

Annual Report 2018-2019



Department of Anesthesiology, Perioperative and Pain Medicine

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Executive Report

The 2018-2019 year continued to be one of consolidation, with few changes compared with the past. Perhaps the calm before the storm.

The national succinylcholine shortage highlighted the importance of a close working relationship between physicians and our operational colleagues. Through cooperative, careful stewardship of succinylcholine's use, we continued to provide high quality patient care and avoided adverse patient outcomes. A team effort. I thank Bryan Peffers, Michael Coutts, Michelle Lohman, the operational staff, Dr. K. Duttchen and the consultant anesthesiologists for pulling together.

The department struck a NHSF Committee to address concerns relating to the clinical work performed in these contracted facilities. The Committee membership includes Ms. C. Guss, the Director of Surgical Contracts, Ms. A. Maier of the CPSA, and a representative from each Section. With the expected increase in NHSF work there exists a need for a streamlined privileging process and an ability to address clinical and logistic problems in a timely manner. I look forward to us working together to ensure that NHSF provide the same quality of patient care as the acute care facilities.

The opioid crisis causes us to focus on persistent post-surgical pain and how it contributes to the development of chronic pain. Though this is a system's problem requiring a system's solution, perioperative pain management will be an essential part. The need for multi-modal analgesia, as recommended in the various ERAS pathways, will likely result in the increased use of regional anesthesia with its attendant changes to operating room workflow. Finding ways to accommodate these changes while maintaining operating room efficiency will require collaboration between anesthesiologists, surgeons and nursing. Similarly, the Transitional Pain Service, developed at the SHC and the recipient of the HQCA's 2018 Patient Experience Award, may need to be expanded throughout the zone. To accomplish this, cooperation of the department with the sites should result in improved care through judicious reallocation of resources. Finally, educational

initiatives such as "Wise Prescribing and Describing of Opioids for Front Line Clinicians", run by the Chronic Pain Program, will be essential to engage primary care physicians and ensure a transition to and from surgery that is best for patients.

From an academic perspective, teaching remains our strong suit. The dedication of the departmental members and others to our Anesthesiology, Family Practice Anesthesia and the Chronic Pain Residency Training Programs is remarkable. The respective Program Directors, Dr. R. Eng, Dr. T. Trinh and Dr. J. Haber continue to do a stand-up job and their personal commitment is commended. Similarly, our CSM Clerkship Rotations and Fellowship Programs, led by Dr. M. Davis and Dr. J. Fox, are substantial successes. There has been growth and integration of support for our educational programs, capitalizing on common requirements and shared needs. I thank Ms. A. Arsneau and Mr. A. Jenkins for putting together a stellar team of support staff. Finally, none of this education is possible without the dedication and commitment of the rank-and-file anesthesiologists, who provide the daily clinical teaching, fill the requisite evaluations, teach at core program and find the time to provide oral exams.

I ask you to look through the annual report with an eye to the remarkable depth and breadth of activities within the department. As always, I am grateful to the many who make the department successful and demonstrate that by pulling together, the whole is greater than the sum of the parts. Something we may need to keep in mind in times ahead.

Wishing you all the best for 2020.

Sincerely,



Gary Dobson MDCM, MSc, FRCPC
Chair, Department of Anesthesiology,
Perioperative and Pain Medicine

Department Structure and Organization

The Department of Anesthesia has five sections; approximately 190 physicians, and 2 city wide locums, 11 administrative support staff, about 100 Anesthesia Respiratory Therapists, 6 site-specific Anesthesia Respiratory Therapist site leads, and Service Workers. In addition, 14 RNs work in the Acute Pain Service and Peri-Operative Blood Conservation Program. The total annual operating budget is approximately \$16 million.

Department medical staff are faculty members at the Cumming School of Medicine, University of Calgary. Academic appointments include five geographic full time and ten major clinical positions, including Post Graduate Medical Education, Family Practice Anesthesia, and Undergraduate Medical Education program directors. Staff anesthesiologists work a range from 0.4 to 1.0 clinical FTE, with many working in a variety of part-time or job sharing arrangements.

Anesthetic services are also provided at several AHS contracted non-hospital surgical facilities for ophthalmology, podiatry, oral maxillofacial surgery and pediatric dental surgery. Anesthesia service continues to be provided in Yellowknife, NWT by some members of our department as well as throughout Alberta as needed. Annually anesthesia provides manpower, preceptorship, and organizational support to the Banff Family Practice Anesthesia conference.

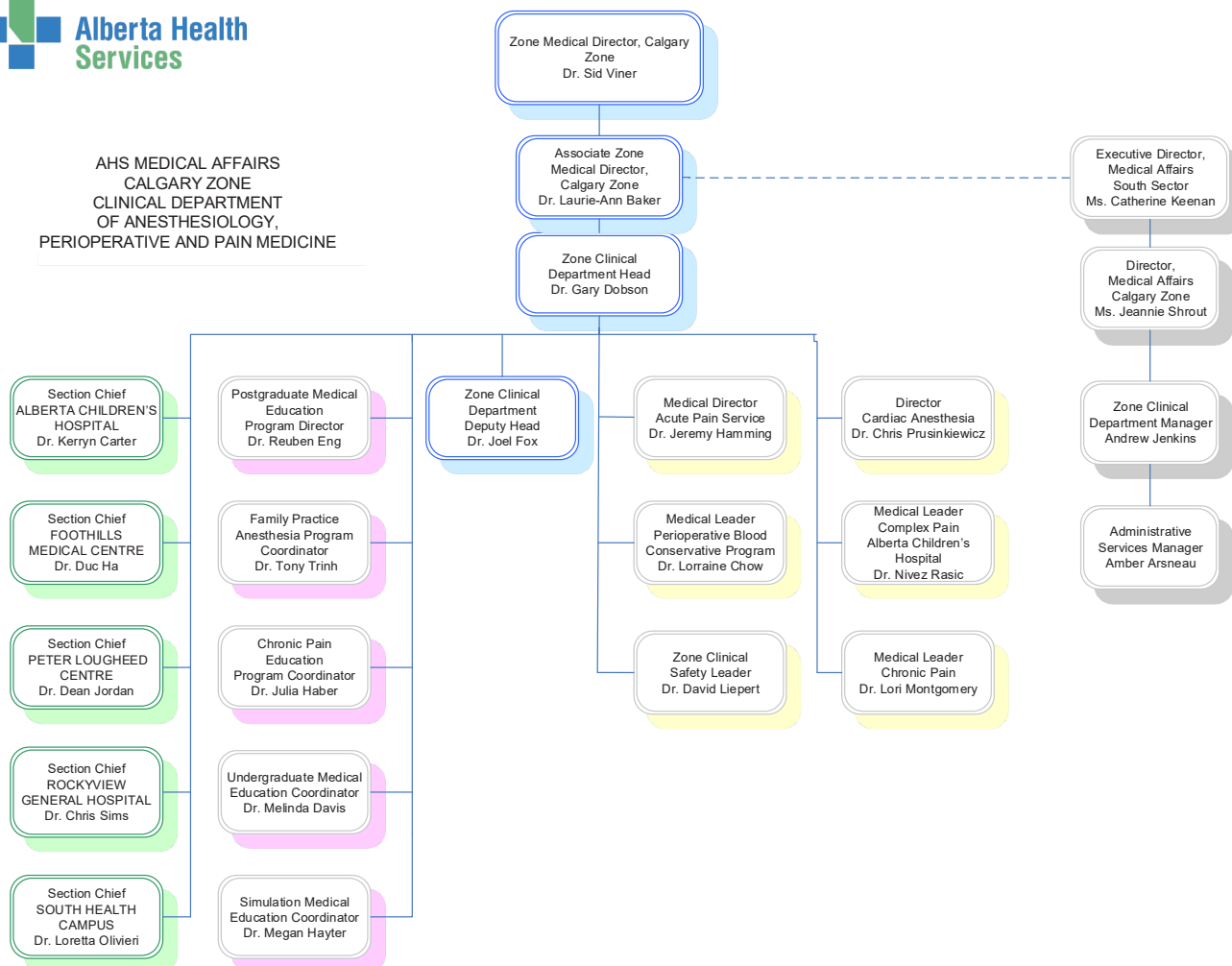
Subspecialty clinical services and programs are provided for Pediatric Anesthesia, Cardiac Anesthesia, Obstetrical Anesthesia, Acute Pain, Chronic Pain, Cancer Pain, Neuroanesthesia, Regional Anesthesia, Thoracic Anesthesia, Vascular Anesthesia, Preadmission Clinics, Trauma Anesthesia, Palliative Care, and the Perioperative Blood Conservation Program.

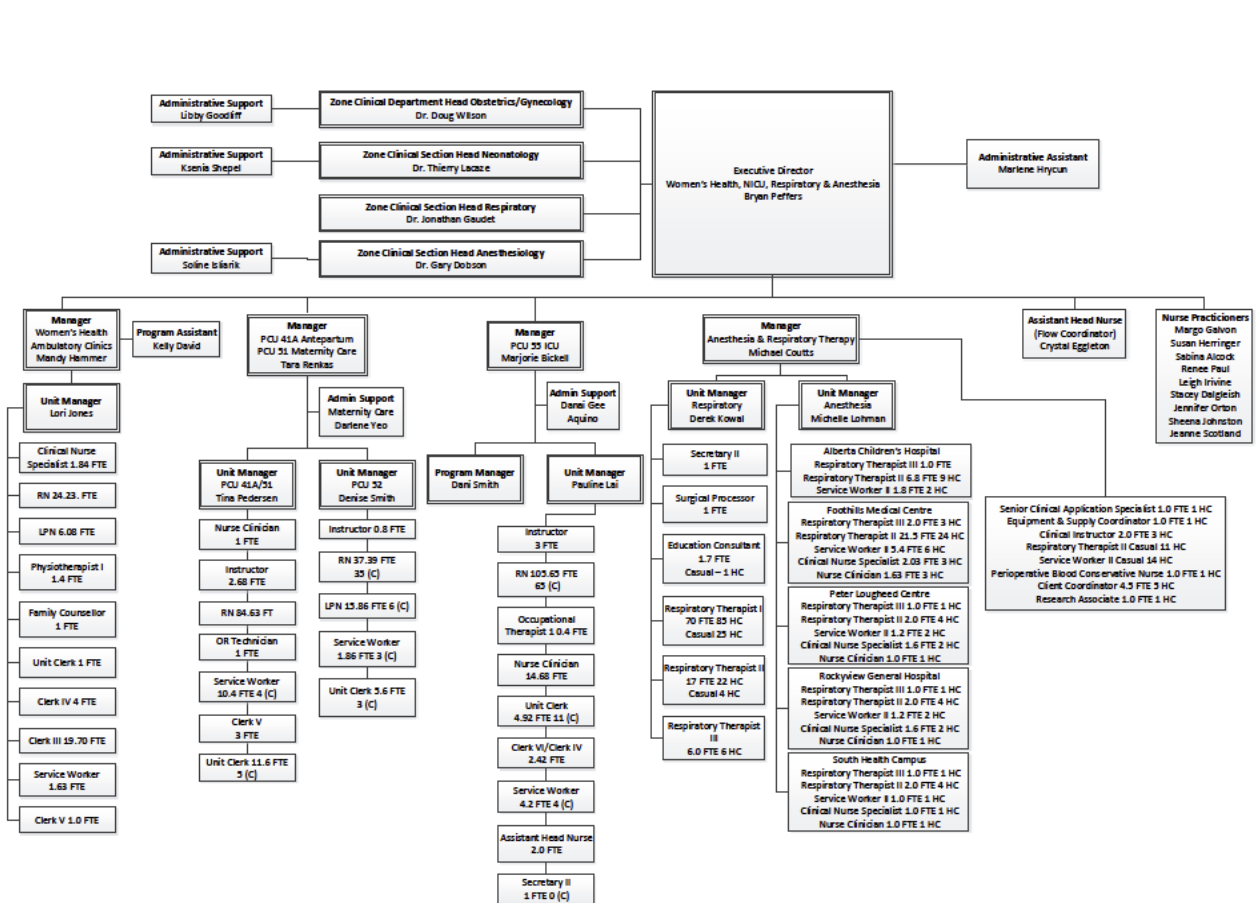
In 2018 – 2019, the Department provided anesthetic care for over 80,000 in-patient and outpatient surgical procedures, more than 10,000 deliveries, and treated many patients through the Acute and Chronic Pain Services.

Zone Organization Charts



AHS MEDICAL AFFAIRS
CALGARY ZONE
CLINICAL DEPARTMENT
OF ANESTHESIOLOGY,
PERIOPERATIVE AND PAIN MEDICINE





Zone Anesthesiology Executive Committee

ZCDH & Academic Head, U of C	Dr. G. Dobson
Deputy ZCDH	Dr. J. Fox
FMC Section Chief	Dr. D. Ha
FMC Deputy Section Chief	Dr. K. Anderson
PLC Section Chief	Dr. D. Jordan
PLC Deputy Section Chief	Dr. B. Parkinson
RGH Section Chief	Dr. C. Sims
RGH Deputy Section Chief	Dr. R. Schultz
ACH Section Chief	Dr. K. Carter
ACH Deputy Section Chief	Dr. M. Gale
SHC Section Chief	Dr. L. Olivieri
SHC Deputy Section Chief	Dr. J. Stephan
Director, Residency Training Program	Dr. R. Eng
Clinical Safety Lead	Dr. D. Liepert
Acute Pain Service Medical Director	Dr. J. Hamming
Zone Clinical Department Manager	Mr. A. Jenkins
ZCDH and Head, Department of Surgery	Dr. S. Grondin
Director of Cardiac Anesthesia	Dr. C. Prusinkiewicz
Medical Lead, Calgary Chronic Pain Program	Dr. L. Montgomery
Executive Director Women's Health, NICU, Anesthesiology, and Respiratory	Mr. B. Peffers
Associate Zone Medical Director and Facility Medical Director, RGH	Dr. L. Baker
Simulation Medical Education Coordinator	Dr. M. Hayter

Anesthesia Academic Council

Zone Clinical Department Head (Chair)	Dr. G. Dobson
Assistant Residency Program Director, FMC	Dr. G. Bishop
ACH and GFT Representative	Dr. R. Cox
Residency Training Program Director, RGH	Dr. R. Eng
Resident Representative	Dr. H. Yu
RGH and CI/SIM Representative	Dr. M. Hayter
FMC Representative	Dr. K. Duttchen
PLC Representative	Dr. C. Pearce
SHC Representative	Dr. L. Baghirzada
ACH Representative	Dr. D. Lardner
Senior Research Associate	Mr. A. Walker
ACUDA Representative	Dr. R. Chun
Co-Resident Scholarly Project Coordinator	Dr. E Bruce Dr. L. Hung
Medical Leader, Calgary Chronic Pain Program	Dr. L. Montgomery
Zone Director	Mr. B. Peffers
Zone Clinical Department Manager	Mr. A. Jenkins

University of Calgary Faculty

Dr. G. Dobson	Zone Clinical Department Head, Department of Anesthesiology, Perioperative and Pain Medicine	Associate Professor, GFT
Dr. R. Cox	Pediatric Anesthesia and Pediatric ICU	Professor, GFT
Dr. J. Davies	Anesthesia and System Safety	Professor, GFT
Dr. D. Archer	Neuro-Anesthesia	Professor, GFT
Dr. J.N. Armstrong	Anesthesia, Stars	Associate Professor, GFT
Dr. A. Gregory	Cardiac Anesthesia	Clinical Assistant Professor, GFT
Dr. R. Eng	Residency Program Director	Clinical Assistant Professor, MPT
Dr. J. Hamming	Medical Director, Acute Pain Service	Clinical Assistant Professor, MPT
Dr. M. Davis	Clerkship Director	Clinical Associate Professor, MPT
Dr. T. Trinh	GPA Residency Program Director	Clinical Assistant Professor, MPT
Dr. K. Shinkaruk	Pain Medicine Residency Program Director	Clinical Assistant Professor, MPT
Dr. K. Darcus	Clerkship Evaluation Coordinator	Clinical Assistant Professor, MPT
Dr. M. Hayter	Simulation Medical Education Coordinator	Clinical Assistant Professor, MPT

Section Reports



Foothills Medical Centre

Dr. Duc Ha

Section Function and Structure

The Foothills Medical Centre Section of Anesthesia provides quaternary anesthesia care encompassing trauma, critical care, surgery, cardiac surgery, obstetrics, interventional radiology and both acute and chronic pain for Southern Alberta and adjacent geographical areas. At present there are 53 anesthesiologists in the Section. Subspecialty interests in all aspects of adult anesthesia practice are fully represented within the Section.

Prominent clinical and administrative roles for the Section are:

Dr. Chris Prusinkiewicz – Director, Cardiac Anesthesia

Dr. Richard Falkenstein – Clinical Lead, Neuroanesthesia

Dr. Jeremy Hamming - Clinical Lead Acute Pain Service and Medical Director,

Acute Pain Services, Calgary Zone

Dr. Jennifer Froelich - Clinical Lead, Trauma Anesthesia

Dr. Lorraine Chow - Clinical Lead, Thoracic Anesthesia

Dr. Rob Thompson - Director, Obstetrical Anesthesia

Dr. Andrea Todd - Site Coordinator, Residency

Training Program

Dr. Desiree Teoh - Site Coordinator, Clerkship Program

Dr. Melinda Davis – Clinical Lead, Pre Admission Clinic

Dr. Lorraine Chow – Medical Lead, Perioperative Blood Conservation, Calgary Zone

Dr. Melinda Davis- University of Calgary Anesthesia Clerkship Director

Anesthesia Services

The FMC performed over 26,128 surgeries for the 2017-2018 year, of which more than 1,300 were Cardiac Open Heart surgeries. FMC delivered more than 5,500 total births, of which more than 1,100 were via C-section. FMC Anesthesia provides services to operating theatres on the 3rd floor of the McCaig building, and on the 1st and 7th floor in the FMC main building. In addition, there are separate cardiac operating theatres, a MRI neurosurgical operating theatre, obstetrical operating theatres and a radiation oncology theatre. There are three PACU areas and two satellite recovery rooms for obstetrics and radiation oncology postoperative patients, respectively.

Anesthesia services were successful with the participation in both surgical oncological uplift and cardiac surgery uplift. It is very rewarding to be part of a great and dedicated O.R. team to provide these uplift in surgical services for the people of Alberta.

Anesthesia services were successful in the transitioning of providing anesthesia services for Cardiac Implantable Electronic Devices from the operating room theatre into the cardiac catheterization/electrophysiology labs. Also initiation of providing Neuroanesthesia care for patient undergoing Focused Ultrasound for the treatment of Neurological Movement disorders.

Accomplishments and Highlights

The Section remains very successful in attracting highly desirable candidates both from within the University of Calgary Residency Program and

nationally. It is expected that there will be no difficulty in hiring exceptional anesthesiologists to address workload growth at the Foothills Medical Centre site.

This year, FMC section of anesthesia was successful in attracting several additional anesthesiologists. Dr. Paul Zakus has completed his Anesthesiology training from the University of British Columbia. Thereafter, he completed an Obstetrical Anesthesia Fellowship at the University of Ottawa in Ottawa, Ontario. Dr. Christopher Dyte has completed his Anesthesiology training from University of Calgary. He plans to complete a SIMS fellowship by June 2019 to contribute simulation as a part of FMC section of Anesthesia CME. Dr. Nicole Webb has completed her Anesthesiology training from McGill University. Thereafter, she completed her Cardiac Anesthesia fellowship from the University of Alberta. Lastly but not least, Dr. Christopher Noss has completed his Anesthesiology training from University of Calgary. He completed his Cardiac Anesthesia fellowship training from the the University of Calgary.

FMC section of Anesthesia is fortunate that while Dr. Illing has retired, she has still made herself available to provide anesthesia care for the patients of Alberta, participating in the senior anesthesiology position.

Dr. Richard Kowaleski has retired from an illustrious career as a Cardiac Anesthesiologist. We wish all the best for Dr. Kowaleski and hope he has the wind in his sails for his future endeavors.

Looking Forward

FMC section of anesthesiology continues to find ways to improve our delivery of anesthesia services. Future endeavors include refining the anesthesia aspects of ERAS for all surgical services at FMC and creating SIMS learning modules for anesthesia care. Future subspecialty training fellowship programs that will be based at FMC include Perioperative Medicine fellowship and Thoracic Anesthesia fellowship.

FMC section of anesthesia is always looking at ways to assess human resource needs. Moving forward, we hope to develop methods of recruitment and retention of anesthesiologists.



Peter Lougheed Centre

Section Chief: Dr. D. Jordan

Similar to previous years, PLC has provided care for 5,244 obstetric deliveries and over 14,000 surgeries throughout the hospital. In addition to the main operating theatres, PLC also provides anesthetic care in two specialized vascular surgery theatres. PLC Section of Anesthesiology provides additional care in Gastroenterology, Radiology, Women's Health Clinic and Psychiatry. We have a dedicated team providing care for a busy acute pain service and pre-operative assessment clinic.

Manpower

Our section is made up of 34 Anesthesiologists. Over the past year we have been preparing for two retirements. Drs. Downie and Cassidy will be retiring in the next few months. The department wishes them the best in retirement and is grateful for their years of dedication, hard work, and caring for Albertans!

Dr. Joe Downie

Dr. Downie joined the PLC section in 1996 after locuming for a year. He was the department QA person before working for several years as a scheduler. Dr. Downie has long been an amazing resource for the team for many years

Dr. Michael Cassidy

Dr. Cassidy was a graduate of the University of Alberta MD program in 1981. He finished Family Medicine residency at the University of Calgary 1984, FRCPC Anesthesia UofC 1988. Was a member Calgary General and Peter Lougheed

Hospitals 1988 to 1997, then Peter Lougheed Centre 1997 to present. Division Chief Calgary General and Peter Lougheed Hospital/Centres 1993 to 1999. Royal College of Physicians and Surgeons Oral Examination Board (Anesthesia) 1993 to 1996. Canadian Anesthesiologists' Society Board of Directors 2010 to 2019. Alberta Medical Association Section of Anesthesia Executive 2009 to 2016 (President 2012 to 2014). Alberta Medical Association Representative Forum (Section of Anesthesia) 2010 to 2018. One hundred and fifty thousand kilometers on two-wheeled BMWs and counting.

PLC Anesthesiology Department extends a warm welcome to Drs. Brown, Hutton, and Marois who have been hired this past year. Dr. Brown and Dr. Marois have started working with the department and Dr. Hutton will start in September 2020 following completion of her fellowship.

Dr. Judy Marois

After completing medical school at the UofC and residency training at Queen's University, Dr. Marois worked in Grande Prairie for a few years. She then returned to Calgary and recently completed a Fellowship in Safety & Quality in Anesthesia. Her fellowship work and ongoing interests include a proactive approach to patient safety through studying and developing return to work supports for anesthesiologists, flexible training plans for residents, and systems analysis of adverse events. When not working she enjoys spending time hiking and biking with her family.

Dr. Alex Brown

Dr. Brown was born and raised in Fredericton, New Brunswick. He has two sisters in Fredericton and a brother in Vancouver. His wife is also from NB - a small town called Campbellton. They have a six year old daughter named Stella and a nine month old son named Andrew. They love to ski, travel, and cook.

Dr. Brown has obtained a bachelor's of science from UNB and an MD from Dalhousie University in Nova Scotia. He completed his residency at the University of Alberta. After residency he worked in a position at the Royal Alexandra Hospital and was on staff there for ten years. He also worked at the hospital in Fredericton New Brunswick for a year before relocating to Calgary

Meredith Hutton

Dr. Hutton is currently away for her fellowship in airway, head, and neck surgery at Stanford University. The PLC Department of Anesthesiology Department is looking forward to her return in September 2020.

Lead Educational, Clinical and Provincial Roles

Thank you to Dr. Stilling and Dr. Yang for their ongoing dedication and work to the scheduling role. This year the PLC Department of Anesthesiology has added two new schedulers: Drs. Rabuka and Brown. The team sends a special thank you for helping the section in this capacity. The section extends the heartiest of thanks to Drs. M. Sandhu and Tiessen who have both worked incredibly hard to provide schedules that are equitable to the department and still find balance between family and work.

In addition, the PLC Section of Anesthesiology recognizes staff who have stepped into new roles:

Dr. Lindsay MacKenzie - Site Lead Obstetrics and OB Anesthesia Resident Rotation Coordinator & RPC Member

Dr. Linda Hung - Site Lead Acute Pain Service and Co-lead Regional Anesthesia



Alberta Children's Hospital

Section Chief: Dr. K. Carter

2018 – 2019 has been a year where renewal, growth, and change have been the positive themes and highlights. Our team's families have grown with three new babies: welcome to Victoria and Mackenzie Shaw (Dr Tiffany Rice) and Sebastien McAllister (Dr Elisabeth Dobereiner).

We launched a search and selection for two new section members with the successful applicants to be welcomed in the fall. We also welcome Chelsey Neda as our new, interim RT Site Lead. We have acquired some awards: Dr. Joanna Moser (resident) winning CAS research award (supervised by Dr. Debbie McAllister) and our section was integral in improving and mobilizing resources for ACH to apply for and be awarded the prestigious Childkind designation. For firsts, we have achieved the first competency by design (CBD) anesthesia trainees rotating through the ACH site, an Inaugural Advanced Pediatric Pain Care Day with Guest speaker Dr. Stephan Friedrichsdorf, the first Peri-Operative Crisis Management course (POCM) run on a week day, and the first ever ACH OR family open house.

Hospital-wide new programs continue to implemented and improved. ACH, along with Stollery Children's Hospital, have implemented the "Safest Together" initiative and we await pedNSQIP with Dr. Michelle Theam recently being appointed our site lead. Our section have been Canadian leaders in the adoption of improved pediatric fasting guidelines, improving patient comfort and hydration. A new Site Airway Council has been struck to oversee and advise multiple programs

in the hospital improving intubations and airway management for pediatric patients. This includes our involvement in a difficult airway database, and the NEAR4neo and NEAR4kids databases. We have also begun a HFJV (high Frequency Jet Ventilation) program to the OR for select neonatal cases and have carefully planned the purchase of new difficult intubation equipment. We are continuing to explore the needs of hospitals of the future and look to develop more robust Day Hospital systems and minor procedure services. In line with this we have ongoing development of the induction room service to provide safe anesthesia service to children requiring procedures not requiring full perioperative nursing support. We are also developing plans for a new transitional pediatric pain program.

These initiatives and improvements bring more energy and change to the work and business of a bustling and intense OR and pain practices.

ACH Education Report

ACH continues to support the education of anesthesiologists and allied healthcare workers. We have commenced a successful transition to competency based training in anesthesiology we are now working with the departments of pediatric and pediatric surgery to support them as they begin the same process. Our current fellow, Dr. Daniel Mireault, graduated in July and has taken a staff post in Montreal. We welcome Dr. Tanya Santella as our new fellow for the 2019 – 2020 academic year. Our fellowship program attracts multiple quality applicants and the successful candidates are being welcomed as valuable member of the Canadian and worldwide pediatric anesthesia community. We continue to welcome residents from other programs to learn and experience airway IV and anesthesiology management. Looking forward, Dr. Luntley will step down from the position of site lead to fulfill other responsibilities in the section. Dr. Hardcastle will take over as site lead supported By Dr. McMillan and Dr. Luntley.

ACH Simulation Report

Simulation at ACH is a busy team championed by Dr. Duncan McLuckie. We are currently running many successful programs including POCM, TPAC and MEPA:

- The Perioperative Crisis Management Course (POCM) is an all-day simulation course designed and developed at the ACH to improve crisis management in our operating rooms. POCM is a multidisciplinary, inter-professional

group from PICU, Peds Emerg, Ped Anesthesia and RTs. The target audience is practicing physicians, outside of anesthesia, that may be required to manage pediatric airways. Lead: David Lardner.

- Managing Emergencies in Pediatric Anesthesia (MEPA). This full day simulation course aims to give anesthesia trainees the opportunity to develop management strategies for emergencies in pediatric anesthesia through



course involving OR RNs, PACU RNs, Pediatric Anesthesiologists, Pediatric Surgeons, and RTs. The course involves simulated crises scenarios based on our last one year experience in the perioperative environment and linked to our Quality Improvement / Quality Assurance program. POCM courses this year were run in collaboration with our ENT, neuro and general surgery colleagues as well as colleagues in the Pediatric Intensive Care Unit. Lead: Duncan McLuckie. Support: Mark Gale

- The Pediatric Airway Course (TPAC) is an all-day simulation based airway course hosted by KIDSIM and facilitated by a multidisciplinary

the use of high fidelity simulation. Dr. McLuckie and Dr. Gale ran the MEPA course for the R4 residents and Dr. McLuckie ran a MEPA course for anesthesiologists in South Africa.

Missions Nina Bulawayo Zimbabwe May 2019 with Christiaan Shraag and Ryan Frank

Cleft project – presented at surgeons day

ACH APS Highlights

There has been some changes this past year with staffing on APS as we wished Leah Foster goodbye as starting her new role here in Neuro-critical and welcomed Sarah Shantz to the APS NP role.

Highlights from 2018 include ACH obtaining the internationally renowned ChildKind certification and hosting our first annual Advanced Pediatric Pain Care day!

Ongoing APS work includes the implementation of a Transitional Pain Clinic, assisting with the development on a Procedural Sedation Team and less exciting but necessary, the building of order sets and policies to be implemented with Connect Care (thank you to all involved in developing these!).

ACH Quality Report

Continues to be a priority at site and zone level, new physician reporting back system for safety events.

Vi Riddell Pain and Rehabilitation Program

The Vi Riddell Pain Program has continued to evolve and expand over the last 12 months with Dr. Nivez Rasic as the Medical Lead of this program. The capacity within the clinic has increased. The pain program includes the Complex Pain Clinic, Headache Clinic, the Vi Riddell Intensive Pain Rehabilitation Program (IPRP) and the Comfortability Program. Data has been collected on all patients within the IPRP at multiple time points, including neuroimaging data, and thanks to the hard work of a summer student, that data is now being analyzed and will be presented.

The research arm of the pain program, led by Drs. Noel, Rice, Vinall and Rasic and Ms. McPeak as our research coordinator, has enjoyed an extremely successful year with ongoing robust recruitment of patients into multiple clinical pain studies, the acquisition of external research funding and numerous awards, and extensive media coverage. Ms. McPeak has recently begun her first year of medical school and as result has unfortunately left her research coordinator position.

With Alberta facing the tragedy of the opioid crisis and the recognition that pain is poorly managed and under-resourced in this province, AHS has

partnered with the Pain Society of Alberta to develop an Alberta Pain Strategy. Dr. Rasic is the Co-Chair of the Acute Pain Working Group of the Alberta Pain Strategy and will be working with a large team to produce and implement this new provincial pain strategy.



In addition, our pain program is involved with broader ACH and AHS initiatives, ensuring that all practitioners follow a “Commitment to Comfort” approach with our young patients. We have been awarded the “ChildKind International”

designation (an initiative through the International Association for the Study of Pain (IASP)) which recognizes our “standardized, institution-wide, collaborative approach to reducing pain and suffering in children.” We are the 10th institution in the world to receive this prestigious designation. This effort was spearheaded by our clinical nurse specialist in the pain program, Laura Rayner and our hospital-wide team.

We hosted our first “Advanced Pediatric Pain Care Day” on February 4, 2019 with Dr. Stefan Friedrichsdorf as our guest speaker from the Children’s Hospital of Minneapolis. This one day local conference focused on improving the knowledge and care delivery of health care practitioners, for children with pain. There are plans to make this an annual conference.

Research

We made the Calgary news with Global TV reporting on Parents pain memory!

<https://globalnews.ca/news/5172950/childrens-memory-of-pain-significantly-impacted-by-parents-anxiety-study/>

The area of pain and translational research has seen the greatest growth. Jillian Vinall (PhD) is a post-doctoral researcher, who continues to run numerous clinical pain studies, and has proven to be a very productive researcher. She is a neuroscientist who studies acute and chronic

pain in children from birth to adolescence with a special interest in neuroimaging. Dr. Melanie Noel has been appointed an adjunct professor of anesthesiology and is a prolific researcher in the area of developmental psychology, studying both acute and chronic pain in children and adolescents. She has an outstanding record of research productivity, numerous graduate students, demonstrated success in the acquisition of external research funding and numerous awards during her four years here at U of C. Dr Rice (MD, PhD) is heading up the translational research component of the program and has established collaboration with basic science researchers at the U of C, Dr. Syed and Dr. Trang. Drs. Noel, Vinall, Rasic and Rice make up the Vi Riddell pain research team and have numerous projects underway including the following:

- “Sociolinguistic context of pain memory development in young children.” Vinall J, Rasic N, Pavlova M, McCallum L, Graham S, Noel M.
- “Mutual maintaining mechanisms underlying the co-occurrence of PTSD and chronic pain in youth: An integrative examination (PATH Study).”: Vinall J, Rasic N, Arnold P, Sears C, Noel M.
- “Neurobiological, cognitive-affective and behavioural changes following exposure to either sevoflurane or propofol-based anesthesia in children undergoing MRI.” Vinall J, Rasic N, Spencer A, Noel M, Walker A, MacMaster F, Syed N, Rice T.
- “Effects of anesthetic agents on neuronal viability, neurite outgrowth and mitochondrial integrity.” Rice T, Armstrong R, Hasan S, Iqbal F, Syed N.
- “Neurobiological changes associated with improvements in function following intensive pain rehabilitation in youth.” Vinall J, Noel M, Harris A, Bray S, Carter K, Rasic N.
- “Establishing a pain outcome database for children and adolescents with headaches, functional abdominal pain and other complex pain disorders”. Noel M, Rasic N, Vinall J, et al.
- “Pain after tonsillectomy study.” Noel M, Rasic N, Graham S, Chorney J, Vinall J, Brookes J, Yunker W, Drummond D, Hoy M, Pavlova M.

- “Pain after surgery study.” Noel M, Brindle M, Pavlova M, Rivera L, MacRobie A.
- “Co-constructing the past: Examining mother and father child narratives about past events involving pain versus sadness.” Noel M, Graham S, Peterson C, Pavlova M.

Our pain program still continues to be involved with the national pain SPOR, and is one of the lead pediatric pain sites. Drs. Noel, Rice and Rasic are the local PIs.

Dr. Adam Spencer is spearheading research involving regional anesthesia and is involved in various studies with our surgical colleagues; one example being small children having orchidopexy surgery. Dr. Mary Brindle (pediatric surgery) has recently received a Research Chair in surgery, and we are collaborating with her group on a variety of EQUIS projects. Drs. Hardcastle and Spencer have been involved with the development of an ACH cleft palate surgery pathway. Implementation of this pathway has resulted in significantly reduced opioid consumption and length of stay in hospital for this patient population, through the use of bilateral suprazygomatic maxillary nerve blocks. The results of this pathway were presented this past June at Surgeons’ Day by Dr. Tom Cawthorn (plastics resident). The same research group is now working on changes to the management of alveolar cleft patients.

From a research standpoint, the section of pediatric anesthesiology has made substantial gains building its research program, but more importantly fostering a culture of research within the section and the hospital. Even staff who are not directly involved in research are willing to facilitate these projects, and follow the clinical research protocols to facilitate recruitment and data collection. Furthermore, our section also gives personal monetary donations to support the research efforts of the members in the group who are conducting research. We excited about these efforts and look forward to further growth and development of research within our section.

Overseas Work

Our section members continue to be widely involved in multiple overseas missions and programs in various capacities. Dr. Hardcastle remains a pediatric anesthesia educator for Operation Smile, and is working on attending an extended educational mission in late 2020/early 2021. Dr. McLuckie is working with CASIEF and supported education for teaching developing and Dr. Cox with Resurge International. Dr. Connors continues to lead Project Outreach. The CASIEF function at the Calgary Zoo was enjoyed by many ACH family members.



Rockyview General Hospital

Section Chief: Dr. C. Sims

The Rockyview General Hospital section of anesthesia currently includes 36 anesthesiologists, comprising 30 FTE in total. We have a wide range of full time and part time practices.

This section provides anesthesia care and teaching at the RGH facility; as well as, privately-owned publicly-funded Non Hospital Surgical Facilities which provide mostly eye surgery.

Our section is also currently staffed to accommodate two privately-owned privately-funded surgical facilities, Canadian Surgical Solutions, and the South Calgary Oral and Maxillofacial Surgery Centre. Section members who work at these facilities do so on average for about 20 percent of their practice.

The section provides daily service to 14 operating rooms at RGH as well as a dedicated anesthetist in the L&D suite. We have an anesthetist dedicated Monday to Friday to our pre-operative assessment clinic who also gives anesthetics for ECT, and covers our acute pain service, with the help of our acute pain nurses. Our outside facilities' daily requirements are somewhat variable. Typically we staff between two and three NHSF eye lists, and approximately three private facility lists on a daily basis. In terms of call coverage, we have two members covering the OR, one covering the L&D suite, and one covering the acute pain service.

We have had, and continue to have, a number of personnel changes this year.

Dr. Lin Tsai has stopped doing regularly scheduled work, and continues to work on a casual basis when

needed and when available. Dr. Hopper had been practicing in this fashion for a number of years. Physicians in this role are officially considered members of the section with 0.0 FTE.

We are very pleased to welcome Dr. Zahid Sunderani to the section, as of July 1, 2019. Dr. Sunderani has just finished a fellowship in obstetrical anesthesia and simulation in Vancouver. He is an alumnus of our own residency program.



Given it has not been my practice in the past to include new staff photos in this report, I'd like to make up for past omissions, and highlight more of the excellent staff we have added over the last few years.

In 2016 Dr. Yara Babyak joined our department. She too was a graduate of the Winnipeg anesthesia program, and also did a simulation fellowship there. She is a resident coordinator for RGH, and received the Excellence in Postgraduate Medical Education Award last year.



Starting in September 2019, we also welcome Dr. Paul Dawson to our section. He too is a graduate of the Calgary anesthesia residency program.



In 2017 we welcomed Dr. Erin Bruce to the department. She is a graduate of the Calgary anesthesia program, and prior to medical school she completed a Masters degree in Community Health and Epidemiology at the University of Toronto. She too received the Excellence in

Postgraduate Medical Education Award last year. She is currently the Resident Core Program Coordinator, the Resident Scholarly Project Coordinator, and the ERAS lead for RGH.

Early in 2020, Dr. Darren Holland will be joining our section. Dr. Holland did his anesthesia residency in Winnipeg, and has been working in Medicine Hat for the last three years.





In July 2018 Dr. Ray Zhou joined our section. Dr. Zhou was a cardiac anesthesiologist in London Ontario, and is a skilled practitioner of transthoracic echo and TEE. He really hit the ground running at RGH this year, given he won the Excellence in Undergraduate

Education for the Rockyview General Hospital for 2019. This is awarded by the Anesthesia Clerkship Committee in recognition of his teaching in the mandatory anesthesia clerkship rotation. He is now the clerkship rotation coordinator for RGH.

Last but not least, we were lucky to have had Dr. Farrah Morrow join our department in 2018. Dr. Morrow was a member of the South Health Campus section of Anesthesiology, and was the Section Chief for her last few years there. She is now one of our schedulers, which is a very challenging job, given so many variable RGH schedulers have to deal with.



I've never been more pleased with our workforce than I am now, and I'm looking forward to more additions in 2020.



South Health Campus

Section Chief: Dr. L. Olivieri

2018 – 2019 was the sixth fully operational year for surgical services at South Health Campus. The Section of Anesthesiology at South Health Campus consistently works towards being a Zone leader in Regional Anesthesia and Acute Pain Management, Simulation and Education, and Quality Assurance.

The Section's mission statement remains, "to provide superior, innovative anesthetic and perioperative care for our patients, and enhancing the knowledge and skills of ourselves, our colleagues and our trainees through excellence in teaching, research and ongoing professional development."

The surgical programs remain relatively neutral in terms of growth. SHC continues to have low-risk bariatric surgery, colorectal surgery, flap procedures for breast reconstruction, upper and lower joint arthroplasty programs, advanced auditory programs (including cochlear implants), hand surgery and surgical sports medicine programs, in addition to an extensive ambulatory surgery program.

The four-bay SHC PACU block area continues to support the provision of regional anesthesia and ultrasound-guided line placement to surgical patients. The PACU block area facilitates approximately 1,400 regional anesthesia procedures annually. This unique multi-disciplinary work area allows Anesthesiologists to provide advanced pain management modalities to preoperative, postoperative, and outpatient (e.g. minor surgery, epidural blood patch) patients with the support of PACU nurses and Anesthesia RRTs. The PACU

block area has three dedicated ultrasound machines and two peripheral nerve stimulators. Gastric ultrasound, basic transthoracic echocardiography, and basic lung ultrasound scanning can also be supported. Anesthesia residents and fellows routinely participate in Regional Anesthesia and Perioperative Ultrasound rotations in the SHC PACU block area. Over the past year, the anesthesia group has been trialing an “out of OR” position, with the hope of evaluating the feasibility of a PACU block area-dedicated anesthesiologist.

Transitional Pain Services

The SHC Transitional Pain Service (TPS), led by Dr. Jarad Stephan, Dr. Jennifer Joo, and Rosa Reyes, NP, opened in the SHC Pre-Admission clinic in the fall of 2017. This outpatient clinic continues to support patients identified at risk for challenging pain management in the perioperative period, such as those patients with significant opioid tolerance and/or complex pain syndromes. With the TPS, SHC surgeons, anesthesiologists and APS nursing staff, have the opportunity involve chronic pain specialists in patient care prior to surgery, prior to discharge from hospital, or after discharge (for ongoing pain management support). This advanced outpatient pain management service adds to our section’s goal of creating a comprehensive “perioperative surgical home”. Since November 9, 2017, the TPS has seen a total of 233 patients with an average of ten new patients per month for each specialist MD and NP, and approximately 22 follow up appointments per week. The team is presently working on a QI study to determine if the service has made a difference in patient outcomes and opioid use, in comparison with patients who have not been referred to the TPS program.

This past year, the TPS won the Health Quality Council of Alberta Patient Experience Award and was nominated for the AHS President’s Excellence Award.

Quality Assurance and Patient Safety

This hospital site is home to several Quality Assurance initiatives.

- Drs. Olivieri and Bharwani have participated in the development of a multi-disciplinary Midwives Practice Document for Managing

Parturients with Labor Epidurals; his document will be considered for implementation provincially

- Drs. Olivieri and Baghir-Zada have participated in the development of a Practice Guide for PACU nurses, in cases where a PACU patient under Anesthesia is being assessed by ICU
- Dr. Leyla Baghir-Zada has been participating on a multidisciplinary OR-ICU committee tasked to implement the Zone-wide ICU Handover Tool
- Dr. Leyla Baghir-Zada is participating on a multi-disciplinary committee developing guidelines for Inhaled Anesthesia in ICU
- As part of a site QAR, Dr. Olivieri participated in the creation of a new proactive care-path for ENT patients with moderate to severe OSA undergoing bi-level airway surgery, which includes elective admission overnight to PACU for continuous pulse oximetry monitoring
- Under the leadership of Dr. Ryan Endersby, the site also continues to develop integrated postoperative pain pathways to expedite recovery from adult shoulder surgery and for outpatient paediatric orthopaedic surgery, in collaboration with Orthopaedic Surgeons, Drs. Justin LeBlanc and Carmen Brauer
- Dr. Leyla Baghir-Zada is the SHC Anesthesia Champion for the SCN NSQIP initiative, working along with the other citywide Anesthesia Champions in Calgary and with the SHC Surgery Champion, Dr. Carmen Brauer
- Dr. Matthew Banasch participated in a multi-disciplinary FMP committee that tackled with a Quality Improvement Project the issue to reduce the number of unattended Fentanyl found in patient rooms; this group developed a new process, including the placement of a lock box on the FMP labour epidural carts
- Drs. Bharwani and Banasch are participating on a FMP nursing-Anesthesia committee to assess and address issues of communication between these two groups
- Dr. Milne (co-Chair, with Crystal Cunningham) co-led and Dr. Olivieri participated in a SHC surgical suites subcommittee committee that reviewed and refreshed the procedure for

“bumping” cases and opening additional ORs after hours

Simulation:

Our section continues to value the use of Simulation for allied health care education and patient safety initiatives, in the OR and PACU, as well as on FMP. Our section members routinely volunteer for interdisciplinary eSim sessions. These sessions help expand knowledge and skills, and provide information for potential system improvements. Notably, Dr. Esther Ho provided a full day of eSim sessions to the OR and PACU teams in July. Dr. Bharwani and Dr. Goldstein have been working with FMP and the Midwifery program to tackle issues around emergency responses involving water births, with the use of eSim. The FMP unit organizes in situ eSim scenarios a few times a year, including the Obstetrical Anesthesiologist on call that day to be a part of these team training and patient safety initiatives. Dr. Baghir-Zada and Banasch are working towards a full day of OR-ICU eSims involving all stakeholders, in order to implement the SHC ICU Handover Tool. Some members of our section also volunteer for the simulation educational program organized by the RPC for resident training.

Academics and Teaching:

Dr. Lori Olivieri has finished collaborating with Orthopaedic Surgeon Dr. Neil White and his research team to carry out the multi-centre PHRI study “HIP Attack” which compares accelerated operative care of hip fractures (less than six hours from time of diagnosis in the ER) versus standard of care. The study authors have closed recruitment across all sites and results are pending.

Dr. Leyla Baghir-Zada and team completed and presented a poster at the SOAP conference a project entitled, “Complications Associated with Anesthetic Care in Obstetrical Patients: A Population-Based Study.”

Drs. Ryan Endersby, Leyla Baghir-Zada, and Carlos Yu (PGY5) continue to recruit for a double-blinded, randomized controlled trial investigating the “Efficacy of Ultrasound-Guided Transversalis Fascia Plane Blocks for Post-Caesarean Delivery Analgesia”.

Dr. Melissa Jack is working with Dr. Sabo

(Orthopedics) on a research project.

Five publications were published in peer reviewed journals this past year by SHC Section members – congratulations to Drs. Endersby, Chu, Montgomery, Baghir-zada, Spencer and Olivieri. please see the Research Section for the details of this list.

Dr. Tony Trinh continues for another year in the role of Program Director for the Family Medicine Anesthesia program at Cumming School of Medicine, University of Calgary. Dr. Trinh oversees two FP-A residents per year.

Dr. Alan Chu is helping our Residency Program continue to transition to Competency-by-Design (CBD) as the Lead of Academic Coach Program for CBD and Lead of the Mentorship Teams Program in the residency program.

Dr. Ted Schubert was awarded Outstanding Educator for SHC by the U of C Anesthesia Residency Program. Excellence in Postgraduate Education Awards were given to Drs. Matthew Banasch, Shaylyn Montgomery, Afra Moazeni, Dr. Adam Spencer, and Dr Alan Chu.

Dr. Ted Schubert was also given the Excellence in Undergraduate Education award by the Anesthesia Clinical Clerkship Program. Dr. Melissa Jack received a clinical clerk recognition for teaching award from UGME.

Dr. Endersby, with the support of Drs. Montgomery, Kostash, Spencer, Olivieri, and Fox, has successfully developed the new SHC Regional Anesthesia and Acute Pain Management Fellowship program. The first SHC RA and Acute Pain fellowship candidate, Dr. Philippe Champagne, is scheduled to begin a 12-month fellowship program in September 2020.

Dr. Melissa Jack hosted a SHC medical staff association information session on Connect Care, in her role as the President of the SHC MSA.

In preparation for Connect Care and EPIC, Dr. Endersby worked with Dr. James Green in Edmonton to formulate the charting of Regional Anesthesia in EPIC. Dr. Lori Olivieri was the provincial lead author for the Pre-Procedure Order Set. Dr. Leyla Baghirzada was the provincial lead author for the obstetrical anesthesia order set.

SHC Leadership

Dr. Lori Olivieri	Section Lead, PAC Liaison (outgoing), SHARP Committee, SHC Search and Selection Committee (Chair), Residency Coach, CPSA Consultants Working Group committee
Dr. Jarad Stephan	Deputy Section Lead, SHC Search and Selection Committee, Transitional Pain Services Lead
Dr. Fayaz Bharwani	SHC Obstetrical Anesthesia Lead, SHARP Committee (Chair), SHC Search and Selection Committee, SHC Women's Health Leadership Committee, SHC Maternity Working Group
Dr. Ryan Endersby	Acute Pain/Regional Anesthesia Lead, SHARP Committee Member, Perioperative Ultrasound Fellowship Site Lead, SHC Regional Anesthesia and Acute Pain Medicine Fellowship Coordinator, Workshop instructor for ASA, CAS and Banff FP-A conferences, Calgary Anesthesia Fellowship Advisory Committee
Dr. Mark Kostash	Perioperative Ultrasound Fellowship Site Deputy Lead, Citywide NHSF Committee
Dr. Tony Trinh	Family Medicine Anesthesia Program Director
Dr. Alan Chu	PGME Site Coordinator, UGME Site Coordinator, CaRMS Committee, CBD Leadership Committee, SHARP Committee Member, RRT Liaison, ER Airway Liaison
Dr. Nathan Brown	Residency Training Committee, Regional Anesthesia Rotation Coordinator, RTC Assistant Site Coordinator, OR SMART Committee, Minor Surgery Block Program Lead, EBP Program Lead, CaRMS Committee
Dr. Mark Cheesman	Section Scheduler, SHARP Committee Member
Dr. David Goldstein	PAC Lead, Specialist Link Lead for Anesthesia (citywide)
Dr. Leyla Baghir-Zada	Quality/Safety Lead, South Health Campus Quality Council, ER-ICU Liaison, SHC NSQIP Champion, ATLS Instructor, Physician Examiner for the National Assessment Collaboration (NAC) Examination
Dr. Esther Ho	Treasurer/Secretary, CME Rounds Co-Coordinator, SHC OR SMART Committee, SHC Retreat Planner
Dr. Afra Moazeni	CME Rounds Co-Coordinator, RPC member, Residency Core Program Co-Coordinator, Calgary Anesthesia TEE/TTE Committee, CaRMS Committee
Dr. Shaylyn Montgomery	PACU-DSU-SSU-Ward Lead, SHC Block Area Position Development Subcommittee Chair, Assistant Director of the SHC Regional Anesthesia and Acute Pain Fellowship, Residency Mentor
Dr. Ted Schubert	Out-of-OR Anesthesia Lead, Residency Mentor
Dr. Melissa Jack	SHC MSA President, Anesthesia RPC CBD Subcommittee Member, Residency Mentor
Dr. Ulyana Nemish	Choose Wisely SHC Lead, SHC OR Laser Safety Committee, SHC Retreat Planner, ATLS Instructor
Dr. David Milne	AMA Anesthesia Section representative
Dr. Matthew Banasch	SHC Family Maternity Working Group

*SHARP (Strategic Human and Resource Planning Committee, formerly called the Manpower Committee)

New Recruitment and Departures

In the past 12 months, SHC was pleased to welcome on staff Drs. Jenny Thompson, Marie-Eve Beauchemin-Turcotte and David Milne.

Dr. Jenny Thompson:



Jenny is a graduate from the University of Calgary Anesthesia program. She completed a 6-month fellowship Peri-Operative Medicine at FMC, gaining administrative and research experience in patient risk stratification and mitigation. She will join us at South

Health Campus in 2020 after a maternity leave for her second child. When not in the OR, she is usually in the mountains with her high-energy toddler, handsome husband and loyal golden retrievers. She loves patio season and beach vacations.

Dr. Marie Eve Beauchemin-Turcotte:

Dr. Marie-Eve Beauchemin-Turcotte was born in Levis, Quebec. She is a graduate of University of Quebec in Trois-Rivieres with honors and then completed a Master's degree in fundamental neurosciences at the University of Ottawa. She obtained her medical degree at the



University of Ottawa. Her residency in Anesthesia was completed in Quebec. She recently completed her training with a two-year Royal College residency program in Chronic Pain, at the University of Calgary. After completion of her exams, she will be the first Royal College-certified Chronic Pain Specialist in Alberta. Dr. Beauchemin-Turcotte has special interest in Transitional Pain Medicine,

regional anesthesia, ultrasound and fluoroscopic-guided procedures and neuromodulation for the treatment of chronic pain, as part of a holistic approach. Dr. Beauchemin-Turcotte resides in Calgary with her beloved husband, and enjoys life with her two-year old son. In her free time, she enjoys spending time with her family, running and yoga.

Dr. David Milne:

Dr. David Milne has been working in Calgary for more than a year. The majority of his clinical time has been spent at SHC, as a long-term locum. Dr. Milne brings a wealth of clinical experience, with past emphasis on thoracic, transplant and trauma anesthesia. While



he worked as a family physician for several years after Medical school, and worked as a Physician in the Canadian Armed Forces for a time, the vast majority of his career has been in clinical anesthesia, and always in a teaching environment. Dr. Milne has trained in and/or worked at UBC, the University of Ottawa, Dalhousie University and now, the University of Calgary. He has also held several leadership positions in Canada, including the Associate Head for Anesthesia for Dalhousie, the President of Doctors Nova Scotia, a CMA Physician leader, a Choose Wisely Physician leader, and a Canadian Anesthesiologists' Society Board Member. Dr. Milne will continue this illustrious career in medical leadership by representing his Anesthesia colleagues at the level of the Alberta Medical Association.

This past year, Dr. Sushil Sancheti moved back to St. John's, Newfoundland, in order to lead the development of a formal Regional Anesthesia Program for Memorial University, and to be close to his extended family. SHC was very sad to say goodbye to an accomplished colleague and teacher, but equally happy for Sushil, as he moves on to new career opportunities in his hometown.

After slowly decreasing his work hours at SHC over the past two years, Dr. Barry Wollach has officially retired from our Section. Dr. Wollach was one of the original members of the SHC Anesthesia department. We wish him all of the best as he embarks on “life after Anesthesia”.

SHC Surgical Services

The SHC site has up to eight elective operating rooms, including one Access room and one Ortho Trauma room, running daily. The section staffs two on-call anesthesiologists per day, one for the Main Operating Room and one dedicated to Obstetrical Anesthesia care. One staff person is assigned to an off-site NHSF list, up to four days a week.

SHC supports placing peripheral nerve blocks for patients booked for minor surgery (21 elective upper limb peripheral blocks in the last 12 months), expanding the scope of procedures done in minor surgery.

SHC also routinely provides Anesthesia services for the outpatient the 7th floor Gyne clinic, Diagnostic Imaging (for imaging investigations and kyphoplasty procedures), ECTs, and Endoscopy.

Nine Epidural Blood Patches for Spontaneous Intracranial Hypotension were performed in the last year to outpatients (in PACU, via Minor Surgery), in conjunction with the Calgary Headache Assessment & Management Program (CHAMP).

As part of our collaborative practice model, SHC Hospital RRTs are called to attend all elective ECTs, as well as most “after hours” Eo caesarean sections (to assist Anesthesia with pending difficult airway management situations in obstetrical patients).

SHC Pre-Admission Clinic

The Section staffs an on-site pre-operative assessment clinic (PAC) that continues to manage increasing demands for patient assessments. The pre-admission clinic reviews and revises its screening protocols to decrease the volume of standard preoperative investigations, in the spirit of the national “Choosing Wisely” campaign.

The PAC formally screens for and appropriately applies ERAS care paths in the Colorectal, Plastics/ Reconstruction, Major Gyne, and Arthroplasty programs at SHC. In the fall of 2018, PAC instituted

modern eating and drinking guidelines to all elective surgeries, by promoting CAS guidelines in lieu of the typical NPO midnight tradition.

Nathan Morin (pharmacy) and Dr. Lori Olivier are in the implementation stages to trial a PAC perioperative diabetes management protocol in the next year.

Dr. David Goldstein has led a trial in PAC of using Dragon Dictation for PAC Anesthesia Consultations, as a cost savings measure for AHS.

SHC Acute Pain Services

The SHC APS saw a total of 981 inpatients for the following: peripheral nerve blocks (794 single shot and 28 continuous), epidural infusions (47), PCAs (15), ketamine and/or lidocaine infusions (10), and acute on chronic pain consults (88).

SHC Family Maternity Place (FMP)

South Health Campus saw 3,044 deliveries in 2018 (including 53 twin deliveries). Two operating rooms in the Main OR area are dedicated to elective and emergency obstetrical operative management. The labour epidural rate was 77% and the caesarean section rate was 28% in 2018. VBAC deliveries (76% success rate in 2018) and vaginal breech deliveries (16 cases in 2018) are supported at SHC. There were also over 545 assisted vaginal deliveries at SHC in 2018. Anesthesia for Cerclage procedures and External Cephalic Versions are routinely provided at SHC.

As mentioned above, Hospital RRTs continue to be called for most Eo caesarean sections (after hours), to provide the option of immediate access to a “second pair of skilled hands” in potential General Anesthesia emergency obstetrical cases.

SHC FMP collects patient feedback on a monthly basis, allowing team members to receive patient appreciation and identify areas for improvement in a timely fashion.

Clinical Services

Anesthesia Assistants

Michael Coutts, RRT

Michelle Lohman, RRT HBS

Over the past year we have had some structure changes to our clinical service model. Anesthesia Operations was placed under the NICU/Women's Health portfolio with Bryan Peffers as our new Executive Director. The one-year pilot of FMC Respiratory Services reporting to Michael is now permanent.

There are 72 Anesthesia Respiratory Therapist IIs and seven Anesthesia Respiratory Therapist site leads. There are 25 Anesthesia Aides and relief staff distributed among the five sites. To provide efficient service coverage at all sites we have many staff that work at multiple sites.

Anesthesia Respiratory Therapists continue to provide high level service delivery to all areas that require an Anesthesiologist. This service delivery involves clinical and technical support of anesthesia equipment. Respiratory Therapists are located at the five acute care centers within the Calgary Zone and provide consulting support for the rural sites (Canmore, High River, and Banff) as well.

Many experienced staff currently on maternity leave and venturing into parenthood. We have added a few new Anesthesia RT staff to our team at all sites, and therefore there will be some new faces at the bedsides.

Continuing education and policy/procedure development and updating continues. Continuing competency audits for advanced skill sets occur annually.

Within Anesthesia, several staff provide zone-wide support to clinical applications including Anesthesia Electronic Record (AER) and anesthesia scheduling software and other clinical applications. There are two senior analysts, three clinical educators and one Zone Equipment and Supply Coordinator. One of our senior analysts, Dan McIntyre, will be retiring in November.

There continues to be increases in clinical activity at all sites which adds to the dynamics of ensuring appropriate equipment and clinical support staff. Although challenging we continue to support the surgical services teams particularly activity outside of the main operating rooms.

Acute Pain Service

Dr. J. Hamming

Overview

The APS service, known as the Acute Pain Service or Anesthesia Pain Service (depending on the hospital), provides specialized consultative analgesic care to select patient cohorts. The primary patient cohort for the service is post-operative patients undergoing analgesic treatment with regional anesthesia or specialized intravenous infusions, but also includes acute on chronic pain in post-operative patients, select trauma patients, and cancer pain patients. This is not an exhaustive list, and there are other specialized services provided, depending on the hospital within the Calgary region.

Administrative Structure

The APS service is a component of Calgary's Department of Anesthesia. The Departmental APS Medical Director represents APS at the Anesthesia Zone Executive and partners with the four Divisional APS Directors of each hospital in the Calgary Zone. The APS team is composed of anesthesiologists from each site, who rotate onto service. The backbone of the APS service are the APS nurses, who numbers vary from site to site and from Nurse Practitioners to Nurse Clinicians depending on staffing requirements.

Clinical Activities

The primary activity of the APS team is providing clinical care to hospital inpatients referred to the service. Overall, our clinical volume and spectrum has not changed appreciably from 2017-2018, though the case mix has changed slightly from

site to site. For example, at FMC the APS service is performing increasing number of epidural blood patches on patients with spontaneous intracranial hypotension and has increased the number of wards and patients cohorts who receive intravenous ketamine and lidocaine infusions. The APS service also provides catheter infusions to cardiac surgery patients undergoing MIV procedures. Another example is at RGH, the APS service has started a formal nerve catheter protocol for limb amputation patients and expansion of their lidocaine & ketamine infusion service.

The second most time consuming service provided by APS across the zone is development of various analgesic policy and procedures and their implementation. Some of the activities deserve special mention, specifically: develop of various ordersets and documentation for the new provincial software platform ConnectCare, participation and leadership in the Alberta Strategic Network for Pain, development of new guidelines for patients on Buprenorphine, updating various policy and procedures for the Calgary zone and the incumbent SCM platform, and leading and contributing to various provincial Clinical Knowledge Topics.

Some of the other activities include research and collaboration with various ERAS protocols and with the Transitional pain service. The APS teams, at all sites, both produce primary research and participate in multi-disciplinary research projects. Collaboration with ERAS programs includes input on the development of some of the protocols, leadership on some of the programs, and of course in the implementation of post-operative clinical care in certain ERAS cohorts.

The Transitional Pain Service was started a couple of years ago at SHC. This program involves the APS nurses, as well as separate physician team. Furthermore, APS is involved with inpatient care of these patients. The Transitional Pain Service will likely expand to the other hospitals in the Calgary Zone, and will certainly involve the APS nurses and collaboration of the respective APS services.

Education

Anesthesia residents take a one month block in Acute Pain at the FMC site. This usually occurs in the PGY-5 year. Junior residents get exposure as part of their general anesthesia rotation at

FMC. Additionally, residents cover some of the night call for APS, under supervision of a staff anesthesiologist. Finally, residents gain further APS exposure as part of their regional rotation and as part of their pediatric rotations. This year the APS program will host a pain fellow as well as provide rotations to thoracic anesthesia fellows starting in the next year.

The APS nurses provide a lot of education to their nursing colleagues on a weekly basis in various capacities. The culmination of their annual teaching work is the Pain Awareness Day, now in its eighth year. It has sold out every year and is highly regarded by the nurses across the city.

Cardiac Anesthesia

Dr. C. Prusinkiewicz

Vision

To improve the quality of life and longevity of patients with surgical cardiac disease by optimizing perioperative management

Mission

To be an international leader in the enhanced recovery of cardiac surgery patients and to excel in academic cardiac anesthesia

Overview

The Cardiac Anesthesia Group (CAG) consists of nine sub-specialty trained anesthesiologists who hold primary appointments in the Department of Anesthesiology, Perioperative and Pain Medicine (Foothills Medical Centre Section) with joint appointments in the Department of Cardiac Sciences. Group members also hold clinical appointments with the University of Calgary. All group members have successfully completed the National Board of Echocardiography Perioperative Examination and have received certification in perioperative transesophageal echocardiography from the College of Physicians and Surgeons of Alberta.

The current Director of Cardiac Anesthesia is Dr. Chris Prusinkiewicz and he represents the CAG on both the Zone Anesthesia Executive Committee and the Cardiac Sciences Executive Committee. Multiple group members hold leadership positions

including Dr. Duc Ha (FMC Section of Anesthesia Site Chief), Dr. Alex Gregory (Director of Cardiac Anesthesia Research and Director of the Cardiac Anesthesia Fellowship Program), and Dr. Doug Seal (Cardiac Anesthesia Lead for Perioperative Blood Conservation).

This year, the group set good-bye to Dr. Richard Kowalewski, who retired after many years of dedicated service.

Clinical Practice

CAG members work in a multidisciplinary environment to provide anesthetic care for a complex variety of cases in an increasingly elderly patient population. Anesthesia services are provided for open-heart surgery, off-pump coronary artery bypass grafting, aortic reconstruction with deep hypothermic circulatory arrest, mechanical assist device support, total endovascular aortic repair, minimally invasive valve surgery, and complex pacemaker/implantable defibrillator lead extractions. Outside the cardiac operating rooms, group members provide anesthetics in the cardiac catheterization laboratories for both electrophysiology procedures and for percutaneous structural heart procedures such as transcatheter aortic valve implantations, atrial septal defect closures, perivalvular leak closures, valvuloplasties, and left atrial occlusion device insertions. Upon request, members also provide care to patients with complex cardiac disease undergoing non-cardiac surgery. Outpatients awaiting heart surgery are reviewed by cardiac anesthesiologists at the weekly preadmission clinic, while inpatients receive preoperative assessments by cardiac anesthesiologists on an on-going basis.

Demand for cardiac anesthesia services continues to grow. The CAG has expanded coverage to meet the demands of the Cardiac Surgical Uplift, and group members expect to provide anesthetics for over 1700 cardiac surgical cases in the coming year. CAG members will also provide anesthesia for over 100 percutaneous structural heart procedures and an increasing number of complex electrophysiology procedures. Additional care for patients undergoing non-complex electrophysiology procedures is provided by members of the general FMC Section of Anesthesiology. In the fall of 2019, anesthesia coverage for electrophysiology cases in the catheterization laboratory will increase to 4

days per week.

Education

CAG members strive to provide the highest standard of clinical education and numerous members have been recipients of teaching awards in recent years, including the 2018-2019 Foothills Medical Centre Outstanding Educator Award received by Dr. Seal. In addition, the group would like to acknowledge Dr. Nicole Webb, on her completion the Teaching Excellence in Medical Education Certificate in the past academic year.

The cardiac anesthesia fellowship program continues to enjoy success. Dr. Justin Byers obtained his fellowship in the 2018-2019 academic year and is now working as a cardiac anesthesiologist at the Mazankowski Alberta Heart Institute.

Anesthesia residents complete two blocks of cardiac anesthesia in their fourth year. Off-service trainees rotating with the CAG include fellows from critical care medicine, cardiology, and perioperative ultrasound, as well as residents from cardiac surgery.

CAG members provide didactic teaching for the anesthesia residency cardiovascular core program on a bi-annual basis. Computer-based learning is available through the TeachingMedicine.com website, which is designed by group member, Dr. Jason Waechter, and includes modules on transthoracic and transesophageal echocardiography.

Research

The CAG has an active research program with numerous publications by multiple members, including recent publications in the New England Journal of Medicine and JAMA Surgery authored by Dr. Gregory, and in the Journal of Cardiothoracic and Vascular Anesthesia authored by Dr. Chris Noss. CAG members Drs. Gregory, Webb, and Rosa Chun were presenters at the 2019 Society of Cardiovascular Anesthesiologists Meeting.

Regarding on-going research, recruitment for the CAMRA-1 study is complete and patients are being followed for the next 12 months. This study is evaluating the difference in trans-mitral pressure gradients during exercise in patients who received mitral valve repair surgery using one of two different repair techniques. Ethics approval

has been obtained and recruitment will begin over the next months for SEARCH-AF (a trial to evaluate the benefit of portable home monitoring to detect postoperative atrial fibrillation), TITAV-SvS (a trial of early surgery versus surveillance in patients with intermediate risk aortic aneurysms), and HEADSTART (a trial comparing two different surgical approaches in patients with complex ascending aortic dissections).

Dr. Seal is the project holder of the Foothills Medical Centre Staff Anesthesia Research Fund. The fund was established through the generosity of Dr. Tim Tang, a former CAG member, and was developed to promote research in the areas of cardiac anesthesia, patient outcomes and quality improvement.

Enhanced Recovery in After Cardiac Surgery

The CAG is on the forefront of the design and implementation of an enhanced recovery after cardiac surgery (ERACS) program. Enhanced recovery after surgery programs have been developed in other fields to improve patient comfort and outcomes, as well as to decrease the length of hospital stay. ERACS implementation involves a multidisciplinary team of health care professionals including anesthesiologists, surgeons, intensivists, and nurses. A successful trial of the newly developed ERACS pathway has already occurred and the official launch of the 1-year pilot program will take place in mid-July, 2019.

Perioperative Blood Conservation Initiative

Despite steady improvements over the last decade, cardiac surgery continues to have a high rate of blood transfusion compared to other types of procedures. Preoperative anemia significantly increases a patient's chance of requiring perioperative blood products and the risk of transfusion-related complications. The Perioperative Blood Conservation Initiative has been launched to help identify and treat patients with preoperative iron deficiency anemia using either oral or intravenous iron. The algorithm also contains a provision for the use of erythropoietin in a select patient cohort. The medical leader of the initiative is Dr. Seal. Nurse Rebecca Rock is the Perioperative Blood Program Coordinator and the CAG thanks her for the critical contributions she continues to make.

Calgary Pain Program

Dr. L. Montgomery

Chronic Pain Centre: Our quality committees have made enormous progress in reducing wait times over the past year, and our current wait time for physician assessment is less than three months. We saw >3,000 unique patients in 2018, and completed 867 telephone consultations with family physicians, most of which resulted in the patient care remaining in the medical home rather than moving to tertiary care. We have also invested significant time this year in developing new patient-oriented outcome measures that will help us to ensure that we continue to provide high quality care. Our patient-completed measures will now include:

- EQ5D : quality of life scale (not disease specific) which is commonly used across AHS and our partners in the Primary Care Networks
- Short Musculoskeletal Functional Assessment: functional outcome scale validated in chronic pain populations
- PHQ4 : depression and anxiety
- Pain Catastrophizing Scale
- Chandler Fatigue Questionnaire: fatigue is a common concern for patient with chronic pain
- Brief Pain Inventory, identified as an outcome measure by the Canadian Chronic Pain Network SPOR
- Pain Self-Efficacy Questionnaire, an important patient-centred outcome
- Satisfaction with Life Scale: a measure of overall wellbeing

This is in addition to the usual healthcare utilization metrics, including opioid use and emergency department visits before and after attendance at the program.

We have moved into our renovated space at Richmond Road Diagnostic and Treatment Centre, which finally allows us to operate in a single clinic space (with procedures still occurring downstairs in Diagnostic Imaging). Since the 2013 flood, when we were quickly relocated to RRDTC, we have been operated in four separate spaces, requiring significant duplication of admin services and causing delays in team communication.

Our Program Manager, Vanessa Swanson, left us to go to medical school at the Cumming School of

Medicine. Our new Program Manager is Suzanne Basiuk, who was most recently clinic manager for the Chronic Pain Centre.

We have a new medical director of the Chronic Pain Centre, Dr. Magali Robert.



Dr. Magali Robert, MD, MSc. is a Professor in the Dept. of Obstetrics and Gynecology, Cumming School of Medicine, University of Calgary. She has been working in the area of pelvic medicine and reconstructive surgery since completing her fellowship in 1999.

She was Section Head for 17 years. Her major area of interest is in the field of pelvic pain. Magali has been leader of the Chronic Pelvic Pain Program since the inception of the Calgary Chronic Pain Centre in 1999.

We are also very excited to announce that Dr Marie-Eve Beauchemin-Turcotte has joined our team as a clinic physician.

Dr. Marie-Eve Beauchemin-Turcotte was born in Levis, Quebec. She is a graduate of University of Quebec in Trois-Rivieres and

completed a Master degree in fundamental neurosciences at the University of Ottawa. She studied the relationship between NMDA receptors and sigma receptors using whole cell patch clamping in rodents. She obtained her medical degree at University of Ottawa. Her residency in Anesthesia was completed at the Centre Hospitalier Universitaire de Sherbrooke and its affiliated Hospitals. She completed her training with a second Royal College affiliated program in Chronic Pain at the University of Calgary. Dr. Beauchemin-Turcotte has a special interest in Transitional Pain Medicine, regional anesthesia, ultrasound and fluoroscopic-guided procedures and neuromodulation for the treatment of chronic pain as part of an holistic approach. She is a Clinical Lecturer at the University of Calgary, working as an anesthesiologist at the South Health

Campus in Calgary and practicing interventional pain medicine at the Calgary Chronic Pain Centre.

Chronic Pain Consult Service: Our nurse practitioners continue to operate an extremely busy consult service at all four acute care hospitals. They see approximately 600 unique patients per year, and have demonstrated a significant reduction in length of hospital stay since the creation of the consult service. The NPs are also first-call for the Specialist Link telephone advice service, and fielded 175 calls in 2018.

Transitional Pain Program: Dr. Jarad Stephan, Director

The Transitional Pain Service is a multidisciplinary pain management program established at the SHC to assist patients at risk of or who have developed significant post-operative pain. It operates out of the Pre-Admission Clinic at the SHC and utilizes the clerical and administrative staff there as well as the physical space.

Resources:

- Medical staff: two physicians and one Nurse Practitioner, one day of service each
- One Social Worker who runs a monthly CBT and mindfulness group and sees patients one on one
- One Psychologist who sees patients on a referral basis one on one



The Transitional Pain Service at the SHC enjoyed its first full year of operation in 2018.

	2018	1st 6 months 2019
New assessments	125	91
Follow-ups	476	300

In 2018 The Transitional Pain Service also had the pain medicine resident frequent our site for experience in Transitional Pain. In 2019 our first

anesthesia resident has also started frequenting our program to enhance their pain education.

The Transitional Pain service was nominated for two awards in the past 12 months. These were the AHS President's Excellence Award and the Health Quality Council of Alberta Patient Experience Award. The TPS was awarded the Health Quality Council of Alberta Patient Experience Award in June of 2018.

Going forward we are excited to be involved in spreading Transitional Pain Services to other sites across the Calgary Zone and then across the province of Alberta.

Primary Care Network collaborations: We continue to support clinical teams in four of the seven Calgary Zone PCNs: Calgary Foothills, Mosaic, Highland, and Bow Valley. We provide lunch and learn sessions upon request, and do clinical rounds with their teams on complex patients. We are also beginning to develop a rounds series for clinicians in these teams to share knowledge regarding best practices in chronic pain assessment and management.

Academic

Pain Medicine Residency Program

- Our first pain medicine resident, Dr. Beauchemin-Turcotte, has completed her residency and joined our group as a staff physician. Dr. Varshney is on schedule to complete his residency in January 2020.
- Our internal review was completed, and resulted in some excellent feedback for our program, including some recommended changes to our evaluations and our academic half day schedule.
- CARMs interviews will be conducted in the first week of October 2019

Undergraduate Medical Education

- All clinical clerks spend one day with our hospital-based Chronic Pain Consult Service under the supervision of the Nurse Practitioners.
- Five pain lectures (multi-professional presenters) and two small group case discussions on 1) Acute Pain and 2) Chronic Pain are provided to students in the undergraduate program in September.

Off service learners

- A large number of off-service residents (approximately 180 per year) from a wide variety of specialties pass through the Pain Centre shadowing all healthcare providers. The rotation is mandatory for residents in urban Family Medicine, Anesthesiology (Calgary and Saskatchewan), Physiatry (R1 and R3) and palliative medicine. We also host elective residents from Neurology, Gynecology, and psychiatry, in addition to trainees from allied health professions.

Continuing Medical Education and Professional Development

- Our CPD program "Essential Strategies for Chronic Pain Management" is accredited for three credits per hour by both the CFPC and the RCPSC and continues to train FPs and other healthcare professionals from Primary and secondary care, offering six or more training programs per year and shadowing at the Chronic Pain Centre.
- We have launched a second three-credit-per-hour Mainpro+ and MOC course, "Wise Prescribing and Deprescribing: Opioid skills for the frontline clinician." This is a flipped classroom model, with online modules followed by two in-person seminars to discuss challenges with opioid tapering.
- The Pain Program offers "Pain Education Day" which attracts up to 100 delegates three to four times per year. This is primarily aimed at allied healthcare providers in secondary and tertiary care.

Research and Publications

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Research projects currently underway at the Chronic Pain Centre include: a study of undergraduate medical students to assess interprofessional learning; a clinical trial of a medication to reduce withdrawal symptoms as patients taper opioids; and an app and website to support self-management in patients with chronic pain.

Strategic Partnerships

- A number of pain program staff and physicians are involved in development of a provincial pain strategy, partially sponsored and supported by the Strategic Clinical Networks.
- The Calgary Zone Opioid Prescribing Safety Coalition was co-chaired in 2018 by the medical leader of the Calgary Pain Program and the medical director of public health for Calgary Zone. Our program also continues to be represented in discussions of opioid prescribing safety provincially and nationally.
- Pain program staff and physicians are actively involved in development of clinical knowledge topics that will be incorporated in ConnectCare over the next several years. We have also participated in the creation of clinical workflows including ordering and documentation.

The Pain Program continues to be represented at the level of the Strategic Clinical Networks and has members on the core group of the Bone and Joint SCN. This group is actively involved in the “Spine Access” collaboration and projects related to Osteoarthritis care for all Albertans.

Patient Blood Management Program

Dr. R. Rock

Patient Blood Management (PBM) is a multi-modal and multi-disciplinary approach to managing patient blood with the overarching goal of improving patient outcomes. Medical and surgical techniques are applied throughout the perioperative experience to support the three ‘Pillars of PBM’:

- 1) Improving hematopoiesis;
- 2) Optimizing coagulation (minimizing blood loss & bleeding); and,
- 3) Anemia tolerance: harnessing patient ability to tolerate anemia; includes patient-centered, evidence-based transfusion decisions.

Introduction

Program works to develop a multi-faceted PBM program utilizing the help of multiple partners including the Transfusion Safety Office, CLS Transfusion Medicine, the CZ Transfusion Committee and others. The PBMP’s participation in ad-hoc groups and task-forces related to anemia and iron-deficiency was aimed at helping to develop better resources for clinicians and to address the issue in a more system-wide approach.

Activities

Preoperative Anemia Management

Anemia Referrals

Program provides service anemia assessment and treatment (including Hgb ‘optimization’) for preoperative or gestational patients; treatments utilize PO/IV iron and ESAs (e.g.: Epo).

- Referral volume from Alberta Hip & Knee Clinic remained constant (300+/year).
- Referral volume increased significantly from SHC PAC (30+/yr) and FMC PAC (250+/yr).

Addendum: “Preoperative Anemia Management & Hgb Optimization”

Anemia Summit

Program participated in the ‘Anemia Summit’ Nov 1, 2018: a half-day conference dedicated to improving

management & treatment of IDA patients in the CZ, including usage of IV iron therapy.

Summit objectives included:

1. Improving appropriateness and efficiency with IV iron ordering
2. Reducing transfusion by improving IDA care with safer treatments
3. Developing a CZ multi-disciplinary & collaborative clinical pathway for IDA treatment
4. Disseminate & implement Toward Optimized Practice pathway for IDA
5. Build groundwork for potential out-patient IV iron clinic

Outcomes of Summit:

Standardized IV iron therapy order-set and ordering criteria

Prior to IV iron treatment, patient must have:

1. Tried PO iron x4 week minimum and demonstrated failure (e.g.: lack of response, poor tolerance)
2. Received referral to Dietician if iron deficiency related to diet (e.g.: vegetarian/vegan, etc.)
3. Received referral to appropriate specialty (e.g.: GI, OB/GYN) if anemia related to blood loss
4. Recent (<4 wks) lab results showing iron deficiency

Toward Optimized Practice (TOP): Iron Deficiency Anemia

Development and launch of evidence-based TOP document for managing IDA; Task-Force group included representatives from Primary Care, Emergency, Transfusion Medicine, Pharmacy and others.

See: <http://topalbertadoctors.org/cpgs/19444488>

Coagulation Management & Minimization of Blood Loss

Tranexamic Acid Protocol

The current protocol for Bone & Joint surgery was updated to include more safety information, clearer parameters surrounding IV versus Topical

use and dosing for Spine surgery. New protocol is incorporated in 2018 Hip & Knee Care Pathway.

See Addendum Updated "Protocol for Tranexamic Acid (TXA) in Arthroplasty Surgery"

South Health Campus TXA in Bone & Joint Surgery

The PBMP partnered with the Physician Learning Program in a project aimed at assessing the utilization of Tranexamic Acid by Surgeons & Anesthesia in Bone & Joint surgery including barriers to usage, impact on patient outcomes and impact on transfusion practice. The project culminated with joint Grand Rounds between Surgery and Anesthesia with commitment to address various practice challenges and improve utilization.

This project is now being launched at FMC with the added goal of improving physician reporting surrounding transfusion and Tranexamic Acid utilization.

Cardiac Surgery database: Direct-acting Oral Anti-Coagulants (DOACs). The program is working with Cardiac Anesthesia to collect data on DOAC patients booked for elective cardiac surgery.

Results: For patients on Xa inhibitors, pre-op Anti-Xa Assay results were consistently within appropriate limits using current protocols for drug stoppage. For patients on Thrombin inhibitors, more data is needed to assess appropriateness of pre-op Thrombin Time results thus data collection will continue for this group.

Anemia Tolerance & Patient-Centered Transfusion Decisions

Re-development: 'CZ Transfusion Guidelines'

Program is working with CZ Transfusion Committee members to review & revise existing guidelines. The aim is to draft a more practical document for clinicians and relocate guide from CLS web to a more accessible location.

Data

Surgical Blood Utilization Reporting – Statit piMD Database

Created in collaboration with Data Integration Management & Reporting (DIMR), the Program distributes annual reports to Department Heads.

Individual Surgeon Reports

NER for Anesthesia physicians: individual unblinded physician results reporting on rate of transfusion and use of IV TXA in Arthroplasty surgery. Reports to be distributed by late August or early September 2018.

Addendum: Sample Individual Anesthesia Physician report

Clinical Service

On-going support and participation in the following:

Calgary Zone Transfusion Committee (CZTC)

Hematology Fellows & Anesthesia Residents Teaching Sessions

Alberta Provincial Blood Coordinating Office: Advisory Committee

Point-of-care Coagulation Testing

We are continuing to work to bring point-of-care coagulation testing to the Calgary zone. Thromboelastography (TEG) and rotational thromboelastometry (ROTEM) are now being recommended by multiple practice guidelines internationally to assist in transfusion

management. Dr. Davinder Sidhu (Section Chief, transfusion medicine) is working closely with us to make this technology available for clinical use. Meanwhile, we continue to use ROTEM for ongoing research studies and we are collaborating with the Department of Surgery on future projects utilizing TEG and ROTEM.

Projects

PBM in Vascular Surgery

We are continuing to analyze transfusion data in Vascular surgery, assessing the impact of PBM strategies in reducing blood transfusion in major vascular surgery patients.

Point-of-Care Coagulation Testing in Pregnancy

The in vitro results of the pilot study investigating the use of thromboelastography (TEG) in detecting the presence of dalteparin in pregnancy have been published; along with reproduction of these results using the alternative coagulation monitor, thromboelastometry (ROTEM). We are currently conducting an in vivo study utilizing ROTEM to detect the effect of dalteparin in pregnant patients undergoing Cesarean delivery.

Thromboelastometry (ROTEM) machine used for coagulation research.

TYPE	Overall (last year)	Female	Male	FMC	PLC	RGH	SHC
Arthroplasty; Primary Hip	4% (5%)	5%	4%	8%	1%	3%	5%
Arthroplasty; Revision Hip	23% (24%)	29%	11%				
Arthroplasty; Primary Knee	2% (2%)	3%	1%	9%	1%	2%	1%
Arthroplasty; Revision Knee	10% (17%)	0%	18%				
Breast Reconstruct TRAM	10% (4%)						
Cardiac; CABG	26% (29%)	43%	22%				
Cardiac, Valve	30% (36%)						
Cardiac, CABG-Valve	56% (56%)						
Hysterectomy	3% (3%)						
Prostatectomy	0% (2%)						
Spine; Adult	4% (5%)						
Spine; Peds	15% (15%)						
Vascular; major	28% (28%)						

Platelet Function Studies

We are also extremely excited to be collaborating with Dr. Ejai Agbani, Adjunct Research Assistant Professor, on several translational studies extending his research to the clinical setting. Dr. Agbani is a well-published researcher investigating platelet membrane dynamics and regulation of platelet procoagulant function. Dr. Alex Gregory, Dr. Gary Dobson, Dr. Lorraine Chow, Dr. Adrienne Lee (hematology) and Dr. Man-Chiu Poon (hematology) are involved in this collaboration. The first phase of our study will be application of these principles to the post-cardiopulmonary bypass population, as well as patients with pre-eclampsia.

Human Factors in Anesthesia

Dr. J.M. Davies, Mario I. Pehar, and Terri Tryon

An update on standardization of anesthetic drug drawer contents and layout

Recap:

Starting in 2008, the Department of Anesthesiology standardized its anesthetic drug drawer contents and layout, based on a Human Factors evaluation. (See: Shultz J et al. standardizing anesthesia medication drawers using human factors and quality assurance methods. Canadian Journal of Anesthesia 2010; 57: 490-9.)

In 2016, several members of the Department joined a province-wide committee organized by Dr. Mike Murphy, previously Head of the Department of Anesthesia in Edmonton zone. The aim of the committee was to identify safety hazards related to anesthesia throughout the province. A survey was undertaken and a decision made to focus on standardizing the anesthetic drug drawer (or tray) contents and layout. After Dr. Murphy left his position, the project was on hold for several months until restarted in 2017 by Lenore Page from the AHS Human Factors group. The project involved determining the anesthetic contents and layouts currently used in facilities in Alberta Health Services and Covenant Health, with the aim of developing a province-wide template.

2018 Update:

The survey found that, although the template used

in the Calgary Zone had been adopted in private clinics throughout Calgary; as well as, by the Banff Mineral Springs Hospital, the Misericordia and Royal Alexandra Hospitals in Edmonton, other adult acute-care centres in the province had developed their own versions. A report of all the survey results and recommendations is in the final stages of completion, before it is submitted to the Surgery SCN.

Calgary Zone Update:

In September 2017, the Zone Anesthesia Executive Committee (ZAEC) requested that Tranexamic Acid INJ 100 mg/mL 10 mL be included and, most recently, in July 2018, the FMC Anesthesia group asked that Heparin 5000 USP units/0.5 mL be added. This latter request has yet to be reviewed, with respect to its relevance to all adult sites in the Calgary Zone, and approved by the ZAEC.

Figure 1:

Calgary Zone standardized medication drawer, with the addition of Tranexamic Acid (circled, third row from front) and Heparin (circled, fourth row from front).

An update on standardization of anesthetic machines

Recap:

During the first two quarters of 2017, the Calgary Zone purchased 49 new anesthesia machines, which included three new and different platforms introduced in four sites.

ACH – After a thorough clinical evaluation of two anesthesia platforms, clinicians chose the GEHC Aisys Carestation, after more than 10 years of clinical work with the Dräger Primus gas machines. This change was in addition to the Department having updated to the Philips MX800 physiological monitors less than six months previously. The anesthesiologists were successful in undertaking these major changes, which required learning and adapting to the new ‘man-machine’ interfaces in a relatively short time.

RGH – This group chose the Dräger Perseus gas machine. The criteria for replacement qualified this group to purchase nine Dräger Perseus gas machines, which is not fully their complete fleet, having 16+ ORs on site. The remainder of the fleet

are newer model (< six years old) Dräger Fabius Premium machines.

2018 Update:

Six additional Dräger Zeus machines were purchased in April 2018. Thus, the RGH will have the Perseus, Zeus, Tiro and Fabius machines in their inventory, all being Dräger machines.

FMC – This group qualified for major software and hardware upgrades to their aging fleet of GEHC Aisys machines. The upgrades included a touchscreen with a ‘flatter’ interface, meaning access to data/applications is more readily available in comparison to previously having to go into several submenus to get to the desired information or command.

2018 Update:

The FMC has purchased one additional GEHC Aisys machine with CareScape B850 physiological monitoring, a welcome addition to the almost 40 machines in clinical use.

PLC – Finally, in 2017 this group added 11 Dräger Zeus Carestations to their fleet of one machine of that type. This is the company’s flagship gas machine and demands a steep learning curve for navigation through its multitude of menus and screens. The single Zeus was acquired just over a year ago and was placed into a high-use OR to allow as many of the PLC’s 36+ anesthesiologists as possible to intermittently use this elaborate machine. Unfortunately, the addition of 11 machines did not put a Zeus in every OR at the PLC; there are still Dräger Fabius machines in the remaining five operating rooms.

2018 Update:

The PLC was able to acquire 7 Dräger Zeus machines, which were purchased in April 2018. This will give the PLC 19 Zeus machines and 1 Fabius.

An update on anesthetic machine CO₂ absorbent

2017:

After several years of working through the logistics, the Calgary Zone Department of Anesthesia planned to move away from using CO₂ absorbent purchased in bulk and towards using prefilled cartridges to be incorporated into every anesthetic machine patient circuit. The reason for this important move was twofold: (1)

the prefilled cartridges are more suited to low flow (< 1 LPM) anesthetic gas delivery; and (2) the introduction of prefilled cartridges almost eliminates the occupational exposure to the corrosive and irritating properties of handling bulk calcium hydroxide based products. When filling and changing the CO₂ canisters, personnel need to don protective gear (eye goggles, gloves, dust mask), open the CO₂ canisters containing the desiccated absorbent, empty the dusty absorbent into a specified disposal container, wash out the canister, and, following the Policy and Procedure, fill the canister with new bulk absorbent. Using prefilled canisters, with the absorbent in a sealed container, drastically reduces direct exposure of personnel to these irritating granules and reduces secondary exposure of other personnel through inadvertent local environmental contamination.

2018 Update:

Ongoing use of the Litholyme absorbent, which is purchased in bulk in 5 L Jerry Cans, has been met with mixed results. Some sites saw an improved life of the absorbent (SHC and ACH) whereas other sites (FMC, PLC, RGH) found a shortened life of the Litholyme. There was no correlation with length of procedure nor type of anesthesia platform (GEHC versus Dräger). Recently, a different absorbent from a different vendor, and which is sold in prefilled canisters, became available for purchase. However, there has not been an opportunity to change to the prefilled canisters, due to logistics with the current distributor; as well as, with workload and timeline restraints from AHS Purchasing.

An update on environmental waste 2017:

The move to standardization of a single platform for physiologic monitoring also meant that accessory devices such as ECG lead sets, SpO₂ monitors and Invasive Blood Pressure monitor cabling were also standardized and therefore readily available, for example, in the ORs and PACU. Because non-standardized devices no longer needed to be ‘swapped out’ and then binned there was the additional advantage of generating less waste.

2018 Update:

There is recycling in place in the operating rooms that allow users to separate paper from the rest of the refuse. This is a big step forward and long overdue!

Standardization of the Malignant Hyperthermia (MH) Carts in the Calgary Zone

Starting in 2017, Terri Tryon, Katrina Drohomirecki, Nadine Lam, Jan Davies and Mario Pehar undertook a project to standardize the MH carts in the Calgary Zone. They also received assistance from two Clinical Nurses Educators at the ACH – Torey Erdman and Karen Bibaud. The team found that there were more than seven types of MH carts or totes, each with a variety of contents. In addition, depending on the Calgary Zone site, representatives from either the operating room nurses or the Department of Anesthesiology were responsible for upkeep of the carts or totes. These findings offered an opportunity to simplify and standardize this very important piece of equipment required in our anesthetic environment. The initial survey and recommendations for standardization; as well as, a review of the literature, were both presented as posters at the 2017 National Scientific Congress of the Australian Society of Anaesthetists in Perth, Western Australia, by Nadine Lam and Katrina Drohomirecki, respectively.

The team undertook a process of standardization of the contents, using the guidelines from the Malignant Hyperthermia Association of the United States (MHAUS) as the starting point and soliciting input from a variety of OR users with a survey. A decision was made to ensure the content of all the carts was identical, with the exception of the PLC cart. Because the PLC is the bariatric center, that site requires 72 vials of dantrolene, rather than the 36 vials at all other sites. Similarly, the totes were all standardized, but with minimum supplies. (Totes are used for initial emergency treatment in geographically isolated areas such as Diagnostic Imaging or ECT, until an MH cart can be delivered from the Main OR at that site.) After standardization, the layout of medications and equipment was iteratively tested for its usability and changes made on the basis of users' feedback.

Implementation of the new carts and totes has been carried out on a roll-out basis. The FMC was completed on July 11th, with three carts (McCaig OR, FMC First Floor and Seventh Floor OR's) and one tote (in the TBCC). The SHC, which has one cart, was completed on August 1st. The ACH will be completed on August 21st, with one cart. The RGH will be completed on August 22nd, with one cart

and two totes (in the Cystoscopy rooms and Labor & Delivery or Unit 62). The PLC will be completed on August 23rd, with one cart and two totes (in the Hybrid Vascular OR and Labor & Delivery).

Finally, as stated above, the initial survey also found that responsibility for maintenance and restocking of the MH carts was split between representatives from OR Nursing and the Department of Anesthesiology. As of August 1st, 2018, the Department of Anesthesiology has taken over responsibility of the upkeep of both the MH carts and totes.

Figure 2: New Malignant Hyperthermia treatment cart

Standardization of the location of the emergency Bag Valve Mask (BVM)

Nadine Lam, Travis Novak (a second-year medical student, now a clinical clerk), Jan Davies, Mario Pehar and Jonas Shultz (the Human Factors specialist at the Health Quality Council of Alberta, and who has an Adjunct Appointment in the Department,) have taken on the task of proposing a standardized location for the BVM on the anesthesia machines in the Calgary Zone. This project was undertaken as part of the overall plan to standardize as much as possible of the anesthetic equipment and medication in the Calgary Zone, so as to minimize the cognitive load and help with efficiency for those who work at one or more sites. In addition, there have been (at least) two incidents in the Calgary Zone in which difficulties were encountered by the anesthesiologist and other OR staff in locating the BVM in an emergency.

An initial survey found that we have seven different types of anesthesia machines, all of which have unique configurations with respect to layout and resulting workflow. In particular, the location of the BVM on these machines is varied. There is no standard location for the BVM in our ORs: some BVM are in drawers while others are to be found in bags hanging from the back or side of the machines. Furthermore, there are no standards or guidelines in the literature for BVM location. Additionally, results of a questionnaire showed that while anesthesiologists were in favour of standardizing the location, almost all wanted the location set to that of their primary site.

Principles for the ideal location were

developed, based on Human Factors guidelines. These principles were accessibility (by the anesthesiologist at the head of the OR table) and visibility (primarily by the anesthesiologist and secondarily by other members of the OR team who might be asked to assist). Both principles could be satisfied by locating the BVM in the bottom drawer of the anesthetic machine and adding a label with a photo on the front of the drawer. Although the varying platforms of the anesthesia machines make standardizing to this location problematic, this location is possible for all but two types of machines. One of these is the GEHC Aestiva MRI machine, which necessitates a location of the BVM on the machine other than in a drawer as this type of machine only has one. The other machine that has a limited amount of drawer space is the Dräger Zeus, which is located at RGH and PLC.

To add further complexity to this problem, each hospital site has different contents for each of its anesthetic machine and anesthetic cart drawers (with the exception of the top drawer of the latter). Mario Pehar is therefore working with the Anesthesia RRT Site Leads in standardizing the drawer contents and layouts. (This secondary project may require a further survey and usability testing.) The challenge is to find space for items already in the drawers, most of which are additional adjuncts, such as backup anesthetic bags, backup flow sensors, gas sample water traps, perioperative check logbooks and reference material. Once the location for the BVM is finally determined, then a cleanable label (with a picture and/or text) for the location on each anesthesia machine will be developed and tested.

To date, this project has also resulted in the acceptance of a scientific Abstract, submitted by Nadine Lam and Travis Novak, for Poster presentation at the 2018 American Society of Anesthesiologists Annual Meeting in San Francisco, CA.

Standardization of the Pediatric Anesthesia Carts

In the Calgary Zone, apart from the Alberta Children's Hospital (ACH), there are Pediatric Anesthesia Carts at FMC and SHC, both of which are comparable to the carts at the ACH. RGH and PLC do not have similar standardized pediatric carts. Over the next several months, Mario Pehar, together with the Clinical Educators, will

be working with the Site Leads at RGH and PLC to purchase new Pediatric Anesthesia Carts and configure them to the standard pediatric anesthesia carts. This change should contribute to overall efficiency and safety for the pediatric patients who receive care outside the ACH.

Education

Fellowship Academic Committee

Dr. Joel Fox

While the areas of Cardiac Anesthesia, Perioperative Ultrasound, Pediatric Anesthesia and Simulation continued to offer fellowships, our department organized four new fellowships. The new fellowships now offered in Calgary include Regional and Acute Pain, Thoracic Anesthesia, Safety and Quality and Perioperative Medicine. We have advertised and promoted our fellowships at the Canadian Anesthesia Meeting; as well as, via journal advertisements with some success. We believe the current manpower shortage of anesthesiologists will have a profound effect on the number of candidates looking for fellowships in the near future.

Our committee meets three times a year at a minimum and membership includes all fellowship supervisors, a fellow and also a member of the Academic Committee. We were able to migrate our programs to a new model of finances for the fellowships this year and now have our finances housed outside the University of Calgary.

Our current model of funding requires that all fellows be able to work independently. As a result, all candidates must completed their FRCPC prior to starting their fellowship. We have reviewed this as a committee this year and stand fully behind the decision to continue with this model.

Three fellows completed their fellowships with our department last year. Two fellows decided to leave their fellowship prior to completion.

2018-2019 Fellows

Name	Fellowship	Start Date	End Date
Dr. Kristen Biefer	Perioperative Ultrasound	July 3, 2018	June 30, 2019
Dr. Chris Dyte	SIM	July 1, 2018	June 30, 2019
Dr. Judy Marois	Safety and Quality	July 1, 2018	July 7, 2019
Dr. Jenny Thompson	Perioperative Medicine	March 1, 2019	September 16, 2019
Dr. Calen Sacevich	Cardiac, Periop ,Transeo	July 3, 2018	August 1, 2018



Anesthesia Residency Program

Dr. R. Eng, Program Director

Dr. G. Bishop, Associate Program Director

Dr. M. Davis, Associate Program Director

Residency Program Committee (RPC)

The RPC has continued to work hard in its endeavour to train the best anesthesiologists possible, with the resources we have, to serve Canadians and patients around the world:

Joseph Ahn – CAS Resident Representative (non-voting)

Yara Babyak – Rockyview General Hospital Site Coordinator

Graeme Bishop – Associate Program Director (CBD)

Nathan Brown – South Health Campus Associate Site Coordinator

Erin Bruce – Education Co-Coordinator, Scholarly Project Co-Coordinator

Alan Chu – South Health Campus Site Coordinator, CBD Academic Coach Lead, Longitudinal Coach Program Lead, Mentorship Teams Program Lead

Karl Darcus – Peter Lougheed Centre Site Coordinator

Jan Davies – Quality & Safety Co-Coordinator

Melinda Davis – Associate Program Director, UME Director

Paul Dawson – Education Co-Coordinator

Gary Dobson – Department Head, University of Calgary

Christopher Durr. – Junior Resident Representative

Chris Dyte – Simulation Co-Coordinator

Reuben Eng – Program Director

Megan Hayter – Simulation Co-Coordinator

Linda Hung – Scholarly Project Co-Coordinator

Heather Hurdle – Foothills Medical Centre Associate Site Coordinator

Nina Hardcastle – Alberta Children's Hospital Associate Site Coordinator

Jeremy Luntley – Alberta Children's Hospital Site Coordinator

Judy Marois – Quality & Safety Co-Coordinator

Shannon Rabuka – Peter Lougheed Centre

Associate Site Coordinator

Katrina Roberts – Chief Resident

Cameron Shillington – Chief Resident

Zahid Sunderani – Rockyview General Hospital Associate Site Coordinator

Andrea Todd – Foothills Medical Centre Site Coordinator

Cameron Williams – Senior Resident Representative

Paul Zakus – Journal Club Coordinator

The following members have either resigned from the RPC or completed their term of service: Drs. David Fermor, Duncan McLuckie, Courtney Phillips, Kevin Torsher.

The following RPC members are currently on leave: Drs. Afra Moazeni, Michelle Theam.

The following rotation coordinators have stepped down from their position and our program is tremendously grateful for their prior support: Drs. Bronwyn Parkinson, Curt Pitter, Rod Schultz, Kelly Shinkaruk, Rob Thompson.

All of these members have worked hard to consistently provide our residents with an outstanding educational experience while helping our program move forward with continual improvements. In particular, the RPC will expend a significant amount of energy preparing our program for its internal accreditation review in February 2020.

Competence By Design (CBD)

Contribution by Dr. Graeme Bishop (Associate PD, CBD)

The 2018 –2019 academic year saw our program welcome the third cohort of residents entering training under the competency by design (CBD) educational paradigm. In short, CBD divides residency into four stages (transition to discipline, foundations, core and transition to practice) and assigns entrustable professional activities (EPAs) which are stage appropriate and designed to create a clear learning path for trainees.

The initial set of EPAs assigned to the anesthesiology foundations and core stages of training were quickly identified as requiring significant modification at the national level. These changes were welcomed

by our program but did require modification of prior plans. Notably, we had to revert back to evaluation on the one45 platform instead of utilizing the new Royal College e-portfolio online system for EPA tracking. At this time the EPAs for anesthesiology specialty training across the country seem unlikely to undergo dramatic change in the near term which has encouraged our program to move back to the e-portfolio platform for EPA evaluations in the upcoming academic year. This change will be easily timed to promotion between stages for our PGY-1 and PGY-2 cohorts; however, the PGY-3 cohort is now in the core stage of training which is scheduled to end midway through PGY-5. With an end goal of eventually only requiring one evaluation platform, we will move those residents to e-portfolio midway through their core stage. This unfortunately does not allow us to eliminate one45 as an evaluation platform for daily evaluations, however, we are hopeful that e-portfolio will soon gain that functionality.

Two additional changes associated with the transition to CBD were the creation of our 1) academic coach program (detailed elsewhere by Dr. Alan Chu) and 2) the competence committee. The competence committee met three times in 2018 – 2019 under the mandate of systematically reviewing the progress of each resident to ensure promotion is an active, intentional, and merit-based process. Fine tuning the communication between the competence committee and academic coaches is an ongoing goal to ensure residents find the competence review process formative.

Competence Committee Members
Dr. Graeme Bishop
Dr. Robin Cox
Dr. Reuben Eng
Dr. Heather Hurdle
Dr. Marelise Kruger
Dr. Shean Stacey

Rotation Coordinators

Our program is also tremendously grateful for the efforts of our rotation coordinators. These faculty members enable us to provide the best clinical training possible with the resources that we have.

Dr. Yara Babyak – Adult Anesthesia (RGH), Medical Education

Dr. Nathan Brown – Regional Anesthesia

Dr. Lorraine Chow – Thoracic Anesthesia

Dr. Alan Chu – Adult Anesthesia (SHC)

Dr. Karl Darcus – Adult Anesthesia (PLC)

Dr. Richard Falkenstein – Neuroanesthesia

Dr. Julia Haber – Airway Anesthesia (FMC)

Dr. Jeremy Hamming – Acute Pain Service

Dr. Jeremy Luntley – Pediatric Anesthesia

Dr. Lindsay MacKenzie – Vascular Anesthesia

Dr. Bronwyn Parkinson – Perioperative Ultrasound

Dr. Curt Pitter – Obstetric Anesthesia (PLC)

Dr. Chris Prusinkiewicz – Cardiac Anesthesia

Dr. Saul Pytko – Airway Anesthesia (RGH)

Dr. Rod Schultz – Obstetric Anesthesia (RGH)

Dr. Kelly Shinkaruk – Chronic Pain

Dr. Andrea Todd – Adult Anesthesia (FMC), Complex Anesthesia

Dr. Rob Thompson – Obstetric Anesthesia (FMC)

The following rotation coordinators have stepped down from their position and our program is tremendously grateful for their prior support: Drs. Alastair Ewen and Arash Fard.

Clinical Teaching Sites

Alberta Children's Hospital

Contribution by Dr. Jeremy Luntley (Site Coordinator)

The section of pediatric anesthesiology and pain medicine at Alberta Children's Hospital had another busy year supporting education across the hospital. Our commitment to operating room education for the anesthesiology, pediatric, family medicine and emergency medicine programs continues. In addition, we provided acute and complex pain experience and supported airway and simulation education via KidsSim.

Our Fellowship program continues successfully,

with Dr. D. Mireault completing his fellowship and taking a staff position at St. Justine hospital in Montreal.

Our roll out of competency by design has been a success with the mix of traditional and new program trainees being managed seamlessly. Based on this our RPC members are assisting pediatrics in planning their CBD rollout next year.

As always all our staff work hard to achieve our educational mandate and while some are recognized at the annual award it is more fitting to commend the whole section for their efforts.

The teaching efforts of the section have been recognized with a number of individuals being recognized.

Excellence in Postgraduate Medical Education:

Dr. Kerry Carter

Dr. Mark Gale

Dr. Nina Hardcastle

Dr. Duncan McLuckie

Dr. Jon McMann

Dr. Nivez Rasic

Leo Strunin Award – Dr. Graeme Bishop

Outstanding Educator Award – Dr. Jon McMann (ACH)

Foothills Medical Centre

Contribution by Dr. Andrea Todd (Site Coordinator)

The Foothills Medical Centre provides the anesthesia program residents with exposure to tertiary anesthesia care in the areas of trauma, cardiac surgery, neurosurgery, thoracic surgery, obstetrics, interventional radiology, and acute pain for Southern Alberta. The residents carry out several rotations at this site, including: Acute Pain Service, Adult Anesthesia, Thoracic Anesthesia, Neuro Anesthesia, Cardiac Anesthesia, Complex Anesthesia, Obstetrical Anesthesia, and new this year, is the inclusion of the Airway Rotation. FMC also provides rotations for the Family Practice Anesthesia residents.

Our faculty are fully engaged in teaching as evidenced by the following teaching awards:

Extra Mile Award – Dr. Heather Hurdle

Outstanding Educator Award – Dr. Doug Seal

Excellence in Postgraduate Medical Education Award:

Dr. Keith Anderson

Dr. Michael Chong

Dr. Lorraine Chow

Dr. Melinda Davis

Dr. Kaylene Duttchen

Dr. Julia Haber

Dr. Doug Seal

Dr. Rob Thompson

Dr. Andrea Todd

Dr. Bing Wang

Dr. Paul Zakus

Many members of the department participate in bi-weekly morning teaching and oral exam preparation for the residents. Many other department members have leadership roles within the residency training program. Dr. Melinda Davis serves as Associate Program Director and the Resident Wellness Coordinator. Dr. Lorraine Chow serves as the Thoracic anesthesia rotation coordinator and serves on the CBD leadership team. Dr. Heather Hurdle serves as the FMC associate site coordinator, a CBD lead and is a co-director of clinical clerks with Dr. Kaylene Duttchen. Dr. Andrea Todd continues as the site coordinator and rotation coordinator of the Adult and Complex anesthesia rotations. Dr. Paul Zakus serves as the obstetrical anesthesia rotation coordinator. Dr. Richard Falkenstein continues in his role as neuroanesthesia rotation coordinator. Dr. Julia Haber who served for several years co-coordinating the core program teaching sessions has transitioned to rotation coordinator for the FMC airway rotation. Dr. Kelly Shinkaruk continues her role as chronic pain rotation coordinator. Dr. Jeremy Hamming continues his role as acute pain service rotation coordinator. Dr. Chris Prusinkiewicz continues his role as the cardiac anesthesia rotation coordinator.

Peter Lougheed Centre

Contribution by Dr. Karl Darcus (Site Coordinator)

The Peter Lougheed Centre continued in its commitment to resident education over the last year. All the staff members at the PLC are involved in resident teaching in the OR. Many participate in Thursday morning teaching rounds and Royal College exam preparation. There are several members of the group that need to be acknowledged specifically:

- Dr. Graeme Bishop continued in his roles as Associate Program Director and Competence Committee chair;
- Dr. Karl Darcus continued in his role as Site Coordinator;
- Dr. Linda Hung continued in her roles as Scholarly Project Co-Coordinator and is co-coordinating the POCUS/regional/US resident rotation;
- Dr. Nadeem Jadavji is the Vascular Anesthesia Rotation Coordinator;
- Dr. Dean Jordan continued his involvement with ACRM and CanNASC simulation training
- Dr. Marelise Kruger continued in her role as a Royal College Examiner. She teaches POCUS and is a member of the Competence Committee and a National Resident Curriculum contributor;
- Dr. Lindsay Mackenzie is the Obstetrical Anesthesia Rotation Site Coordinator;
- Dr. Neal Maher continued to be instrumental in providing resident training in POCUS. He also served as a longitudinal preceptor/coach;
- Dr. Judy Marois began her role as the Patient Safety and Quality Improvement Co-Coordinator
- Dr. Bronwyn Parkinson continued her roles as Regional/Perioperative Ultrasound Rotation Site co-coordinator and Perioperative Ultrasound Fellowship Site Coordinator;
- Dr. Curt Pitter is the interim Obstetrical Anesthesia Rotation Site Coordinator;
- Dr. Shannon Rabuka continued as Associate Site coordinator;
- Dr. Kristi Santosham is the PLC OR Simulation Leader;
- Dr. Theresa Yang is an Academic Coach

Several members of the department were honoured

with teaching awards:

Outstanding Educator Award – Dr. Graeme Bishop Excellence in Postgraduate Medical Education Awards

Dr. Graeme Bishop
Dr. Linda Hung
Dr. Dean Jordan
Dr. Marelise Kruger
Dr. Lindsay MacKenzie
Dr. Bronwyn Parkinson
Dr. Theresa Yang

Rockyview General Hospital

Contribution by Dr. Yara Babyak (Site Coordinator)

The Department of Anesthesiology, Perioperative and Pain Medicine at the Rockyview General Hospital has had a very successful and productive year with its involvement in the postgraduate anesthesia resident education.

We are proud to have uniform staff involvement and genuine interest in day-to-day teaching of the residents of all PGY levels that come to RGH in the operating room, preoperative anesthesia clinic and post-anesthesia recovery unit. Many staff members continue to participate in Wednesday morning teaching rounds and oral RCPSC exam preparation. Our site continues to be the home site to the CBD Transition to Discipline block for the PGY-1 resident cohort. This past year our section (led by Drs. Y. Babyak and R. Eng) has continued to offer Medical Education in Anesthesia rotation for PGY-5 senior residents that is novel not only to Calgary but to all other postgraduate anesthesia residency programs in the country.

Special mention and gratitude also goes to these outstanding section members that have demonstrated true dedication to resident education over the past year:

- Dr. Reuben Eng continues in his role of a Residency Program Director with tireless and inspiring stamina, creativity, and dedication many of us have never witnessed in our professional education careers before. He was also deservedly named the recipient of the Outstanding Educator Award for 2018 by our residents.

- Dr. Meghan Hayter continues to lead and tirelessly develop simulation education programs including CRM/core simulation program, CanNASC, and many other simulation based resident education activities.
- Dr. Zahid Sunderani has started his role as Obstetrical Anesthesia Rotation Site Coordinator and Associate RGH Site Resident Coordinator;
- Dr. Erin Bruce continues her two busy roles as a Scholarly Project Associate Coordinator; as well as, the Resident Core Program Education Coordinator.
- Dr Ray Zhou has embarked on the role of RGH Undergraduate Medical Education Site Coordinator
- Dr. Yara Babyak continues as the Medical Education in Anesthesia Rotation Coordinator and the RGH Site Coordinator.

In the years to come we hope to continue and expand our active involvement in the postgraduate anesthesia resident education. We will strive to incorporate the feedback we collected from both TTD and Medical Education rotations to improve residents experience and educational value of these rotations. We also hope to have more staff members involved in core curriculum teaching; as well as, simulation activities. Some other directions of development for our site would be to improve resident exposure to ultrasound use for both regional anesthesia; as well as, bedside cardiac echo and to explore the opportunities of utilizing RGH on-site simulation facilities for our postgraduate anesthesia education needs.

Several members of the department were honoured with teaching awards:

Excellence in Postgraduate Medical Education Awards

Dr. Yara Babyak

Dr. Erin Bruce

Dr. Reuben Eng

Dr. Rod Schultz

Dr. Kevin Torsher

Dr. Ray Zhou

Outstanding Educator Award-RGH

Dr. Ray Zhou

South Health Campus

Contribution by Dr. Alan Chu (Site Coordinator)

The SHC currently hosts the PGY-1s for an Adult Anesthesia rotation, and the PGY-3s and -5s for their junior and senior regional anesthesia rotations. We look forward to hosting the CBD PGY-5s in a few years for their senior adult anesthesia rotation here. The PGY-1 junior anesthesia rotation continues to follow a longitudinal preceptor model, along with providing time in regional anesthesia, APS, OB, and PAC. Optional training time with the Transitional Pain Service is available. We continue to train off-service residents, paramedic students, ward RRTs, and provide airway training days for our emergency medicine colleagues, in addition to medical students, FP-A residents, and fellows in the Perioperative Ultrasound fellowship.

This growing bulk of trainees has justified a Tuesday morning teaching program for anesthesia residents. Our regional anesthesia service is very busy and provides great opportunities for regional anesthesia teaching. We have a home catheter program and continue programming for a block area regional anesthesiologist position that will provide more consistent training and supervision for our learners. We host the Perioperative Ultrasound fellow for regional anesthesia training and look forward to the start of our Acute Pain Service and Regional Anesthesia fellowship program under the direction of Dr. Ryan Endersby.

We continue to enjoy contributing to our city's anesthesia education, staying responsive to our residents' and residency program's needs over this time of transition to CBD.

RPC Members from SHC:

Dr. Nathan Brown - Associate Site Coordinator, Regional Anesthesia Rotation Coordinator

Dr. Alan Chu - Site Coordinator, Academic Coach Program Lead, Mentorship Teams Program Lead.

Dr. Afra Moazeni - Education Co-Coordinator.

SHC 2017 Winners Excellence in Postgraduate Medical Education Award: Drs. Leyla Baghirzadeh, Alan Chu, Mark Kostash, and Shaylyn Montgomery.

SHC 2017 Outstanding Educator Award: Dr. Alan Chu

Mentorship Program

Contribution by Dr. Alan Chu (Mentorship Teams Program Lead)

Our Mentorship Teams Program has entered its third year and teams are now replete with a blend of junior and senior residents, recently graduated or post-fellowship junior staff, and a senior staff member. This longitudinal program provides each resident with a very close web of collegial support to help navigate the multi-faceted and often meandering path of residency. Staff participants include Drs. Michael Chong, Alan Chu, Melinda Davis, Peter Farran, and Melissa Jack, along with our recent graduates Drs. Erin Bruce, Chris Dyte, Linda Hung, Afra Moazeni, and Jenny Thompson.

Academic Coach Program

Contribution by Dr. Alan Chu (Academic Coach Program Lead)

While the Royal College has maintained its position that an Academic Advisor program remains suggested rather than required, our local program (known as Academic Coaches) has flourished. Informal surveys suggest that residents find no shortage of coaching and mentorship in our program! In this program, all CBD residents have a staff physician who provides goal-directed coaching toward residency success. During the 2018 – 2019 year, our Academic Coaches are Drs. Michael Chong, Melinda Davis, Peter Farran, Julia Haber, Wendy Hall, Melissa Jack, Udell Larsen, Alan Lee, Lori Olivieri, Chris Prusinkiewicz, Ted Schubert, and Marc Soska.

These staff members have received additional training in mentorship, professional coaching, educational coaching via the R2C2 model; along with topics such as burnout, resiliency, and emotional intelligence. Recruitment is ongoing as each new cohort of CBD residents mandates another cohort of staff coaches! Please contact Dr. Chu at aycchu@ucalgary.ca if you are interested in participating as a Coach.

Longitudinal Coaches Program

Building on the successes of the Academic Coach program for CBD residents, a similar individual coach program has rolled out to all Traditional Stream (non-CBD) residents on an optional basis. Our current Longitudinal Coaches are Drs. Alan Chu, Melinda Davis, Reuben Eng, Peter Farran, Neal Maher, and Debbie McAllister. Additional staff members are happy to participate, all interested staff and residents are asked to contact Dr. Chu at aycchu@ucalgary.ca.

SHC 2018 Winners Excellence in Postgraduate Medical Education Award: Drs. Matthew Banasch, Alan Chu, Afra Moazeni, Shaylyn Montgomery, Ted Schubert, Adam Spencer.

SHC 2018 Outstanding Educator Award: Dr. Ted Schubert

Morning Teaching Sessions

Throughout the week, faculty members around the city provide morning teaching sessions to our residents, including the following staff anesthesiologists in the 2018 – 2019 academic year:

FMC		
Keith Anderson	John Balaton	Michael Chong
Lorraine Chow	Melinda Davis	Kaylene Duttchen
Chris Dyte	Donal Finegan	Alex Gregory
Julia Haber	Heather Hurdle	Kim Illing
Leigh Illing	Bruno Ligier	Chris Noss
Chris Prusinkiewicz	Kelly Shinkaruk	Shean Stacey
Desiree Teoh	Rob Thompson	Andrea Todd
Nicole Webb		

PLC		
Graeme Bishop	Craig Pearce	Michelle Hokanson
Dean Jordan	Neal Maher	Curt Pitter
Lindsay Mackenzie	Linda Hung	Vanessa Wong

RGH		
Yaryna Babyak	Bevin Bart	Miriam Berchuk
Erin Bruce	Tommy Chan	Niahm Donnelly-Warner
Reuben Eng	Wendy Hall	David Hardy
Megan Hayter	Gordon Hopper	Stephen Jacyna
James Janzen	David Kent	Udell Larsen
Brenda Lee	David Liepert	Farrah Morrow
Jill Partridge	Kiran Patel	Steven Phillips
Saul Pytka	Yair Rubin	Marius Saayman
Peter Samuels	Martin Scanlon	Rod Schultz
Misbah Shah	Karl Simon	Chris Sims
Marc Soska	Blythe Sweet	Kevin Torsher
Lin Tsai	Paula Wasserman	Karrie Yont
Ray Zhou		

SHC		
Nathan Brown	Alan Chu	Afra Moazeni Rizi
Shaylyn Montgomery	Ulyana Nemish	Sushil Sancheti
Adam Spencer	Adam Spencer	

Practice Oral Exam Sessions

The following faculty members were recognized by last year's PGY-5 residents for their dedicated assistance in helping this cohort of residents prepare for the RCPSC Anesthesiology Oral Examinations:

Matthew Banasch	Graeme Bishop	Erin Bruce
Michael Chong	Lorraine Chow	Alan Chu
Karl Darcus	Melinda Davis	Chris Dyte
Reuben Eng	Alastair Ewen	Julia Haber
Wendy Hall	Nina Hardcastle	Linda Hung
Heather Hurdle	Dean Jordan	Marelise Kruger
Udell Larsen	Meggie Livingstone	Jeremy Luntley
Lindsay MacKenzie	Judith Marois	Debbie McAllister
Duncan McLuckie	Afra Moazeni Rizi	Shaylyn Montgomery
David Nguyen	Chris Noss	Lori Olivieri
Chris Prusinkiewicz	Shannon Rabuka	Marius Saayman
Peter Samuels	Rod Schultz	Adam Spencer
Desiree Teoh	Michelle Theam	Andrea Todd
Vishal Varshney	Nicole Webb	Josh Wilson
Theresa Yang	Paul Zakus	Ray Zhou

Core Program

Contribution by Dr. Erin Bruce & Dr. Afra Moazeni (Education Co-Coordinators)

This academic year we continue to have a mix of traditional and competency by design residents, and include all training levels from R1 through R4 in core program. We currently have a three-year rotation for our academic program to ensure all residents are exposed to all essential topics prior to the Royal College written exam. By incorporating oral exam questions into Thursday afternoon sessions, we aim to start preparing our residents early for both components of their final exam.

For the 2018 – 2019 academic year, the coordinators of the core program blocks included Drs. Lorraine Chow, Nathan Brown, Alastair Ewen, and Afra

Moazeni. We covered thoracic/pulmonary, regional anesthesia, pediatric anesthesia and pharmacology. We also introduced two new topics to core program, acute and chronic pain, as well as a dedicated vascular anesthesia block. We would like to thank Drs. Linda Hung, Vishal Varshney, and Nadim Jadavji for creating and executing these new core program blocks.

In addition to our focus on academics, we also include sessions on the CanMEDS competencies. This academic year we included mindfulness and wellness, disclosure of adverse events, and how to give and receive feedback.

As we transition into the 2019 – 2020 academic year, Dr. Paul Dawson will be assuming the role as education co-coordinator as Dr. Moazeni will be looking after some little new ones on maternity leave. We had great faculty involvement in teaching core program this year and are always welcoming new faces to be core program preceptors.

Faculty members who taught in Core Program in the 2017 – 2018 academic year include:

Keith Anderson	Peter Farran	Lori Montgomery
Leyla Baghirzada	Donal Finegan	Shaylyn Montgomery
Marie-Eve Beauchemin-Turcotte	Julia Haber	Jamin Mulvey
Kristin Biefer	Nina Hardcastle	Chris Noss
Nathan Brown	Linda Hung	Duncan McLuckie
Erin Bruce	Heather Hurdle	Afra Moazeni
Michael Chong	Nadim Jadavji	Ulyana Nemish
Lorraine Chow	Mark Kostash	John Pereira
Ruth Connors	Mike Letal	Shannon Rabuka
Robin Cox	Jeremy Luntley	Nivez Rasic
Jan Davies	David Jungen	Kelly Shinkaruk
Karl Darcus	Judy Marois	Adam Spencer
Chris Dyte	Afra Moazeni	Michelle Theam
Ryan Endersby	Debbie McAllister	Andrew Walker
Alastair Ewen	Jon McMann	

Journal Club

Contribution by Dr. Paul Zakus (Journal Club Coordinator)

Two journal clubs were held over the past 12 months, one in November 2018 and the other in April 2019. Journal articles which were chosen to be discussed were deemed to be interesting, impactful and promoting discussion. Two papers were discussed at each journal club. For the November journal club, one paper discussed studied the role of tranexamic acid during spine surgery and the other was a retrospective review of anesthetic choice (general vs regional anesthesia) during c-sections in patients with abnormal placentation. The April journal club discussed one paper examining preconditioning in high risk surgical patients and the other suggamadex's possible role in reducing perioperative complications. Fortunately, both journal clubs this year were held in staff anesthesiologist's residences. Dr. Geoff Hawboldt graciously hosted the November journal club and Dr. Shannon Rabuka hosted the April journal club. It appears that journal clubs hosted at a residence improved attendance numbers from staff anesthesiologist which facilitated a more involved and lively discussion of the papers. For the upcoming year, there will be two journal clubs with one occurring this November and the other occurring in April 2020. With regard to funding, fortunately we received \$2,000 from Merck via an unrestricted education grant this February which supplied sufficient funding. The plan for funding in the coming year is to apply again for this education grant from Merck.

Quality & Safety

Contribution by Drs. Jan Davies & Judy Marois (Safety & Quality Co-Coordinators)

In July of 2019, the revised Introduction to Safety & Quality Course was provided for all new FRCPC residents with 2.5 days of instruction. The revisions this year focused on the new CBD EPAs and was delivered over 1.5 days and covering Safety, Quality, Human Factors, and Proactive & Reactive Investigation. One further half-day was spent Quality Improvement and Information Management. Another half-day included a tour of the Human Factors laboratory in W21C; as well as, the Alberta Health Services

course, “Communicating Unexpected Outcomes in Healthcare Clinician Master Class” from Saegis (Canada) with the awarding of a Certificate to all participants.

Feedback from the class was presented in August by Lauren Crosby, as the R1 Class representative to the Department’s Safety & Quality experts: Drs. Jan Davies, Donal Finegan, Judy Marois and Michelle Theam. This feedback will be used to facilitate further evolution of the Introduction as the backgrounds of the incoming residents continue to change as changes are made in the undergraduate medical curriculum.

Also in July, residents Drs. Lauren Crosby and Joel Janssen co-presented the Institute of Healthcare Improvement (IHI) course modules on Quality Improvement to all R1 – R4 residents. This class included vigorous discussion of various aspects of the course and requests for future additions to both the Introductory Course and Core.

The Safety & Quality Co-Coordination to the RPC changed in September 2019 when Dr. Michelle Theam took maternity leave and was replaced by Dr. Judy Marois who recently completed her Fellowship in Safety & Quality in Calgary. Apart from representing Safety & Quality in general, Dr. Marois will provide the RPC with her knowledge and expertise in “Return to Work” programs as the RPC develops a policy for residents returning to clinical work after a voluntary absence, for example: for health or family reasons.

Also in September, Dr. Talia Ryan became the lead resident on a project to develop a part of the Department website devoted to Safety & Quality Improvement projects in the Department.

Scholarly Projects

Contribution by Dr. Erin Bruce & Dr. Linda Hung (Scholarly Project Co-Coordination)

Our annual Scholarly Project Evening to showcase resident and staff research took place on March 7, 2019 at the Calgary Winter Club. This year, our keynote speaker was Dr. Alex Gregory from the Foothills Medical Centre who spoke to us about “Building an Academic Career in Your Early Years”. Our resident and staff physicians alike found this to be extremely informative and interesting!

We continue to have excellent faculty involvement

in this evening and would like to specially thank Dr. Rosa Chun (FMC), Dr. Melissa Jack (SHC), and Dr. Debbie McAllister (ACH) for being our guest adjudicators for the evening. We had excellent resident presentations given by Dr. Katrina Roberts, Dr. Paul Dawson, Dr. Nicky Morrison, Dr. Edward Choi and Dr. Cam Shillington. Our quality improvement fellow, Dr. Judy Marois presented on “development of a Canadian Anesthesia Return to Work Program”. Dr. Ed Choi took home the prize for best oral presentation for his project “Validation of using ultrasound in real-time to visualize insertion of nasogastric tubes in pediatric patients” with his supervisor Dr. Adam Spencer (ACH).

Our residents also represented us well at multiple conferences in the past year, including Nadine Lam at the 2018 American Society of Anesthesiologists Meeting (ASA), Edward Choi also at the ASA, Paul Dawson at the 2019 Canadian Anesthesiologists Society (CAS) Annual Meeting, Cameron Shillington presented at the 2018 Canadian Pediatric Anesthesia Society Annual Meeting, and Katrina Roberts at the 17th Annual Pain Medicine Meeting as well as the 2019 CAS. Joanna Moser represented us well in the 2019 Residents Competition at the CAS. We would like to thank Dr. Andrew Walker for his continued support of research in our department.

Simulation

Contribution by Dr. Chris Dyte & Dr. Megan Hayter (Simulation Co-Coordination)

A wide variety of simulation training experiences are provided for our residents, with guidance and facilitation from the Simulation Committee, including ACRM (Anesthesia Crisis Resource Management), MEPA (Managing Emergencies in Pediatric Anesthesia), CanNASC (Canadian National Anesthesia Simulation Curriculum), Core Program, PGY1 Bootcamp, and an OSCE curriculum for our residents in response to the RCPSC’s inclusion of an OSCE as part of the anesthesiology oral examinations.

The 2018 – 2019 academic year involved a number of changes to the simulation curriculum and opportunities. The CanNASC task force completed all five validated, evaluative simulations with not only the PGY5s but also with the PGY4s to advance the time in which senior residents complete these

mandatory simulations to better align with the timeline of the upcoming CBD resident RCPSC examinations. To further prepare residents for the CanNASC assessments, the 2018-2019 ACRM curriculum introduced an additional session which included a formative, checklist-style assessment for further review and education. Additional programs over the year included the INSPIRE course (bolstering clinical teaching to residents and faculty), a simulated patient regional anesthesia session, and an extensive Pediatric Core Program simulation curriculum.

Moving forward with plans for the 2019 – 2020 year, the ACRM program introduces a more formalized, four-year curriculum to continue to reinforce the importance of nontechnical skills in crisis, but also to encompass resuscitation and essential medical emergencies/topics based on RCPSC Required and Suggested Anesthesiology Training Experiences and Objectives and Competencies. This is a considerable undertaking, and increases the number of simulation sessions attended by residents over the course of each year. This new curriculum will bring much of the content-linked simulation exposures previously seen in conjunction with Core Program into a more appropriate educational experience (minimizing observer roles, reduced group sizes and more appropriate focus on communication skills). Core Program will continue to have simulation activities, but with a redirected focus on topics that can be better provided in a larger group setting.

Further opportunities will also include additional exposure to multidisciplinary simulation in conjunction with Obstetrics and Psychiatry, critical care, trauma team simulations, recovery room in-situ simulation, and various part-task trainers including advanced airway and ultrasound models. The Difficult Airway Course through the University of Calgary also provides an opportunity for residents to learn skills while at a junior stage, and step into an educator role at a senior level.

Faculty members who taught simulation sessions in the 2018 – 2019 academic year included Drs. Yara Babyak, Niamh Donnelly-Warner, Chris Dyte, Mark Gale, Julia Haber, Megan Hayter, Dean Jordan, Duncan McLuckie, and Kristi Santosham.

Resident Wellness

Dr. Melinda Davis serves as our Director of Resident Wellness and many residents have found her to be tremendously supportive when they approach her with the common stresses of residency. The CARR Planning Committee consisted of Drs. Paul Dawson, Meredith Hutton, Nicky Morrison, and Joanna Moser; the successful retreat was held in Cochrane this year. Our program introduced a new team-building and ski day in February, which was well received by our residents. Dr. Alan Chu continues to lead our mentorship teams and our residents continue to find significant support from their peers.

Mentorship Program

Contribution by Dr. Alan Chu (Mentorship Teams Program Lead)

Our Mentorship Teams Program has entered its second year, building on our previous peer mentorship program. Our Mentorship Teams are now replete with a blend of junior and senior residents, recently graduated or post-fellowship junior staff, and a senior staff member. This longitudinal program provides each resident with a very close web of collegial support to help navigate the multi-faceted and often meandering path of residency. It was developed after resident and staff consultation. Staff participants include Drs. Michael Chong, Alan Chu, Melinda Davis, Peter Farran, and Melissa Jack, along with our recent graduates Drs. Erin Bruce, Chris Dyte, Linda Hung, Afra Moazeni, and Jenny Thompson.

Academic Coach Program

Contribution by Dr. Alan Chu (Academic Coach Program Lead)

While the Royal College has maintained its position that an Academic Advisor program remains suggested rather than required, our local program (known as Academic Coaches) has flourished. Informal surveys suggest that residents find no shortage of coaching and mentorship in our program these days! In this program, all CBD residents have a staff physician who provides goal-directed coaching toward residency success. Our current active Academic Coaches are Drs. Michael Chong, Melinda Davis, Peter Farran, Julia Haber, Melissa Jack, Udell Larsen, Alan Lee, Lori Olivieri,

Chris Prusinkiewicz, and Marc Soska.

These staff members have received additional training in mentorship, professional coaching, educational coaching via the R2C2 model; along with topics such as burnout, resiliency, and emotional intelligence. Recruitment is ongoing as each new cohort of CBD residents mandates another cohort of staff coaches! Please contact Dr. Chu at aycchu@ucalgary.ca if you are interested in participating as a Coach.

Longitudinal Coaches Program

Building on the successes of the Academic Coach program for CBD residents, a similar individual coach program has rolled out to all Traditional Stream (non-CBD) residents on an optional basis. Our current Longitudinal Coaches are Drs. Michael Chong, Alan Chu, Melinda Davis, Reuben Eng, Peter Farran, Neal Maher, and Debbie McAllister. Additional staff members are happy to participate, all interested staff and residents are asked to contact Dr. Chu at aycchu@ucalgary.ca.

Chief Residents

The Chief Residents for the 2019 – 2020 academic year are: Drs. Katrina Roberts and Cam Shillington.

Graduating Residents

The following residents successfully passed their



RCPSC examinations in anesthesiology and graduated from our residency program this past year:

Dr. Paul Dawson – now a Staff Anesthesiologist at the Rockyview General Hospital;

Dr. Meredith Hutton – currently completing a fellowship in head and Neck Anesthesia and Advanced Airway Management Stanford University in Palo Alto, CA, USA;

Dr. Nicola Morrison – currently completing a fellowship in Simulation Education as of November 2019 at University of Calgary

New Residents

Our program had a successful CaRMS match, and we are delighted to welcome the following residents to our program:

Dr. Ryden Armstrong (University of Calgary);

Dr. Lauren Crosby (Western University);

Dr. Joel Janssen (Western University);

Dr. Curtis Nixon (University of Manitoba);

Dr. Taesuk Song (University of Alberta).

2019 Award Winners

The Awards & Graduation Dinner was well attended by over 100 faculty members and residents. We hope that attendance is even higher next year! Dr. Lisa Welikovich was our commencement speaker.

The Top Junior Resident Award was awarded to Dr. Oliver Hatheway, while the Top Senior Resident Award was awarded to Dr. Nadine Lam.

Dr. Edward Choi was the recipient of the Undergraduate Medical Education Award.

Dr. Graeme Bishop was the recipient of the Leo Strunin Award.

The following faculty members were selected by the residents to receive the Outstanding

Educator Award at their respective sites:

Dr. Ted Schubert (SHC)

Dr. Ray Zhou (RGH)

Dr. Doug Seal (FMC)

Dr. Graeme Bishop (PLC)

Dr. Jon McMann (ACH)

The following faculty members received an Excellence in Postgraduate Medical Education Award:

ACH	FMC	PLC	RGH	SHC
Kerryn Carter	Keith Anderson	Graeme Bishop	Matthew Banasch	Yara Babyak
Mark Gale	Michael Chong	Linda Hung	Alan Chu	Erin Bruce
Nina Hardcastle	Lorraine Chow	Dean Jordan	Afra Moazeni	Reuben Eng
Duncan McLuckie	Melinda Davis	Marelise Kruger	Shaylyn Montgomery	Rod Schultz
Jon McMann	Kaylene Duttchen	Lindsay MacKenzie	Ted Schubert	Kevin Torsher
Nivez Rasic	Julia Haber	Bronwyn Parkinson	Adam Spencer	Ray Zhou
	Doug Seal	Theresa Yang		
	Rob Thompson			
	Andrea Todd			
	Bing Wang			
	Paul Zakus			

Dr. Heather Hurdle was the recipient of the Faculty Extra Mile Award. Dr. Nadine Lam was the recipient of the Resident Extra Mile Award.



Family Practice Anesthesia

Dr. T. Trinh

As one of the third-year Category 1 Enhanced Skills programs offered by the University of Calgary Department of Family Medicine, the Family Practice Anesthesia Program continues its tradition of training family physicians to provide excellent anesthesia care in rural, remote, and underserved areas. The FPA program is run in conjunction with the Royal College Anesthesia Program. Our residents share in many of the same excellent learning opportunities as their specialty anesthesia counterparts.

Calgary offers a wide variety of training sites for our residents, providing exposure to pediatric anesthesia, adult anesthesia at community hospitals, and tertiary care/trauma care at the Foothills Medical Centre. Our program is proud to continue our collaboration with Stanton Territorial Hospital in Yellowknife, where our residents complete their rural anesthesia block. These rich and varied experiences provide our residents with the tools necessary to not only provide exceptional anesthesia care to their patients, but to act as medical leaders in their respective communities as well.

Recruitment and staffing

Dr. Emilie Bousquet and Dr. Reid Hosford successfully completed the FPA program in July, 2018. Both performed with distinction, and we wish them the best of luck in their future endeavors. Dr. Hosford was the recipient of the Dr. Bryan Ward Memorial Award for his demonstrated dedication to rural medicine, leadership, and professionalism.

Our current residents are Dr. Caleb De Putter and Dr. David Steed. Both are graduates of the University of Calgary Rural Family Medicine Program based out of Lethbridge. Dr. De Putter is also the acting Chief Resident of the Family Medicine Enhanced Skills Program.

Section/program educational and academic activities

The staff anesthesiologists in Calgary and at our rural training site, Stanton Territorial Hospital in Yellowknife, remain the cornerstones of our program. Their tireless dedication and passion

for teaching are integral to our ongoing success. Though the majority of their time is spent in the operating room, our residents also benefit from resident teaching rounds, grand rounds, and academic half day. Our program continues to support our residents in attending enriching educational opportunities such as Anesthesia Bootcamp, a course dedicated to intensive simulation-based learning; as well as, the Rural Anesthesia Conference in Banff each year.

Future directions

It is a time of change for Enhanced Skills programs across the country, with the majority of programs transitioning to a structure reflective of competency-based medical education. Our FPA program will be introducing an assessment structure consistent with CBME starting in the 2019 – 2020 academic year. Such a major change in the approach to learner assessment and evaluation brings great challenges and; at the same time, renewed optimism, fresh ideas, and opportunities for increased collaboration between program directors and other leaders across the country. It is an exciting time to be involved with the Enhanced Skills Program.

Anesthesia Clerkship Program

Dr. M. Davis

The Department of Anesthesiology, Perioperative and Pain Medicine continues to have an important role in Undergraduate Medical Education in the Cumming School of Medicine. During the 2018 – 2019 academic year approximately 250 students from years one to three came through our operating rooms across the city. Additionally, our faculty and residents teach in lectures and small group sessions across all three years of the medical school curriculum.

Our clerkship committee has expanded to welcome representation from the Alberta Children's Hospital with Dr. Tiffany Rice joining us. While there are no plans to have core clerks spend time at ACH we have been excited to be able to offer experience there for interested elective clerks. We have also welcomed Dr. Cam Williams as our junior resident rep.

Our current Clerkship Committee is:

Dr. Melinda Davis – Clerkship Director

Dr. Karl Darcus – Evaluations Coordinator

Dr. Kaylene Duttchen – Site coordinator FMC

Dr. Heather Hurdle – Site coordinator FMC

Dr. Vanessa Wong – Site coordinator PLC

Dr. Niamh Donnelly-Warner – site coordinator
RGH

Dr. Alan Chu – site coordinator SHC.

Dr. Tiffany Rice – site coordinator ACH.

Dr. Chris Young – Senior Resident representative.

Dr. Cam Williams – Junior Resident representative.

Lynda Pederson – Program Coordinator.

The mandatory anesthesia clerkship rotation remains a popular rotation with the clerks, with feedback consistently recognizing the value of faculty teaching in the operating room. With the introduction of the Medical Education rotation for our senior residents some clerks will now benefit from supervision by residents in the operating room. Dr. Chris Young, with assistance from Dr. Katrina Drohomirecki and Dr. Joanna Moser, has created an introductory video which is now distributed to all core clerks prior to their rotation. This has been well received, especially by those clerks for whom the operating room is a new environment. With the assistance of the Medical Technologies team in UME we continue to work on other online educational tools for our core clerks.

As a committee we have spent some time this year exploring ways to make our rotation more enriching for elective students. Dr. Katrina Drohomirecki and Dr. Claire Allen have updated the rotation materials that elective students receive. They have also created a shadowing program whereby interested students can shadow a resident on call. This is an important career exploration exercise for these elective students and has been very popular. The students have really appreciated this opportunity and have enjoyed the chance to meet and talk with the residents. Many thanks to all the residents who have had a clerk join them on call.

I want to thank all of the faculty who have contributed to the success of our undergraduate medical education program. The department

accommodates many learners across all levels of education and experience which places demands on faculty at all sites. Our program has worked closely with the residency and fellowship programs to ensure that learners are thoughtfully distributed across the city. We recognize the time and energy that faculty put into teaching and it is very much appreciated by the students.

This year the following staff were recognized for “Excellence in Undergraduate Education”:

FMC – Dr Rob Thompson

PLC – Dr Dean Jordan

RGH – Dr Marc Soska

SHC – Dr Leyla Baghirazada

Dr. Carlos Yu was recognized for his teaching during the clerkship orientation day. And Lynda Pedersen was recognized with the “Outstanding Service to Clerkship” award. Lynda has been instrumental to the success of our program for over a decade. She will be very much missed following her retirement later this year.

We have had a standalone anesthesia clerkship rotation for only eight years (prior to this anesthesia was part of the surgery clerkship) but in that time have established an important place in undergraduate education. Our activities now extend beyond clerkship to include work with students in the pre-clerkship years, both as part of their regular curriculum and in career exploration activities. Quality teaching, mentorship, and role modelling are critical to attracting students to a career in anesthesiology and for demonstrating the role and scope of practice of our specialty.

Continuing Medical Education

Dr. Robin Cox

2018 – 2019 saw the continuation of significant departmental activity in the area of Continuing Medical Education and Professional Development (CME/PD). All five clinical sites continue to conduct anesthesia rounds at a Section 1 level of MOC on a weekly basis throughout the academic year. A proportion of these rounds are for journal article review and case discussions. Rounds are given by guest speakers, staff anesthesiologists, fellows, or residents under supervision. On occasion, joint rounds are held with other clinical

departments and programs, e.g. surgery, critical care, trauma. Other teaching rounds, for example at the Alberta Children's Hospital, are aimed more towards residents and fellows. These may have staff anesthesiologists attending or presenting, so provide CME as a Section 2 MOC activity if a Personal Learning Project ensues.

At the Departmental level, we continue to run citywide Anesthesiology Journal Club, chaired by Dr. Paul Zakus, who recently took over from Dr. Nathan Brown. These are conducted several times per academic year. Each journal club session takes the form of critical review of two to three key journal articles following a specific theme. These events are held in one of the staff anesthesiologists' homes or in a hospital venue.

Other CME/PD initiatives have included regular participation in the Rural Anesthesia for GP-Anesthetists Course in Banff, Alberta Anesthesia Summits, the annual meeting of the Canadian Pediatric Anesthesia Society, and participation in Canada-wide Pediatric Anesthesia Rounds. Several faculty members and residents presented at the Canadian Anesthesiologists' Society Annual Meeting in Montreal, QC, in June 2018. 2019 will see the CAS meeting in Calgary, so we expect to have an increased CME presence at that event.

Other specific CME courses have been developed by our faculty, for example:

- Dr. Mark Kostash at SHC has organized the "Ultrasound-Guided Regional Anesthesia for ER Workshop";
- Dr. Neal Maher at PLC continues to hold Section 1 accredited point of care ultrasound workshops twice a year, specifically "Basic FATE" (Focus Assessed Transthoracic Echocardiography) and "Basic Lung/FAST" (Focused Assessment with Sonography for Trauma);
- Dr. Mark Gale, Dr. Duncan McLuckie, and colleagues at ACH continue to run the POCM "Perioperative Management Course" several times per year, which is accredited for Section 3 MOC credits.

At an administrative level, each site continues to have an identified leader for CME/PD. These are Dr. Elisabeth Dobereiner (ACH), Dr. Steve Jacyna (RGH), Dr. Tad Cherry (PLC), Dr. Colin Bands (FMC), and Dr. Esther Ho (SHC). Dr. Robin Cox

is the Departmental representative on the Faculty of Medicine's CME and PD Committee. He also sits nationally on the Continuing Education and Professional Development (CEPD) Committee of the Association of Canadian University Departments of Anesthesia (ACUDA), and Council of the Royal College of Physicians and Surgeons of Canada. There is no specific citywide Anesthesia CME/PD Committee as the Zone Anesthesia Executive Committee, the Academic Council of the Department, and the Journal Club planners serve this function.

The future of CME in the Department will include a further emphasis on developing assessment tools for faculty, such as simulation programs, and anesthesia feedback reports (e.g. as developed by Dr. Donal Finegan and colleagues). Such methodology will allow us to tailor our learning needs to providing the best care for our patients.

Simulation Fellowship Program

Dr. M. Hayter

The Alberta Health Services Calgary Zone Department of Anesthesiology, Perioperative and Pain Medicine has an established formal Simulation Committee, co-chaired by Drs. Megan Hayter and Christopher Dyte. The 2018 – 2019 academic continued to see exciting new developments in the simulation program.

Several existing Department programs have been maintained and new simulation programs added. Importantly, our simulation activities target learners of all levels of training. All simulation activities are organized and run by members of the simulation committee (Drs. Hayter, Dyte, McLuckie, Haber, Gale, Donnelly-Warner, Jordan, Santosham).

Resident Simulation

A. Anesthesia Crisis Resource Management (Dr. Hayter) - The Anesthesia Crisis Resource Management (ACRM) course continues to be an integral part of the simulation curriculum at the University of Calgary. This is a high fidelity simulation session for four of our residents (PGY 1-4) focusing on crisis resource management skills. Each simulation scenario is followed by an individualized debrief by one of our simulation staff.

B. ACRM2 (Drs. Dyte and Hayter) - This new simulation program was added to our residency curriculum as an introduction to simulation for assessment for our residents.

C. Core Program Simulation Integration (Drs. McLuckie and Dyte) - Several simulation sessions have been added to each core block. These simulation sessions are developed with a content expert and focus on the medical expert role. In 2018 during the Pediatric Core Program residents had the opportunity of participating in pediatric specific simulations which complimented the core topic each week. The regional anesthesia core program included simulated session using standardized patients for teaching ultrasound guided upper and lower extremity techniques (Drs. Spencer and Brown).

D. Managing Emergencies in Pediatric Anesthesia (Dr. McLuckie) - Our residents participate in several high fidelity simulation sessions in the

operating room environment at Alberta Children's Hospital. MEPA is an international simulation course which focusing on managing common peri-operative pediatric emergencies.

E. CanNASC Simulation Milestones (Dr. Hayter) - Our PGY 4 and 5 residents continue to complete their CanNASC simulation milestone scenarios. These milestones are a National undertaking. This year the 5 residents completed two of these standardized scenarios. In the 2018 – 2019 academic year our PGY 4 and 5 residents will complete these scenarios in preparation for CBD.

F. Simulation Bootcamp (Drs. Hayter, Dyte, and Jordan) - During the first week of PGY 1, our first year residents participated in a simulation bootcamp where they focus on common intraoperative emergencies and review some technical skills.

G. Part-task trainers - Our residents have access to and participate in various sessions with different part-task trainers. These sessions include: cardiac ultrasound, respiratory bronchoscopy, and airway trainers.

H. Inter-disciplinary simulations (Dr. Haber) - Our residents participate in simulations with other health care teams such as obstetrics, trauma, and intensive care. Our senior residents participated in an inter-disciplinary obstetrical team simulation. Moving forward this simulation event has become a mandatory part of our residency curriculum.

I. OSCE station (Drs. Hayter and Dyte) - In 2019, our PGY 5 residents participated in a standardized patient OSCE examination in preparation for a station that was added to their Royal College examination.

Staff Simulation

- Perioperative Crisis Resource Management Course (POCM) - POCM is an all-day simulation course designed and developed at the Alberta Children's Hospital (Drs. McLuckie and Gale) to improve crisis management in our operating rooms. POCM is a multidisciplinary, inter-professional course involving OR RNs, PACU RNs, Anesthesiologists, Surgeons, and RTs. The course involves three to four high-fidelity in-situ simulated crises scenarios based on each hospital's previous years' Quality Improvement/Quality Assurance

cases. Importantly 2018, saw the expansion of this program to both the Peter Lougheed (Drs. Jordan and Kruger) and the Rockyview General Hospital (Dr. Hayter). The plan moving forward is to have POCM run at each site by the end of 2019.

- Mini-POCM (Drs. Hayter, Dyre, and Santosham) – Mini-POCM is a course based on the same principles as the full-day POCM course; however, it occurs on one Friday every month during and runs between 7:30-8:30. It is a in-situ high fidelity simulation program based on QA/QI events and is hospital specific. At the Rockyview, Peter Lougheed, and Foothills Medical Center one operating room a month will be enlisted to participate. All team members from that room will be participants in the simulation which is followed by a debrief.
- Difficult Airway Management Course (DAM) – the DAM course allows staff physicians to practice difficult airway management, including the surgical airway on pig trachea (Dr. Haber). This course is hosted at the ATSSL.

Hospital Based Simulation Activities

A. Foothills Medical Centre – Under the direction of Drs. Dyte and Haber several simulation activities have occurred including a PGY1 Surgical Skills Simulation Examination, Difficult Airway Course 2018 and 2019, Anesthesia Resident Teaching to Clinical Clerks (multiple sessions, every two weeks as new clerks start), Anesthesia Return to Work Program Pilot, TeamSTEPPS PGY1 Surgery Simulation, OB/ANA/Nursing/RT IPE Simulation, RT/ANA Simulation, RT/ANA Simulation – CICO, RT/ANA Simulation - PEA Arrest, and several additional RT simulations. In addition, Dr. Haber participated in the psychiatry academic half day and is now involved with developing an inter-disciplinary simulation with our psychiatry colleagues. Lastly, a simulation study looking at Situational Awareness in OB Teams (Ethics approved, recruitment started, running in Fall 2019)

B. Peter Lougheed Centre (PLC) (Drs. Santosham and Jordan)-The PLC continues doing interdisciplinary simulations including staff anesthesiologists, nursing and respiratory therapy from the operating room and obstetrical unit.

These sessions run every one to two months. As previously mentioned, the PLC introduced POCM to their operating room staff.

C. Rockyview General Hospital (RGH) – RGH staff anesthesiologists continue to participate in in-situ simulations in the operating room, recovery room and obstetrical unit. These sessions include anesthesia, nurses, and respiratory therapy. High fidelity in-situ obstetrical team training exercises occur with obstetrics throughout the year. We have grown are PACU simulations which occur on a monthly basis. In addition, we participate in MORE-OB sims with our obstetrical colleagues. Also, we have actively begun our mini-POCM course which occurs once a month our operating rooms. Lastly, a simulation study looking at maternal cardiac arrest has begun recruitment.

D. Alberta Children's Hospital (ACH) – ACH continues to run POCM, Just In Time Simulation (JITS) and the Pediatric Airway Course (TPAC). TPAC is an all-day simulation based airway course hosted by KIDSIM at ACH. JITS is an educational strategy where simulation occurs in close temporal proximity to a clinical encounter, usually in the operating room at a scheduled time on a scheduled list.

E. South Health Campus (SHC) - Currently, the SHC does high-fidelity in-situ team training exercises which focus on allied health team learning needs (OR and PACU nurses, desk clerks, respiratory therapists, health care aides, and surgical processors). They hope to include anesthesiologists and surgeons in the future. Anesthesiologists are intermittently involved in high fidelity obstetrical simulations which are led by the OB nurse educators.

Simulation Fellowship

We saw our second simulation fellow complete his fellowship in 2019. Dr. Christopher Dyte has been a excellent addition to our program and continues to develop and grow our program at all levels. He also won a teacher award from our residents which is a testament to his skill and commitment to our program.

Cardiac Anesthesia Fellowship Program

Dr. A. Gregory

The Cardiovascular Anesthesia Fellowship program offers postgraduate education in perioperative anesthetic management for open-heart surgery, associated cardiovascular procedures (such as transcatheter aortic valve replacement, EP procedures, complex lead extractions, etc.), patients with cardiac disease undergoing non-cardiac surgery, and advanced training in perioperative transesophageal echocardiography.

The fellowship is a 12-month program which relies on the hard work and excellent teaching of the entire CV operating room team. Fellows work intensely in a one-on-one environment with one of the attending cardiac anesthesiologists. They are intimately involved in the preoperative evaluation, patient optimization, intraoperative management, and transition to postoperative CVICU care. The year is made up of 13 blocks which are generally divided into nine blocks of CVOR and one block each of Echo Lab, CVICU, thoracic/vascular anesthesia, and elective time. Most of the rotations take place at the Foothills Medical Centre.

Fellows are provided a yearly salary which is funded by them receiving a one-year temporary locum position within the Department of Anesthesiology, Perioperative and Pain Medicine. In addition to funding their fellowship year, this provides flexibility to the anesthesia OR schedulers to fill in assignments when coverage is needed or help with last minute cancellations/sick calls.

I would like to thank the members of the cardiac anesthesia group, cardiac OR team, the members of the Department of Anesthesia and the administrative staff. Without the hard work, support, and dedication of all of these people the fellowship program could not exist.

Graduating Fellows

This past year we have two fellows training with our group. Dr. Nadeem Jadavji had been practicing as an attending at the PLC and took a year off to augment his training. Having completed his training this past summer, Nadeem has returned to the PLC as a valuable member of the vascular and perioperative echocardiography team. Dr. Justin

Byers graduated from the UofA in June 2017 and joined us in January 2018. His fellowship year will be completed this upcoming January and he will return to a position at the UofA Hospital joining both the cardiac and liver transplant services.

Both Nadeem and Justin worked very hard during the year provided excellent care to the patients, while generating new knowledge for the attendings and overall contributing to the CV operating room team.

Incoming Fellows

We are currently interviewing candidates and expect to have at least one fellow starting in the summer of 2019.

We were proud to have completed our first year running the perioperative ultrasound fellowship with Dr. Afra Moazeni. Our fellowship committee worked hard in developing the fundamental structure and curriculum of a brand-new fellowship program. Afra exhibited incredible patience and flexibility as the program materialized throughout the year. The Perioperative Ultrasound Fellowship Program is the first of its kind in Canada and provides postgraduate training in the use of ultrasound technology across a broad spectrum of clinical applications: transesophageal echocardiography, point-of-care ultrasound (including transthoracic echocardiography), and regional anesthesia.

As one can imagine, a fellowship as expansive as this, covering multiple sites and areas of expertise, is a daunting task. Fortunately, there is an incredible team of anesthesiologists representing all sites who are collaborating on the design and implementation of the fellowship. This team includes:

Adam Spencer (ACH/POCUS and regional)

Alex Gregory (FMC-TEE)

Heather Hurdle (FMC-POCUS/TEE)

Andrew Walker (FMC-Physics of Ultrasound Course)

Gary Dobson (PLC-POCUS/TEE)

Marelise Kruger (PLC-POCUS/TEE)

Neal Maher ((PLC-POCUS/TEE))

Bronwyn Parkinson (PLC/Regional)

Theresa Yang (PLC-POCUS/TEE)

Ryan Endersby (SHC/Regional)

Mark Kostash (SHC/Regional)

I would like to thank the members of this group for all their hard work over the past year, and their continuing efforts in the success of the program. I would additionally like to express my appreciation to the other members of the department for helping us out by providing learning opportunities for our fellow.

Graduating Fellows

Dr. Afra Moazeni is our first graduating fellow from the program. Afra's year was busy, but she was able to accomplish many educational goals while simultaneously helping us fine-tune the program for the benefit of future fellows. Afra has now moved in to a position at SHC where she will assist as one of our perioperative ultrasound preceptors.

Incoming Fellows

Our fellow for this year is Dr. Kristen Biefer, who started in July after completing her residency at UofA.

Zone-Wide Quality Assurance / Quality Improvement Committee Report

Dr. D. Liepert

I am pleased to report that your QA/QI committee has shown continued success applying the lessons learned from our review process, and the quality we provide has been internationally recognized. In the Newsweek Magazine review of best worldwide hospitals, there is literally no other city that shares our same record of broad success, with our adult hospitals all ranked among the top 20 hospitals in Canada.

<https://www.newsweek.com/best-hospitals-2019/canada>

Our dedicated team of site-leads, including Dr. Leyla Bhagirzada at the South Health Campus, Dr. Michelle Hokanson at the Peter Lougheed Hospital, Dr. Michelle Theam at the Alberta Children's Hospital, Dr. Donal Finegan at the Foothills Medical Centre, Dr. David Liepert at the Rockyview General Hospital all appreciate all of your ongoing support and engagement, without which that would not be possible. We also want to specifically thank Dr. Gary Dobson for his ongoing guidance and support, and thank both Anne Chang from Patient Safety and both Andrew Jenkins and Brian Peffers and Soline Isliarik and Natasha Hayter in our own Department as well.

Here is a brief summary of our completed Quality Assurance Reviews, including their recommendations both completed and outstanding

Calgary Zone Anesthesiology Quality Assurance Subcommittee Annual Report QARs

COMPLETED Between April 1, 2018 – March 31, 2019

Name of Review & Date Completed: CAL-8085-Jul2018-Delayed Epidural Assessment by APS-SURGER-PLC

Case Description: A patient received an epidural in the operating room for post-operative pain management. A patient with an epidural is followed by Acute Pain Service (APS) and typically seen shortly after surgery. The patient was not seen by APS until three days after surgery. At the time of this event, the anesthesiologist assigned to APS was a locum and was not added to the APS group in the electronic health record system. Therefore, the locum anesthesiologist did not know this was an APS patient. The patient was followed by APS until the epidural was removed with no negative effects.

Date Accepted by QAC Chair: 22/08/2018

Date Review Ended: 21/01/2019

Recommendations: None

Operational Owner:

Recommendation Status:

Name of Review & Date Completed: CAL-7705-Mar2018-Patient Transfer from PACU to Day Surgery-SURGER-FMC

Case Description: A patient who received elective surgery was transferred from Post-Anesthesia Care Unit (PACU) to Day Surgery. The patient became bradycardic shortly after arriving to Day Surgery. The surgeon was paged but was unable to immediately address this concern as the surgeon was performing surgery. The patient's anesthesiologist offered assistance and instructed Day Surgery to administer medication. Day Surgery voiced concern with the administration of this medication as the medication required specialized training and equipment for administration and monitoring. The anesthesiologist requested the patient be transferred to PACU. Day Surgery attempted to transfer the patient but PACU voiced concerns with the transfer and the patient remained in Day Surgery. The patient recovered with no apparent ill effects.

Date Accepted by QAC Chair: 19/03/2018

Date Review Ended: 24/07/2018

Recommendations: Establish a guideline regarding the communication pathway to discuss best management strategies (i.e., staff resources and expertise, equipment availability, access to the safest location for management) for post-operative patients with anesthesia and/or surgical concerns who have been discharged from PACU. This guideline should be shared throughout the Calgary Zone Surgical Services upon completion.

Operational Owner: Holly Mackin

Recommendation Status: In Progress

Name of Review & Date Completed: CAL-7480-Feb2018-Laryngeal Injury Post Appendectomy-SURGER-SHC

Case Description: A patient received emergency surgery and was intubated by a paramedic student, under the supervision of an anesthesiologist. The surgery was completed with no identified issues. The patient was discharged on the same day of the surgery but returned to the emergency department shortly after with hemoptysis. A CT revealed possible tracheal laceration. The patient was transferred to another hospital specializing in thoracics for surgical investigation. A 2 cm tracheal laceration was confirmed. The

patient spent time in the Intensive Care Unit intubated and sedated until the injury healed enough for extubation. Once extubated, the patient was transferred to a surgical inpatient unit for further recovery. The patient recovered and was discharged home.

Date Accepted by QAC Chair: 16/02/2018

Date Review Ended: 24/07/2018

Recommendations: Explore the feasibility of using manometers with intubated patients in the operating room.

Operational Owner: Dr. Gary Dobson

Recommendation Status: In Progress

Recommendations: Develop a post-operative anesthesia discharge teaching sheet to include, but not limited to, corrective actions if hemoptysis is noted after surgery.

Operational Owner: Dr. Gary Dobson

Recommendation Status: Not Started

Name of Review & Date Completed: CAL-7461-Jan2018-Code Blue in Pediatric OR-SURGER-ACH

Case Description: Plans were made for an infant with a significant cardiac history to undergo surgery to repair a congenital gastrointestinal defect. Pre-operative consultations were done by cardiology and anesthesia clearing the patient for surgery. The patient had periodic hypotension during the surgery which was corrected with pauses in surgery and anesthesia management. At one point, blood was given as a volume expander to improve the patient's blood pressure. The blood administered was hemolyzed due to the use of an alternative blood warming technique. Shortly after blood administration, the patient's blood pressure and heart rate rapidly decreased. This was immediately recognized and a code blue was activated. The patient received 5 minutes of cardiopulmonary resuscitation (CPR) and recovered. The surgery was completed and the patient was transferred to the pediatric intensive care unit.

Date Accepted by QAC Chair: 15/02/2018

Date Review Ended: 24/07/2018

Recommendations: Ensure optimal blood warming and administration equipment is available for use for all pediatric patients.

Operational Owner: Dr. Kerry Carter

Recommendation Status: Implemented

Name of Review & Date Completed: CAL-7272-Nov2017-Intraoperative Death-SURGER-RGH

Case Description: A Home Care nurse came into the patient's home to attend to the patient for wound care. The patient was found with decreased level of consciousness and difficult to rouse. The patient was complaining of bilateral leg pain, dizziness, and lethargy. The patient was brought to the hospital, initially diagnosed with necrotizing fasciitis, and received surgery. The surgery revealed the patient had a necrotizing soft tissue infection, which was treated with broad-spectrum antimicrobials. The patient returned for a second surgery for source control. The patient became septic in the days to follow and returned to the operating room for a third surgery. Shortly following anesthesia induction and before the surgeon started the case, the patient had a cardiac arrest with pulseless electrical activity. The patient failed to respond to resuscitation efforts and passed away.

Date Accepted by QAC Chair: 17/08/12

Date Review Ended: 16/04/2018

Recommendations: Develop a standard process of transferring care between the Intensive Care Unit (ICU)

and the Operating Room (OR) at the Rockyview General Hospital by optimizing the OR to ICU Handover tools in use at the Foothills Medical Centre and Peter Lougheed Centre. Development of this process will require collaboration between physicians and nurses in the areas of critical care, surgery, and anesthesia. The process should establish a method of identifying risks associated with the patient's condition, provide guidance on the appropriate team members to be present depending on the patient's risk score, promote role clarity (e.g., introductions), and include structured communication (e.g., checklist).

Operational Owner: Dr. David Liepert

Recommendation Status: In Progress

Recommendations: Develop a learning plan to provide opportunity for multidisciplinary participation in simulation exercises involving cardiac resuscitation events in the Operating Room focusing on role clarity, communication, and debriefing.

Operational Owner: Dr. Megan Hayter

Recommendation Status: Implemented