



Department of Anesthesia
& Perioperative Medicine

ANNUAL REPORT 2018

Schulich School of
Medicine & Dentistry
Western University

London Health Sciences Centre
St. Joseph's Health Care London
London, ON, Canada

Our vision and mission,
is to be an internationally
acclaimed academic department in
anesthesia, pain, and critical care.

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It gives me great pleasure to write this message as the new Chair / Chief of the Department of Anesthesia & Perioperative Medicine.

Almost a year ago, I arrived in London in January, with a snow storm! Since then, I have received nothing but welcoming open arms from all quarters. I heartily thank everyone's hospitality and quick acceptance of my arrival. I also want to take this opportunity to thank our previous Chair / Chief, Davy Cheng, who established a

very strong Department through his years of hard work; he has made much of my work easier.

The foundations of this department are deep: an excellent residency program, strong clinical programs with much history of practice-changing research, as well as faculty members who are hard-working and committed to good patient care. Our MEDICI center continues to produce impactful research on the WHO front. The continuing strength of this Department comes from everyone working together with a common focus: the patient. The consultants, the fellows, the residents, and the medical students all have but one goal in mind: the best care one can provide to our patients.

I am proud and humbled by the excellent colleagues working with me side-by-side including the fellows, residents, and medical students, too. You keep all of us honest, especially me; there has not been one day when I work with trainees that I have not learned something refreshing.

MESSAGE FROM THE CHAIR / CHIEF

To achieve our common goal, we always keep our three-legged stool balanced and cohesive: good patient care, honest impactful research, and education with role models. Good patient care does not happen by accident. Our nursing colleagues in the perioperative world, our nurse practitioners, and the administrative team in the London Hospitals have worked so hard with us to keep our goal in sight. To them, I express a sincere thank you. In the operating room, life can be arduous and unpredictable, as we all know. Our anesthesia assistants and respiratory therapists are our colleagues and often our saviours. All of us have been in a situation with a difficult airway and an anesthesia assistant shows up with exactly the right tool for us to effortlessly accomplish the intubation, just to mention one example. On behalf of the Department, I express our sincere appreciation to our AAs.

In early spring, a Department-wide retreat took place with an excellent turnout and enthusiastic participation. From the retreat, five priority pillars were established: excellence in clinical care, impactful research, education, quality improvement, and wellness. Now that the Schulich School of Medicine & Dentistry, London Health Sciences Centre, and St Joseph's Health Care London all have completed their strategic plans, I am happy to report that our Departmental priorities are aligned with all three organizational strategic plans.

In the fall, we also conducted a retreat on Pain Management and defined a set of action items for the next six months. This is especially important since our Department was the very first to establish the RCPSC Chronic Pain Residency in Canada.

The Department also recruited a senior echographer to help establish quality assurance and a clinical practice model across the Departmental campuses. This is being built upon the established strengths of point-of-care ultrasound (POCUS) and transesophageal echocardiography (TEE) within our Department. I am confident that we will bring perioperative echo to the next level. An "echo" retreat is already planned in the coming months. The aim is to establish strategic and implementation priorities for the perioperative echo program.

Early recovery after surgery (ERAS) has really taken hold in recent years. Aligned with ERAS, the Department has also established early discharge with home monitoring as a program. Working with the London Health Sciences Centre Connecting Care to Home (CC2H), work has started to link with the South West LHIN on this initiative. In addition, there are many on-going local initiatives in London on remote patient monitoring. In collaboration with all the different specialties, the Home Monitoring in Health Care Conference was born; this was hosted by the Department of Anesthesia & Perioperative Medicine and was held in November with excellent attendance and great enthusiasm. Collaboration to establish a multi-disciplinary working group is now set as a priority.

There is tremendous energy for change in this city and with the tools that we are building and sharpening, we can look forward to exciting advances! With the strong history and accomplishments of this Department, medical school, and Faculty, we have a strong base to launch into a new phase. It is exciting to be on the ground floor for change, at least for me! I am confident you will enjoy this annual report.

Dr. Homer Yang

Chair, Department of Anesthesia & Perioperative Medicine
Schulich School of Medicine and Dentistry, Western University
Chief, Department of Anesthesia and Perioperative Medicine
London Health Sciences Centre
Chief, Department of Anesthesia and Perioperative Medicine
St Joseph's Health Care London



Dr. Yang received the Gold Medal Honour at the annual Canadian Anesthesiologists' Society meeting. The Gold Medal is the highest award given by CAS. It is a personal award consisting of an inscribed medal given in recognition of excellence and leadership in anesthesia.

(Image credit: CAS / Tom Berthelot)



Department Organization

EXECUTIVE COMMITTEE

Homer Yang, Chair/Chief
Ashraf Fayad, University Hospital Site Chief
George Nicolaou, Victoria Hospital Site Chief
William Sischek, St. Joseph's Hospital Site Chief
Marc St-Amand, Chair, AAPP Finance Management Committee
Heather Pierce, Adminstrative Assistant

DEPARTMENT COUNCIL

Homer Yang, Chair
Achal Dhir
Anita Cave
Ashraf Fayad
Daniel Bainbridge
Geoff Bellingham
George Nicolaou
Ian Herrick
Indu Singh
Kevin Armstrong
Marc St-Amand
Michelle Gros
Miguel Arango
Mohamad Ahmad
Ramiro Arellano
Richard Cherry
Jeff Granton
Ruediger Noppens
William Sischek
Lois Hayter

APPOINTMENTS & PROMOTIONS COMMITTEE

Ronit Lavi, Chair
Miguel Arango
Shalini Dhir
Ravi Taneja
Ian Herrick
Janet Martin
Homer Yang
Ola Bienkowski

UNDERGRADUATE EDUCATION

Michelle Gros, Director
Pravin Batohi
Jonathan Brookes
Charlotte Sikatori McLain

POSTGRADUATE EDUCATION

Anita Cave, Program Director
Andreas Antoniou and Stephen Morrison, Associate Program Directors
Lori Dengler and Linda Szabo, Education Coordinator
Kristine Marmai, Site Coordinator - SJHC
Hilda Alfaro and Jonathan Borger, Site Coordinator - University Hospital
Stephen Morrison and Nathan Ludwig, Site Coordinator - Victoria Hospital
Jonathan Brookes, Resident Research Coordinator
Richard Cherry, Simulation and Information Technology Director
Jennifer Vergel de Dios, CBD Lead
Miguel Arango, Fellowship Director
Zach Davidson, Chief Resident
James Pius and Kevin Braden, Senior/Junior Representatives

POSTGRADUATE PAIN MEDICINE EDUCATION

Geoff Bellingham, Program Director
Jonathan Brookes
Collin Clarke
Heather Getty
Stephen Morrison
Eldon Loh
Dwight Moulin
Raju Poolacherla
Shiraz Malik
Charlotte Sikatori McLain
Scott Cook, Resident Representative

CONTINUING MEDICAL EDUCATION

Ian Herrick, Program Director
Lee-Anne Fochesato
Courtney Harper

FELLOWSHIP

Miguel Arango, Program Director
Andrea Fragassi, Program Coordinator
Achal Dhir, Liver Transplant
George Nicolaou, Thoracic and Vascular
Indu Singh, Obstetric
Qutaiba Tawfic, Acute Pain
Hilda Alfaro, Cardiac
Ruediger Noppens, Neuro
Richard Cherry, Simulation
Shalini Dhir, Regional
Kevin Armstrong, Regional and Acute Pain

CARDIAC SURGERY RECOVERY UNIT (CSRU) CONSULTANTS

Jeff Granton, Director
Ron Butler
Daniel Bainbridge
Scott Anderson
Davy Cheng
Dave Nagpal
Ahmed Hegazy
Vince Lau
Raymond Kao
Rob Arntfield
Marat Slessarev

RESEARCH COMMITTEE

Daniel Bainbridge, Chair
Collin Clarke
Craig Railton
Indu Singh
Janet Martin
John Murkin
Jonathan Brookes
Kathie Baer
Lee-Anne Fochesato
Miguel Arango
Philip Jones
Richard Cherry
Ronit Lavi
Timothy Turkstra

AAPP FINANCE MANAGEMENT COMMITTEE

Marc St-Amand, Chair
Homer Yang
George Nicolaou
Ian McConachie
Jason Hoogstra
Maxim Rachinsky
Pravin Batohi
Ron Butler
David Sommerfreund
Chris Harle
Lois Hayter
Pauline Bessegato
Andreas Antoniou
Phil Jones
Stephen Morrison

SITE ROUNDS COORDINATORS

Peter Mack (UH)
Gary Simon (VH)
Paidrig Armstrong (SJHC)
Shalini Dhir (Regional)

EQUIPMENT

Jason Hoogstra

JOURNAL CLUB CONVENERS

Philip Jones
Timothy Turkstra

ANESTHESIA QUALITY COMMITTEE, CITY-WIDE

Ian Herrick, Chair
Geoff Bellingham
Jon Brookes
Catalina Casas Lopez
Melissa Chin
Rudy Noppens
Raju Poolacherla
Indu Singh
Ramesh Vedagiri Sai
Ray Zhou
Craig Railton
Elizabeth McMurray
Hussein Sadkhan
Johanna Halabi
Sonja Payne
Ushma Shah
Deepti Vissa
Bethany Oeming
Magda Terlecki
Brenda Maxwell
Seetha Subramanian
Lee-Anne Fochesato
Kathie Baer

ADMINISTRATIVE SUPPORT STAFF

Andrea Fragassi
Brie McConnell
Cathy Pollard-Culbert
Charlotte Sikatori McLain
Christina White
Courtney Harper
Danielle McVeeneey
Heather Pierce
Jessica Moodie
Kathie Baer
Kim Harrison
Jackie McAllister
Lee-Anne Fochesato
Linda Szabo
Lori Dengler
Magda Spasic
Nicole Moyer
Ola Bienkowski
Rachel Sandieson
Sandi Hallock
Sarah Rayner
Shannon McConnell
Sherry Gorog

Our Faculty

- Ahmad, Mohamad

Al-Areibi, Arif

Alfaro, Hilda

Antoniou, Andreas

Arango, Miguel

Arellano, Ramiro

Armstrong, Kevin

Armstrong, Padrig

Bainbridge, Daniel

Banasch, Matthew

Batohi, Pravin

Bellingham, Geoff

Biswas, Abhijit

Block, Gary

Borger, Jon

Briskin, Alexander (Windsor)

Brookes, Jonathan

Bruni, Ida

Butler, Ron

Casas Lopez, Catalina

Cave, Anita

Champion, Lois

Cheng, Davy

Cherry, Richard

Chin, Melissa

Chui, Jason

Church, Brian

Clarke, Collin

Craen, Rosemary

Cuillerier, Daniel

Dhir, Achal

Dhir, Shalini

Fantillo, Vanessa

Fayad, Ashraf

Flier, Suzanne

Fujii, Satoru (Ray)

Fuller, John

Giraldo, Mauricio

Gonzalez, Nelson

Gordon, Neil

Granton, Jeff

Gros, Michelle
- Harle, Chris

Hegazy, Ahmed

Herrick, Ian

Hoogstra, Jason

Iglesias, Ivan

John-Baptiste, Ava (Basic Sciences)

Jones, Philip

Katsiris, Sandra

Khalaf, Roy

Kumar, Kamal

Lavi, Ronit

Lin, Cheng (Bill)

Ludwig, Nathan

Mack, Peter

Marmai, Kristine

McCabe, Greg

McConachie, Ian

McKishnie, James

McNamara, Jeff

Martin, Janet (Basic Sciences)

Morrison, Stephen

Murkin, John

Nagappa, Mahesh

Newton, Peter

Nicolaou, George

Noppens, Rudy

Ower, Katherine

Payne, Sonja

Poolacherla, Raju

Puentes, Wilfredo

Rachinsky, Maxim

Railton, Craig

Rajarathinam, Manikandan
- Sadkhan, Hussein

Sandhu, Takpal (Tinu)

Sato, Keita

Schulz, Valerie

Sebbag, Ilana

Sehmbi, Herman

Shah, Ushma

Simon, Gary

Singh, Indu

Sischek, William

Smith, David

Sommerfreud, David

St-Amand, Marc

Taneja, Ravi

Tawfic, Qutaiba

Turkstra, Tim

Vannelli, Tony

Vedagiri Sai, Ramesh

Vergel de Dios, Jennifer

Watson, Jim

Zhou, Ray

Yang, Homer

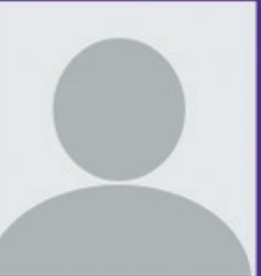
New Faculty



Dr. Ashraf Fayad
Associate Professor
UH & VH
Subspeciality: Senior Lead for Perioperative Echocardiography



Dr. Hussein Sadkhan
Assistant Professor
Primary Site: UH
Subspeciality: Regional Anesthesia



Dr. Satoru (Ray) Fujii
Assistant Professor
Primary Site: UH
Subspeciality: Cardiac Anesthesia



Dr. Takpal (Tinu) Sandhu
Assistant Professor
Primary Site: VH
Subspeciality: Pediatric Anesthesia



Dr. Roy Khalaf
Assistant Professor
Primary Site: VH
Subspeciality: Simulation



Dr. Keita Sato
Assistant Professor
Primary Site: UH
Subspeciality: Cardiac Anesthesia



Dr. Sonja Payne
Assistant Professor
Primary Site: UH
Subspeciality: Neuroanesthesia

SITE REPORTS

2018 has seen a few changes in our department. The arrival of Dr. Homer Yang as the new Chair/Chief has helped to set the clinical academic direction of the department as a whole and St. Joseph's in particular. Dr. Yang's previous interest in Perioperative Home Monitoring (POHM) fits well with our emphasis on ambulatory care patients. Early discussions and planning have proven to be both exciting and productive. We look forward to exciting new developments in patient care on that front over the coming months and years.

2018 also saw the release of the new strategic priorities for St. Joseph's – Reaching Out, Connecting Care, Innovating Together, Leveraging Technology and Empowering People. These directives combined with the corporation's values of Compassion, Excellence and Respect allow the organization to continue to flourish, for both those who receive as well as deliver care. The day to day work of the members of the Department of Anesthesia and Perioperative Medicine is enhanced by the very positive corporate culture and attitudes which predominate.

The Regional Anesthesia group has expanded its activities across all our city hospitals, but the SJHC Hand and Upper Limb Centre (HULC) continues to provide an ideal environment for the practice of regional anesthesia techniques of the upper limb. Many patients are able to be lightly sedated while having their surgery under regional anesthesia allowing for rapid discharge and return to home. Other patients are given the options of regional anesthesia along with their general anesthetic in order to insure excellent post-operative analgesia. We continue to train and educate physicians from around the world in innovative and effective regional anesthesia of the upper limb.

Out of OR anesthetic practice continues to grow. Patients are provided sedatives and analgesia to make everything from endoscopy to peripheral limb surgery comfortable. We have expanded anesthetic services to some of our clinic settings to improve and expedite patient care. Patient satisfaction scores remain very high with the total perioperative and periprocedure experience while we continue to pursue avenues to further improve our anesthetic services and care. The staff of St. Joseph's Health Care London truly does practice patient-centred care and it drives all the right metrics as we evolve.

And finally, as the year ends, St. Joseph's is beginning its preparations for an Accreditation Canada visit scheduled for Sept 30- Oct. 3, 2019. The past two accreditation surveys have led to St. Joseph's passing with Exemplary Standing and all efforts are being made to continue that trend. The Department of Anesthesia and Perioperative Medicine is looking forward to playing its role in seeking that distinguished status once again.

Dr. William Sischek
Site Chief, St. Joseph's Health Care London

As a new member of the Department of Anesthesia & Perioperative Medicine, I was honored and pleased to be appointed as the UH Site Chief in October 2018. This is an exciting and challenging role in this active, dynamic, and productive department.

Cardiac anesthesia continues to meet the clinical surgical demand nonetheless, as the surgical cardiac volume increases, the result of new surgical procedures and bed limitations; we will likely see significant challenges in our academic environment.

Perioperative Echocardiography and Ultrasound as a new program and initiative will be instituted in our department in 2019. The program is expected to oversee all the echocardiography and non-regional ultrasound clinical and academic activities. It will also open the opportunity to develop a fellowship training program. A departmental retreat is expected in January 2019 to provide the big picture of this initiative involving multiple subspecialties.

The demand on neuro-anesthesia continues to mount with the increase in stroke code cases and the number of interventional radiology procedures. Development of clinical pathways to accommodate the clinical demand is underway in collaboration with the stroke team and neuroradiology.

We will also see an increase in the orthopedic volume (joints) to meet the targets of the region. Some minor changes in OR allocation for joints will be noted. Out of OR procedures continue to grow, with patients being provided general anesthetics and sedation. The biggest challenge is the availability of beds to recover patients. Meetings with different stakeholders are in progress to find a suitable solution for this challenge.

Finally, there is currently a project underway at University Hospital to review the perioperative culture and we are expecting to see some feedback in the coming few months. This is a positive initiative and may help to find a balance between clinical demand and life style for the perioperative team.

Dr. Ashraf Fayad
Site Chief, University Hospital

VICTORIA HOSPITAL (LHSC)

The Department of Anesthesia and Perioperative Medicine at the Victoria Hospital, provides clinical service for vascular, thoracic, orthopaedic (trauma and spine), plastic (including craniofacial), ENT, urologic, oncologic, general surgical, robotic and pediatric (ENT, general, thoracic, urologic, neurosurgical and plastic) surgery. We also have a well-established palliative, acute and chronic pain service. In addition, we provide anesthetic services for 'out-of-OR' procedures such as endoscopy/colonoscopy, MRIs, CT scans, interventional radiology, diagnostic/therapeutic lumbar punctures, bone marrow aspirates, kidney biopsies, bronchoscopies and any other 'out-of-OR' procedures that might require sedation. Victoria Hospital also provides anesthesia services for all obstetrical and pediatric patients in the city of London. The site's emphasis is the clinical teaching of residents, medical students, fellows and allied health professionals. This includes the use of a well-established anesthesia simulator program. The Operating Suites at Victoria Hospital have undergone major renovations and reconstruction. We now have eighteen, state of the art Operating Suites equipped with the latest anesthesia and surgical technological advances.

ANESTHESIA OPERATING ROOM RESOURCES

Anesthesia resources include a transesophageal echocardiography machine with 3-D capabilities, two transthoracic echocardiography machines, multiple ultrasound machines for vascular access and for regional anesthesia and state of the art airway equipment. Furthermore, Victoria Hospital is increasing its ability to provide SSEP monitoring for complicated Adult and Pediatric patients.

In the upcoming year, we are looking forward to the long awaited implementation of an electronic intraoperative Anesthesia record.

THORACIC/VASCULAR ANESTHESIA

Both thoracic and vascular subspecialties have flourished and remain popular as resident rotations and as fellowship training programs. Vascular surgery at Victoria Hospital has become a world leader in the endovascular management of thoracic aortic disease. Thoracic surgery has also become a world leader and boasts one of the largest series in Video Assisted Thoracic Surgical procedures. Several recent clinical

research projects in these subspecialties have been completed, and others involving Video Assisted Thoracic Surgery (VATS) and pressure-limited one-lung ventilation are underway. With respect to vascular anesthesia, our preliminary results have shown that spinal oximetry detects decreases in spinal cord blood flow early, allowing for the early initiation of preventive treatment spinal cord protection strategies. A previous project led to a change in the postoperative epidural analgesia solution utilized.

PEDIATRIC ANESTHESIA

This pediatric division is under the guidance of Program Director, Dr. Mohamad Ahmad, with input from members of the Pediatric Anesthesia Subspecialty Group. We currently support at least four dedicated pediatric surgery operating rooms on a daily basis. In addition, we are increasing our involvement in 'out-of-OR' settings which include endoscopy/colonoscopy, MRIs, CT scans, interventional radiology, diagnostic/therapeutic lumbar punctures, bone marrow aspirates and any other procedure that is amenable to sedation. We have also implemented a 'Parental Presence at Induction' Program in conjunction with the hospital's 'Child Life Program' and have expanded pediatric preoperative assessment and postoperative pain management services. Perioperative Pain management, in pediatric patients, is offered in many forms including; PCA, epidurals, single-shot nerve blocks and/or indwelling regional block catheters.

PEDIATRIC CHRONIC PAIN

We have developed the first pediatric, multi-disciplinary chronic pain program in South Western Ontario. Interested staff continue to participate in the nationwide telemedicine conferences hosted by the Hospital for Sick Children in Toronto. Other educational activities in pediatrics include a monthly journal club in collaboration with McMaster University. We also have weekly pediatric rounds to discuss interesting cases and topics. Recently, we have established a multidisciplinary pediatric simulation academic program to deliver simulation-based crisis management training to anesthesia and pediatric residents and fellows, as well as to the nursing staff.

REGIONAL ANESTHESIA

The regional program at Victoria Hospital is for both pediatric and adult patients. It is a multidisciplinary block room with state-of-the-art imaging and all of the necessary supporting equipment and staffing. We have also developed patient information pamphlets explaining the role of pediatric regional anesthesia in pain management, postoperative care after regional anesthesia and on what to do if there are any concerns. We have developed a pediatric home regional anesthesia program, where we can send paediatric patients home with continuous peripheral nerve blocks and have a system for regular follow up.

OBSTETRICAL ANESTHESIA

Dr. Indu Singh, the Citywide Obstetrical Anesthesia Director, has successfully introduced a citywide standardized obstetrical anesthesia care approach including standardized epidural solutions, PCA, PCEA and postoperative pain management. With the consolidation of all obstetrical services at Victoria Hospital in London, the volume of births in this level 3 unit has increased to over 6,000 deliveries per year. This makes Victoria Hospital the second busiest obstetrical unit in the province. Recently, we have established a multidisciplinary obstetrical simulation academic program to deliver simulation-based crisis management training to anesthesia and obstetrical residents and fellows, as well as to the nursing staff.

SIMULATION

The Simulation Program continues to thrive and expand under the guidance of Dr. Richard Cherry. The program continues to deliver simulation-based crisis management training to anesthesia, surgical and critical care residents, as well as expanding the program to include more undergraduate medical students and surgical residents. Research collaboration is gaining momentum along with the general awareness and interest in healthcare simulation.

QUALITY ASSURANCE

Dr. Melissa Chin, our new Quality Assurance lead at Victoria Hospital, is advancing and improving our Quality Assurance program. She has completed her Quality Improvement Fellowship at Yale University and at the moment, she is working on improving the communication between perioperative staff during patient handovers, in order to improve patient safety.

ANESTHESIA ASSISTANT PROGRAM

Our Anesthesia Assistant program has been a great success and has been well received by all disciplines. It has allowed us to increase our 'out-of-OR' commitments for all procedures that require sedation. This has led to an increase in patient safety and satisfaction, more efficient use of resources allowing for an increased utilization of our services. The Anesthesia Assistant program has been beneficial for all, is well supported and continues to expand.

ACUTE AND CHRONIC PAIN

Our multi-disciplinary pain program is well established and continues to expand. We have one nurse practitioner that helps with all aspects of pain including research and opioid addiction. A pain database has been developed for recording patient data, which is used for quality assurance and research purposes. Our interventional pain management program is well established and has expanded to include pediatric patients.

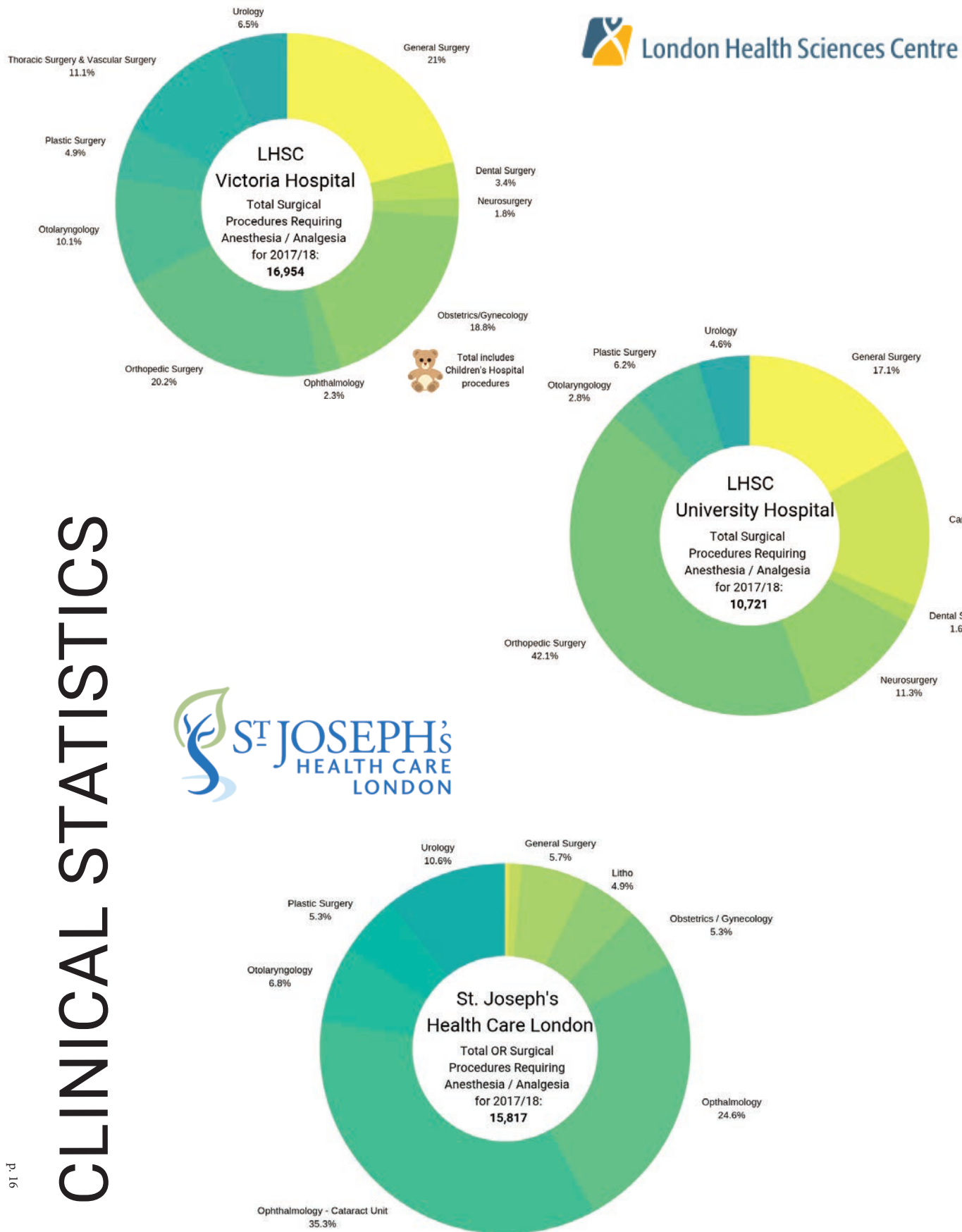
SURGICAL CENTRE

London Health Science Centre (LHSC) is developing a new model of health care to address long patient wait times and organizational inefficiencies. For a number of years, London Health Science Centre's surgery program has experienced significant financial pressures. This project seeks to address the on-going financial challenges through the implementation of innovative and efficient ways, of delivering quality patient care for less complex surgical procedures.

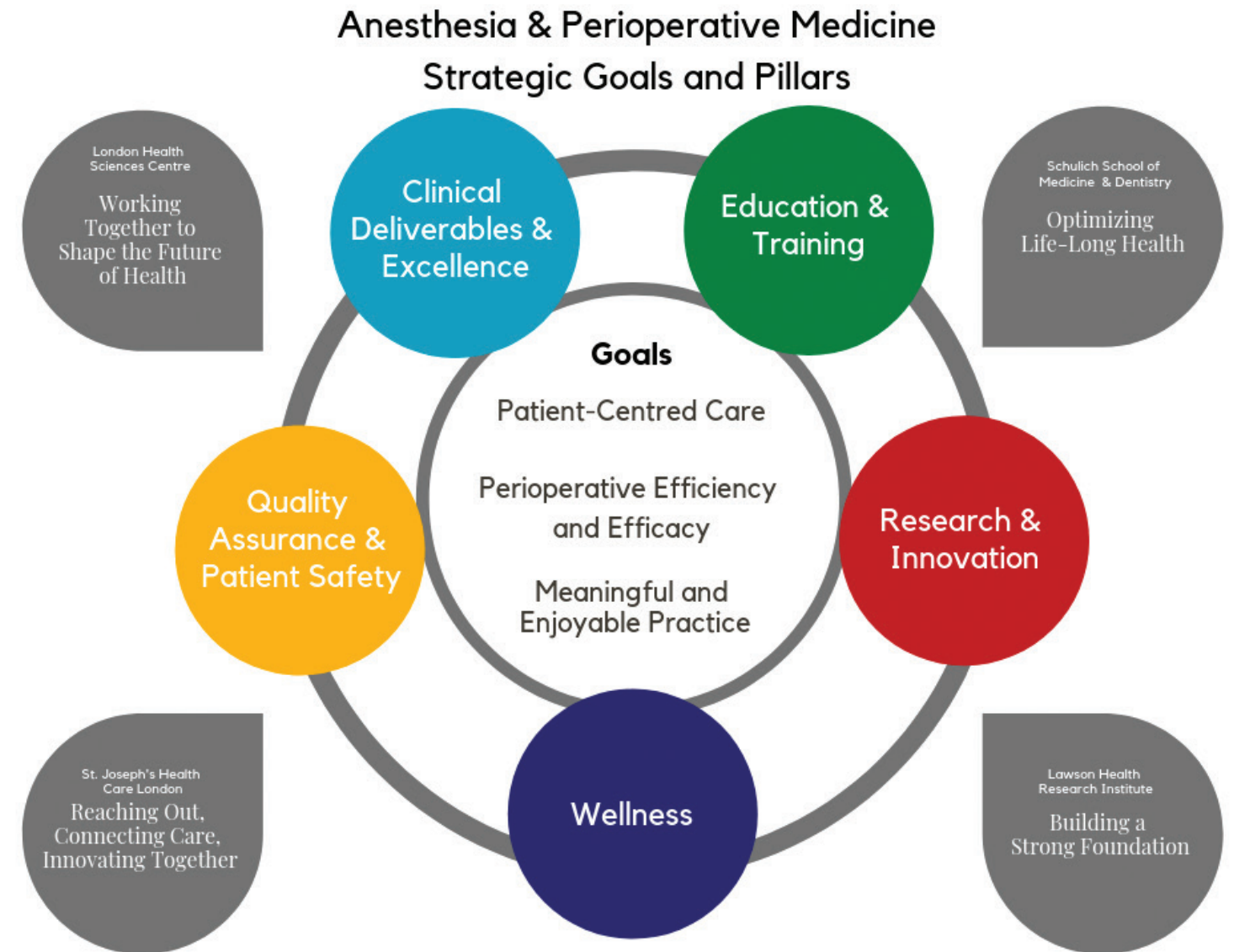
Our pilot project has shown that streamlined surgical care for non-complicated OR procedures using Regional Anesthesia, standardized equipment, instrumentation, and disposables have shown decreased turnover time, more timely access to care and reduced length of stay in the hospital. This offers Anesthesia an opportunity to expand our Regional Anesthesia Program and increase our presence and leadership in the perioperative management of these patients.

Dr. George Nicolaou
Site Chief, Victoria Hospital

CLINICAL STATISTICS



Strategic Goals



QUALITY ASSURANCE

Individual department members play a central role in delivering safe, high quality care to the patients we serve. The Anesthesia Quality Committee seeks to complement this role by supporting a departmental framework for assessing our performance, managing improvement initiatives and promoting an environment conducive to these goals. The Quality Committee has the following mandate:

- Assist Chief/Chair and Site Chiefs with monitoring and promoting high quality anesthesia care.
- Selectively monitor and/or respond to opportunities to enhance the quality and safety of care.
- Provide a forum for the post hoc systematic review of critical incidents and events impacting on anesthesia care.
- Support education by encouraging the engagement of department members and trainees in projects to assess and enhance quality care.
- Support research activities aligned with the objectives of the departmental QI framework with relevance to the quality and/or safety of anesthesia care.
- Support departmental initiatives that promote a high quality and safe work environment.
- The Committee meets bi-monthly.

Highlights for 2018

- Under the leadership of our new Chair and Chief Dr. Homer Yang, the Department of Anesthesia and Perioperative Medicine undertook a department retreat in May. Quality Improvement and Patient Safety (QI/PS) continue to be recognized as central elements for success together with Patient Care, Education and Research. Strategic focuses for QI/PS in the next couple of years are: 1) continuing development and evolution of the specialty program quality leadership, 2) refinement of the critical incident management process and 3) continuing support for the QI/PS fellowship program.
- This year the Committee welcomed Dr. Hussein Sadkhan (currently enrolled in the Masters of Applied Science in Patient Safety and Healthcare Quality program at the Johns Hopkins Bloomberg School of Public Health), Dr. Sonja Payne (transplantation anesthesia), Dr. Craig Railton (thoracic and vascular anesthesia) and Dr. Ushma Shah (pediatric anesthesia) as program QI leads or co-leads. We also welcomed Ms. Johanna Halabi (Manager Surgical Care, UH) and Ms. Elizabeth McMurray (OR Professional Practice Consultant, SJHC) who joined the Committee in their respective perioperative leadership roles.
- LHSC underwent accreditation in November 2018 by Accreditation Canada. The Anesthesia QI/PS group was pleased to have the opportunity to support the Perioperative Care accreditation process with two submissions to the LHSC accreditation showcase “Sharing Our Successes” focused on perioperative interdisciplinary communication.

- This year the Quality Committee supported two large, multidisciplinary improvement projects across the three London hospitals focused on enhancing communication at perioperative care transitions. The work was timely and well positioned to support hospital preparations for accreditation based on a new Required Organizational Practice (ROP) focused on this issue recently introduced by Accreditation Canada.
- In 2018, members of the Quality Committee supported quality improvement projects in several programs including Cardiac Anesthesia, Obstetrical Anesthesia, Pediatric Anesthesia, Neuroanesthesia, Regional Anesthesia/Acute Pain Management and the Chronic Pain Program as well as several multidisciplinary initiatives aimed at enhancing communication during perioperative care transitions.

Research publications and scholarly activity by members of the Quality Committee in 2018 include:

1. Elsaharty AA, McConachie I, Singh S. Development and Implementation of a Standardized Clinical Pathway for Super Morbidly Obese Parturient undergoing elective Cesarean Delivery. Society for Obstetric Anesthesia and Perinatology 2018 Annual Meeting; Poster discussion S1C-2 [<https://soap.org/meetings/2018-abstracts-list/>]
2. Vissa D, O'Brien L, Casas Lopez C, Subramanian S, Emery R, Holborough J, Wells J, Arellano R, Herrick I. Improving handovers in post-anesthesia care units in three academic hospitals. Canadian Anesthesiologists’ Society Annual meeting, Montreal, June 16, 2018. Poster display [<http://www.casconference.ca/en/poster-displays-saturday/>]
3. Spohn J, Stirling D, Chen H, Walsh S, Riggs J, Casas Lopez C. Teamwork, communication, and role unfamiliarity in the operating room. Quality Improvement and Patient Safety Forum 2018, Toronto, October 16, 2018. Poster display [<https://www.cquips.ca/wp-content/uploads/2017/11/QIPSF2018-Poster-Abstracts-Open-Competition.pdf>]
4. Vissa D, O'Brien L, Casas Lopez C, Subramanian S, Emery R, Holbrough J, Wells M, Arellano R, Herrick I. Improving handover in Post-Anesthesia Care Units in the London hospitals. October 2018. QI project abstract in LHSC Perioperative Program accreditation showcase “Sharing Our Successes”.
5. Casas Lopez C, Van Koughnett JA, Merrifield K, Koichopolos J, Halabi J, Herrick I, Arellano R, Batohi P, Burnette K, Devuono T. Enhancing teamwork in the Operating Room at University Hospital by implementing introductions and “My name and role is ... ” board to recall roles and names of people in the Operating Room. October 2018. QI project abstract in LHSC Perioperative Program accreditation showcase “Sharing Our Successes”.
6. Herrick I. Improving perioperative care transitions – making the handover better. Presentation of peer practice audit results. Department of Surgery, Quality Council. June 28, 2018.
7. Allen NJ, Casas Lopez C, Merrifield K. Departments of Psychology and Anesthesia, Western University — Teamwork: An evidence-based look at challenges and strategies for action teams. Anesthesia Grand Rounds, September 19, 2018.

Dr. Ian Herrick, Director
Ms. Kathie Baer, Program Coordinator

ANESTHESIA ASSISTANTS

The Fanshawe College Anesthesia Assistant (AA) Program had another successful year. Dr. James Watson stepped down as inaugural medical program director after 10 years but continues to play a pivotal advisory role. His dedication and diligence in establishing the program were recognized by Fanshawe College at a November advisory committee meeting. The Fanshawe program is one of only three English language programs across the country. Under Dr. Watson's leadership, it has proven durable and continues to attract students from across southern Ontario.

Paul Williams, RRT, continues as director of the program for the upcoming year. Paul has been very busy recruiting students, preparing coursework, coordinating with lecturers and clinical supervisors and doing much of the teaching himself. This year, Paul had enthusiastic assistance from Shaikib Naqshbandi, one of our UH Anesthesia Assistants who is himself a Fanshawe AA program graduate.

Many of our staff and senior residents are involved in the classroom teaching at Fanshawe. They deliver lectures on physiology, pharmacology and subspecialty anesthesia. They are also involved in simulation for the AA students at Fanshawe's AA simulation lab. The AA students consistently rate our staff and residents as excellent teachers and note the quality of teaching as a major strength of the program.

Ten students completed the program for 2017/18. Clinical placements were mostly in London but some students elected to do their placements closer to home in Kitchener, St. Catharines, Brantford and Toronto. The 2017/18 class was the first to write the newly-established national Anesthesia Assistant competency exam. We await the results. Seven students have enrolled for the 2018/19 program. Demand for AA graduates is strong across the country.

Plans for this upcoming year include preparing for accreditation of the program and establishing a clinical daily evaluation system. The students will be doing their clinical rotations - especially subspecialty rotations - in the spring and summer of 2019 throughout the London hospitals system.

Dr. Mohamad Ahmad
Director

CARDIAC ANESTHESIA

Several new members joined the Cardiac Anesthesia group this year. Dr. Ashraf Fayad joins us from Ottawa. He brings a wealth of knowledge in transesophageal echocardiography to the group. In addition to his role as the Site Chief of University Hospital, he is the Senior Lead of Perioperative Echocardiography. The Program also welcomed Dr. Keita Sato and Dr. Satoru (Ray) Fujii as two new consultants to the group. Both have been Cardiac Fellows for the last two years in our center and both are now pursuing further research training in Master of Sciences programs.

Over the last year, members of the Cardiac Anesthesia Program provided tertiary and quaternary clinical services at the University Hospital and the Victoria Hospital to patients undergoing cardiac surgical and catheter-based procedures. These included: coronary artery bypass graft surgery, cardiac valve repair/replacement surgery, minimal access approaches to valve surgery, robotic cardiac surgery, heart transplantation, left/right ventricular assist device implantation, extracorporeal membrane oxygenation therapy, Mitraclip procedure, transcatheter aortic valve implantation (TAVI) procedure, catheter based electrophysiological ablation procedures, and catheter based atrial septal defect and left atrial appendage closure procedures. In addition, cardiac anesthesiologists and surgeons teamed up with vascular anesthesiologists and surgeons to provide complex reconstructive aortic surgery to high risk patients.

In 2018, Dr. Suzanne Flier organized the biannual multidisciplinary grand rounds on perioperative care of cardiac surgical patients. These grand rounds are open to the departments of anesthesia, cardiac surgery, cardiac surgery recovery unit and clinical perfusion with two main objectives. 1) Use past cases in the light of evidence-based medicine to learn and further our shared knowledge. 2) To strengthen interdepartmental relationships.

Anesthesia residents participate in one block rotations in cardiac anesthesia. A new resident curriculum featuring case-based learning is being implemented to supplement the clinical experience that the rotation provides. In addition, the program hosts electives in transesophageal echocardiography for anesthesia and off-service residents. The Cardiac Anesthesia Program runs a robust fellowship program that attracts high quality anesthesiologists from national and international centers who join us to learn subspecialty skills. Three morning teaching sessions per week prepare fellows for the National Board of Echocardiography Advanced Perioperative Transesophageal Echocardiography examinations that they write each July. Fellows benefit from weekly afternoon didactic sessions dedicated to discussing topics related to cardiac anesthesia and TEE. These sessions are coordinated by cardiac anesthesia consultants, perfusionists, cardiologists and cardiac surgeons according to the topic and area of expertise.

Our curriculum includes 25 cardiac anesthesia subjects and 22 TEE lectures. Five interactive workshops have been scheduled this year as well. Fellows are all active in conducting research and education projects promoting the academic productivity of the cardiac anesthesia program.

In other exciting news, Dr. John Murkin was selected to be President of the Minimally Invasive Extracorporeal Technology International Society (MiECTiS) in June 2018 and was voted convenor and Chair of the 2020 MiECTiS meeting now to be held here in London. His research abstract on the microcirculation in critically ill patients won the Critical Care Award at the 2018 CAS meeting. His research on cerebral NIRS has fostered new collaborations with investigators at Lawson Research resulting in a novel AMOSO submission and a CIHR grant in preparation.

From a leadership standpoint, Dr. Daniel Bainbridge stepped down in July as the Director of the Cardiac Anesthesiology Program when he assumed his role as President of the Canadian Anesthesiologists' Society. The Cardiac Group members would like to extend their sincere thanks and appreciation for Dr. Bainbridge's leadership, leading the program to where it is today. In the meantime, Drs. Arellano and Granton have served as Directors of the Cardiac Anesthesiology Program until a new program lead is selected. Dr. Hilda Alfaro was named as the Director of the Cardiac Fellowship Program this past year. She takes over from Dr. Anita Cave who is now the Postgraduate Medical Education Program Director. The Cardiac Anesthesia Members would also like to thank both Anita and Hilda for their work continuing to develop an excellent curriculum for the cardiac fellowship program.

Dr. Jeff Granton & Dr. Ramiro Arellano
Directors

CSRU & CRITICAL CARE

The Cardiac Surgery Recovery Unit (CSRU) is a 14 bed critical care unit that specializes in the care of post-operative cardiac surgery patients. The CSRU is one of three teaching intensive care units under the leadership of the Critical Care Western.

Each year we care for over 1400 patients that undergo Cardiac Surgery including: on and off pump coronary bypass, valve replacements, heart transplantation, minimally invasive and robotic cardiac surgery, complex aortic reconstruction, trans-catheter valves and ventricular assist device placement.

This unit has state of the art equipment to meet the complex needs and fast track recovery of our cardiac surgical patients.

The CSRU is staffed by critical care physicians with backgrounds that include cardiac anesthesiology, critical care medicine, and cardiac surgery. Resident trainees from anesthesia, cardiac surgery, cardiology, and critical care rotate through the unit along with cardiac anesthesia fellows. The CSRU has an Advanced Practice Nurse who works within the unit and provides a key link between the CSRU and Cardiac Surgery ward.

The CSRU provides excellent experience in postoperative cardiac surgery care both clinically and academically. One and two year Fellowship opportunities are available within the unit.

Dr. Jeff Granton
Director



NEUROANESTHESIA

Neuroanesthesia provided care to a total of 1121 patients in Neurosurgery and 232 patients in Interventional Neuroradiology at University Hospital in 2018. The vast majority of neurosurgical patients received care by a subspecialty trained member of the dedicated neuroanesthesia team.

In 2018, the neuroanesthesia team consisted of nine members: Drs. Miguel Arango, Jason Chui, Rosemary Craen, Daniel Cuillerlier, Mauricio Giraldo, Ian Herrick, Rudy Noppens, Sonja Payne and Tim Turkstra. Dr. Sonja Payne is our newest member of the group and joined LHSC in November 2018. Dr. Carla Todaro from Italy, Dr. Aldo Espinosa Tadeo from Mexico and Dr. Sujoy Banik from India are currently doing their fellowship training in Neuroanesthesia. A total of eight residents completed their rotation in the sub-specialty of Neuroanesthesia at University Hospital.

Administrative support in 2018 was provided by Sherry Gorog and Courtney Harper.

The Neurogroup for 2018 was organized as follows:

Program Director: Dr. Rudy Noppens

Fellowship Program: Dr. Rudy Noppens

Neuro-monitoring Program: Dr. Jason Chui

Quality Improvement: Dr. Rudy Noppens

Research : Dr. Jason Chui

Rounds organization and curriculum development: Drs. Aldo Espinosa Tadeo, Maurico Giraldo

Advisory and Support: Drs. Miguel Arango, Rosemary Craen, Ian Herrick, Sonja Payne, Tim Turkstra

Education for Staff, Fellows and Residents

Neurorounds were organized by Dr. Giraldo and Dr. Espinosa Tadeo. During the last year, most major topics from the field of neuroanesthesia were covered, and our journal clubs covered the most recent scientific articles. This year, Drs. Giraldo and Espinosa Tadeo made a great effort to develop a curriculum to meet the requirements of the SNACC and to have a greater participation of other specialties involved in different areas of neurosciences. Most of the teaching activities are available online for residents, fellows, and staff.

Research

Dr. Jason Chui continued to organize monthly research meetings in order to bundle research efforts and to individually support specific activities. Current research activities are in the field of acute subarachnoid hemorrhage, stroke, airway management, high flow nasal canula oxygenation for awake craniotomy, neuromonitoring and basic science projects with a focus on an Alzheimer's animal model.

Quality Improvement

Neuroanesthesia participates actively in the interventional acute stroke treatment. An interdisciplinary approach was created in order to improve an effective and timely treatment. A quality improvement program has been initiated with the goal to constantly improve patient care in this field. Over 240 patient charts were reviewed to identify factors that could improve patient outcomes.

Neuromonitoring

The department of anesthesia offers intraoperative neuromonitoring services in the operating room and radiology suite. A Cascade Elite INOM device is available and is operated and maintained by neuroanesthesiologists Drs. Chui and Giraldo. A total of 30 patients at high risk for neuronal injury were monitored using SEP, EMG and EEG during procedures.

Fellowship Program

Fellows in neuroanesthesia are exposed to a wide variety of neurosurgical procedures, including stereotactic surgery, endoscopic neurosurgery, craniotomies for tumors and hemifascial spasm, carotid endarterectomy, and spinal instrumentation. Fellows also have the opportunity to learn how to use Transcranial Doppler, Cerebral Oximetry, Evoked Potential and EEG monitoring during surgery. Neuroanesthesia fellows usually work together with an experienced neuroanesthesiologist on these cases. The 1:1 ratio allows a great learning experience. Fellows have the opportunity to participate in research projects and are expected to actively participate in neuro rounds and research meetings.

Dr. Ruediger Noppens
Director



OBSTETRIC ANESTHESIA

The Obstetric (OB) Anesthesia Subspecialty group members actively provided clinical care, education, research and quality improvement this past year. The OB Anesthesia program is located in the Grace Donnelly Pavilion at Victoria Hospital, London Health Sciences Centre.

Clinical care

This past year, there were approximately 5,600 deliveries. A 24h labor epidural service is provided by the group and the epidural rate was approximately 85% with reassuring efficacy. The cesarean delivery rate was 23% and almost 90% were completed with neuraxial anesthesia. Elective cesarean sections continued to be carried out three days a week, by a separate team not covering labor and delivery. OB Anesthesia Preadmission Clinics occurred weekly.

Members actively participated in OB committees and multidisciplinary case conferences. Dr. S. Katsiris continued as the Anesthesia representative on the Maternal and Perinatal Death Review Committee for the Chief Coroner of Ontario and provided members with redacted reviews of recent cases for learning. Dr. K. Marmai is our representative on the hospital-based OB Neonatal Quality Review Committee and Dr. M. Gros is our anesthesia member on the local Perinatal Collaborative Council.

Education

Resident/Fellow Education

Residents continued to do two 1-month rotations and these rotations are coordinated by Dr. P. Batohi. Drs. M. Terlecki and T. Symons started their fellowships in July and are supervised by Drs. McConachie and Singh. The Education committee members include Drs. Al-Areibi, Kumar, McConachie, Sai, and Sebbag. This past year, they formalized the fellowship curriculum and designed an assessment form. As well, they were successful in having our fellowship added to the SOAP fellowship directory, found on the SOAP website.

Weekly OB Anesthesia teaching rounds continued to be provided to trainees by all members of the subspecialty group. This past year, weekly PBLDs were also started. Teaching rounds and PBLDs are organized by Dr. Kumar. The Wednesday afternoon resident academic OB anesthesia lectures were given this past year by Drs. Batohi, Gros, Kumar, Marmai, McConachie, Sai, Sebbag, and Singh.

CME accredited Journal Club, coordinated by Dr. Sai, occurred five times in 2018 and presenters included Drs. Bae, McConachie, Terlecki, Subramani, and Symons.



Faculty members attend the Society for Obstetric Anesthesia and Perinatology (SOAP) Annual Meeting.

Critical Case Reviews, coordinated by Drs. Sai and Sebbag, were started in 2018 and presenters included Drs. Sai and Terlecki.

Interdisciplinary Simulation Sessions, coordinated by Dr. A. Antoniou, continued to run sessions throughout the year. Residents from Anesthesia and OB, nurses and respiratory therapists participated in scenarios focused on Crisis Resource Management skills, such as communication, leadership, task delegation, situational awareness and resource allocation. Plans are underway to incorporate more in-situ simulation into the program.

Invited Lectures:

- Dr. A. Al-Areibi gave a course, Decision making in Obstetric Anesthesia, in Libya.
- Dr. S. Dhir gave lectures on Valvular lesions and pregnancy, congenital heart disease and pregnancy, and massive hemorrhage, and presented obstetric cases for discussion at Guyana Public Hospital during her CASIEF sponsored project this past summer.
- Dr. I. McConachie presented “What’s new in Obstetric Anesthesia?” at Obstetric Grand Rounds, at Victoria Hospital. He also gave a lecture, “The morbidly obese parturient having caesarean section” and instructed a workshop, Management of the collapsed parturient, at the 11th National Conference of the Association of Obstetric Anaesthesiologists in India.
- Dr. R. Sai presented “Loss of Consciousness during Cesarean Section” at the Ontario Anesthesiologists meeting.
- Dr. I. Singh spoke about “The anesthesiologist’s role in reducing maternal morbidity & mortality” and instructed at workshops about the management of PPH and preeclampsia at CRITICARE 2018 in India.

Research

Multiple projects led by Drs. Dhir, McConachie, Kumar, Sai, Sebbag, and Singh are ongoing. Dr. I. Sebbag is the research coordinator for the group.

Abstracts Presented (presenter italicized):

Joschko A (resident), Qasem F, Tawfic Q, Singh S. Efficacy of simple questions in predicting labor pain & epidural analgesia requirements. CAS annual meeting.

McConachie I, El-Saharty A, Singh S. Development & Implementation of a clinical pathway for super-morbidly obese parturients having CS. SOAP annual meeting.

Qasem F (fellow), Tawfic Q, Joschko A, Singh S. Efficacy of simple questions in predicting labor pain & epidural analgesia requirements. SOAP annual meeting.

Qasem F (fellow), Hegazy A, Fuller J, Lavi R, Singh S. IVC assessment in pregnancy using US: a feasibility study of subxiphoid & RUQ views. SOAP annual meeting.

Singh S, Subramani Y, Al-Areibi A. Anesthetic management of parturients with severe aortic stenosis: a compendium of cases from the literature. SOAP annual meeting.

Subramani Y, Al-Areibi A, Singh A. Anesthetic management of parturients with severe aortic stenosis: a compendium of cases from the literature. ASA annual meeting.

Publications:

Antoniou A, Marmai K, Qasem F, Cherry R, Jones P, Singh SI. Educating anesthesia residents to obtain and document informed consent for epidural labor analgesia: Does simulation play a role? Int J Obstet Anesth; 2018 May; 34:79-84.

Ni L, Elsharty A, McConachie I. Cesarean birth – what’s in a name? Int J Obstet Anesth 2018; 34 : 5-9.

Sebbag I, Tang R, Gunka V, Sahota J, Vaghadia H, Sawka A. [Effect of table tilt and spine flexion-rotation on the acoustic window of the lumbar spine in pregnant women]. Rev Bras Anesthesiol, 2018 May 1; 68 (3): 280-284

Vedagiri Sai R, McConachie I. What’s new in Obstetric Anesthesia and Analgesia. 8th Year Book of Anaesthesia. Jaypee Brothers Medical Publishers, New Delhi, India, 2018.

Wada K, Charland LC, Bellingham G. Can women in labor give informed consent to epidural analgesia? Bioethics. 2018 Oct 25. [Epub ahead of print]

QI Initiatives.

Two projects were undertaken this past year. Dr. Sai is the QI coordinator for the group:

•El-Saharty A, McConachie I, Singh S. Development of a Clinical Pathway for super-morbidly obese parturients having CS.

•Alvi S, Chau B, Sai R, Singh S. 1 year audit of PDPH and management.

Dr. Indu Singh
Director



Dr. Joanne Douglas, Clinical Professor Emeritus in the Department of Anesthesiology, Pharmacology and Therapeutics at UBC, joined us for a special guest lecture. Her presentation, “The Evolution of Anesthesia – A Personal Journey,” helped to celebrate World Anesthesia Day, commemorating the first successful demonstration of ether anesthesia on October 16, 1846.

PALLIATIVE MEDICINE

The Department of Anesthesia & Perioperative Medicine endorses the practice of Palliative Medicine and promotes Palliative Care resident education, with the support of the, Schulich School of Medicine & Dentistry, Western University. The palliative service considers an approach to symptom management and goals of care and treatment options for patients with life threatening and/or life limiting illnesses. Resident education is supported by the Palliative Care community, and in particular the London Home Palliative Care team (LHPC). The LHPC is spearheaded by Dr. Kirk Hamilton, who facilitates palliative care learning in the home setting. These patients have a wide variety of cancer and non-cancer (ALS, COPD, CRF, CHF, dementia, MS etc.) end stage illnesses, which allow the residents an exciting and unique opportunity to learn how to manage a wide range of clinical scenarios. Dr. Valerie Schulz is available to guide Palliative Care clinically at University Hospital in the Medical-Surgical Intensive Care Unit, the Cardiac Surgery Recovery Unit, and the Renal Dialysis Unit, within the Heart Failure Care Team and the Pre-Admission Clinic, for patients with palliative needs.

Locally, Dr. Schulz is taking a leadership role in discussions regarding the assessment of frail patients in the peri-operative period. These discussions are advancing with the support of Peri-operative Care leadership, clinical expertise drawn from Geriatric Medicine, Surgery, and Anesthesiology, and St. Joseph's Health Care London, and London Health Sciences Centre administrations. The purpose of assessing frail patients in the peri-operative period is to collaboratively explore care options across their trajectory of care from community, through surgery and to the best location after surgery. Nationally, Dr. Schulz is a member of the inaugural Palliative Medicine Specialty Exam Committee and acknowledged as a Founder of Palliative Medicine at the Royal College of Physicians and Surgeons of Canada.

Drs. Gofton, Sarpal, and Schulz, are collaborating on a multi-year education project, titled: Implementation of a Cross-Discipline Palliative Care Curriculum for Postgraduate Medical Residents at Western University. Our aim is to integrate discipline-specific palliative approaches to care within the core curriculums of Clinical Neurological Sciences, Pediatrics, Critical Care, and Anesthesia. This research has been supported by AMOSO.

Dr. Valerie Schulz
Director



PEDIATRIC ANESTHESIA

The pediatric anesthesia program had another productive year in 2018.

Academically, we continued our Thursday morning teaching rounds and Monday afternoon journal clubs now under the direction of Dr. Sommerfreund. Drs. Fantillo and Sommerfreund remain deeply involved in exam preparation for our residents and Dr. Fantillo will become a Royal College Examiner in 2019.

For the first time, pediatric consultants were also involved in core teaching sessions for the Pediatric programs. I gave a lecture on pediatric anesthesia and Dr. Poolacherla gave a lecture on pediatric pain management. Dr. Sommerfreund continued his involvement with the pediatric simulation program working with residents from multiple programs.

Dr. Biswas initiated a series of afternoon talks on pediatric nerve blocks which also included live ultrasound demonstrations. The first was multidisciplinary and was attended by over 30 participants from multiple pediatric services.

The “It Doesn’t Have to Hurt” conference, organized by Dr. Poolacherla, was held on February 1 at the Sumner Auditorium. It was well attended by over 100 staff involved in pediatric care. We had two guest speakers from Halifax and Minnesota, as well as local speakers who shared their experiences in reducing the pain and trauma of children undergoing painful procedures.

We also gave multiple inservices to nursing staff and allied staff. New this year was our involvement in simulation for PACU and PMDU nurses at the Victoria Campus Gunning Simulation Centre. Also new this year was the introduction of pediatric anesthesia inservices for all operating room nurses and staff at Victoria Campus.



This past February, LHSC’s Comfort and Coping Strategy Team and the Pediatric Chronic Pain Program hosted their inaugural Pediatric Pain Conference. To date, this is the first conference of its kind in Southwestern Ontario, and the theme was #itdoesn’t havetoHurt : Why Pain Management Matters.

Multiple quality-improvement projects have been initiated under the leadership of Dr. Poolacherla and Dr. Shah. Drs. Biswas and Shah are involved in multiple research projects – some in collaboration with orthopedics, urology, and ENT. Dr. Sommerfreund is conducting a randomized control trial with ENT.

Clinically, we have a consistent volume of cases in the operating room. Out-of-OR work continues to increase with additional time made available for Interventional Radiology, MRI, and Minor Procedure Room this year. Our pediatric regional anesthesia volumes have increased with the establishment of the VH block room and the development of portable pediatric block carts.

Demand for pediatric neuromonitoring continues to increase with Drs. Simon and Sommerfreund providing this service at VH.

Dr. Takpal Sandhu joined our department this year. She completed her pediatric anesthesia fellowship in Ottawa and is interested in quality improvement and teaching.

Our goal is to recruit at least one more pediatric anesthesiologist within the next year. We continue to have talented residents expressing an interest in pediatric anesthesia and applying to fellowship positions. As I have stated in past reports, this is a very rewarding indicator that we are inspiring interest in pediatric anesthesia.

Finally, we had an external review of our pediatric program conducted at our request. Most of our pediatric group members participated along with colleagues from the wider department and hospital. We eagerly await the results that should certainly inform us in further developing the program.

Dr. Mohamad Ahmad
Director



Dr. Abhijit Biswas preparing for a nerve block.

REGIONAL & ACUTE PAIN

Perioperative Care

It is recognized that there is a need for improved perioperative care for those with complex pain issues. Leveraging the capacity of the divisions with expertise in Chronic Pain, Palliative Care, Regional Anesthesia, and Acute Pain is central to such an improvement. In 2018 Dr. Homer Yang our new chair/chief convened a “pain retreat”. This meeting allowed a number of faculty to explore options for a comprehensive pain management program. The intent of the CPMP is to create greater integration between Chronic Pain, Palliative Care, Regional Anesthesia and Acute Pain. Next steps are to create priorities for moving forward.

Regional Anesthesia

As reported previously, we now have regional block rooms at each site within the system. These clinical areas provide comprehensive learning opportunities for our trainees, and offer regional anesthesia for a greater proportion of patients. Beyond the clinical deliverables for regional anesthesia, there continues to be output on the academic side, with collaborative activities with a number of stakeholders. We do continue to have challenges with the variation in workflow from day to day.

One of the new aspects of the regional program is the growth of pediatric regional. New consultants to the pediatric group include Drs. Shah and Biswas. Both have training in regional anesthesia, and will have responsibility towards expanding the program for this group of patients. Dr. Biswas has also started pediatric regional anesthesia rounds.

In an attempt to foster growth and support our programs and clinicians we have established an Education subcommittee and Quality subcommittee. These committees will establish priorities in the area of education and quality. It is expected that this will help focus the time and energy of the regional group and be therefore more efficient and successful.

At SJHC, the clinical load of the Roth McFarlane Hand and Upper Limb Centre (HULC), results in a high volume of clinical work, educational opportunities, and research involving the brachial plexus. At UH the general surgery, orthopedic and plastic surgery populations provide a high volume of clinical work, educational opportunities, and research involving truncal blockade and lower limb regional analgesia. With recent changes in space allocation, the workspace has improved. At the VH site peripheral nerve blockade is provided for lower limb surgery in both children and adults, as well as truncal blockade for general, gynaecological and thoracic surgery.


Surgical Centre
C1-300

Pre-Admission

Admitting

Surgical Daycare

Lithotripsy



Dr. Collin Clarke

Learn more about his research featured on CTV News London

Dr. Collin Clarke was featured on CTV News London, discussing his research on Complex Regional Pain Syndrome. Newly diagnosed patients underwent MRI scans in order to see if there were any neurological changes.

Fellowships

Our fellow numbers vary between 2 and 3 per year. They get clinical experience in upper & lower limb, as well as truncal at all three block rooms. There are also opportunities to participate in research and quality improvement. Going to the annual ASRA meeting is supported and encouraged. Our fellows are expected to present their work in this environment.

Staffing

The current regional anesthesia group involved providers with subspecialty training in acute pain, chronic pain, and regional anesthesia. With the increase in regional anesthesia activity across the city, there is a need for consultants with skills in regional anesthesia. Having individuals with skills in multiple areas will be a consideration going forward.

Acute Pain Management

The clinical load at both UH and VH sites continue to be highly subscribed. There are 100 to 150 primary clinical visits per week by the APS team at both sites. Additionally there are supplemental visits by nurse practitioners and on call residents. As there is evolution in surgical minimally invasive techniques, the requirements for postoperative management has changed. Having said that, the number of patients with complex pain have increased. As mentioned above, the need for expertise in managing these patients is necessary if we are to provide optimal care for these individuals.

Nurse Practitioners Heather Whittle and Charlotte McCallum provide weekly coverage, and contribute greatly to a greater depth of care for the complex pain patients.

We continue to introduce care paths to improve the care of our patients. Recent examples are care path for those on pre-operative suboxone. Another is a mutually agreed upon standardized pain management orders for the arthroplasty group at UH.

Another is the Intensive Postoperative Pain Care (IPPC). This is an initiative to address the patient who 1) presents with chronic complex pain, 2) is likely to develop complex pain, or 3) who develops complex post operatively. The process is to have these patients receive some advanced care or suggestions from our chronic pain colleagues.

Dr. Kevin Armstrong
Director



Dr. Shalini Dhir, as part of CASIEF (Canadian Anesthesia Society International Educational Foundation) partnership with the Georgetown Public Corporation, spent a month in Georgetown, Guyana. She taught medical residents and reflected on her experiences on her blog - Shalini's Guyana Blog: <https://traveldocanesthesia.wordpress.com/>

THORACIC & VASCULAR ANESTHESIA

The academic Thoracic and Vascular Anesthesia Program continues to thrive and grow at an exponential pace in the Department of Anesthesia and Perioperative Medicine at Western University. Located at Victoria Hospital, it is an extremely busy program covering all types of complex elective and emergency cases, with the exception of lung transplantation.

Vascular surgery operates six times a week and thoracic surgery five times a week. We have monthly multi-disciplinary and morbidity and mortality rounds with our surgical colleagues to assure quality control and to keep up on current events.

The majority of vascular and thoracic patients coming through our institution have multiple co-existing diseases including severe cardiorespiratory compromise. These patients have an extensive preoperative evaluation by anesthesia and/or internal medicine, cardiology and respirology. We have developed a multi-disciplinary perioperative high-risk clinic for optimization and follow up of these patients. The Thoracic and Vascular Surgical Programs have their own postoperative step-down monitored units with invasive monitoring capabilities.

THORACIC SURGERY

The robotic (da Vinci robot) and video-assisted thoracic surgical (VATS) programs are well developed at our institution and currently account for 80% of cases, the remainder being open thoracotomies or investigative procedures. On average per year, we perform 300 major pulmonary resections and 80 esophagectomies. We have the largest experience with esophagectomies and VATS procedures in Canada. To enhance our clinical experience and improve our teaching program, we have developed an advanced VATS surgery and anesthesia workshop using a pig model. Here, consultants can enhance their skills in fiberoptic bronchoscopy and management of one lung ventilation. The pediatric thoracic anesthesia program has evolved with the recruitment of a pediatric thoracic surgeon. Pediatric thoracic procedures include investigative, video-assisted and open procedures. Alongside this is the adult and pediatric regional anesthesia and acute pain program, allowing for excellent perioperative pain management. The majority of our adult and pediatric patients receive thoracic epidurals or paravertebral blocks for postoperative pain management.

VASCULAR SURGERY

The Vascular Division of Surgery at Victoria Hospital continues to be a pioneer in endovascular stenting of abdominal and thoracic aneurysms and claims one of the largest series in North America. In April 2013, the construction of the hybrid vascular operating room was completed. This hybrid suite is equipped with numerous large, high-definition, flat-screen monitors for viewing images as well as the patient's vital signs. It combines the newest computer generated technology and the newest radiologic imaging in a sterile operating room environment. This gives the surgeons the ability to perform traditional, open surgery and minimally invasive, endovascular procedures on the same patient, at the same time, in the same place.

Patient benefits include the following:

- Shorter procedure times;
- Less radiation used during imaging;
- Reduced need for ICU care;
- Shorter hospital stays;
- Faster recovery.

Ruptured abdominal and thoracic aneurysms that have favourable anatomy are repaired by the endovascular route at our institution. The thoraco-abdominal aneurysm program is well developed and these aneurysms are now generally repaired using endovascular branched stents. The thoraco-abdominal aneurysms that cannot be repaired by using endovascular stents are repaired using partial left heart bypass. In conjunction with cardiac surgery, we are doing elephant trunk-type procedures and aortic arch aneurysm repairs, via the endovascular route. We use rapid ventricular pacing to optimize surgical conditions before stent deployment. On average per year, we perform 150 open abdominal aneurysm repairs, 35 endovascular thoracic, 150 endovascular abdominal and 12 endovascular thoraco-abdominal aneurysm repairs. Preliminary results of one of our studies have shown that spinal oximetry detects decreases in spinal cord blood flow early, allowing for the early initiation of preventive spinal cord protection treatment strategies. We presented our results on spinal cord protection strategies at the 2012 International Forum of Cardiovascular Anesthesia in China.

TRANSESOPHAGEAL ECHOCARDIOGRAPHY (TEE)

Our Transesophageal Program is well developed with formal daily teaching and multi-disciplinary weekly rounds. We have also acquired a new TEE machine with 3D capabilities. TEE is specifically available for management of thoracic aneurysm stenting and for adjunctive management of the vascular patient with associated cardiac disease. While not every anesthetist involved in vascular anesthesia is experienced in TEE, there is usually one anesthetist experienced in TEE available for guidance. Recently, we have added an intensive 2 week Cardiac TEE rotation for Fellows that are interested in becoming TEE certified.

POINT-OF-CARE ULTRASONOGRAPHY

Recently, we have acquired a new ultrasound machine for point-of-care ultrasonography for use in the perioperative period. We have an established basic and advanced teaching program for point-of-care ultrasonography for consultants, fellows, and residents.

RESEARCH PROJECTS IN PROGRESS

- The Role of Intraoperative Lidocaine Infusion in Preventing Chronic Post Surgical Pain After Video Assisted Thoracoscopic Surgery: Randomized Double- Blinded Controlled Study;
- Treatment modalities for spinal cord protection;
- Comparing Transcutaneous to Transdural Near-Infrared Spectroscopy for Detection of Regional Spinal Cord Ischemia in a porcine model;
- Biochemical markers of spinal cord ischemia in patients undergoing thoracic aortic endovascular repair;
- Inhaled milrinone during one lung ventilation in thoracic surgery: a feasibility pilot study.
- Efficacy of Serratus Anterior Plane Block in providing perioperative analgesia in adult patients undergoing non-emergent Video-Assisted Laparoscopic Thoracic Surgery-A randomized control trial.

RESIDENT TRAINING

Our Residency Program includes two four-week blocks of subspecialty training in vascular and thoracic anesthesia. Educational objectives are clearly outlined and monitored through daily assessments. Reading material is provided and residents are encouraged to partake in clinical research. At the beginning and the end of their rotations, the residents have an MCQ examination to assess improvement during their rotation. An oral examination is also administered at the end of the rotation.

FELLOWSHIP PROGRAM

Our Fellowship Program is well established with ongoing clinical research opportunities, in collaboration with our surgical colleagues. The program is one year in duration. Each week, the fellow will work two days independently in the operating room, one day in vascular and one day in thoracic with a consultant. The fifth day is for academic and research projects. The fellows are encouraged to attend x-ray rounds, thoracic/vascular rounds, fiberoptic bronchoscopy clinics and transesophageal rounds. Reading material is provided and fellows are encouraged to go to another centre for two weeks to broaden their experience. The Fellowship Program is extremely flexible, and is designed to accommodate the individual fellow’s needs.

SIMULATION

The integration of simulation scenarios on thoracic and vascular anesthesia for fellows and residents has been very successful and rewarding. This environment allows for better preparation in this clinically diverse patient population. We continue to develop in this frontier of enhanced learning.

SUMMARY

Overall, the Thoracic and Vascular Program at Victoria Hospital is a very busy program with an incredible variety of interesting and complex cases. It is constantly evolving to keep up with medical and technological advances and to ensure that patients receive the most optimal perioperative care currently available. The program offers excellent opportunities for fellows to become proficient in adult and pediatric thoracic/vascular anesthesia, transesophageal echocardiography and point-of-care ultrasonography both in a clinical and research setting. It is designed to meet the individual’s needs, along with the best exposure to the available clinical caseload.

Dr. George Nicolaou
Director

Clinical:

Liver transplantation program has maintained excellence in providing state of the art clinical care to the patients for liver transplantation, liver resections and major Hepato-biliary (HPB) surgeries. In 2018 the liver team managed 54 solo liver transplants and 6 combined liver & kidney transplants. The list included re-transplants and many critically ill recipients from the ICU. The donor livers were from:

- 1 Living related donor (LDLT)
- 10 Donations after Cardiac Death (DCD)
- 49 Neurologically dead donors (NDD)

Our team also managed more than 100 patients for major liver resections and major HPB surgeries.

The use of TEE during liver transplant is becoming popular practice. Most of the liver anesthesia team is trained and adept in its use. We are looking for the training pathways, passing basic TEE exam for the remaining members. We are thankful to the department for continued support for ‘TEE training’ of our members. We have also started using ‘Cell savers’ more often, to reduce blood transfusions. The team thanks the perfusion services for their support. Work is also in progress for establishing the guidelines, criteria and the protocol for the use of veno-venous bypass for this complex surgical procedure.

Liver team and call responsibilities:

Due to the complexity and long duration of liver transplantation, odd hours, and very sick patients, two qualified anesthesiologists are required to manage liver transplants. So far, the team had been relying on the fellows, the second consultant rarely being called in for help. However, one of the fellows did not join the program in 2018 due to personal reasons and the program was left with only one fellow, disrupting the work flow. The liver group decided to expand the team to 10 members and have two call lines (with or without the fellows).

We are pleased to have Drs. Sonja Payne, Hesham Youssef and Hussein Sadkhan join our group; they all have done one-year liver fellowships at LHSC.

We had a trial period of 1st and 2nd call lines for few months and it will become official from January 2019. There will be one in ten 1st and one in ten 2nd liver calls. This also will help maintain the minimum number of 10 transplants per consultant to maintain basic skills. This model not only will provide excellent clinical services but also help with the fatigue management in the team. The group consists of: Achal Dhiri (Director), Anthony Vannelli, Marc St-Amand, Ramiro Arellano, Phil Jones, Steve Morrison, Nelson Gonzalez, Hesham Youssef, Hussein Sadkhan and Sonja Payne. Team members attend Transplant rounds and also participate in ‘Liver assessment’ and ‘M & M’ rounds conducted by Transplant surgeons & Hepatology colleagues.

Academic activities:

Despite busy schedule, our program has been able to conduct liver PBLDs and attend Hepato-biliary rounds on a regular basis. Following is the list of liver projects and individual members’ academic and administrative commitments to the department:

Projects:

1. The manuscript of the completed project of ‘Associating liver partition and portal vein ligation for staged hepatectomy (ALPPS): The anesthetist’s perspective’ has been submitted to the CJA.
2. The writing of manuscript of the completed project of “Infusion of ketamine and Lidocaine for pain management after major liver resection’ is underway.
3. The project of ‘Handovers of liver transplant recipients from the OR to the ICU’ is in completion stages
4. The project of ‘Pain following liver transplantation’ is also being written for possible submission.

TRANSPLANT ANESTHESIA

Individual members' academic activities and contributions to the department:

Arellano, Ramiro:

- Site chief (UH) until Sept. 2018
- Interim Cardiac program director, July – October 2018
- Moderator: "New Directions" at the ILTS Perioperative Care in Liver Transplantation Meeting, Oct 12, 2018 San Francisco.

Dhir, Achal:

Visiting Professor:

- 'Anesthesia challenges during orthotopic liver transplantation', May 9, 2018. King George's Medical University, Lucknow, UP, India
- To review and discuss 'Establishing TEE for liver transplant and other academic activities' at the Institute of Liver and Biliary Sciences (ILBS), Delhi, India, August 2018.

Invited lectures:

- 'Coagulation in liver disease' January 2018, 36th Anesthesia international symposium: Clinical update in Anesthesiology, Surgery and Perioperative Bahamas
- 'HIT and heparin resistance – how has the landscape changed. Feb. 2, 2018, IACTA, Hyderabad, India
- 'VV Bypass and cell savers in liver transplant: Is it relevant today? TRANCrit, May 13, 2018, ILBS, Delhi, India

Chairperson: Feb. 12, 2018, IACTA, Hyderabad, India

Manuscript reviews:

- Annals of Cardiac Anesthesia: 6
- Journal of Cardiothoracic and Vascular Anesthesia: 5
- Journal of Cardiothoracic surgery and therapeutics: 1

Editorial Board:

- Annals of cardiac Anaesthesia
- IACTA Echo library

Cardiac Fellows' lecture:

- Congenital Heart Disease. June 12, 2018

Jones, Phil:

- HSREB Vice Chair
- Associate Editor, CJA
- Cross appointed to Epi/Biostats (only physician in the dept.)
- Successful primary supervision of a MSc epidemiology & biostatistics student Jeffrey Chow (only clinician in the Dept. to supervise a MSc student)
- Teaching three sessions of fall Introduction to Clinical Epidemiology course (MSc and PhD students in faculty of Epi/Biostats)
- Core member of CAS Research committee
- Member of Graduate Affairs committee of Epi/biostats

Morrison, Steve:

- Associate Program Director - Post Graduate Medical Education
- Post Graduate Medical Education Committee Member
- CBME Competence Committee Member
- Resident Oral Exam Preparation Committee Member
- Chronic Pain Medicine Residency Committee Member
- Financial Management Committee Member
- Simulation Group Member - involved with CanNASC and Multidisciplinary Sim with ENT
- Designed and Organized Hepatobiliary Elective Resident Rotation

Payne, Sonja:

- Submitted the 'ALPPS' manuscript to CJA
- QI representative and lead for the liver group
- Assisting PGE committee with the CBD.

Sadkhan, Hussein:

Pain:

- Conducted an APS orientation session for new anesthesia faculty August 18, 2018.
- Established and moderated first Pain PBL Nov. 15, 2018
- Interviewer for APS fellow selection process for July 2019 positions.
- Research project: Pain management after breast reconstruction and DIEP Flap. REB-approved and finishing collecting data.

Quality Improvement and Patient safety:

- Enrolled in Masters' degree in 'Applied Science in Quality Improvement and Patient Safety' at John Hopkins University.
- Committee member, Quality assurance in the Department.
- Mentor for Medical Students Year 2 for their Leadership and Quality improvement group project, academic year 2018-2019.
- QI project (Home Multimodal Analgesia for patients undergoing TKA). Still in the first cycle.

St-Amand, Marc:

- Finance Management Committee chair
- Royal College Exam board peer assessor
- Previous Royal College Examiner
- Dept. internal practice examiner

Youssef, Hesham:

- Member of the Planning Committee of the CAN-AM Clinical Anesthesia conference.
- Member of the academic half day subcommittee.
- Academic Advisor for three PGY1 residents
- Oral Exam Preparation for PGY5.
- Academic half day for residents.

Dr. Achal Dhir Director



POSTGRADUATE EDUCATION

Western's Anesthesia Residency program barreled into 2018 faced with the continuing challenges of being one of the first specialties to implement Competence By Design with our Junior Residents concurrently with three Senior non-CBD cohorts. Throughout this process, we have dedicated ourselves to maintaining exemplary standards of excellence while approaching competency based medical education with the innovative spirit that has made our program a recognized leader in Anesthesia research and education.

Our faculty and staff have faced these transitional challenges with a continued commitment to providing outstanding clinical and educational experiences for our learners, and by cultivating a dynamic service environment of quality patient care.

We look forward in the coming year to the integration of innovative training partnerships and the continued expansion and enhancement of the exceptional learning opportunities that are highly valued by our residents.

Program Leadership

With clear goals of aspiring for excellence and providing the highest quality training structure and environment, we continue to design optimal opportunities for our trainees to earn their place amongst the most qualified clinicians and educators in the profession. We nourish a culture of continuous improvement and have developed our administrative structure to systematically evaluate and revise content and quality.

The staff and resident members of the Core Post Graduate Education Committee and Subcommittees continue to play an important role in all aspects of our training program and their contributions are an important factor in creating our collegial educational environment. These subcommittees include:

- Assessment Subcommittee
- Academic Mentoring Subcommittee
- Academic Half Day Subcommittee
- Royal College Examination Preparation Subcommittee
- Quality Improvement Subcommittee
- Resident Wellness Subcommittee

Education

With a talented team of 38 program residents, we provide the highest level of medical training nurtured by an interdependent learning environment, and welcomes trainees from other services including the Physician Assistants from the Canadian Forces.

As early adopters of the Royal College of Physicians and Surgeons of Canada Competence By Design initiative, this past year saw the inauguration of the Anesthesia Resident Competency Committee, the nucleus of the CBME paradigm. Tasked with the overarching evaluation and promotion of Anesthesia residents, the faculty members of this neoteric effort have devoted countless hours to refining a matrix of assessment that provides a robust representation of all aspects of resident learning. The next year will see the refinement of these methodologies and the harmonization of a systematized process of evaluation that will benefit both assessors and learners.

We maintain and strengthen our leadership at Western in simulation and training in Crisis Resources by highly skilled educators who maintain an unparalleled level of excellence and who are also involved nationally in developing the Canadian Simulation program. With the advent of CBD and the new place of simulation as a summative assessment tool, our consultants are investing significant time and energy in creating a focused curriculum.

Our department offers a wide variety of subspecialty training opportunities in anesthesia, with a large case volume which allows us to be among the top Canadian training programs in resident clinical exposure.

In addition, our residents regularly participate in national and international electives, including medical missions, such as Operation Walk and Mercy Ships, with ongoing support from faculty and departmental leadership.

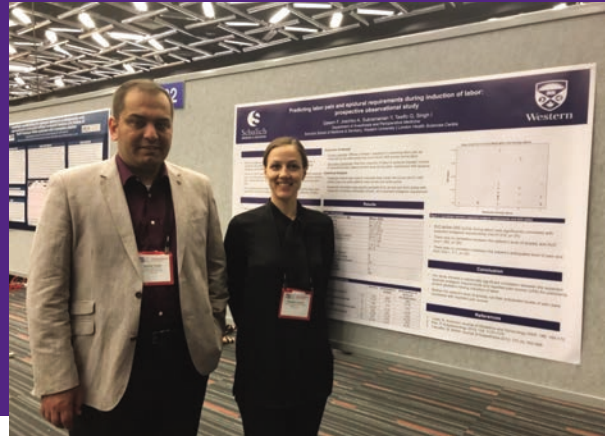
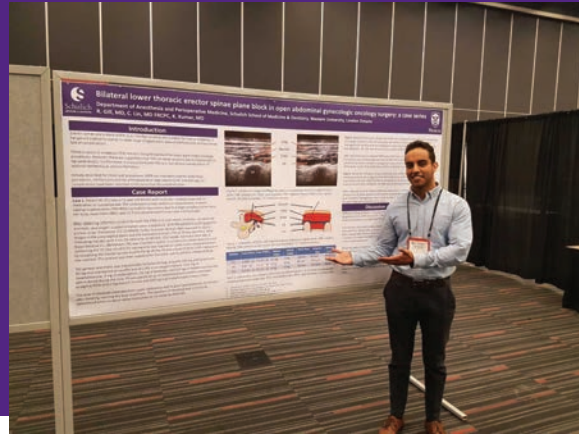
Research

Our trainees continue to pursue and work on high quality research projects which they have presented at both the national and international level. We are committed to supporting and encouraging resident research and provide administrative and financial support to all residents who are participating in research projects, including in-training Masters degrees.



Four Western residents braved ice storms and broken bridges to take part in the 2018 MARC conference in Cincinnati. Zach Hynes (PGY4), Beth Oeming (PGY5), Osama Sefein (PGY4) and Dan Szoke (PGY4) all gave poster presentations at this year's resident research competition, and brought home 2 prizes. All the four residents produced superb presentations that were a credit to them and their supervisors.

Sunny Gill, Qutaiba Tawfic, and Abigayel Joschko at the CAS Annual Meeting.



MARC 2018

MARC is an annual conference, sponsored by the Association of Midwest Academic Anesthesia Chairs (AMAAC). This year, Cincinnati welcomed 584 conference attendees, with representatives and residents from all 33 AMAAC institutions. Residents from each clinical-academic center participated in numerous research competitions during the conference. Congratulations to this year's Midwestern Anesthesia Conference presenters Zach Hynes, Bethany Oeming, Osama Sefein and Daniel Szoke.

McMaster-Western Research Day

This year, Western residents swept the podium! Congratulations to Dr. Matt Chong (1st), Dr. Zameer Pirani (2nd) and Dr. Zach Hynes (3rd). A prelude to, and practice for, the Canadian Anesthesiologists' Society Research Competitions in June, this competition continues to be an enriching and rewarding opportunity for our residents to examine different research and presentation methods (oral presentation, poster, case reports) and gain a broader scope of research in Anesthesia.

Canadian Anesthesiologists' Society (CAS)

At this year's Annual Meeting of the Canadian Anesthesiologists' Society (CAS) in Montreal, Quebec, from June 15-18, our department was represented by Dr. Rajwinder Gill and Dr. Abigayel Joschko.

Residents and Research Projects:

Matt Chong (PGY5) – Perineural Versus Intravenous Dexamethasone as an Adjuvant for Peripheral Nerve Blocks: A Systematic Review and Meta-Analysis

Sunny Gill (PGY4) – Bilateral lower thoracic erector spinae plane block in open abdominal gynecologic oncology surgery: a case series

Zach Hynes (PGY4) - Finding the Dose of Protamine Required to Neutralize Heparin in Cardiac Surgery Using ACT, ANTI-LIA, and Anti-XA Activity – Results of a Pilot Study

Abigayel Joschko (PGY3) - Predicting epidural requirements for induction of labor

Bethany Oeming (PGY5) - Global Health Opportunities During Anesthesiology Residency Training - A Canadian Perspective

Zameer Pirani (PGY2) - The Role of Intravenous Lidocaine in the Management of Chronic Peripheral Neuropathic Pain- A Randomized Controlled Trial

Dan Szoke (PGY4) - Dexamethasone as an Adjuvant for Caudal Blockade in Pediatric Surgical Patients: A Systematic Review and Meta-Analysis



Western residents swept the podium with 1st, 2nd and 3rd place prizes at the 2018 MacWestern resident research competition.

A special thank you to our.....

Program Director: Anita Cave

Associate Program Director: Andreas Antoniou and Stephen Morrison

Education Coordinators: Lori Dengler and Linda Szabo

Research Coordinator: Jon Brookes

VH Site Coordinator: Stephen Morrison and Nathan Ludwig

UH Site Coordinator: Hilda Alfaro and Jonathan Borger

SJHC Site Coordinator: Kristine Marmai

Simulation/IT: Richard Cherry

Chief Resident: Zach Davidson

Senior/Junior Representatives: James Pius and Kevin Braden

Fellowship Coordinator: Miguel Arango

Competence Committee Chair: Michelle Gros

Academic Mentoring Subcommittee Chair: Jeff Granton

Evaluation Subcommittee Chair: Melissa Chin

Examination Preparation Subcommittee Chair: Michelle Gros and Sandra Katsiris

Resident Wellness Subcommittee Chair: Pravin Batohi and Kristine Marmai

Academic Half Day Subcommittee Chair: Bill Lin

2018 Graduates

In June, we honoured 10 graduating Residents: Drs. Ranjana Bairagi; Hasan Behbehani; Michael Chow; Dalal Dahrouj; Kyle Fisher; Caitlin Gallagher; Luke Jakobowski; Danielle Lapierre; Lina Lee and Magda Terlecki.

RESIDENTS

Abdulrahman Alboog PGY2
Sandy Bae PGY2
Juliana Barrera-Ramirez PGY1
Jillian Belrose PGY3
Sebastien Borowiec PGY4
Kevin Braden PGY2
Lukas Brown PGY5
Sonny Cheng PGY1
Matt Chong PGY5
Zach Davidson PGY5
Nachiket Deshpande PGY2
Mark German PGY4
Sunny Gill PGY4
Byron Gottschalk PGY1
Malcolm Howard PGY1
Zachery Hynes PGY4
Abigayel Joschko PGY3
Katelyn Komsa PGY1
JP Larkin PGY2
T.J. Leeper PGY5
Annie Li PGY1
Jordon Lui PGY2
Allison Mackenzie PGY3
Natalie Melton PGY5

Kaylyn Merrifield PGY4
Kiarash Mohajer PGY5
Bethany Oeming PGY5
Derek Paradiso-Shaw PGY3
James Pius PGY3
Zameer Pirani PGY2
Osama Sefein PGY4
Takis Tryphonopulos PGY5
Daniel Szoke PGY4
Amanda Wen PGY1
Curtis Van Doormaal PGY1
Megan Woods PGY2
Namrta Yashpal PGY2
Dan Annie Zhu PGY1

Pain Medicine Residents

Abdulghader Alfasi PGY7
Nicolas Beaudoin PGY6
Scott Cook PGY7
George Deng PGY6



2018 PGY1 Residents

COMPETENCE BY DESIGN

Along with anesthesiology programs across the country, we launched Competence by Design (CBD), the Royal College of Physician and Surgeons of Canada's version of competency-based medical education, in July 2017. In our second year of the transition for the 2018-2019 academic year, we currently have 17 residents in the CBD stream which is just under half of our entire number of residents.

Continuing with implementing this change, there have been introductory faculty development workshops with all materials created in-house, continuous quality improvement measures via feedback surveys from the residents to include measures based on their suggestions like modifying our preceptor evaluations, the inclusion of certain fellows for assessing entrustable professional activities (EPAs), and adapting to the system barriers by modifying the Competence Committee expectations for EPA numbers. The other changes we introduced in 2017 to ensure a smooth orientation period were maintained based on resident feedback.

Our inaugural cohort has done the unenviable job of handling the stresses of residency in general along with blazing the path for everyone to follow after them and I thank them for their wonderful efforts and resilience.

I am amazed and grateful to our faculty for their commitment to this process as evidenced by our 87% completion rate for over 2300 EPA assessments requested by CBD residents since we launched!

Looking forward, two big changes will be the revision of our specialty's EPAs and incorporating them into our curriculum and switching our electronic platform to Elentra to standardize across all Schulich programs.

Dr. Jennifer Vergel de Dios
Competence by Design Lead

Every year, the Canadian Association of Medical Education (CAME) awards the Certificate of Merit to recognize and reward outstanding faculty who are committed to medical education in Canadian medical schools.

For 2018 one of the CAME Certificate of Merit award recipient's is Department Assistant Professor, Dr. Jennifer Vergel de Dios. Since joining the Department, Dr. Vergel de Dios has been instrumental in the development and implementation of Competency By Design (CBD) for the Department's postgraduate program.



PAIN MEDICINE RESIDENCY

In 2018 we have continued progression of our residency program. Once again we filled our two annual funded PGY6 entry positions via the CaRMS match and welcomed a physiatrist and an anesthesiologist on July 1.

As reported last year, enhanced funding to our pain clinic from the Ministry of Health and Long Term Care allowed us to expose our residents to more multidisciplinary care of chronic pain patients.

Our residents this year have been fortunate to work in a clinic with a variety of health professionals including psychologists, occupational and physical therapists, social workers, pharmacists, and nursing staff. This multidisciplinary environment promotes this model of care since both of our residents who went into practice chose to adopt this same standard in their new practices.

In June and again in October we said farewell to graduates who went on to their own practices in Vancouver and Prince George, British Columbia as well as Kitchener, Ontario. It is with great pleasure that we watch them establish themselves as accredited subspecialists in their communities. We are seeing our goals realized of training leaders of best practices in pain medicine serving communities across Canada.

Pain Medicine residents have also continued to produce innovative scholarly projects during their training. Projects include the development of interventional pain management simulation devices for spinal pain, an online educational model for Complex Regional Pain Syndrome, and a book chapter on the role of the autonomic nervous system in visceral pain syndromes.

Our department has been making significant contributions in educating pain medicine subspecialists as hosts of the first Pain Medicine residency in Canada. I thank all of those who continue to support and teach our residents in this growing specialty.

Dr. Geoff Bellingham, Director
Charlotte Sikatori McLain, Coordinator

UNDERGRADUATE EDUCATION

Anesthesia is a mandatory two-week core rotation that all third-year medical students complete as part of their surgery block at Western. Six students are on Anesthesia at any one time throughout the city. Typically, two students are assigned to each of the three teaching hospitals in London. We have increased flexibility so that clerks spend time at more than one hospital. This allows for better exposure to the wide variety of anesthetics delivered at the different sites.

Clerks spend each day of their rotation assigned to a staff supervisor, providing for exceptional one-on-one teaching. The clerks also spend one day of their rotation in the cataract suite where they are paired with a staff anesthesiologist for the day to develop IV insertion skills. This is a favourite day of the rotation for many of the clerks.

The medical students are all given an updated anesthesia student textbook to read during their rotation and a list of learning topics to read about and discuss with their supervising anesthesiologists. We have also added useful learning tools and links to our website and encourage the students to use these as well.

The Anesthesia Bootcamp in the CSTAR Simulation Centre continues to be very well received by the students. Each group of students spends one day of their rotation in the simulator with a simulation fellow. They are introduced to some basic skills and aspects of our specialty, so that when they come to the operating room, they feel more comfortable with the basics of anesthesia. Presentations include preoperative assessments, the anesthesia machine and monitoring, airway management, and drug administration. They then have the opportunity to run through some case-based scenarios. The students are very enthusiastic about this highly-rated opportunity, and state that it has eased their transition into the operating room.

We also have a significant number of Western and visiting elective students from Canada and abroad that rotate through the Anesthesia program. They are all given the opportunity to meet with the Program Director to discuss the residency program at Western during their rotation. They are also given more flexibility to see different aspects of anesthesia such as acute and chronic pain, and obstetrical anesthesia, just to name a few.

For the 2017-2018 academic year, we had 137 clerks, 19 Western elective students, 39 visiting elective students, and 6 non-credit pre-clerkship summer clinical elective students rotate through our program at Western. These numbers are increased from the previous year.

New this year, we also had three M4 students do a two week elective as part of the new Schulich initiative of electives in February after CaRMs. We were very successful in recruiting excellent PGY1 residents from some of the students who completed electives with us.

Once again, we had some excellent essays submitted from Western medical students for the annual CAS medical student essay contest. We were successful with one of our students, Edmund Yim, winning 2nd prize for his essay titled: Medical School Admissions in Canada – A Work in Progress for the Poor.

Another highlight is the annual orientation to airway management lecture and workshop that our department runs for the incoming year of clerks. This is evaluated very highly and each year it takes a group of dedicated residents to help run this event.

Every student that has rotated through our department received an exit interview at their respective site. The focus of the interview is to provide an opportunity for the students to share their input on how we can continue to improve rotations for future students. From this input, we have developed a Tips and Good Practices handout that is given to each student prior to their rotation. This has helped the students get the most from their rotation.

Our department continues to have a strong presence in undergraduate teaching at the first and second year level, and we encourage as many faculty members as possible to get involved in this teaching.

A very special thank you to:
Dr. Pravin Batohi, SJHC Site Coordinator
Dr. Jonathan Brookes, UH Site Coordinator
Charlotte Sikatori McLain, Undergraduate Education Coordinator

I have very much enjoyed my time over the past many years as Undergraduate Program Director and as I reflect back, we have made a significant number of changes to the program for the better. I am stepping down on December 31, 2018 and will be leaving it in good hands with Dr. Jon Brookes taking over.

Dr. Michelle Gros
Director



FELLOWSHIP

Our Fellowship program consists of 21 Fellows, with trainees supporting several subspecialties citywide. Most fellows join us for one-year terms starting in July, and must pass the rigorous PEAP assessment before they can be licensed to work in the OR. Currently, we offer fellowships in the following subspecialties:

- 1. Cardiac – 5 Fellows (currently have 4)
- 2. Transplant – 2 Fellows
- 3. Neuro – 3 Fellows
- 4. Regional – 2 Fellows (normally have 3)
- 5. Quality Assurance – 1 Fellow
- 6. Simulation – 1 Fellow
- 7. Vascular/Thoracic – 3 Fellows
- 8. Obstetrics – 2 Fellows
- 9. Acute Pain Service – 2 Fellows

During their time with us, Fellows are extremely busy and contribute greatly to the day-to-day operations of our department. Fellows provide clinical support so that Consultants have the flexibility to attend meetings, book academic time, or take vacations. All Fellows are stationed throughout the City so that in the event there is a clinical need, Fellows are available to provide support across our three hospitals. Aside from approximately 4 clinical days per week, fellows may be granted 1-2 academic days to pursue research and education within their own subspecialties. Fellows are required to participate in undergraduate and postgraduate teaching activities and are expected to present at rounds on Wednesdays throughout the year.

Fellow rounds are generally scheduled once per month at both University and Victoria Hospitals. Cardiac, Neuro, and Transplant fellows are also assigned call duties, with call assignments rotating among fellows within their respective subspecialties each week, (e.g. with 4 Cardiac fellows enrolled, each fellow is on call every 4th week). This also provides clinical relief to consultants who are on call. The Fellowship Program is dually-designed to provide clinical support for the Department as well as highly-specific skills and education in each of the subspecialties. This enables the fellows to seek specialized certifications after completing our program (for example, when a Cardiac Fellow has completed their one year Fellowship, they are eligible to write the TEE exam, a mandatory certification in the subspecialty).Overall, the Fellowship Program has grown substantially in the last 10 years and Western has achieved a positive global reputation as one of the more favorable Anesthesia Fellowship Programs. Recently, we have seen an increase in domestic applicants, as well as an increase in applications from very talented anesthesiologists around the world.

In recent news, the Fellowship Committee has decided to implement a new evaluation process for fellows in our department. Previously, fellows would receive a certificate upon completion that states how long they were in the program, but in recent months a new evaluation system has been implemented. Our goal is to provide a fellowship certification that is based on performance and evaluation, and not based on time spent in the program. In June, we said goodbye to nine departing Fellows (Drs. Angela Builes; Catherine Cournoyer; Franklin Daukins; Christine Dy-Valdez; Basem Eldeyasty; Aya Elsharty; Alex Freytag; and Jeroen Vandenbrande).

Dr. Miguel Arango
Director



ACUTE CRITICAL CARE TRAINING THROUGH SIMULATION

Why do we simulate? The simplest answer to this question is **because it makes a difference.**

Over many years, ACCTTS simulation faculty members have taken great pride in watching trainees leave our anesthesia program as better communicators, leaders, and clinical managers because they practice those skills in a simulated clinical environment. Our knowledgeable simulation educators attend to details that ensure that when learners practice, the practice is valuable. We ensure scenarios are educationally sound and they are delivered in a realistic and engaging fashion. Most importantly we observe participants carefully, promote reflection on performance and help learners to close performance gaps. All this benefits the learners, our patients, and the broader healthcare system. Simulation is resource intensive work. It is often slow and progressive work, but it helps our learners become better anesthesiologists.

Again in 2018 our group delivered over two thousand learner hours of simulation instruction across the medical education continuum - undergraduate, postgraduate, interdisciplinary and interprofessional. In addition to teaching within the department, we continue to expand our impact through collaborations with other departments. This year we were particularly pleased to deliver our first joint simulation sessions with residents from Otolaryngology. These sessions were developed collaboratively between ACCTTS (R Cherry, S Morrison, I Bruni), anesthesia postgraduate education (J Vergel de Dios, N Gonzalez) and Otolaryngology (J Paradis, K Roth) and targeted common Entrustable Professional Activities (EPAs) related to airway management. Scenarios were designed to encourage residents from both disciplines to practice technical and nontechnical skills related to managing shared airways. As Competency Based Medical Education is introduced in other specialty training programs, we hope to expand these types of interdisciplinary simulations to include other departments with common EPAs.

At the Michael Gunning Simulation Center in Victoria Hospital, Andreas Antoniou continues to lead interprofessional simulations with our colleagues from Nursing, Respiratory Therapy, and Obstetrics. Involving our learners in authentic interprofessional simulations offers valuable opportunities to work through the common challenges of delivering healthcare in interdependent teams. This experience is highly valued by all the participants.

Fellows

Ranjana Bairagi, Cardiac
 Sujoy Banik, Neuro
 Marta Berrio, Transplant
 Lina Basri, Acute Pain
 Murray Campbell, Cardiac
 Taniya Datta, Transplant
 Aldo Espinosa, Neuro
 Fuhazia Horner, Vascular/Thoracic
 Niveditha Karuppiah, Regional
 Danielle Lapierre, Vascular/Thoracic
 Georgina Mahony, Regional

Saqayeq Marashi, Acute Pain
 Erin McCabe, Vascular/Thoracic
 Luis Sordo, Simulation
 Mathilde St-Pierre, Cardiac
 Yamini Subramani, Clinical
 Tammy Symons, Regional
 Magdalena Terlecki, Obstetrics
 Carla Todaro, Neuro
 Deepti Vissa, Clinical
 Raffael Zamper, Cardiac

As another successful ACCTTS innovation, this year we initiated a resident simulation education rotation. During this rotation, senior residents are given the opportunity to develop knowledge and skills in the fundamentals of simulation based education. Using foundational education principles, residents are encouraged to develop and deliver simulation scenarios. They are given opportunities to develop facilitation and debriefing skills during simulation events within our home department but also in conjunction with other clinical departments doing simulation. This year, TJ Leeper and Lukas Brown completed this rotation. We wish to thank them both for their outstanding input and efforts to refine this rotation but particularly for acting as excellent ambassadors of the Anesthesia department while they shared their expertise with other simulation programs.

This year we welcomed our new simulation fellow, Luis Velasco Sordo who joined us from Mexico City. We also said goodbye to Angela Builes as she returned to her home to spearhead new simulation initiatives in Columbia. We value our simulation fellows. While honing their skills as simulation educators, they also play vital role in delivering curriculum for postgraduate simulation sessions and particularly for the medical student anesthesia bootcamp.

In considering the broader simulation plans for our department, Schulich School of Medicine & Dentistry and hospital partners continue working towards a city-wide simulation strategy and the rationalization of simulation activities across the organizations. Given our current simulation expertise and capacity, along with plans to develop additional strategic simulation facilities, there is a vast opportunity to create an overarching, scholarly, productive, and impactful simulation program that supports the needs of both education and patient care.

Dr. Richard Cherry
Director



VISITING INTERNATIONAL STUDENT, PHYSICIAN & SCHOLAR PROGRAM

Our department has welcomed observers for many years. About three years ago, we attempted to have a more formal and organized approach to the many ways in which observers come to our department.

Observers or visitors are those who are not allowed any patient contact. Thus, any elective medical student or resident doing a formal rotation is not considered an observer since they are allowed to participate in patient care and will be evaluated throughout and at the end of their time with us. We have observers from all over the world, at various levels of medical training, and varying goals for why they wish to come to LHSC and SJHC.

As a way to streamline our process, all administrative work for any interested observers is under the care of Charlotte Sikatori McLain. This includes Schulich students and international visitors.

I take care of all international observers in terms of reviewing their application forms, signing paper work, and conducting video interviews to ensure proficiency in English. We had to give ourselves a name, so it is termed our Visiting International Student, Physician & Scholar (VISPS) program. We also instituted new rules for observers so that there was a maximum of two weeks at each hospital site.

Here are some numbers from the past two years:

2016–2017

We had 15 international observers who came from Brazil, Chile, Colombia, Germany, the Netherlands, Ireland, Japan, Rwanda, Ukraine, and the USA.

(In addition to our international observers, Charlotte processed 2 high school students, 7 university students, 19 Schulich medical students, 1 visiting medical student, 4 researchers, and 1 practicing anesthesiologist for observerships.)

2017–2018

We had 9 international observers who came from Chile, Colombia, Germany, Nepal, the Philippines, Qatar, Saudi Arabia, and the UK.

(In addition to our international observers, Charlotte processed 9 university students, 16 Schulich medical students, and 1 visiting medical student for observerships.)

Observership Fees

It's unclear if our numbers are increasing since we were not collecting the data prior to 2016, but given the administrative burden and that similar centres charge an observership fee, we decided to institute a fee for our international observers. This is not meant to be profit-generating, but there is value in what we offer and we have added to Charlotte's workload.

We gather feedback from our observers when they are finished here and so far they have all been positive. I'm sure that will continue in the future as we welcome our international visitors and showcase the great work of our department.

We have added information for potential interested international observers to our department website: https://www.schulich.uwo.ca/anesthesia/education/visiting_international_student_physician_scholar_program_visps.html

Dr. Jennifer Vergel de Dios
VISPS Coordinator



Charlotte Sikatori McLain, VISPS Program Administrator (R)
with Juri Suzuki, a medical student from Japan.

CONTINUING PROFESSIONAL DEVELOPMENT

Under the auspices of the Continuing Professional Development Office at the Schulich School of Medicine & Dentistry, the Department of Anesthesia Continuing Professional Development (CPD) Program supports a variety of continuing education events aimed at practicing anesthesiologists and affiliated health care professionals. Current activities include departmental rounds (held as monthly city-wide forums across London hospitals); weekly site rounds (held at each hospital site and designed to address issues and topics of local interest) and subspecialty rounds and seminars (organized to meet the educational needs of subspecialty groups e.g., cardiac anesthesia, neuroanesthesia, obstetrical anesthesia, etc.).

In addition, the CPD Program hosts several lectureships and accredits local, national or international conferences and workshops supported by the Department and organized by its members.

A key event this year was a departmental learning needs assessment conducted with the support and assistance of the CPD office at the Schulich School of Medicine & Dentistry. The assessment was focused on learning opportunities associated with events that arise during a 'day on call'. An extensive departmental consultation was undertaken. Results were presented to department members at a grand round event in December 2018 and are expected to help to inform CPD Program objectives for the next couple of years.

Following eleven years, Dr. Herrick stepped down as Director of the Anesthesia CPD Program in December 2018. Dr. Mohamad Ahmad will bring his interest in education, thoughtful perspective and energy to the leadership role in CPD starting in January 2019.

2018 Invited Speakers:

- Dr. Ronnie Rosenthal, Surgeon-in-Chief, VA Connecticut Healthcare System
- Dr. Lauralyn McIntyre, Senior Scientist, Clinical Epidemiology Program, Ottawa Hospital
- Ms. Deb Karcz, Ms. Stephanie Poots (Clinical Risk Management Consultants) and Mr. Brent Hodge (Associate Corporate Counsel), Clinical Risk Management, London Health Sciences Centre
- Prof. Natalie J. Allen, Department of Psychology, Western University
- Dr. Joanne Douglas, Clinical Professor Emeritus, University of British Columbia
- Dr. Ansgar Brambrink, Professor and Chair, Department of Anesthesiology, Columbia University
- Dr. Valerie Schulz (Associate Dean), Michael Brock (Education Developer), and Andrea Good (Program Administrator), Office of Continuing Professional Development, Schulich School of Medicine & Dentistry, Western University

City-Wide Grand Rounds – 2018

Dr. Ronnie Rosenthal, VA Connecticut Healthcare System – “Perioperative assessment and optimization of the geriatric patient”. January 31, 2018.

Dr. Phil Jones, Department of Anesthesia and Perioperative Medicine – “Association between handover of anesthesia care and adverse postoperative outcomes among patients undergoing major surgery”. February 14, 2018.

Dr. Lauralyn McIntyre, The Ottawa Hospital – “Usual care resuscitation crystalloid fluids: are they really that different?” February 21, 2018.

Drs. Rudy Noppens, Tim Turkstra, and Nelson Gonzalez, Department of Anesthesia and Perioperative Medicine – “An international perspective on airway algorithms”. March 21, 2018.

Deb Karcz, Stephanie Poots, and Brent Hodge, Clinical Risk Management, LHSC – “AEMS: general overview and local application”. April 18, 2018.

Mohamad Ahmad, Zameer Pirani, Qutaiba Tawfic, Department of Anesthesia and Perioperative Medicine – “Intensive perioperative pain care for complex patients: a transition toward patient-centered care”. May 16, 2018.

Drs. Sunny Gill, Abigayel Joschko, Deepti Vissa and Matthew Roche, Department of Anesthesia and Perioperative Medicine – “Resident & Fellow CAS presentations”. June 13, 2018.

Prof. Natalie J. Allen, Dr. Catalina Casas, Dr. Kaylyn Merrifield. Departments of Psychology and Anesthesia, Western University – “Teamwork: An evidence-based look at challenges and strategies for action teams”. September 19, 2018.

Dr. Joanne Douglas, University of British Columbia – “The evolution of anesthesia: a personal journey” World Anesthesia Day. October 17, 2018

Dr. Ansgar Brambrink, Columbia University – The Aitken Memorial Lecture, “Neurobehavioral effects of anesthesia & surgery early in life: what do we currently know?” November 14, 2018.

Dr. Valerie Schulz, Mr. Michael Brock, and Ms. Andrea Good. Office of Continuing Professional Development, Schulich School of Medicine & Dentistry, Western University – “A night on call – an anesthesia needs assessment”. December 19, 2018

Dr. Ian Herrick, Director
Ms. Courtney Harper, Coordinator



Aitken Memorial Lecture 2018

Guest speaker Dr. Ansgar Brambrink with
Dr. Ruediger Noppens and Dr. Ian Herrick

DEPARTMENT TEACHING AWARDS

Awarded for the 2017–2018 Academic Year were the following:

The Rooney Gverzdys Award for Resident Teacher of the Year Award – Dr. Kamal Kumar

Undergraduate Teacher of the Year – Dr. Craig Railton

Fellow Teacher of the Year – Dr. Ray Zhou

Jr. Faculty Teacher of the Year – Dr. Nathan Ludwig

Pain Medicine Teacher of the Year – Dr. Geoff Bellingham

Faculty Mentor of the Year – Dr. Matthew Banasch

Resident Research Award – Dr. Matthew Chong
Resident as Mentor Award – Dr. Lukas Brown
Resident as Teacher Award – Dr. Terrence Leeper



About

The Centre for Medical Evidence, Decision Integrity & Clinical Impact (MEDICI) is a World Health Organization Collaborating Centre for Global Surgery & Anesthesia in the Department of Anesthesia & Perioperative Medicine, Schulich School of Medicine & Dentistry, Western University. MEDICI was established in 2012 with the support of the Schulich School of Medicine & Dentistry, London Health Sciences Centre, St. Joseph's Health Care London and Lawson Research, and received official WHO Collaborating Centre status in 2016.

MEDICI encompasses:

HiTEC (High Impact Technology Evaluation Centre), a hospital-focused, evidence-based health technology assessment program which serves to inform hospitals and regional health in London, Ontario and beyond.

EPiCOR (Evidence-Based Perioperative Clinical Outcomes Research Group), which supports research synthesis and clinical research with a focus on anesthesia, surgery, perioperative medicine, and critical care for local, national, or international settings.

Know4Go, a framework to support decision-makers and policy-makers to contextualize and synthesize evidence, economics, SLEEPERs, and forgone opportunities to illuminate whether a decision should be a 'go' or 'no-go', or whether 'more research is required (and is worth it)'.

MEDICI has three key mandates:

1. PRACTICE & POLICY: To provide timely, contextualized evidence synthesis to facilitate evidence-informed decision-making related to drugs, devices, procedures and programs in the real-world setting, with a special focus on:
 - a. Hospital-based health technology assessment for decision-making related to drugs, devices, procedures, and health services relevant to acute care
 - b. Optimizing decision-making across portfolios of opportunities in healthcare using Know4Go
 - c. Health services assessment for local, regional, national, and international decision-making, to support capacity-building and improved outcomes in global surgery, anesthesia, and perioperative care



2. EDUCATION: To provide educational and capacity-building opportunities in evidence-informed decision-making, health technology assessment, health economics, health policy, and knowledge translation locally, nationally, and internationally in the developed and developing world.

3. RESEARCH: To conduct cutting-edge research to advance the front of health technology assessment, economic analysis, health policy analysis, decision-making sciences and knowledge translation in the developing and developed world

Staff & Faculty

Janet Martin, Director

Davy Cheng, Medical Director

Ava John-Baptiste, Health Economist

Jessica Moodie, Research Program Coordinator & Information Specialist

Amy Sterkenburg, Grants & Communications Coordinator

Emily Dawson, Research Coordinator (AMOSO TAVI Frailty Project)

Research Priorities

- Global Perioperative Mortality Rates
- Prioritizing Global Surgical & Anesthetic Care
- Large Pragmatic Trials
- Contextually Relevant Knowledge Translation
- Health Technology Assessment & Knowledge Translation
- Rapid Synthesis Methodologies To Support Decision-Makers
- Real World Robust Decision-Making
- Quantifying Opportunity Cost Across Multiple Competing Opportunities
- Disinvestment-Reinvestment Methodology
- Evidence Contextualization
- Value Of Information Analysis
- Evidence Reversals
- Relevance Of Health Economics In The Hospital Setting
- Know4Go Applications: Combining Evidence + Ethics + Economics + "Everything Else" to inform value in health care

2018 Publications

1. Solomkin JS, Boermeester MA, Falkhy H, Damani N, Belda FJ, de Jong S, Berenholtz S, Dellinger EP, Egger M, Ferwana M, Gastmeier P, Jalil NA, Kamoga RN, Kairiritimba R, Guirao X, Khan F, Greif R,Latif A, Martin J, Mehtar S, Loke YK, Ndoye B, Nthumba PM, an Ren J, Unahalekhaka A, Mellin-Olsen J, Obembe BO, Widmer A, Ozan A, Pagani L, Pittet D. WHO Global Guidelines for the Prevention of Surgical Site Infections (SSI). Reconsideration of the WHO recommendation on use of 80% fraction of inspired oxygen (FiO2) in adult patients undergoing general anaesthesia to reduce the risk of SSI. WHO, Geneva, December 2018.

2. Wang L, Shen J, Ge L, Arango MF, Tang X, Moodie J, McConnell B, Cheng D, Martin J. Dexmedetomidine for craniotomy under general anesthesia: A systematic review and meta-analysis of randomized clinical trials. J Clin Anesth. 2018 Nov 13;54:114-125.

3. Anderson KK, John-Baptiste A, MacDougall AG, Li L, Kurdyak P, Osuch EA. Access and Health System Impact of an Early Intervention Treatment Program for Emerging Adults with Mood and Anxiety Disorders. Can J Psychiatry. 2018 Nov 12:706743718809347.

4. John-Baptiste A, Becker T, Fung K, Lipscombe LL, Austin PC, Anderson GM. Bayesian synthesis using prior information on fracture risk from randomized trials to analyze post-market data. J Clin Epidemiol. 2018 Sep;101:79-86.

5. Cheng D, Barreiro G, Khan F, Mellin-Olsen J. Commentary on Burke TF et al. "Safety and Feasibility of a Ketamine Package to Support Emergency and Essential Surgery in Kenya when No Anesthetist is Available: An Analysis of 1216 Consecutive Operative Procedures". World J Surg. 2018 Sep;42(9):3042-3043.

6. Kuijpers T, Spencer FA, Siemieniuk RAC, Vandvik PO, Otto CM, Lytvyn L, Mir H, Jin AY, Manja V, Karthikeyan G, Hoendermis E, Martin J, Carballo S, O'Donnell M, Vartdal T, Baxter C, Patrick-Lake B, Scott J, Agoritsas T, Guyatt G. Patent foramen ovale closure, antiplatelet therapy or anticoagulation therapy alone for management of cryptogenic stroke? A clinical practice guideline. BMJ. 2018 Jul 25;362:k2515.

7. Hong M, Jones PM, Martin J, Kiaii B, Arellano R, Cheng D, John-Baptiste AA. Clinical impact of disinvestment in hydroxyethyl starch for patients undergoing coronary artery bypass surgery: a retrospective observational study. Can J Anaesth. 2018 Nov 8.

8. Li JY, Gong J, Zhu F, Moodie J, Newitt A, Uruthiramoorthy L, Cheng D, Martin J. Fibrinogen Concentrate in Cardiovascular Surgery: A Meta-analysis of Randomized Controlled Trials. Anesth Analg. 2018 Sep;127(3):612-621.

9. Solo K, Lavi S, Choudhury T, Martin J, Nevis IF, Kwok CS, Kotronias RA, Nishina N, Sponga S, Ayan D, Mamas MA, Bagur R. Pre-operative use of aspirin in patients undergoing coronary artery bypass grafting: a systematic review and updated meta-analysis. J Thorac Dis. 2018 Jun;10(6):3444-3459.

10. John-Baptiste A, Rawal S (2018). Decision Analysis. In: Doria AS, Tomlinson G, Beyene J & Moineddin R. (eds) Research Methods in Radiology. Thieme Medical Publishers, Inc., New York, NY. ISBN 9781604068269

11. Martin J. Editorial: Complementary roles of global, national, and local health technology assessment. Int J Hosp Based Health Technol Assess. 2018. Doi: 10.21965/IJHBHTA.2018.E.

12. Allen L, John-Baptiste A, Meyer M, Richardson M1, Speechley M, Ure D, Markle-Reid M, Teasell R. Assessing the impact of a home-based stroke rehabilitation programme: a cost-effectiveness study. Disabil Rehabil. 2018 Apr 10:1-6.

13. Chong MA, Krishnan R, Cheng D, Martin J. Should Transfusion Trigger Thresholds Differ for Critical Care Versus Perioperative Patients? A Meta-Analysis of Randomized Trials. Crit Care Med. 2018 Feb;46(2):252-263.

14. John-Baptiste A. Who really benefits from surgical tray reduction? J Thorac Dis. 2018 Jun;10(Suppl 17):S2074-S2075.

15. Qureshi R, Sutton D, Cheng D, Martin J. How fragile is the evidence base? A meta-epidemiologic study of the fragility index derived from 374 randomised trials. BMJ Evidence-Based Medicine 2018 Jun;23(Suppl 1):A20-A20.

16. Solo K, Martin J, Lavi S, Kabali C, John-Baptiste A, Nevis IF, Choudhury T, Mamas MA, Bagur R. Antithrombotic therapy in patients receiving saphenous vein coronary artery bypass grafts: a protocol for a systematic review and network meta-analysis. BMJ Open. 2018 Apr 7;8(4):e019555.

17. Devereaux PJ, Duceppe E, Guyatt G, Tandon V, Rodseth R, Biccard BM, Xavier D, Szczeklik W, Meyhoff CS, Vincent J, Franzosi MG, Srinathan SK, Erb J, Magloire P, Neary J, Rao M, Rahate PV, Chaudhry NK, Mayosi B, de Nadal M, Iglesias PP, Berwanger O, Villar JC, Botto F, Eikelboom JW, Sessler DI, Kearon C, Pettit S, Sharma M, Connolly SJ, Bangdiwala SI, Rao-Melacini P, Hoefft A, Yusuf S; MANAGE Investigators. Dabigatran in patients with myocardial injury after non-cardiac surgery (MANAGE): an international, randomised, placebo-controlled trial. Lancet. 2018 Jun 9;391(10137):2325-2334.

18. John-Baptiste A. (2018). Don't Miss the Bus. In: McKinley, G. & Sibbald, S.L. (eds) Western Public Health Casebook 2018. London, ON: Public Health Casebook Publishing.

19. Mohan N, Deilgat M, John-Baptiste A. (2018). Managing Expectations: Lyme Disease. In: McKinley, G. & Sibbald, S.L. (eds) Western Public Health Casebook 2018. London, ON: Public Health Casebook Publishing.

20. Habbous S, Przech S, Martin J, Garg AX, Sarma S. Cost-Effectiveness of First-Line Sevelamer and Lanthanum versus Calcium-Based Binders for Hyperphosphatemia of Chronic Kidney Disease. Value Health. 2018 Mar;21(3):318-325.

21. Sutton D, Qureshi R, Martin J. Evidence reversal- when new evidence contradicts current claims: a systematic overview review of definitions and terms. J Clin Epidemiol. 2018 Feb;94:76-84.

22. Wale J, Bond K, Wortley S, Martin J, Godman B, Gutiérrez-Ibarluzea I. OP105 Disinvestment Toolkit: Patients Involvement In Disinvestment Activities. International Journal of Technology Assessment in Health Care. Cambridge University Press; 2018;34(S1):39–40.

Policy Documents

- MOHLTC drug programs branch, drug policy advice: 4 reports in total in 2018
- MOHLTC drug programs branch: 2 decision-making frameworks submitted in 2018
- WHO: 1 international guideline completed in 2018

Local Projects in 2018

Anesthesia Resident/Fellow Projects:

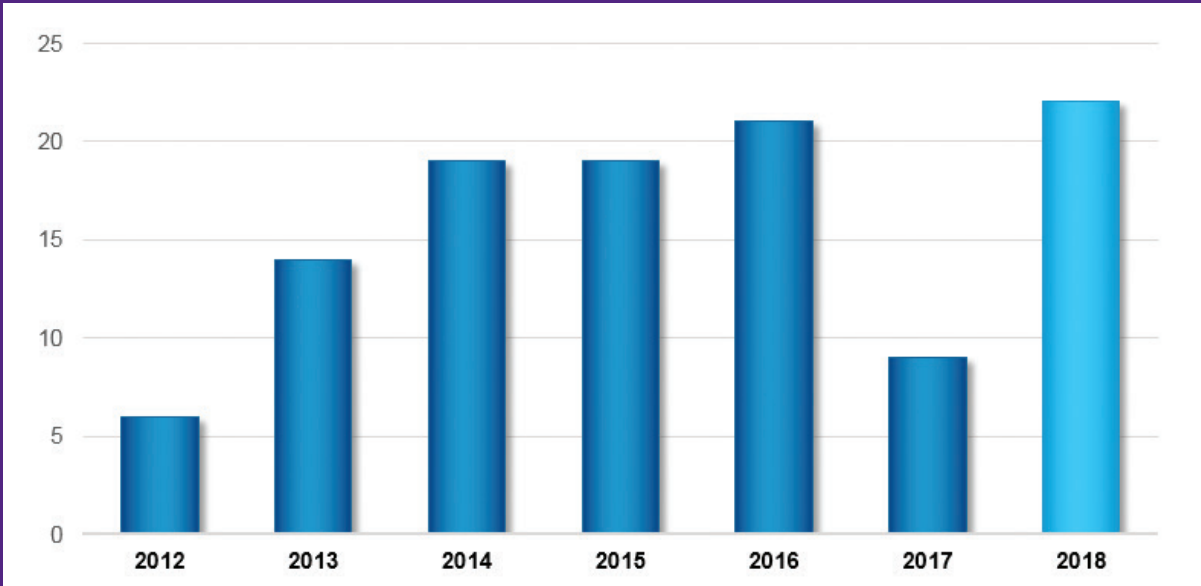
- Should Transfusion Trigger Thresholds Differ for Critical Care Versus Perioperative Patients? (Completed)
- Post-Operative Home Monitoring (Ongoing)
- Dexmedetomidine (Completed)
- Fibrinogen (Completed)
- Sutures vs Staples in Orthopaedic Surgery (Completed)

Medical Student & MSc Student Projects:

- Which Anticoagulation for TAVI? A Network Meta-Analysis (Completed)
- Approaching evidence reversal and medical reversal – when to say ‘enough is enough’ (Completed)
- Sevoflorane (Completed)
- Transfusion Thresholds (Completed)

AMOSO TAVI Frailty Project

- Systematic Review & Meta-Analysis investigating the tools used to measure frailty, the impacts of frailty on patient outcomes and cost, and the performance of administrative database frailty indices in predicting patient outcomes and costs for patients undergoing TAVI in Ontario (Ongoing)



Number of MEDICI Publications
2012-2018



Dr. Janet Martin, Dr. Ava John-Baptiste, and students.

Methods (Ongoing projects focused on aspects of innovative research methodology, these include collaborators from the Department of Anesthesia, other departments at Western, and external collaborators)

- Evidence Reversals
- Research Validity
- Evidence Sufficiency & Knowledge Translation
- Defining Value & Innovation
- Decision-Making Frameworks (Ministry of Health)
- Case-Based Teaching
- Bayesian

Other Local Projects

- Sugammadex
- CSA
- PFO
- Obstructive Sleep Apnea
- Perioperative Antithrombotics
- Preoperative Prehabilitation
- Surgical Tray Costing
- Home Based Stroke
- Hydroxyethyl Starches
- Staples/Sutures



MEDICI Global

MEDICI is a World Health Organization Collaborating Centre for Global Surgery, Anesthesia & Perioperative Care, a global leader in Hospital-Based Health Technology Assessment, and an active collaborator with the World Federation of Societies of Anesthesia. We work with researchers from over 18 different countries, and welcome trainees from around the globe.

In 2018, MEDICI became the **Perioperative Lead for the GlobalSurg & GlobalPeriop Collaborative**. GlobalSurg was initially established to represent surgeons from across the globe and support collaborative international research focused on surgical outcomes through the development and growth of local, national and international research networks. MEDICI’s role is to help identify and prioritize high-impact research questions and enable knowledge translation and capacity building. Dr. Janet Martin participated in the GlobalSurg Annual Research Prioritisation Workshop where she spoke about research prioritization and perioperative FiO2.

Global Projects:

- Ebola Virus Disease in Surgery
- Viral Hemorrhagic Fever in Surgery
- Perioperative Supplemental Oxygen
- Global Priority Setting in Perioperative
- Global Priority Setting Surgery
- Postoperative Mortality
- GlobalSurg Metrics
- GlobalSurg Research Toolkit
- Safe Surgery Checklist
- Caesarean Section Mortality



Participants of the 2018 GlobalSurg Research Prioritization Meeting.

Workshops Provided

17 workshops were provided at various local and international symposia, including WFSA, IARS, CAS, the THETA HTA Decision Maker Institute, Health Canada, the Southwestern Ontario Academic Health Network, the Health Innovation Forum, and HTAi, as well as for local teaching venues (the Rotman Institute of Philosophy, mini-med school, resident research day, grand rounds, academic half-days, etc). Popular workshops include:

- Postoperative Mortality Rates: An Update on the Global Epidemiology of POMR
- Evidence-Based Decision-Making – Cases From Real World Practice
- Lack Of Access To Safe Surgery And Anesthesia Is A Public Health Catastrophe Playing Out Before Our Eyes: What Can We Do?
- An Introduction to Economic Evaluation
- Troubled Evidence? Tracking Excess Significance, Premature Closure, Cherry-Picking And Evidence Reversals
- Transfusion Thresholds: Should They Differ For Surgical And Critical Care Settings?
- Evidence Reversals: Do They Exist? Can We Detect Them?
- WFSA Research Toolkit: Supporting Context Relevant Research In LMIC Settings
- Global Surgery 2030: An Update
- Knowledge Translation & Translating Research Into Practice
- Evidence-Based Decision-Making: Will The Real Evidence Please Stand Up? In With Evidence, Out With Bias
- Ebola: Integrating Evidence, Ethics, Economics, And ‘Everything Else’ That Matters
- How Fragile Is The Evidence Base? An Analysis Of 327 Randomized Trials
- Hospital Based Health Technology Assessment: Combining Evidence, Ethics, Economics And Context
- Hospital Based HTA: Real World Cases Demonstrating Decision Impact & Clinical Outcomes
- A Global Perspective on Perioperative Antibiotics: Which Dose, Route, Duration?

Courses Taught

- EPI 9562 “Clinical Epidemiology” MSc Epidemiology (Dr. Janet Martin)
- EPI 4320 “Clinical Epidemiology” 4th Year BSc Honors Specialization (Dr. Janet Martin)
- MPH 9014 “Health Economics” MPH Program (Dr. Ava John-Baptiste)
- MPH 9018 “Capstone Course” MPH Program (Dr. Ava John-Baptiste)
- MPH 9016 “MPH Practicum” MPH Program (Dr. Ava John-Baptiste)

Evidence Based Perioperative Clinical Outcomes Research (MEDICI-EPiCOR)

Members: Davy Cheng, Janet Martin, and Daniel Bainbridge

The Evidence Based Perioperative Clinical Outcomes Research (EPiCOR) Group is a multidisciplinary collaboration between Perioperative Medicine & Anesthesia, Surgery, Pharmacy, Medicine, and Pharmacology, housed within the MEDICI Centre, whose mandate is to provide comprehensive systematic reviews, meta-analyses, and health technology assessments of new and existing technologies including medical devices and equipment, surgical and other interventional procedures, drugs and diagnostic techniques in order to inform important perioperative clinical and economic questions with best available evidence.

Our goal is to identify, synthesize, and translate best evidence into decisions for policy and everyday practice, and to collaborate with others in this mission locally, nationally, and internationally.

International Guidelines & Consensus Statements

EPiCOR has collaborated with other international groups to perform evidence-based systematic reviews and consensus statements. These forums provide a unique opportunity to provide capacity-building in skills related to study design, statistical analysis, evidence-based decision-making, meta-analysis and systematic review, and GRADE’ing the evidence. The following areas have been addressed by consensus conferences led by EPiCOR/MEDICI:

- Stentless Aortic Valves
- Ablation of Atrial Fibrillation
- Endovascular Vein Harvest
- Transmyocardial Revascularization
- Perioperative Antibiotic Prophylaxis
- Minimally invasive mitral valve repair
- Off-Pump Coronary Artery Bypass Surgery
- Video-Assisted Thoracic Surgery for Lung Cancer
- Thoracic Endovascular Aortic Repair
- Transcathether aortic valve implantation
- Perioperative Colloids (HES, Albumin, Gelatins)
- Blood Management –Drugs, Devices & Procedures

Other research has focused on perioperative supportive care, blood conservation & fluid management, and minimally invasive and robotic surgical methods.

Projects include:

- | | |
|---|---|
| •Ketamine for Post-operative Analgesia | •NSAIDs versus Non-NSAID Multimodal Analgesia |
| •Postoperative Nausea and Vomiting | •Dexmedetomidine for Awake Fibreoptic Intubation |
| •Dexmedetomidine for Craniotomy | •Dexmedetomidine for Prolonged ICU Sedation |
| •Dexmedetomidine for MAC | •Cox-2 Selective Perioperative Analgesia |
| •Amiodarone Perioperatively | •Endovascular vs Open Vein Harvest for CABG |
| •Ultrafiltration | •Perioperative Gastric Acid Suppression |
| •Miniaturized Circuits | •Off-Pump versus On-Pump Coronary Artery |
| •Cell Saver | •Thoracic Endovascular Aortic Repair vs Conventional Open Repair |
| •Antifibrinolytics | •Minimally Invasive vs Conventional Mitral Valve Surgery |
| •Synthetic Colloids versus Albumin | •Stentless vs Conventional Valves for Aortic Valve Replacement |
| •Perioperative Erythropoietics | •Surgical AF Ablation (MAZE and related procedures) |
| •Mini-Mitral Valve Surgery | •Multislice CT, MRI, TEE/TTE Ultrasound, vs Angiography for Aortic Dissection |
| •Mini-Aortic Valve Surgery | •IV Iron |
| •Robotic Surgery | |
| •Video-Assisted Thoracic Surgery (VATS) | |
| •TAVI Innovative Surgical & Imaging Techniques | |
| •Levosimendan for Prevention of Arrhythmia and Death | |
| •Patient Controlled versus Nurse Controlled Analgesia | |



Dr. Davy Cheng currently serves as Acting Dean of the Schulich School of Medicine & Dentistry for the period October 1, 2018 to June 30, 2019. His appointment enjoys the support of Western’s Board of Governors through its Senior Policy & Operations Committee. Prior to taking on the Acting Dean role, Dr. Cheng was Vice Dean of Faculty Affairs for Schulich.

Dr. Cheng is a Distinguished University Professor in the Department of Anesthesia & Perioperative Medicine, and is recognized as a world expert in perioperative outcomes and resource utilization in cardiac surgery/anesthesia, critical care medicine, and perioperative evidence-based medicine.

GRANTS

Newly-Awarded Grants

Chui, J; Dhir, S. A randomized controlled study in detection and prevention of nerve injury using a novel automated Somatosensory Evoked Potential monitoring device in shoulder arthroplasty surgery. CAS, 2018-2020: \$30,000.

Nagappa, M; Lanting, B; VanKoughnett, JA; Schlachta, C; Speechley, K; Vogt, K; **Martin, J; John-Baptiste, A; Yang, H.** Preoperative needs and postoperative satisfaction in patients undergoing elective surgical procedures - a quantitative evaluation – the first step in a program of research to help improve patient preparation for, and outcomes with, early post-operative home recovery. AMOSO Opport, 2018-2020: \$32,500.

Nagappa. M; Lanting, B; VanKoughnett, JA; Schlachta, C; Speechley, K; Vogt, K; **Martin, J; John-Baptiste, A; Yang, H.** Preoperative needs and postoperative satisfaction in patients undergoing elective surgical procedures - a quantitative evaluation – the first step in a program of research to help improve patient preparation for, and outcomes with, early post-operative home recovery. Lawson IRF, 2018-2020: \$15,000.

Lee, Ting-Yim; Bagur, Rodrigo H; **Hegazy, Ahmed F;** Hicks, Justin; Kovacs, Michael S; Slessarev, Marat; Tzemos, Nikolaos; Whitehead, Shawn N; Wisenberg, Gerald. Selective Brain Hypothermia via Intranasal Cooling to Limit Brain Injury Post Cardiac Arrest. CIHR, 2018-2019: \$100,000.

Active Grants

Arango, M; Jones, P. GASTROKE - The effect of General Anesthesia versus Sedation for patients with acute ischemic stroke undergoing endovascular treatment on three month morbidity and mortality: a feasibility study. CAS, 2017-2019: \$7,300.

Noppens R; Belrose J; Prado M; Prado V. The effect of volatile anaesthetics on Alzheimer's Disease in an animal model. ANAES IRF, 2017-2019: \$9,870.

Zhou R; Fujii S; Vissa D; Ganapathy S; Bainbridge D; Jones P; Chu M; Quantz M; Guo R; McKenzie N; Myers M; Kiaii B; Nagpal D; Goldback M. Analgesic effects of transversus thoracic plan (TTP) block in cardiac surgery - feasibility study. ANAES IRF, 2017-2019: \$7,620.

Collaborative Grants

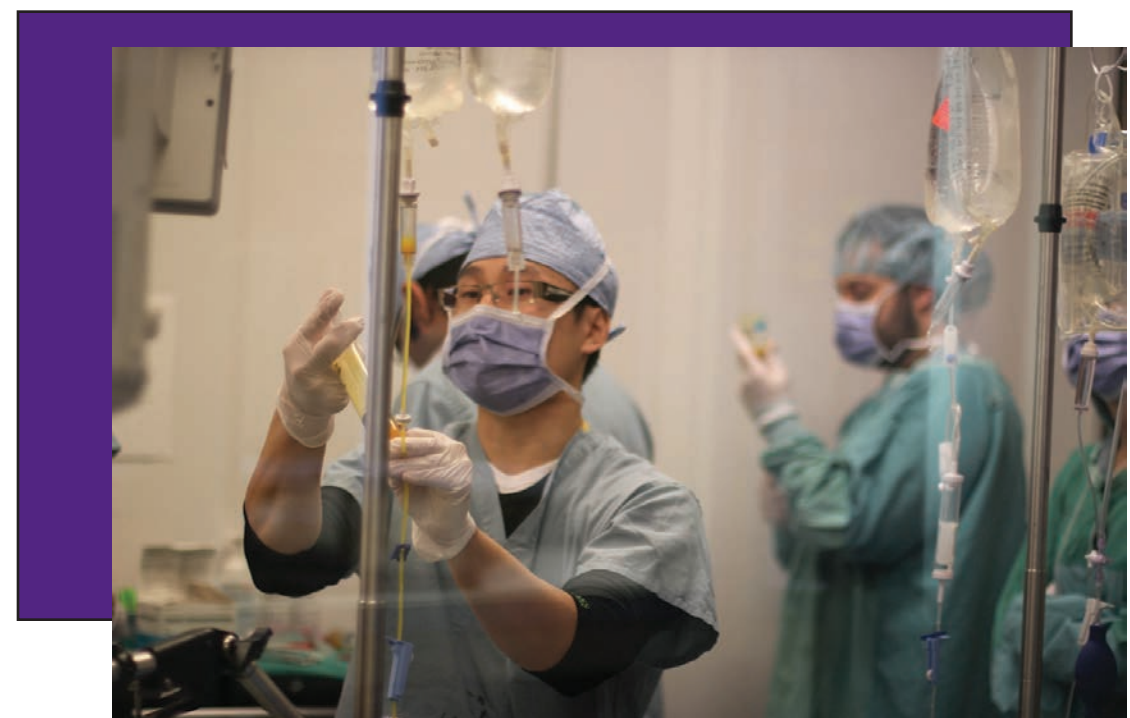
(Anesthesia & Perioperative Medicine members involved in studies with principal investigators coming from other departments.)

Lee, Ting-Yim; Bagur, Rodrigo H; **Hegazy, Ahmed F;** Hicks, Justin; Kovacs, Michael S; Slessarev, Marat; Tzemos, Nikolaos; Whitehead, Shawn N; Wisenberg, Gerald Selective Brain Hypothermia via Intranasal Cooling to Limit Brain Injury Post Cardiac Arrest. CIHR, 2018-2020: \$100,000.

Abou-Setta, A; Armson H; Aston M; Barnabee C; **Martin J; Cheng D;** et al. SPOR REACH Network. CIHR, 2017-2022: \$4,997,000.

Peters, T; **Bainbridge, D;** Burneo, J; Chu, Michael; Eagleson R; Ganapathy S; Hammond R; Johnsrude, I; Khan A; Kiaii, B; Ladbon Bernasconi, N; Mirsattari, S; Paulther, S. Program for Image-guided minimally invasive surgery and therapy (PI-MIST) (Peters). CIHR, 2015-2022: \$2,300,000.

You, J; Barwich, D; Gutman, G; Howard, M; Jayaraman, D; Kaasalainen, S; Kobewka, D; Simon, J; Sussman, T; Tan,A; Urquhart, R; Ableson, J; Allatt, P; Bernard, C; Bourgeois-Guerin, V; Day, A; de Vries, B; Dodek, P; Downar, J; Fowler, R; Hunter, P; Klein, D; Kryworuchko, J; Ma, I: McCleary, L; Myers, J; Nijjar, A; Sharma, N; Sinuff, T; Slaven, M; **Taneja, R;** Thompson, G. Improving Advance Care Planning for Frail Elderly Canadians. CFN, 2016-2020: \$2,999,991.





AWARD WINNERS : Canadian Anesthesiologists’ Society 2018 Annual Meeting
Dr. Homer Yang (Gold Medal), Dr. Jason Chui (CAS Research award), Dr. Adrian Gelb (Gold Medal and former Chair/Chief of our Department), Dr. Shalini Dhir (Chronic Pain award), Dr. John Murkin (Critical Care award) and Dr. Richard Merchant (CAS Clinical Practitioner award and former faculty member).

PUBLICATIONS

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A basic science research project designed by Dr. Ruediger Noppens and Dr. Jillian Belrose (PGY3) is currently underway to investigate the effect of volatile anesthesia exposure on cognition in dementia. Over 500,000 individuals in Canada are currently living with Alzheimer’s disease or other forms of dementia. Dementia can greatly impact length of hospital stay, morbidity, mortality, and costs to the Canadian health care system. The project is funded by an Internal Research Fund from the Department of Anesthesia & Perioperative Medicine.

BOOK CHAPTERS

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In September 2018, Dr. Daniel Bainbridge became President of the Canadian Anesthesiologists' Society.



In November 2018, The Department of Anesthesia & Perioperative Medicine hosted a conference to bring local innovators together to share their current projects and collaborate on future goals. The Home Monitoring in Health Care conference had a mission to exchange information and identify common goals or projects among attendees in the area of home monitoring advancements. These projects focus on monitoring patients using new technologies, throughout their healthcare journey.

“In London, there are many excellent initiatives on remote patient care and monitoring, ranging from mobile apps on smartphones to wearables to multicomponent interventions. As typical of busy clinicians and researchers, these pockets of excellence have been developing in isolation. This conference is an attempt to bring together all the pioneers and to exchange ideas,” – Dr. Homer Yang

Featured speakers at the conference included:

Dr. Nassar Khalil
Connecting Care to Home

Dr. James Lewis
Connecting Care to Home

Dr. Julieann Vankoughnett
Surgery, LHSC

Dr. Anthony Tang
Cardiology, LHSC

Dr. Tim Doherty
Physical Medicine & Rehabilitation, LHSC

Dr. Mandar Jog
Neurologist, LHSC

Dr. John Fuller
Perioperative Care, LHSC

Dr. Arsh Jain
Renal Services, LHSC

Danish Mahmood
15-year-old youth innovator, speaker,
and high school student



ANESTHESIA & PERIOPERATIVE MEDICINE



Cover photo by Dr. Ruediger Noppens