergraduate
Teacher of the Year
Dr. Ronald Cheng



Clinical Teacher of the Year

Dr. Konstantin Lorenz

ANGEL IN ACTION



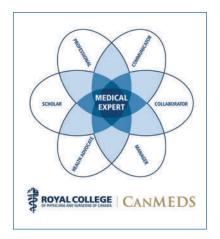
(L-R) Drs. Kristin Holm, Colin Van Zoost, Stefan Molgat Sereacki and Karthik Tennekore.

Dr. Stefan Molgat Sereacki was among a group of four residents to be honoured by a patient's family through the QEII Foundation's *Angel in Action* program. The family donated \$40,000 to the foundation in recognition of the residents' patient care excellence.

"To have had a patient's family recognize that their family member was well cared for and that they truly felt confident in the individuals responsible for that person's well-being is truly a gratifying and humbling experience," says Dr. Molgat Sereacki.

Congratulations!

ACCREDITATION UPDATE



The Department of Anesthesia's residency program will soon face tremendous scrutiny by Royal College of Physicians and Surgeons of Canada representatives charged with assessing anesthesia resident training. It is accreditation time in 2012 and preparations are well underway.

The residency program completed an internal review in March 2010 that showed department members need to more regularly provide feedback to residents and the program needs to improve its weekly teaching sessions. Both of which are being addressed. "We're getting there, but we can still make improvements," says Dr. Janice Chisholm, Postgraduate Medical Director.

Through the accreditation process, the Royal College will assess the postgraduate training program based on preset standards in six areas including:

- · administrative structure
- goals & objectives
- resources such as quantity and training of staff
- academic and scholarly conduct; and
- structure and organization of the program evaluation of resident performance and conduct

The CanMEDS physician competency framework will also factor heavily in the Royal College's assessment. According to the Royal College, "CanMEDS describes physician abilities to meet the needs of patients in the 21st century." The Royal College team will assess the residency program's provision of the opportunities through which residents will become excellent medical experts, professionals, communicators, collaborators, managers, health advocates, and scholars.

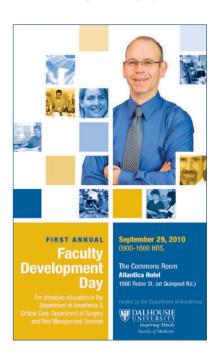
COORDINATED EFFORTS TO STRENGTHEN SIMULATION-BASED LEARNING



Within 2010, the Dalhousie Faculty of Medicine named **Dr. John Ross**, Department of Emergency Medicine, as Director of Simulation: **Dr. Narendra Vakharia**. Department of Anesthesia, was named Medical Director of the Atlantic Simulation Centre: and Marilyn Girouard, Department of Anesthesia, began serving as the Capital Health lead on simulation-related initiatives.

Their focus is three-fold: production of a business plan for province-wide simulation efforts, interprofessional education and coordination, and development of Capital Health's simulation activities.

FACULTY DEVELOPMENT DAY: A FIRST IN 2010



The Department of Anesthesia hosted its first Faculty Development Day in 2010, which encourages collaborative and interdisciplinary learning among physician faculty members primarily responsible for education. It offered an opportunity for anesthesia, surgical, critical care and pain management colleagues to learn together. With a focus on simulation, adult learning principles and constructive feedback workshops, the day offered a wellrounded curriculum, as well as a chance to engage more informally with colleagues. Evaluation results indicated it was a great success.

Faculty Development Day was initiated in keeping with the department's commitment to provide timely and appropriate professional development opportunities for its members.



CONTINUED CONTRIBUTION TO UNDERGRADUATE ELECTIVE MEDICAL EDUCATION

The department hosted more than 80 medical students from across Canada who chose to do elective courses in anesthesia at the QEII Health Sciences Centre, the IWK Health Centre, Saint John Regional Hospital and other sites in Nova Scotia and New Brunswick. Elective students generally spend two to four weeks under direct supervision of department members, who are also Dalhousie Medical School faculty, observing anesthesia care for varying surgical procedures at the QEII Health Sciences Centre. They may also practise skills in the Atlantic Simulation and Training Centre, do a rotation at the IWK Health Centre, and observe staff anesthesiologists at the QEII Chronic Pain Management Unit. Students in Canadian medical schools may choose to do their required elective courses at any medical school across the country. The department's elective offerings continue to grow in popularity.

FIRST AIRWAY FELLOW ARRIVES

The Department of Anesthesia recruited its first airway fellow in 2010. **Dr. Jeanette Scott** ventured from New Zealand in January to begin the one-year program. The department also filled fellowship positions in chronic pain and regional pain. Candidates will arrive in July 2011, as will a second airway fellow.

The department increased its fellowship program recruitment efforts in 2010, presenting at the Canadian Anesthesiologists' Society annual meeting, updating online information and producing printed brochures for each of the fellowship programs. The number of inquiries has increased dramatically over the last year.

The Department of Anesthesia Fellowship Committee approved the following fellowship programs in 2010:

Pediatric Anesthesia Fellowship	Regional and Acute Pain Fellowship
Pediatric Pain Fellowship	Neuroanesthesia Fellowship
Chronic Pain Fellowship	Airway Fellowship
Cardiac Anesthesia Fellowship	Global Health Fellowship
Women's & Obstetric Anesthesia Fellowship	

CONGRATULATIONS TO OUR PGY5S!

The following successfully completed the anesthesia residency program in 2010:

Dr. Sylvie Aucoin Dr. Ambrose Ng Dr. Stuart Wright Dr. Anita Cave Dr. Sarah Nickolet Dr. Olia Novikova



Dr. Anita Cave, Dr. Stuart Wright, Dr. Sarah Nickolet; Dr. Olia Novikova, (Dr. Narendra Vakharia), Dr. Sylvie Aucoin; Dr. Ambrose Ng, Dr. Scott Furey

Drs. Aucoin, Ng and **Nickolet** have since joined the staff of the Dalhousie Department of Anesthesia; **Drs. Cave** and **Wright** are in the midst of subspecialty fellowships; and **Drs. Furey** and **Novikova** are practising at other health centres in Nova Scotia.

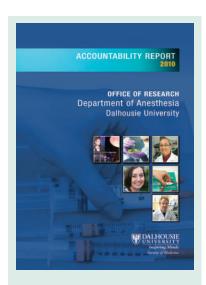
Education by the Numbers

2010/2011 ACADEMIC YEAR

2010/2011 **Undergraduate Learners** 114 **Postgraduate Off-Service/Elective Rotations** One hundred and fourteen medical students in seven cities and towns: Antigonish, Charlottetown, Halifax, Kentville, Moncton, Saint John and Sydney. Antigonish Charlottetown 8 85 Halifax 5 Kentville 3 Moncton Saint John 5 Sydney Forty-five learners from disciplines other than medicine, including nursing, paramedicine, respiratory therapy, etc. Respiratory Therapy 8 Lifeflight Peri-operative nurses Anesthesia assistant students 7 Primary care paramedics Anesthesia technicians Other **Anesthesia Elective Course Participation** Medical student participants, Year 1 13 Medical student participants, Year 2 Number of Department Member Undergraduate Tutors at **Dalhousie Medical School 24** tutors, 605 hours **Number of Residents** PGY 1 5 PGY 2 PGY 3 5 PGY 4 7 PGY 5

Kentville: 2 residents	8 wks.
Halifax (QEII Health Sciences Centre): 17 residents	66 wks.
Halifax (IWK Health Centre): 15 residents	35 wks.
Saint John: 7 residents	36 wks.
Number of Applicants to Residency Program	98
International Medical Graduates	15
Canadian Resident Matching System (CaRMS)	83
Continuing Professional Development	
Number of Grand Rounds	28
Faculty speakers	12
Resident speakers	11
Visiting professors	5
Number of M&M rounds	8
Number of Journal Clubs	8
Number of other CME and/or events	17

Research



ACCOUNTABILITY FRAMEWORK AND REPORT

The Office of Research released its second annual Research Accountability Report in 2010. Identified in the Department of Anesthesia strategic plan as a priority, a research accountability framework was developed in 2008 to articulate the department's research activities and establish clear standards and expectations against which achievements can be measured and results evaluated. The Research Accountability Report (2010) reports on performance relative to twelve indicators. of which the department met ten targets and partially met two targets. No targets were unmet in 2010. The Research Accountability Report (2010) is used to inform planning, to enhance the credibility of the research program with stakeholders, and to complement the department's values of transparency and accountability.



CORE AREAS OF RESEARCH

Core areas of research in the department include bench, translational and clinical research, with emphasis on the following areas:

- Pain
- Airway management
- Perioperative inflammation and organ protection

Outcomes research and device development are also areas of concentration.

RESEARCH CLUB

The department's research club was revived in 2010 and now meets quarterly to facilitate information-sharing about departmental research and to generate ideas and learn from others. Hosted by a research-oriented clinician, researchers and learners present an overview of their research activities, encourage discussion of research projects and network with colleagues. Research Club is an approved group learning activity of the Royal College of Physicians and Surgeons of Canada.

CFI LEADERS OPPORTUNITY FUND SUCCESS CONTINUES

For the second year in a row, a Department of Anesthesia researcher is the recipient of a \$300K+ Canada Foundation for Innovation Leaders Opportunity Fund Award. **Dr. Dietrich Henzler**, Professor of Anesthesia and staff physician in the Department of Anesthesia and Division of Critical Care, received the award to improve the infrastructure of his research space. The award will better enable Dr. Henzler and his team to pursue research on the prevention of acute lung injury.



Funded by CFI, Nova Scotia Research Innovation Trust and Dalhousie University and in-kind contributions from equipment suppliers, the total value of the award was \$308,467.

Dr. Henzler is the third Anesthesia member to receive a CFI Leaders Opportunity Fund Award. **Drs. Christian Lehmann** and **Mary Lynch** are past recipients.

DR. ALLEN FINLEY NAMED CHAIR, PEDIATRIC PAIN MANAGEMENT



Dr. Allen Finley, Professor of Anesthesia and Psychology and Medical Director of Pediatric Pain Management at the IWK Health Centre, is the first holder of the Dr. Stewart Wenning Chair in Pediatric Pain Management.

The Chair will fund initiatives to improve child pain prevention and treatment throughout the Maritimes and around the world. For his part, Dr. Finley aims to create an innovative, specialized pain management network by uniting hospitals and clinicians across the region to ensure Maritime children receive the best care possible. In turn, this will create a model for other countries. He also notes the Chair will enable the pain management team to implement the principles of ChildKind International, an initiative to establish global standards of children's pain management in hospitals around the world and to certify hospitals that take steps to prevent and treat child pain.

Dr. Finley has worked in pain research and management for 20 years. He has published more than 80 journal papers and is an advocate for improved pain management for children in both developing and developed countries. His projects have taken him to Jordan, Thailand, China, Brazil and beyond.

RESEARCHER RECEIVES MORE THAN \$1M TO STUDY PAIN IN CHILDREN

Dr. Jill Chorney was awarded a \$724,991 five-year operating grant from the Canadian Institutes of Health Research (CIHR) for a multisite study titled, *Pain at Home in Children Following Major Surgery: Physical, Psychological and Economic Consequences.* She also received a New Investigator Award from CIHR valued at \$300,000 over five years. The award will allow Dr. Chorney to devote 75% of her work time to further her research.



"The purpose of this research is to examine the prevalence, treatment, and impact of post-operative pain following children's major surgery," says Dr. Chorney. "For thousands of children across Canada each year, surgery is an excessively painful experience. Literature on minor surgery suggests that post-operative pain in children is not well managed, especially at home. Children undergoing major surgery are at a particularly high risk of suffering significant pain because these procedures are typically highly invasive, cause significant tissue damage, and require long recovery periods at home," she explains.

Literature from adult studies suggests that postoperative pain and associated physiological processes may interfere with physical recovery, return to function, quality of life, and may be associated with the development of chronic pain. Despite evidence from adult studies, there has been little research on post-operative pain in children following major surgery. The same is true for research examining the physical, emotional and economic consequences of children's post-operative pain.



Dr. Jill Chorney, Assistant Professor of Anesthesia and member of the Pediatric Pain Service at the IWK Health Centre, is the 2010 recipient of the *Routh Early Career Award in Pediatric Psychology* awarded by the Society for Pediatric Psychology, a division of the American Psychological Society. The prestigious award recognizes contributions to the field of pediatric psychology in research, clinical training, and service.

Department of Anesthesia ANNUAL REPORT 2010-2011

Patient Experience

AT THE HEART OF RESEARCH

We often associate research with the scientists, the investigators, the people in white coats leading the studies, but the fact is patients play a critical role in health research. They enable studies on new medications, new uses for existing medications, and new procedures and processes. Without people willing to participate in clinical trials — willing to explore uncertainties and take part in new discoveries — we wouldn't have more effective pain management, less invasive surgery, shorter hospital stays. Here are stories from just two of the many patients involved in research studies led by members of the women's and obstetric anesthesia team at the IWK Health Centre.

Wendy Mitchell found out she had breast cancer in October 2010. By November, she was scheduled for a lumpectomy. A mastectomy followed in December. Prior to her second surgery Wendy was advised of an ongoing study to assess the effectiveness of *pregabalin* to reduce pain after breast surgery. The drug is most often used to relieve nerve pain but could have the potential to better control pain resulting from breast surgery and with fewer side effects.

"I was nervous about having a lot of pain after my surgery so when I found out about this study, I was keen to participate. Once my questions were addressed, I was happy to do my part," says Wendy. "Just as I expected, I received exceptional care leading up to and following my surgery by all involved. I kept track of my pain levels and shared them with the research team who ensured I was well supported and comfortable. Everything went smoothly and really, I had very little to do."

The *pregabalin* study is co-led by **Drs. Ron George** and **Dolores McKeen**, anesthesiologists at the IWK Health Centre. Their hope is that pregabalin will improve pain control after breast surgery subsequently reducing the need for other pain medications that cause negative side effects.

On the morning of **Lori Campbell**'s planned Caesarean section delivery of her second child, she was approached by **Faye Jacobson**, research coordinator, about participating in a study to measure the effectiveness of three different drug combinations to lessen the possibility of experiencing nausea and vomiting during a Caesarean delivery. Nausea and vomiting, in this case, are caused by a drop in blood pressure resulting from spinal anesthesia. Despite the ability for the attending anesthesiologist to improve low blood pressure, 40 per cent of women still experience nausea and vomiting. For Lori, the potential side effects were more to wonder and worry about.

"Despite being somewhat anxious about the delivery, I believe research is an important way to advance practice. I was happy to have had the opportunity to participate in this study. I was given ample information and time to make my decision, which made the experience more positive," says Lori. "Looking back, I didn't feel inconvenienced at any time so, it was an easy thing to do. Actually, I'm convinced I benefited because I didn't experience nausea and vomiting."

Lori is now the proud Mom of Lane, 5 months, and Tye, two years. While participating in a research study is not for everyone, she notes people should be open-minded, learn as much as they can and then make the decision. "I was thoroughly informed and well taken care of."

The study, *Prevention of Intraoperative Nausea and Vomiting in Caesarean Deliveries*, is co-led by **Drs. Ron George**, **Dolores McKeen** and **Ashraf Habib** (Duke University Medical Center).



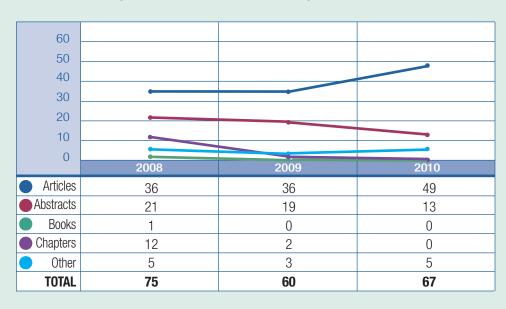


A SNAPSHOT OF RESEARCH EXCELLENCE

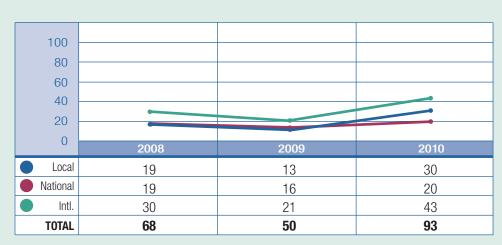
RESEARCH FUNDING



PUBLICATIONS (SUBMITTED AND ACCEPTED)



PRESENTATIONS

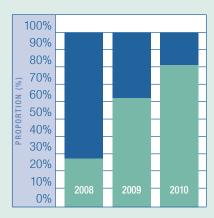


The Department of Anesthesia also tracks collaborative efforts:

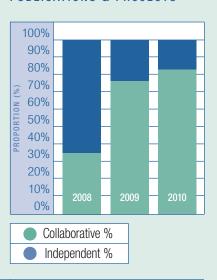
COLLABORATIVE PUBLICATIONS



COLLABORATIVE RESEARCH PROJECTS



COLLABORATIVE PUBLICATIONS & PROJECTS



OF Bujumbura Kigali, Sereng Kananga Plain Kananga M. REP. Skampala Mananga Plain Kananga Shamanga Plain Mbuji-Mayi

LIFE-CHANGING OPPORTUNITY: RWANDAN RESIDENTS TRAIN IN HALIFAX

For the second consecutive year, Dalhousie's Department of Anesthesia offered a lifechanging opportunity to two anesthesia residents from the National University of Rwanda. In January 2011, **Drs. Theoneste Mwumvaneza** and **Christian Mukwesi** arrived in Halifax from Rwanda to begin six months of residency training in anesthesia, critical care and pain management. The training opportunity is part of the Department of Anesthesia's Rwanda program, a partnership with the National University of Rwanda, Department of Anesthesia.

"The program is a true partnership, benefitting residents and faculty in the Department of Anesthesia here as well as residents and learners in Rwanda," notes **Dr. Patty Livingston**, Medical Director, Global Health Office of Anesthesia.

Drs. Mwumvaneza and Mukwesi returned to the National University of Rwanda in June to complete their residency program and become fully qualified anesthesiologists in their native republic. Their colleagues, Drs. Paulin Banguti Ruhato and Jean Bonaventure Uwineza, came to Dalhousie's Department of Anesthesia in 2010 to undertake the same residency training. They have since graduated from the National University of Rwanda. Dr. Uwineza is working as an anesthesiologist in Rwanda and Dr. Ruhato established a Rwandan Pain Society with the assistance of Dr. Mary Lynch, Director of the QEII Pain Management Unit and former president of the Canadian Pain Society; he will complete a supplementary year of anesthesia training in Belgium in 2011.

Also as part of the Rwanda Program, the following department members travelled to Rwanda in 2010-2011 to train members of the Department of Anesthesia at the University of Rwanda: **Dr. Chris Hinkewich** (*November 2010*) **Drs. Patty Livingston** and **Shannon Bradley** (*January 2011*)

Global Health

SETTING A STANDARD FOR GLOBAL HEALTH EDUCATION

Global Outreach: Anesthesia in Challenging Environments offers unprecedented educational opportunities for physicians who plan to work in resource poor settings. The annual course presented in Halifax by the Canadian Anesthesiologists' Society International Education Fund and the Dalhousie Department of Anesthesia remains one of a kind in North America and attracts renowned faculty from around the world and participants from across Canada and the United States. It aims to prepare anesthesiologists for missions to developing countries and focuses on issues such as different types of equipment and the art of draw-over technology, the prevention of infectious disease, the promotion of safe travel, the study of ethical issues and the psychology of adaptation.



The 2010 course proved as popular as those held in each of the two prior years, filling up quickly. The following excerpts from participants' feedback help to describe the reasons for its growing popularity:

"A thoroughly absorbing course with a commendable level of participation by all. On the whole, [the course had] very gifted, unusual, devoted and knowledgeable presenters"

"[The] interactive, hands-on small group sessions were fantastic and solidified material presented"

DALHOUSIE ANESTHESIA RESIDENTS REFLECT ON RWANDA



Eight Dalhousie anesthesia residents have so far ventured to Rwanda to do their part to improve the anesthesia program at the National University of Rwanda. The following are excerpts from a few residents' reflections on their Rwanda experience.

"My days were spent teaching in either the OR or the classroom. It was refreshing to see how eager everyone was to learn. Of course, these didactic sessions helped improve my teaching skills but it was the on-the-spot teaching that was most challenging. While in Butare we had the opportunity to teach the junior anesthesia residents for a few hours each afternoon. We had no pre-specified topics so just let the residents ask questions. This was especially beneficial for me because I really got a chance to see what I understood well enough through my own training to teach to other residents and what I needed to work on."

"Rwanda is very forward thinking. Friday afternoon has been pronounced "day of activity" by the ministry of health. No one from the health care field is supposed to work on Friday afternoons (barring emergencies of course) and is supposed to spend it doing a sport or exercise. Plastic bags are not allowed in the country. Smoking is banned in all public places and outside as well. At least 33% of parliament has to be female (there is widespread knowledge that the genocide likely would not have happened had more women been in power). At the moment, it has >50% female politicians, the highest in the world."

"Everything was so unbelievably different in Rwanda. People are sooooo poor. But everyone manages to live the only life they've ever known. They wear their clothes and shoes until they are absolutely non-functional. Every piece of equipment is used well beyond when it is safe to keep doing so. All the farming is done by hand, and often up the side of steep hills. Basically everyone works from sun up to sun down..."



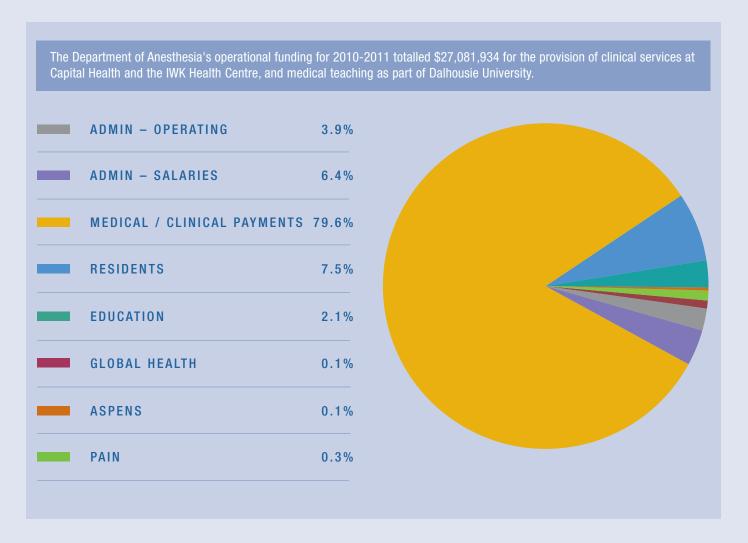
A GLOBAL RESOURCE

Dr. Patty Livingston, Medical Director, Global Health Office of Anesthesia, accepted an invitation from the Rwandan Ministry of Health to sit as a steering committee member charged with advising the ministry on improving surgical and anesthesia care in Rwanda. The steering committee began its work in 2011.

The Global Health Office of Anesthesia has been working with the Department of Anesthesiology and Peri-operative Medicine at Queen's University in Kingston, Ontario to support the development of a residency opportunity for Rwandan residents at Queen's. The residency is expected to be available in 2012.

Financial Overview at a Glance

2010-2011



Department of Anesthesia

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