



THE UNIVERSITY OF BRITISH COLUMBIA

**DEPARTMENT OF ANESTHESIOLOGY,
PHARMACOLOGY & THERAPEUTICS**

**ACADEMIC HOSPITAL SITES
& CLINICAL DIVISIONS
REPORT 2023**



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Department Faculty & Staff Numbers - 2023

Full-time faculty - 26

Clinical Faculty - 547

Clinical Fellows - 25

Residents - 96

Medical Students - 332

Pharmacology Graduate Program - 23 students

Pharmacology Undergraduate Program - 38 students

Postdoctoral Research Fellows - 7

Research Associates - 6



British Columbia Children's Hospital

The UBC Department of Pediatric Anesthesia (the Department), centred at BC Children's Hospital (BCCH), has continued in its rôle as the home of paediatric academic and clinical anaesthesia, perioperative medicine, and pain medicine.

Executive summary

By the end of 2023, the Department comprised 27 permanent Staff pediatric anesthesiologists, one term Staff, four Fellows, and two Administrative Assistants. We also had three non-anesthesiologist permanent Pediatric Anesthesia Research Team members, ten Anesthesia Assistants, four Co-op Students and three Summer Students. Our Acute Pain Service was supported by one Nurse Practitioner and one Pain Nurse Intern. Please see Section 10 for details.

As we emerged from the pandemic, CST implementation & a highly virulent 2022/23 respiratory virus season, waitlists for surgery, interventional radiology and diagnostic imaging had all risen. Non-anaesthesia human resource constraints have limited the ability to increase service delivery; however, such deficits merely masked our own staffing shortages and, in anticipation we began to hire. By the end of 2023 we had interviewed five of seven short-listed candidates; four had accepted offers, one was considering. As always, the lag between hiring & arrival will be lengthy, and we anticipate being the rate-limiting step to service expansion for at least the first half of 2024, potentially longer.

As the sub-sections below detail, Department members have continued to be productive both clinically and academically, and there are many 2023 achievements to celebrate & be proud of. Among them:

- Dr. Randa Ridgway became the inaugural Medical Director of Pain360, which I hope history will record as being the precursor to a Division of Pediatric Pain Medicine at BCCH.
- Dr. Katherine Bailey continued to co-lead work which, in late 2022, led to the approval of Pediatric Anesthesia as a Royal College Area of Focused Competency (AFC) – the first anaesthesia subspecialty to attain this recognition.
- Dr. Zoë Brown became the UBC Residency Program Director.
- The Pediatric Anesthesia Research Team (PART) collectively published 29 papers.

Clinical Care

i. Anaesthesia-Led Sedation (Dr. Erica Dibb-Fuller)

- The Sedation Practice and Implementation Subcommittee, which reports up to the Pain, Comfort and Sedation Steering Group, meets monthly to discuss challenges, support, and new requests for sedation at BCCH; provides support, advice, and feedback to clinicians; and updates and develops policies to support site-wide sedation practices. Dr Dibb-Fuller co-chairs this subcommittee.

- BCCH has no formal, funded out-of-OR sedation service, which is a significant gap in service provision for a paediatric hospital. Updated Canadian Pediatric Society guidelines published in 2021, and the ChildKind accreditation process that BCCH underwent in 2022, have surfaced this large gap between demand and safe supply. We are working hard to support small pockets of mild to moderate sedation that is provided on the wards and clinic areas. We are keen to develop formalised education sessions and courses for different specialities. We have just started a six-month pilot project of out-of-OR sedation in the outpatient clinics provided by self-selecting ED physicians. This is part of a QI initiative which will contribute data to support a business case proposal for ongoing funding.

ii. Cardiac Anaesthesia (Dr. Louis Scheepers)

- The paediatric cardiac anaesthesia program had an interesting and eventful year. Despite intensive care resource challenges that influenced the number of surgeries, the program still managed to complete 242 bypass and 50 non-bypass surgeries, as well as provide diagnostic and interventional catheterisation services.
- The cardiac anaesthesia team welcomed Dr. Cheryl Peters after she had completed her Fellowship at Stollery Children's Hospital, as Dr. Chris Chin retired from the program after 12 years of dedicated service. The other team members include Drs. Heng Gan, Stephan Malherbe, Louis Scheepers, and Brendan Smith. The program offers each of the paediatric anaesthesia Fellows a 4-week clinical rotation through the operating room, as well as each of the paediatric intensive care Fellows a two-week rotation. Together with the weekly didactic lectures provided by Dr. Brendan Smith, the program is a well-balanced clinical and educational experience.
- On the surgical side, Dr. Muhieldin Muhieldin, also from Edmonton, joined Drs. Andrew Campbell and Mohammed Al-Aklabi. Combined with our nursing and perfusion colleagues, the program is well positioned to offer exemplary clinical care to our patients with congenital heart disease.

iii. Neuroanaesthesia (Dr. Nigel Barker)

- Service covers all paediatric neurosurgery: tumour resection, shunts, spinal cord detethering, epilepsy planning, and surgery employing sEEG robot and ECOG monitoring to guide resection.
- Craniostomosis surgery is carried out jointly with plastic surgery. As a team we strive to keep blood loss and therefore subsequent transfusion, to a minimum in this population. We recently audited this and have contributed our data to a multicentre registry.
- We have developed a full perioperative guideline, in combination with PICU, to enhance our care of Moya Moya patients, with the aim of reducing the incidence of stroke to almost zero.
- Plans are in place to carry out LITT (laser interstitial thermal therapy) treatments which are less invasive options for some patients with an epileptic focus. Access to intraoperative MRI for these procedures will be the biggest hurdle.
- Two active audits are concerned with i) anaesthesia and conditions for ECOG neuromonitoring during epilepsy focus resection; and ii) perioperative complications in the Moya Moya population.

- Many department members are involved in these procedures, to maintain good working relationships with neurosurgeons, and familiarity for on call work. A small subgroup exists to support the smaller volumes of ECOG and Moya Moya cases, to ensure consistency of care.

iv. Pain Services (Dr. Randa Ridgway)

- In 2023 the Department has led substantial expansion in paediatric pain services at BCCH, with increasing number and complexity of patients being managed. With substantial growth in demand, the anaesthesia team has welcomed a pain nurse intern, an APS physiotherapist, and joint complex pain/palliative care rounds. A second Nurse Practitioner will hopefully be joining soon.
- As we move towards supporting more paediatric ERAS, the acute pain service has taken the lead on program development for home regional catheters for both upper and lower limb surgery; developed new pathways for adolescent idiopathic scoliosis; and for NUSS bar procedures with cryotherapy ablation and intercostal blocks, with substantial reduction in length of stay and improved perioperative experience for these patients.
- Promoting paediatric pain education has been a highlight this year; Our residency experience in paediatric pain has expanded, with residents joining the APS team for clinical days during their rotation, and we had our first resident paediatric pain elective! For the paediatric anaesthesia Fellowship program, we have developed a Fellow-specific pain education curriculum. To improve to improve paediatric pain care more broadly, training for non-anaesthesia paediatric specialty Fellows and residents is being spearheaded by our Department, with education sessions and clinical days with the APS team.
- Professional development for paediatric pain has included several Department members undertaking training in hypnosis and non-pharmacological strategies for paediatric pain and anxiety – an exciting and important strategy for paediatric patients.
- The APS team remains actively involved in research and QA/QI in conjunction with PART and the newly formed Pain360 team, as well as in pan-Canadian collaboration for policy and guidelines development, and data collection.

v. Pre-Anaesthesia Clinic (Dr. Christa Morrison)

- Continued to adapt to the tail of the COVID-19 pandemic cases and the worst respiratory virus surge on record, to ensure as many children as possible safely underwent their procedures.
- Continued to work with the business and innovation team to enhance our pre-operative preparation for children using virtual reality technologies.
- Partnered with Palliative Care for perioperative planning in children with complex care including direction/restriction on escalations of care/DNR orders.
- Collaborated with VGH to establish a pre-operative care pathway for all children undergoing procedures at VGH.
- Working on improved care pathways for children with autism, and with other complex care needs, requiring multiple procedures under anaesthesia (see Section 4).

vi. Regional Anaesthesia (Dr. Kat Lanigan)

The regional anaesthesia programme at BCCH has continued to grow in strength and volume during 2023.

- We have successfully continued our elastomeric programme for day case ACL surgeries as well as a variety of other lower and upper limb orthopaedic surgeries. These children are now going home with regional catheter pumps instead of staying in the hospital for 2-3 nights. We have transitioned to a pharmacy-prepared elastomeric pump with resultant increased PACU efficiency.
- In collaboration with our surgical colleagues, we have begun utilising regional blocks and cryoablation techniques for Nuss bar surgeries instead of the traditional thoracic epidural.
- There are plans for the NICU to take babies with epidurals, which will be novel for them.
- We have commenced a pilot study examining whether using an induction room to perform regional anaesthesia can improve overall OR efficiency. This is ongoing and will report in 2024.
- Education has been a priority in 2023:
 - o In May we ran an inaugural in-house course for BCCH Staff and Fellows, in conjunction with regional anaesthesia experts from St Paul's Hospital. This was very well attended with excellent feedback.
 - o We have worked with our APS nurses to develop bedside regional education pamphlets for our PACU which has improved in improved familiarity and comfort with the regional techniques being performed in the OR.
 - o Education has also continued outside the OR with sessions for our PICU colleagues, and ongoing education to ward nurses with revision of the regional education module.

vii. Spine (Dr Andrew Morrison)

- The Paediatric Anaesthesia Spine Team at BC Children's Hospital was formed twelve years ago with the intention of providing a specialised, consistent, and coordinated approach to the provision of anaesthesia for our scoliosis patients, and to advancing and teaching this to the wider anesthesia community. Paediatric scoliosis aetiologies group into three broad categories: congenital, neuromuscular, and idiopathic. Affected children range from toddlers to young adults, and often have associated complex medical conditions. Our small, expert group of seven anaesthetists is able to focus on the individual requirements of each patient while delivering a high level of care specific to the requirements of scoliosis surgery.
- In 2023, the service provided expert care to around 200 patients for 250 surgeries per year - as many children require surgery over multiple days.
- Communication, understanding and interaction between care providers in the operating room is essential in complex and lengthy surgeries and these parameters have improved with the move to a smaller team. Quality of care indicators such as maintenance of patient temperature, time to incision, transfusion rates and others have improved, and the implementation of new practices such as patient pre-warming, streamlined pre-operative clinic consultations, expedited discharge and novel analgesia protocols have been facilitated.

- Together with our surgical, nursing, and technical colleagues, as part of the larger Paediatric Spine Team, we are actively involved in ongoing multidisciplinary education sessions to maintain, advance, and promote understanding of the challenges of these patients.
- Our group has received PHSA's annual team award and has presented our unique team-based approach and its results at national conferences, to much acclaim.
- We are represented at the Executive Board level of the North American Pediatric Spine Anesthesia (NAPSA) Collaborative & aim to begin contributing data to their multicentre registry in due course.

Quality of Care (Drs. Stephan Malherbe & Nigel Barker)

The Department's Quality of Care portfolio is co-led. Drs. Stephan Malherbe & Nigel Barker coordinate QoC rounds (case reviews, approximately 8/year); receive, review & respond to relevant PSLs reports; and represent the Dept, or delegate representation, on other QoC Committees and Working Groups, including (but not limited to) Surgical Suites QoC; Child Health QoC; Surgical Suites Infection Prevention (SSIP); Pediatric National Surgical Quality Improvement Project (P-NSQIP); Pharmacy, Therapeutics & Nutrition; and Mortality Review.

Active Departmental QoC initiatives include:

- Project SPRUCE – an international collaboration to quantify & reduce anaesthesia departments' carbon footprints.
- Contribution to national (CANPANDA) and international (PeDI) paediatric difficult airway registries.
- Our group has received PHSA's annual team award and has presented our unique team-based approach and its results at national conferences, to much acclaim.
- We are represented at the Executive Board level of the North American Pediatric Spine Anesthesia (NAPSA) Collaborative & aim to begin contributing data to their multicentre registry in due course.
- Oversight of local registries, which capture patient-reported outcome metrics in recovery (PACU) and at 24 hours post-operatively (POFU).
- Data contribution, to P-NSQIP and SSIP datasets, of timeliness of surgical antibiotic prophylaxis administration and intraoperative thermoregulation.
- Local PeDI, PACU, POFU, antibiotic administration & intraoperative thermoregulation datasets all have associated live dashboards which all Department members can access in real time, to review overall and anonymised individual performance metrics.
- Home regional nerve catheter program, enabling children who were previously admitted for post-operative pain management to go home on day of surgery, with daily follow-up by the Acute Pain Service (APS) until catheter removal (at home).
- Formalised pre-operative APS assessment of patients at high risk of pain and anxiety, for joint planning of post-operative analgesia.
- Follow up of patients being discharged from APS still needing weaning support.

Please also see Section 4, REDI Considerations, below – many of these represent QoC activities & initiatives.

REDI Considerations (Dr. Natasha Broemling)

The Department of Pediatric Anesthesia at BC Children's Hospital delivers individualized, family-centred care that enshrines patient (and colleague) choice, needs and values. Initiatives which enhance such care include:

- **PAC reorganisation:**
 - o maximises opportunities for patients and families to meet with the anaesthesiologist who will care for them on the day of surgery, including options for telephone and virtual consults to suit families' needs & choices.
 - o PAC-generated individualised care pathways for patients with anxiety, needle phobia, severe behavioural challenges etc., with respect to coordinating opportunistic investigations (blood draws, vaccination, pending EUA unrelated to primary booked procedure (e.g. dental, ENT, ophthalmology)) and communicating family concerns to anaesthesiologists involved.
 - o Individualized pathways for perioperative management of children on the autism spectrum have been a particular focus. Components include the utilization of the Take a Sec tool, and provision of a Sensory Room to address behaviour escalation associated with a trip to the operating room.
 - o Negotiations remain ongoing around a nurse practitioner position to support coordinated care for patients and families with complex medical needs; and around dedicated monthly slate time to accommodate patients with behavioural complexity to maximize bundling of procedures under a single anaesthetic.
- **"Anesthesiologist In-Charge" (AIC) position:**
 - o Provides flexibility around seeing patients outside the time-constraints imposed by the OR slates.
 - o Work is ongoing to facilitate out-of-hospital induction (eg car park) of anesthesia for children with severe behavioural complexity, by building a team-based process, including collaboration with Relational Security Officers and Behavioural Analysts.
- Relationship development with the Indigenous Health team:
 - o Gifts of children's books for the Indigenous Health library,
 - o Attendance at Indigenous Health open house, lectures, and Blanket Exercise
 - o Support for the development of a Sacred Space within the Procedures Suite
 - o Incorporation of Indigenous Patient Navigator referrals system.
 - o Patients/families encouraged to bring comfort items and items of cultural significance into theatre: religious music, sweetgrass bundles, etc., at family request.
 - o Early adoption of both the San'yas and ARRT courses by our physician group – more than half have completed both & the remainder will do so in the next year.

Pivoting to incorporate cultural humility and cultural safety has been facilitated by the ongoing practices of trauma-informed care and family-centred care practised by our Department.

Education

i. Fellowship Program (Dr. Katherine Bailey)

- The clinical Fellowship program remained popular and strong, providing both advanced paediatric anaesthesia clinical training and academic research and teaching opportunities for our Fellows. Calendar 2023 encompassed the completion of the first year & the start of the second year of our expanded (four Fellows) program, with the present cohort comprising Drs Rory Blackler, Victoria Buswell, Anna Ratcliffe and Nancy Wang.
- Several changes to the structure & design of the Fellowship program have accompanied its expansion and are now core components, including a more formalised orientation; an academic half-day with Fellowship-specific content; a regional anaesthesia rotation; Fellow-level call; and participation in the Pacific Northwest Bootcamp, in concert with paediatric anesthesia Fellows from programs in Seattle & Portland. The Department at BCCH will host the Bootcamp in 2024.
- A major achievement occurred in late 2022 with the successful application to the Royal College for Pediatric Anesthesia to become an Area of Focused Competency, and thus a RC-accredited subspecialty. This brought to fruition the work of the Canadian Pediatric Anesthesia Society (CPAS) Education Committee, formed in 2019, which has been co-led by Dr. Bailey & her counterpart at the Hospital for Sick Kids in Toronto. The AFC application approval led to continued work throughout 2023 on next steps, to formalise the Competency Training Requirements (CTR) and Standards of Accreditation (AFC-SA) documents. Once these are completed and approved, individual Departments will be able to apply for accreditation of their Fellowship programs.

ii. Residency Program (Dr. Lynn Correll)

The BCCH Anesthesia Department has consistently extended itself in the realm of education:

- Starting July 2023, we rolled out a new, re-designed didactic curriculum for our anaesthesia trainees. This new curriculum carefully follows the Royal College Exam outlines and utilises standardised resources that ensure a consistent quality of information delivery regardless of the instructor.
- This new curriculum has been very well received by the expanded (from 17 to 20) class of UBC anaesthesia residents that have been passing through, and by other resident trainees from other institutions who have come to us either for Core or Elective rotations.
- These out-of-province trainees have had such an excellent educational experience that two are returning to us as Fellows in 2025-26.

iii. Undergraduate Program (Dr. Natasha Broemling)

We continue to support UBC medical students rotating through an anaesthesia rotation:

- Students continue to benefit from the flipped classroom approach proffered by the online modules; they are then able to appreciate the rapid changes in physiology attendant to paediatric anaesthesia.

- A significant number of medical students now arrive with medical letters which require no call, opportunity for breaks, and provision of seating. Generally, these requests have not been difficult to accommodate.

iv. Outreach (Dr. Lynn Correll)

We have created and refined more structured pathways for non-anaesthesiologist learners to benefit from joining us:

- PICU, NICU, Pediatric ED, and Pediatric Dental Fellows' rotations have been re-designed to include new specific goals and objectives that suit the unique needs of these non-anaesthesia learners.
- We have partnered with the UBC CAMP program, the Provincial REAP program, and have hosted 4 practising FPAs and general anaesthesiologists from the Interior to each visit for a week, to refresh their paediatric anaesthesia skills.
- We have hosted an international colleague from rural New Zealand, who joined us for a 2-week sabbatical.
- We ran the annual Pediatric Anesthesia Update meeting in May 2023.
- A few Faculty members have organised/been invited to visit anaesthesia departments elsewhere in the Province, to support refreshing paediatric anaesthesia skills, knowledge & comfort levels. This is a potential growth area.
- Regular international outreach work resumed in 2023, with Department members contributing to global health projects in Uganda, the Gambia and Guatemala.

v. Simulation (Dr. Chris Chin)

BCCH Anesthesia has an active program of simulation-based training including:

- Managing Emergencies in Pediatric Anesthesia (MEPA). Paediatric anaesthesia simulation training course for UBC Anesthesia Residents, run since 2013. Since 2017, MEPA scenarios are run as a major part of the annual BCCH Pediatric Anesthesia Update meeting. Since 2021 this course has been tailored and run for the Family Practice Anesthesia trainees.
- Pediatric Advanced Life Support (PALS). One-day PALS Provider course for anaesthetists and 'skilled practitioners' developed and first run by BCCH Anesthesia Simulation in 2015. This course is run several times a year for anaesthesia Residents and Staff across the Lower Mainland.
- Pediatric Airway Management (PAM). One-day simulation-based course, initially developed for teaching anaesthesia Residents. Following requests from other departments the course is now also run for the Pediatric Emergency and PICU Departments.
- Multidisciplinary Training. We have successfully collaborated with our peri-operative nurse educators to include nurses on our MEPA and PAM simulation courses.
- In-situ Simulation. Since 2015, in collaboration with Pediatric Cardiology, we have instituted regular in-situ Cardiac Cath Lab multidisciplinary simulation sessions. Feedback has been great, and several concrete teamwork changes have been implemented as a result.

Research (Drs. Lynn Correll & Terri Skelton)

The Pediatric Anesthesia Research Team (PART) continues to evolve and thrive under the new leadership of Drs. Correll and Skelton, along with research manager Steffanie Fisher.

- Significant numbers of projects, presentations, and publications in 2023. Please see Section 9 for a comprehensive list of peer-reviewed publications by Department members.
- Conference contributions were strong with 23 PART presentations across 8 conferences, including IARS, ASA, and APAGBI. At these conferences, PART members received 3 'Best Of' awards in their respective categories.
- Four BCCH Research Institute Evidence-2-Innovation Seed Grants:
 - o Co-administration of dexamethasone with rectus sheath blocks (Krishnan).
 - o MyoActivation for scars and surrounding fascial tissue (Lauder).
 - o Development of a national paediatric transfusion curriculum for paediatric sub specialty experts (Skelton).
 - o Genetic influences on pharmacodynamic safety endpoints with propofol anaesthesia (Whyte).
- Five investigators received Research Support Awards from the BCCH Research Institute's Clinical Practice Outcome & Innovation Funding Program.

Faculty Development (Dr. Simon Whyte)

Several initiatives started, progressed, and came to fruition in 2023:

- We applied to the BCCH Foundation for a \$250 000 Leadership Grant. The application required collaborative development with many Department members, and full Departmental support. If successful, the grant will provide one-time funding over 3 years for multiple Faculty development initiatives.
- In a separate proposal, we resumed a pre-pandemic collaboration with the BCCH Foundation to seek a philanthropic donation for a Hospital Chair in Pediatric Anesthesia.
- As noted above (Section 2(iv)), we ran in-house training workshop to enhance Faculty skills and familiarity with regional anaesthesia techniques.
- Over 60% of Department members completed or embarked upon San'yas Indigenous Cultural Safety training.
- Several Department members undertook Clear Leadership training.

Foundation Liaison & Equipment (Dr. Prakash Krishnan)

We have liaised with the BCCH Foundation (BCCHF) on several initiatives in 2023:

- Through BCCHF Capital Equipment grants, we are upgrading and modernising the equipment used in our day-to-day practice to allow better, safer, and more efficient care of patients.

- We have been approved for purchase of new ultrasound machines, rapid infusers, NIRS monitors, video laryngoscopes and fibreoptic bronchoscopes.
- Of special note is that the Department trialled and approved use of breathing circuits that are validated for use for 7 consecutive days. This will have a major impact on reducing the single-use waste coming out of operating rooms.
- The Department continues to liaise directly with the BCCHF team to educate & spread awareness of our roles in patient care to philanthropists and potential donors to paediatric anaesthesia.
- The Department successfully navigated multiple supply chain crises affecting important devices/equipment, including endotracheal tubes. This is a testament to the spirit of collaboration and flexibility of the Department members, in the face of challenges, to ensure ongoing safe and efficient delivery of anaesthetic services to the children of BC.

Publications featuring Department and PART Faculty

Publications are listed alphabetically, by surname of any Department member who was a listed author or co-author. The authors' order in individual manuscripts may be different – please check links for details of first, co-, senior authorship, etc..

- Anesthesia and neurodevelopment after 20 years: where are we now and where to next?
Katherine Bailey, Simon Whyte
<https://pubmed.ncbi.nlm.nih.gov/36536154/>
- Impact of pediatric near-miss perioperative events: A survey of anesthesiology residents.
Zoë Brown
<https://onlinelibrary.wiley.com/doi/10.1111/pan.14616>
- Dashboard of Short-Term Postoperative Patient Outcomes for Anesthesiologists: Development and Preliminary Evaluation.
James Chen, Norbert Froese, Matthias Gorges
<https://periop.jmir.org/2023/1/e47398>
- Patient and Process Outcomes among Pediatric Patients Undergoing Appendectomy during the COVID-19 Pandemic: An International Retrospective Cohort Study.
Lynn Correll.
<https://pubs.asahq.org/anesthesiology/article/139/1/35/138035/Patient-and-Process-Outcomes-among-Pediatric>
- Prevalence of COVID-19 and Risk Factors for Infection Among Pediatric Anesthesia Patients: A Report from the PEACOC Research Network.
Lynn Correll <https://pubmed.ncbi.nlm.nih.gov/36269171/>
- Reducing Unplanned Intubations in the Neonatal Intensive Care Unit After Children's Surgery: A Quality Improvement Project.
Lynn Correll
<https://linkinghub.elsevier.com/retrieve/pii/S0022346823005663>

- Using Human-Centered Design and Cocreation to Create the Live 5-2-1-0 Mobile App to Promote Healthy Behaviors in Children: App Design and Development.
Matthias Görge
<https://pediatrics.jmir.org/2023/1/e44792>
- Designing a Collaborative Patient-Centered Digital Health Platform for Pediatric Diabetes Care in British Columbia: Formative Needs Assessment by Caregivers of Children and Youths Living with Type 1 Diabetes and Health Care Providers.
Matthias Görge.
<https://pediatrics.jmir.org/2023/1/e46432>
- Enhanced recovery support for people with eating disorders during the COVID-19 pandemic: quality improvement using a web-based, stepped-care programme in Canada.
Matthias Görge
<https://bmjopenquality.bmj.com/content/12/4/e002366>
- Pediatric Delirium Educational Tool Development with Intensive Care Unit Clinicians and Caregivers in Canada: Focus Group Study.
Matthias Görge
<https://pediatrics.jmir.org/2023/1/e53120>
- Prediction of Blood Risk Score in Diabetes Using Deep Neural Networks.
Matthias Görge
<http://dx.doi.org/10.3390/jcm12041695>
- An Individualized Postoperative Pain Risk Communication Tool for Use in Pediatric Surgery: Co-Design and Usability Evaluation.
Matthias Görge, Simon Whyte
<https://pubmed.ncbi.nlm.nih.gov/37976087/>
- A comparison of operative and anesthetic techniques for inguinal hernia repair in infants.
Prakash Krishnan
[https://www.jpedsurg.org/article/S0022-3468\(23\)00053-2/abstract](https://www.jpedsurg.org/article/S0022-3468(23)00053-2/abstract)
- Perioperative management of infant inguinal hernia surgery; a review of the recent literature.
Prakash Krishnan
<https://onlinelibrary.wiley.com/doi/10.1111/pan.14726>
- Assessing changes in range of motion in adolescent patients undergoing myoActivation® for chronic pain related to myofascial dysfunction: a feasibility study.
Gill Lauder
<https://pubmed.ncbi.nlm.nih.gov/37954067/>
- Improved patient safety with a simplified operating room to pediatric intensive care unit handover tool (PATHQS).
Stephan Malherbe
<https://www.frontiersin.org/articles/10.3389/fped.2024.1327381/full>
- Self-reported clinical practice and attitudes about cricoid pressure: an online survey of Canadian Pediatric Anesthesia Society members.
Stephan Malherbe
<https://link.springer.com/article/10.1007/s12630-023-02575-3>
- Timely diagnostics and safe procedures in children with anterior mediastinal masses (AMMs): a qualitative review of the AMM protocol at BC Children's Hospital in Vancouver BC.
Cheryl Peters.
<https://pubmed.ncbi.nlm.nih.gov/35920632/>
- Perioperative Anesthesia-Related Complications and Risk Factors in Children: A Cross-Sectional Observation Study in Rwanda.
Terri Skelton.
https://journals.lww.com/anesthesia-analgesia/fulltext/9900/perioperative_anesthesia_related_complications_and.616.aspx
- Resuscitation team training in Rwanda: A mixed method study exploring the combination of the VAST course with Advanced Cardiac Life Support training.
Terri Skelton
<https://linkinghub.elsevier.com/retrieve/pii/S2666520423000589>
- Transfusion Camp Rwanda: A prospective feasibility study evaluating the delivery of Transfusion Camp to a multidisciplinary group of postgraduate medical trainees in Rwanda.
Terri Skelton.
<https://onlinelibrary.wiley.com/doi/10.1111/trf.17568>
- Transfusion medicine education delivery in Rwanda: Adapting Transfusion Camp to a resource-limited setting.
Terri Skelton.
<https://onlinelibrary.wiley.com/doi/10.1111/trf.17531>
- The impact of a care bundle with an emphasis on hemodynamic assessment on the short-term outcomes in neonates with congenital diaphragmatic hernia.
Mike Traynor.
<https://www.nature.com/articles/s41372-023-01807-0>
- Diagnosis and management of congenital diaphragmatic hernia: a 2023 update from the Canadian Congenital Diaphragmatic Hernia Collaborative.
Mike Traynor.
<https://fn.bmj.com/content/early/2023/10/25/archdischild-2023-325865>
- High frequency jet ventilation for congenital diaphragmatic hernia.
Mike Traynor.
<https://pubmed.ncbi.nlm.nih.gov/36788056/>
- Efficacy of a hybrid technique of simultaneous videolaryngoscopy with flexible bronchoscopy in children with difficult direct laryngoscopy in the Pediatric Difficult Intubation Registry.
Simon Whyte.
<https://pubmed.ncbi.nlm.nih.gov/37322572/>
- Difficult or impossible facemask ventilation in children with difficult tracheal intubation: a retrospective analysis of the PeDI registry.
Simon Whyte.
<https://pubmed.ncbi.nlm.nih.gov/37076335/>
- The role of WhatsApp™ in pediatric difficult airway management: A study from the PeDI Collaborative.
Simon Whyte.
<https://onlinelibrary.wiley.com/doi/full/10.1111/pan.14760>

- Airway management in the paediatric difficult intubation registry: a propensity score matched analysis of outcomes over time.
Simon Whyte.
<https://pubmed.ncbi.nlm.nih.gov/38374968/>

Staff, 2023

I. Permanent Staff Anesthesiologists

Dr. Katherine Bailey	Dr. Lynnie Correll	Dr. Andrew Morrison
Dr. Michael Barker	Dr. Yvonne Csanyi-Fritz	Dr. Christa Morrison
Dr. Nigel Barker	Dr. Erica Dibb-Fuller	Dr. Cheryl Peters
Dr. Natasha Broemling	Dr. Caitlin Gallagher	Dr. Randa Ridgway
Dr. Zoë Brown	Dr. Heng Gan	Dr. Louis Scheepers
Dr. Myles Cassidy	Dr. Prakash Krishnan	Dr. Teresa Skelton
Dr. James Chen	Dr. Katherine Lanigan	Dr. Brendan Smith
Dr. Chris Chin	Dr. Gillian Lauder	Dr. Michael Traynor
Dr. Michelle Correia	Dr. Stephan Malherbe	Dr. Simon Whyte

ii. Other Department Members

Term Staff Anesthesiologists	Dr. Mary-Claire Simmonds
Administrative Assistants	Ms. Yvonne Hardwicke
	Ms. Tanya Chan-Chiang
Fellows 2022/23	Dr. Ridhima Bhatia
	Dr. Lorna Murphy
	Dr. Arna Verholt
	Dr. Mei Foong Yeoh
Fellows 2023/24	Dr. Rory Blackler
	Dr. Victoria Buswell
	Dr. Anna Ratcliffe
	Dr. Nancy Wang
APS Nurse Practitioner	Ms. Kathleen Duddy
Permanent PART Members and Staff	Dr. Matthias Görges (Dept Partner Member)
	Ms. Steffanie Fisher (PART Manager)
	Ms. Bianca Vizcaino (PART Co-ordinator)
	Mr. Nick West (PART Assistant (contracted))

BC Women's Hospital & Health Centre

2023 has been a year of consolidation. Energy was spent renegotiating the group contract and moving over to the APP; this process has presented an opportunity to reflect on group structure, address and meet human resource needs, and enhance our focus on academic priorities.

We continue to build the gynecology surgical Program (under Dr. Jonathan Collins' Leadership), adding additional types of surgery to the portfolio that we perform at BC Women's (e.g urogyne) and increasing access to overnight admission and privileging more surgeons. On the obstetric side the trend for increasing age and complexity of parturients continues along with the associated challenges.

The Department has grown significantly (metaphorically and physically!) in the last five years and is now approaching capacity. We would like to welcome Dr. Ilana Sebbag as she returns to BC Women's (previous BC Women's and UBC Clinical and Research Fellow). She comes back to us, after over ten years, from Western University where she had built an impressive Research and Academic profile. We are excited to have Ilana join our team and in particular we are looking forwards to adding her knowledge and skills to our Research program as our Deputy Research Director.

Thanks to Dr. Elise Hindle (Deputy Quality Director) we are continuing to develop our ability to capture data from within CST to be able to track, report, and analyse both program and individualised anesthesiologist quality outcomes.

We have welcomed the opportunity to engage collaboratively with multidisciplinary teams to advance safety and best practice initiatives within the hospital (led by Dr. Katie Seligman; Quality and Safety Lead), including helping to develop the updated post partum haemorrhage bundle and implementing a screening and support for psychological birth trauma. We also initiated multidisciplinary case learning sessions to facilitate open communication between departments.

We have been able to further support Dr. Anton Chau with increased time to develop the Department's Research portfolio. This year has been another successful year for Department publications and conference abstracts (please see below). As we continue to build our Research Capacity, we are excited to have several local investigator-initiated (prospective and retrospective), multicentre collaborative research, and large network trials in various stages of development and awaiting ethical approval.

Dr. William Shippam temporarily stepped in to the Fellowship Director role; Congratulations to Dr. Clare Burlinson with her lovely (and chunky!) baby boy Ralph, currently on maternity leave. Well done to our current Fellows (Drs Simon Wydall, Nick Ledlie and Juliana Barrera) who have recently had multiple original research submissions accepted to SOAP and CAS. Further congratulations to Dr Wydall on winning first place for his oral presentation at the annual Whistler Anesthesia Summit.

Dr. Helen Parker continues to develop the scope of her Education and Simulation role, setting up an annual Provincial OB Anesthesia update day, developing a resident TCI rotation (in collaboration with LGH), using process sims to plan complex clinical cases and running regular in house medical and nursing simulations and update sessions.

We look forwards to the year ahead: we are planning to continue developing our academic mandates across research, and quality and integrating learnings into clinical practice through service development and our medical education programs.

2023 Publications: BC Women's

1. Chau A, Smiley R. Intrathecal morphine and delayed micturition after cesarean delivery: the rose and the thorn. *Anaesth Crit Care Pain Med.* 2023 Dec;42(6):101272. doi: 10.1016/j.accpm.2023.101272. Epub 2023 Jul 5. PMID: 37419322.
2. Tran KC, Fayowski CD, Chaworth-Musters T, Purkiss SE, Chau A, Bennett MT, Chan, WS "Post-partum maternal bradycardia: A case series and literature review" *Obstetric Medicine (2023)* 10.1177/1753495X231178407
3. Clark KJ, Chau A "Neuraxial Techniques in Obstetric Patients with Intracranial Lesions" *Current Obstetrics and Gynecology Reports* 12.1(2023) 10.1007/s13669-023-00345-y
4. Li KC, Coley MA, Chau A, Dotto A, McMillan A, Chiu H, Ree R. Rotational Thrombo elastometry-Guided Use of Synthetic Blood Products in Cardiac Transplant Patients: A Retrospective Before-After Study. *J Cardiothorac Vasc Anesth.* 2023 Jul;37(7):1121-1128. doi: 10.1053/j.jvca.2023.02.042. Epub 2023 Mar 4. PMID: 37005203.
5. Chau A, Hofmeyr R. Hypothesis-generating procedures and unmasking novel associations in large observational studies: are we doing harm while doing good? *Anaesthesia.* 2023 Jan;78(1):9-13. doi: 10.1111/anae.15877. Epub 2022 Sep 30. PMID: 36178605.
6. Dobson G, Chau A, Denomme J, Fuda G, McDonnell C, McIntyre I, Milne AD, Milkovich R, Sparrow K, Wang Y, Young C. Guidelines to the Practice of Anesthesia: Revised Edition 2023. *Can J Anaesth.* 2023 Jan;70(1):16-55. doi: 10.1007/s12630-022-02368-0. Epub 2023 Jan 23.

2023 SOAP Conference Abstracts: BC Women's

8. Clark KJ, Villar G, Chau A. Unexpected prolonged neuromuscular blockade in an eclamptic patient requiring emergent cesarean delivery – a case report.
9. Yang T, Chan WS, Chau, A. Time to first recognition of postpartum abnormal sensorimotor deficits following neuraxial anesthesia or analgesia - a retrospective cohort study.
10. Clark KJ, Shippam W, Saulnier L, Massey S, Chau A. Comparison of motor block regression times following spinal and epidural anesthesia for cesarean delivery – a retrospective cohort study
11. Clark KJ, Chau A, Sviggum HP, Rollins M, Hanson AC, Sharpe EE.
12. Conversion of labor analgesia for intrapartum cesarean delivery: dural puncture epidural vs combined spinal epidural vs epidural
13. Saulnier L, Massey S, Crowell P, Bright S, Chau A. Psychological wellness and its relationship with Cesarean delivery quality of recovery and peritraumatic events: a prospective observational study
14. Mackie N, Yang T, Sahota P, Chau A. Perioperative Management of Dural Venous Sinus Thrombosis During Twin Pregnancy: A Case Report
15. Mackie N, Chau A. Successful use of epidural analgesia in a parturient with a history of transverse myelitis associated with multiple sclerosis
16. Yang T, Hindle E, Parker H, Chau A. Suspected venous air embolism as the cause of cardiovascular collapse during cesarean section under general anesthesia: a case report.
17. Saulnier L, Chau A, Bright S, Massey S. Treatment of post cesarean delivery lower segment incision pain with topical 5% lidocaine ointment: a clinical audit
18. Bhiladvala C, Prior C, Dobrer S, Albert A, Chau A. Association of heart rate variability with preoperative anxiety and postoperative pain after scheduled cesarean delivery: A prospective observational study
19. Saulnier L, Chau A, Massey S Incidence of general anesthesia for Cesarean delivery before and during the COVID-19 pandemic at BC Women's Hospital: a retrospective clinical audit
20. Royal A, Saulnier L, Chau A. Preoperative fasting times and patient experience for elective cesarean delivery: round 2 of a quality improvement project using the plan-do-study-act (PDSA) method
21. Mackie N, Abdulla S, Chau A. Identifying barriers to performing sphenopalatine ganglion block and developing an institutional block kit - a quality improvement study
22. Yang T, Chan WS, Chau A. Association of second stage labor with epidural blood patch placement following dural punctures - a retrospective cohort study

Lions Gate Hospital

Lions Gate Hospital is part of the Coastal Community of Care of Vancouver Coastal Health (VCH CCOC) providing acute, community and primary health services to more than 270,000 residents in rural and urban settings living on the North Shore, in Sea-to-Sky Country, on the Sunshine Coast and in Powell River. Additionally, it is affiliated with and provides service to BC's Central Coast, including Bella Bella and Bella Coola. As such, we are the tertiary referral centre for a wide catchment area and a significant volume of surgical patients from outside our immediate geographic area, coming to us by ground, sea and air transport. A recognized trauma centre, LGH has 268 beds. We have 10 ORs, including 8 Main ORs, a Case Room and a Closed Urology room, and 8.5 slates run daily, with 9.5 slates twice a week to accommodate expanded services in Therapeutic Endoscopy and Closed Urology, which were added in 2022. It is the fourth busiest hospital in Vancouver and one of only five neurosurgery centres in B.C.

In 2022, Dr Magda Lipowska continued in her Role of Department Head of Anesthesiology for the Coastal Community of Care while Dr Clare Morrison continued on in her role of Comedical Director for the VCH CCOC. In these roles, they help with the perioperative program leadership as well as maintaining close ties and build relationships with our anesthesia partners across the 3 VCH Coastal Community of Care Surgical programs in Squamish, Sechart, and Qathet Hospital in Powell River. Dr. Riley Senft has continued in the role of Deputy Department Head. Dr. Teresa Ripley continues to be our Preadmission Clinic Medical Lead. Dr. Randy Hewgill has been our Site Director for over 10 years, overseeing the ever-expanding presence of residents at Lions Gate Hospital. At the end of 2023, Dr Hewgill decided to transition out of this role and he is in the process of handing the Education Portfolio over to a new Site Director, Dr Connie Drewbrook. Dr Hewgill has been the face of Education at LGH for over a decade, and his leadership and dedication to Medical Student and resident education has been very much appreciated. We are also excited to welcome Dr Drewbrook to this new role and we know she will continue to build on the legacy of excellent educational opportunities for trainees at our Hospital.

Our site also provides opportunities for refresher days and extra training for currently practicing FPAs, as well as providing teaching for paramedic students and Anesthesia Assistant trainees. Dr. John McAlpine serves in the role of Director of the Family Practice Anesthesia Program and Dr. Rob Fingland is the Local Site representative for the Family Practice Anesthesia Program. Due to our position as one of the hospitals in the Coastal Community of Care, Lions Gate Hospital and its Anesthesia Department leadership maintain ties with the Family Practice Anesthesiologists at surgical programs across the other VCH Coastal Community of Care sites.

One emerging development in 2023 is the creation of a Department Quality Committee at LGH, building on an increased focus on a more fulsome and systematic approach to delivering, assessing and improving Quality of Care at our site. In addition to monthly morning Educational Rounds, we are conducting regular Departmental Quality and Patient Safety rounds as well as continuing a strong tradition of liaising with other Hospital Departments for Multidisciplinary Educational opportunities.

Under the excellent guidance of Dr. Rob Fingland and Dr. Teresa Ripley, Anesthesiology at LGH continues to run regular perioperative Simulations for Department members and perioperative staff.

From a Redevelopment Work is continuing on the new Acute Care Facility Tower at Lions Gate Hospital, slated to be completed at the end of 2024 with a move-in planned for Spring 2025. This building, adjacent and connected to our current ORs, will see us add new ORs with 2 net new, as well as the move of our surgical wards to a new tower. Much planning is happening around this, and our existing Planning for this will see our ORs expand by 2, and bring with it much-anticipated innovation in patientcare spaces.

Staffing Changes: 2022 saw the addition of Dr. Connie Drebrook and Dr Cristin McRae to our Department. We also celebrated the career and retirement of Dr. Shafik Thobani.



Royal Columbian Hospital And Eagle Ridge Hospital

The Department of Anesthesiology and Perioperative Medicine at Royal Columbian Hospital (RCH) provide anesthesia services at both RCH and Eagle Ridge Hospital (ERH). RCH along with Vancouver General Hospital, is one of two Level 1 trauma centres in the province and serves as the tertiary care referral centre for the Fraser Health Authority (FHA), with approximately 1.9 million people or 38% of British Columbia's population, as well as patients from other regions. RCH, the oldest hospital in the province, is a general hospital providing a wide spectrum of surgical and medical services.

RCH is the highest volume cardiac centre in BC, and cares for an ever growing volume of trauma patients, as a result of its large population base, proximity to major transportation corridors, among other factors. Supporting this care is a robust critical care team, and an ECMO service for patients with severe heart or lung dysfunction. RCH runs an orthopaedic trauma operating room 364 days per year. Additionally we have created a block room in the operating room, to facilitate the conduct and teaching of regional anesthesia for orthopaedic and plastic surgery patients. RCH is the regional neurosurgical referral centre for FHA, and sees a high volume of craniotomy, spine and neuro-interventional procedures annually.

RCH continues to have one of the best neonatal intensive care units in North America in terms of neonatal outcomes, and is the provincial centre of excellence for high-risk obstetrical care, specifically the management of complex invasive placenta conditions (eg. placenta accreta), cases that require ICU and/or cardiac care for expectant mothers, while also being able to care for low birth weight, premature infants. A multidisciplinary approach to this complex work, underlies the successes we see at our site.

Over 60% of the cases performed at RCH are classified as urgent/emergent. Over the last decade, NSQIP data has consistently ranked RCH surgical patients as having some of the the highest acuity amongst the hundreds of North American hospitals participating in the program including in 2023 when it received meritorious status for quality of care. Furthermore, RCH Anesthesiologists are actively involved in multiple multicentre clinical trials and we are actively expanding our research activities and quality improvement initiatives, supported by a full-time research assistant, summer students, and clinician scientists.

Royal Columbian Hospital and Eagle Ridge Hospital are core teaching sites for medical students and for anesthesia resident training. The residency program has expanded recently to 20 positions per year. As well, there is a new Fraser track for 32 3rd year medical students based primarily at our site, but involving other sites within the FHA. We also train anesthesia assistant (AA) students, and have a growing group of AA's who are integral to the work we do. We expect RCH to continue to evolve as an important academic and learning centre for medical learners in the years to come.

Finally, RCH is undergoing a \$1.5 billion+ redevelopment. Phase 1 which is completed, is the Mental Health and Substance Use Wellness Centre with a stand alone neuro stimulation suite where our group provides anesthesia care for electroconvulsive therapy. Phase 2, the 10 level Acute Care Tower (ACT), is under construction with a planned opening in early 2026. This includes an interventional platform with 17 operating rooms, 3 cardiac catheterization laboratories, and 5 interventional radiology suites. There will be a 3 bay block room, for regional anesthesia as part of the Interventional Platform. The obstetrical service will exist on its own floor with 2 obstetrical operating rooms. Phase 3 will renovate the existing hospital for future needs, and to support the function of the ACT.

Eagle Ridge Hospital (ERH), is a lower acuity community hospital in Port Moody, BC where our department provides anesthesia care. There are six operating rooms that provide space for nearly 10,000 surgical cases a year, the majority of which are outpatient cases. This now includes a same day arthroplasty program which has been launched this year at ERH, as well as minimally invasive major general surgery cases in selected patients.



Surrey Memorial Hospital

Surrey and JPOCSC

Surrey is the fastest growing city in BC and is expected to surpass Vancouver to become the largest city within the next 5 years. Surrey Memorial Hospital is the second largest hospital in the province, with 650 beds, the busiest Emergency Department, and 5200-5500 deliveries per year, currently. SMH is a tertiary-teaching-community hospital that combines a high level of acuity, learners, and tertiary level infrastructure and supports, with the fast pace and atmosphere more typical of the periphery.

The OR at SMH currently runs 10 slates plus a swing room in the birthing unit, where we have 24x7 on-site dedicated coverage. We are a regional referral site for high risk Obstetrics, Thoracics, and Head and Neck surgery. Our Pediatric surgery program is modest but still the primary one in the region, with 40-45% of the children's surgery in FHA. Other surgical services include Urology, Gynecology, General Surgery, Orthopedics (trauma, upper limb, foot and ankle, arthroplasty, spine), Plastics, ENT, Oral-Maxillofacial and Ophthalmology (retina/glaucoma/cataract), and we provide care to higher comorbidity elective and emergency patients from surrounding hospitals such as Delta and Peace Arch.

Jim Pattison Outpatient Care and Surgery Centre, our nearby satellite ambulatory facility, runs an additional 5 ORs daily. JPOCSC slates consist mostly of rapid turnover outpatient procedures in ASA 1-4 patients in Urology, Gynecology, Orthopedics, ENT, Plastics and General Surgery, as well as AV fistulas and Pacemaker/Defibrillators for the region. JPOCSC also hosts our multidisciplinary Chronic Pain Clinic, which sees approximately X patients per year.

The JPOCSC OR does rapid turnover slates encompassing a wide variety of outpatient procedures in ASA 1-4 patients in Urology, Gynecology, Orthopedics, ENT, Plastics, and General Surgery, as well as AV fistulas and Pacemaker/Defibrillators for the region. JPOCSC also hosts our multidisciplinary Chronic Pain Clinic, which logs over 25,000 patient encounters per year among all providers.

Department Organization and Leadership

The SMH/JPOCSC Department is a diverse and collegial group from across the lower mainland from North Vancouver to Point Grey to White Rock to Maple Ridge. We maintain an egalitarian and generalist approach to our practice, on a fee-for-service basis.

In 2023, Dr. Gramberg and Dr. Wong transitioned out of their roles as Co-Department Heads, and have been replaced by Dr. Iyer as Co-Head for SMH, and Dr. Karwa as Co-Head for JPOCSC, while Dr. Vesely continues in the SMH role.

Membership

With retirements/attrition and new hires, at year end, the Department sat at 36 members totaling 25.5 FTE. 2024 will be an expansion year, with continued growth in 2025 and beyond, as renovations wind down and rooms come back on line. 2023 Additions: Dr. Mihaela van Idour, Dr. Danyela Lee (Chronic Pain and Anesthesia), Dr. Kavin Bains, Dr. Jordan Meyers, Dr. Eric Landymore.

Resident and Medical Student Education

Dr. van Idour has succeeded Dr. Disha Mehta, and joins Dr. Christine Graf as co-DSSL in prioritizing an optimal learning for residents and medical students in Anesthesiology, as well as numerous other categories of learners such as RT, AA and paramedic students, off-service residents and practicing emergency physicians.

Trainees rotating through SMH/JPOCSC enjoy a fertile learning environment with a diverse breadth of cases in a friendly atmosphere. Resident rotations now include General Pool for R1-R5, subspecialty Regional and Thoracics blocks, and Transition to Practice. We have 3rd year core and 4th year elective MSIs.

Selected Programs/Initiatives

Chronic Pain: We have committed to revitalizing the link between the two hemispheres of our department and then to initiating programs to more seamlessly and holistically serve pain patients, wherever they may find themselves. Significant infrastructure and human resource expansion have already begun and will continue for the next 2-3 years.

Regional Anesthesia: Our contract-supported Block Program, now in its 4th year of operation, continues to provide a valuable clinical service and popular educational experience in providing thoracic epidurals, upper and lower extremity, and truncal blocks to SMH surgical patients. Along with an increase to our ultrasound fleet, at year end, we moved into a newly renovated dedicated 2 bed space within Surgical Daycare.

Simulation: Our in-house Surgical and Obstetric Hi-Fidelity Simulation Programs, led by Dr. Clara Gramberg, are now well-established as a valuable safety/quality and team building asset.

Anesthesia Assistants: Our AA program is over 20 years old, with numbers and deployment calibrated to ensure an efficient and sustainable practice for our group while providing value to the system.

Robotic Surgery: The Intuitive da Vinci has been selected to bolster our existing programs in Thoracics, major Head and Neck, Urology and General Surgery. January 2026 is the expected go-live for the robot in a redesigned OR6, which will undergo renovation in 2024-25.

Preoperative Optimization: Led by Dr. Peter Gajecki, this project focuses on enhancing the care of patients undergoing esophagectomy and gastrectomy, and is showing decreased length of stay, morbidity and readmissions.

Study: Intraoperative pain/satisfaction during Caesarean section: Multicentre study out of Stanford, led locally by Drs. Iyer and Gramberg.

Planetary health: SMH recently played host to a trial of anesthetic vapour recapture technology, and in 2023 discontinued the use of Desflurane.

In 2023, SMH experienced a boiling over of frustration for a number of reasons, in particular, hospitalist shortages, emergency department and ward congestion, maternity unit diversion, and dissatisfaction with the lack of certain capabilities. An outpouring of publicity, advocacy, and pressure, involving a large number of physician groups and providers led to engagement with community leaders such as the Foundation, Mayor and Councilors, media, and ultimately the Ministry of Health. A moderated forum at Surrey City Hall was followed by a series of consultative meetings with Minister Dix at SMH, ultimately resulting in commitments for much needed new and expanded services at SMH. Construction will begin shortly on 2 Cardiac cath labs and 2 new Interventional Radiology suites in former administration space in the SMH Critical Care Tower, and a new outpatient dialysis building. A new tower is planned at SMH to address capacity in many areas, including surgery and maternity.

In the meantime, the SMH Clinical operations team, Anesthesia heads and Surgeon heads are working collaboratively to ensure renovation, reactivation, and optimization of all existing spaces. We anticipate approximately one additional OR from within our existing footprint to come on line each year for the next 3 years. We have managed our growth sustainably, which has preserved staffing, working conditions and morale, allowing us to function with low closures, high efficiency and quality.

The future promises continued growth for what is already the busiest surgical program in FHA.

St. Paul's Hospital

St. Paul's is a Clinical Medical Academic Centre in downtown Vancouver that is integral to the University of British Columbia Faculty Of Medicine. It is part of Providence Health, which comprises St. Paul's Hospital, and Mt. St. Joseph's Hospital. The Department of Anesthesiology has demonstrated excellence in numerous aspects of perioperative care. Areas of clinical focus include Cardiac Anesthesia, Regional Anesthesia, Perioperative Medicine, Interventional and Complex Pain. The Department of Medicine houses major initiatives in Respiratory, Cardiac, Addictions, and Nephrology areas. The Department of Surgery aside from Cardiac sciences also has components including Urology, Otolaryngology, General, Gynecologic, Plastic, and Orthopedic surgery as well as Vascular surgery. Anesthesiology at St. Paul's Hospital is a major Department comprising 57 anesthesiologists and up to 6 subspecialty fellows. The Department also delivers anesthetic services at Mt. St. Joseph's hospital (a community hospital) with 4 Operating Rooms and 3 Ophthalmology Procedure Rooms.

The Cardiac Anesthesia Group is comprised of 15 members responsible for the intra-operative Trans-esophageal Echo Program, CSICU, Structural Heart and Open Heart and Transplant programs. Dr Anne Marie Madden is the Cardiac Anesthesia Lead. Dr Matt Klass leads the TEE group; Dr Matt Coley is the CSICU Lead; and Dr Simon Bruce is the anesthesia lead for structural heart program. Our successful Cardiac Anesthesia Fellowship program is lead by Dr. Kevin Rondi and welcomes 2 Fellows each year. The Cardiac Anesthesia group also includes Drs. John Bowering, Bobby Lee, Aaron Doyle, Ron Ree, Raja Rajamohan, Jean Raubenheimer, Terri Sun. Long time member, Dr. Ken MacDonald retired at the end of 2023.

The Pain Group has been very active with Dr. Jill Osborn is the Physician lead for SPH Complex Pain Program (6 members) as well as Interventional Pain with long standing member Dr. Clinton Wong. Dr Ainsley Sutherland leads the Acute Pain Team (9 members) as well as the Transitional Pain Clinic where she is joined by Dr. Kat Kojic. The multidisciplinary Complex pain clinic provides services with outreach to many patients outside the lower mainland. Given its unique and well-planned efficiency this is hoped to be used as a model for the evolution of various chronic pain programs in the province. The multidisciplinary Neuromodulation Program (Dr Jill Osborn and Dr. Vishal Varshney) received extra funding because of the successful Health Technology Review which more than doubled resources available to the program. Working together with the SPH Foundation, two initiatives were prioritised: The creation of an Endowed Chair in Pain Medicine (Dr. Vishal Varshney) and support for the Neuromodulation Program. In 2022, the Transitional Pain Clinic was launched after the completion of a multimillion-dollar Supercluster project jointly funded by government, industry and PHC. After many years of service, Dr. Colm Cole retired in mid 2023.

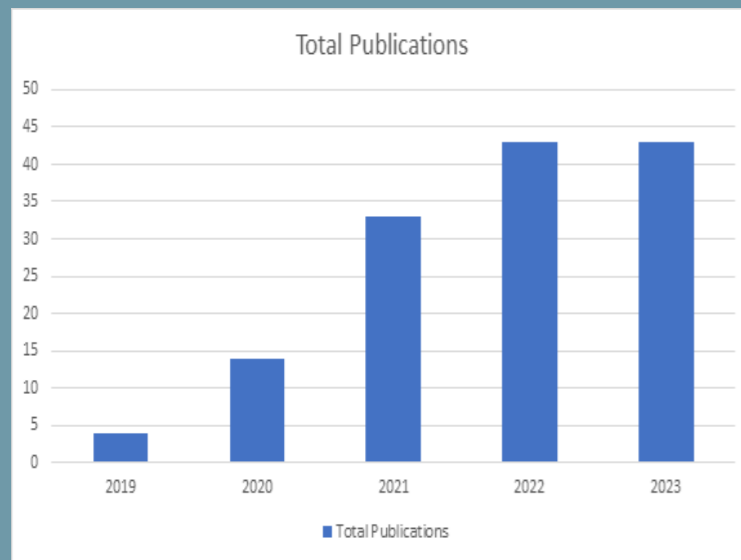
The Regional Anesthesia Group is lead by Dr. Chris Prabhakar and has 12 members. They perform over 4500 regional blocks per year at 3 separate locations with dedicated block areas (two at SPH and one at MSJ). There are three active research projects with cardiac surgery group. Dr Steven Wang joined the group after completing Regional Fellowship in Singapore. Similarly, Dr. Adam Humble returned after completing his fellowship in Perth, Australia. The Regional Fellowship is very competitive and welcomes two Fellows/year and th large number of residents. Dr Steve Petrar is the overall department Fellowship program director and also leads the Regional Fellowship program. The Regional Anesthesia Resident Rotation remains very popular.

The Perioperative medicine group Physician Lead in Dr. Sui Yin McDonell who is also the UBC Perioperative Medicine Lead. The group continues to be innovative in terms of its team-based approach to perioperative care with residents, fellows and internal medicine staff. The core Perioperative members also include Drs. Alana Flexman, Janny Ke, Hao Chen, Anton Chau, Vincent Frucci, and Tony Bhad.

Simulation is a major focus of the department with Dr. Shannon Lockhart as the Co-physician lead for PHC Simulation. She is heavily involved with the UBC Simulation program is often joined by Drs Hao Chen, Heather Cadenhead, Kelli O'Reilly and Cole Wong. Dr Lockhart was successful in obtaining a large (\$175,000) PHC Simulation Innovation grant to initiate this in a multidisciplinary fashion at PHC.

Dr. Alana Flexman continues to lead the The PHC Anesthesia Research program. Drs Flexman and Schwarz supervised Jaycee Farmer who successfully defended her Master's Thesis in 2023. Highlights of 2023 include the following grants and awards and a large number of publications (43):

1. Michael Smith Research BC \$450,000 (Dr. Alana Flexman)
2. MoH grant for external validation of Troponin and MINS prediction Model \$50,000 (Dr. Janny Ke)
3. CAS Dr James Beckstead Award \$20,000 The Efficacy of Superficial Parasternal Intercostal Plane Catheter for Sternal Pain Reduction for Cardiac Surgery Patients. (Dr. Tim Jen)
4. IARS starter grant for Paravertebral Blockade for Recovery following Cardiac Surgery \$50,000 (Dr. Terri Sun)
5. Dr. Ron Ree, Dr Alana Flexman, Dr. Terri Sun got an investigator-initiated grant from Eisai, Inc for pilot RCT "A Randomized Trial of Lemborexant for the Prevention of Delirium After Cardiac Surgery" (worth approximately \$115,000)
6. Participated in ongoing Multicenter RCTs: CODEX and Fit after Surgery.



9. Jim Kim, PHC Representative Member of PACT (perioperative anesthesia clinical trials group)
10. Vishal Varshney & Jill Osborn, Board Members-at-Large, Canadian Neuromodulation Society
11. Anton Chau, Board Member, Anaesthesia Journal
12. Raja Rajamohan and Vishal Varshney, Board Member, BCAS

The Department continues to grow and expand under the APP contract. In 2023, they celebrated the retirement of longstanding members, Drs Colm Cole and Ken McDonald. A major initiative in 2024 is the creation of a PHC Department Chair in Perioperative Data Sciences.



The Department of Anesthesia at St. Paul's Hospital will continue to develop as one of the larger departments in Providence Health Care. New staff who are presently in subspecialty training include:

- Dr. Lily Chew (Regional Anesthesia Fellowship in London, England)
- Dr. Michael Jew (Regional Anesthesia Fellowship in Calgary)
- Dr Charles Yu (Perioperative Medicine Fellowship in McMaster)

The PHC Anesthesia Academic Leadership continues to be active in the UBC system and abroad. These are some of the highlights from this year's activity.

1. Stephan Schwarz, Editor-in-Chief, Canadian Journal of Anesthesia, Director of the UBC Hugill Anesthesia Research Centre
2. Anne Marie Madden, Co-Head, UBC Division of Cardiac Anesthesiology
3. Alana Flexman, President, Society for Neuroscience in Anesthesiology and Critical Care & Past-Chair, Neuroanesthesia Section, Canadian Anesthesiologists' Society; Associate Editor, Journal of Neurosurgical Anesthesiology
4. UBC Vice-Chair of Equity, Diversity and Inclusion.
5. Su-Yin MacDonell, Head, UBC Division of Perioperative Anesthesiology
6. Trina Montemurro, PHC physician group (PASS) lead for quality
7. Cynthia Yarnold and Lain Bosma, Co-Chair, UBC Competency Committee
8. Cynthia Yarnold, Co-Chair, UBC Promotions Committee

Vancouver General/ UBC Hospitals

Clinical Activity:

Our department covers surgical sites at both VGH and UBC Hospital. On a daily basis we operationalize 24 operating rooms plus 4-5 out of OR surgical sites including interventional radiology, cath lab, electrophysiology, uro-radiology, lithotripsy/ stone center and ECT at VGH, plus an additional 8 operating rooms at UBCH.

Annually we provide anesthesia to approximately 15,000 surgical cases at VGH, 50% of which are urgent or emergent bookings. At UBCH we perform approximately 7,000 elective surgical procedures per year.

Transplantation has become a growing and increasingly normalized part of our work environment. In 2023 we performed an all time high of 77 lung transplants and 107 liver transplants.

In order to operate the 51-53 daily assignments, our department had expanded to 80 full-time staff by the end of 2023. We maintain a small temporary staff pool of 2-3 individuals for longitudinal assessment with intent to hire. We maintain a locum arrangement with BCWH providing exposure to general anesthesia cases at UBCH for their staff.

We have multiple novel and exciting initiatives ongoing:

1. Our environmental stewardship group has moved Desflurane out of the operating room suites and has facilitated the decommissioning of our nitrous oxide manifold system throughout the hospital. Both of these gases are significant contributors to greenhouse gases from healthcare settings.
2. Our regional group has embarked on a number of pain pathway initiatives in collaboration with surgical services. Our rib fracture pathway identifies trauma patients that will benefit from regional anesthesia for pain control and morbidity prevention. The goal is to utilize regional anesthetic techniques for analgesia to reduce opioid consumption and prevent the need for intubation and ICU admission. Our hip fracture pathway delivers regional anesthesia to patients prior to surgical fixation irrespective to their in-hospital location, in periop hold, the emergency department or on the orthopedic ward. This is an elderly and frail population that benefits from non-opioid analgesia for the prevention of delirium and other side effects.
3. Our perioperative anaphylaxis clinic investigates perioperative events from our health authority and others in collaboration with Allergist Dr Ruiz. Workups include skin testing and, if required challenge testing in PACU.
4. We run a resident POCUS rotation supported by Cardiac Anesthesia and perioperative anesthesia staff members. Residents are exposed to a vast array of ultrasound pathology

in the cardiac surgery ICU, the intensive PACU and in the preoperative arena.

5. Our perioperative group is responsible for the postoperative care of all non-cardiac patients going through PACU, facilitating recovery and triage to ward or ICU for patients after hepatobiliary, thoracic, vascular and major general surgery.

6. The PreAdmission Clinic has benefited from the full integration of Pharmacy in the clinic. As well, pathways of Pre-Surgical Optimization continue to be developed for surgical patient benefit before their procedure. Optimization pathways include: Smoking Cessation, Perioperative Blood Management, Frail Patients, Blood Sugar management, Nutrition, Pain and Addiction Services.

Staffing departures:

Dr. Yvonne Peng unfortunately left our department for family reasons.

New staff hires:

Drs Stephen Miazga and Naima Kotadia joined our department after completion of their residency at UBC.

Staff returns:

Dr Julena Foglia re-joined the staff after a combined cardiac fellowship at VGH and the University of Alberta. Dr Brendon Chung re-joined the staff after a transthoracic echocardiography fellowship at the University of Seoul.

A photograph showing the hands and forearms of several people gathered around a table. Some are holding blue markers, and there are sticky notes on the table, one with a blue 'M' and another with a blue 'T'. The scene is overlaid with a large, semi-transparent blue graphic element.

CLINICAL DIVISIONS OF ANESTHESIOLOGY

Cardiovascular Anesthesia

The UBC Division of Cardiac Anesthesiology would like to thank Dr Bobby Lee for his leadership during his term as division Head. Dr Juliet Atherstone and Dr Anne-Marie Madden have assumed the roles of co-heads starting in 2023. As the world entered the post pandemic era in 2023, Drs Atherstone and Madden chose to focus on restarting multi-site collaboration and meetings which were paused during the isolation precautions of the pandemic.

UBC Anesthesia Residency and Fellowship Training

UBC offers residents a 2-month rotation in cardiac anesthesia at one of the sites: Vancouver General (VGH), Royal Columbian (RCH), St. Paul's Hospitals (SPH), Royal Jubilee Hospital (Victoria). Residents can also pursue elective educational opportunities in cardiac anesthesia at Kelowna General Hospital. Fellowships are offered at the VGH, SPH, RCH and Victoria.

Each of the sites have their own unique educational opportunities such as endovascular thoracic aortic aneurysm repair, mechanical assist devices, transplants, and transcatheter aortic, mitral, and tricuspid valve repair/replacements outside of the standard experience during such a rotation.

Residents also spend one month in the Cardiac Surgery ICU (CSICU) while fellows complete a 3-month rotation. Given the increasing complexity of cardiac surgery patients, this has resulted in an excellent learning experience in managing complex patients with a variety of mechanical assist devices such as ECMO and LVAD's as well as challenging medical conditions historically seen in the ICU.

An additional one-month TEE/POCUS elective is also offered, focusing on both cardiac anesthesia and perioperative medicine. We have our fellows participate in regular echo education rounds.

Royal Jubilee Hospital

A Healthy Dose of Updates for Garden City's Cardiac Anesthesia Group In 2023, the Cardiac Anesthesia group continued to progress through publications, adoption of new techniques, and ongoing development of local initiatives.

The CJA published a paper co-authored by one of our colleagues (Mark German) on the utility of point of care ultrasound in hip patients with hip fractures. The care for increasingly complex cardiac surgery patients treated in Victoria continues to evolve. We identified the need for situational debrief amongst staff in the Cardiovascular Unit. A project was undertaken by Dr Craig Bosenberg who led the effort to develop an approach for "hot debriefs" to take place

following critical incidents. INFO is the acronym for the system we have adopted as a means to debrief staff in the CVU, and for training consultants and nurses on this approach are set to begin in early 2024. Minimally Invasive Cardiac Surgery has also taken a big step forward in Victoria. We sent a team to Calgary in July of 2023 to undergo peer to peer education on minimally invasive mitral valve surgery. Dr Mark German represented anesthesia in this respect. Since then, we have performed almost 20 minimally invasive mitral valve and atrial septal surgeries. Key features of these operations include lung comprehensive TEE information, and erector spinae plane catheters. This has been an excellent opportunity for members of CV Anesthesia and Regional Anesthesia to work together, facilitated by Dr Kevin Yee, a constituent of both groups. Pain relief in Cardiac Surgery patients undergoing sternotomy has had a closer look this year. Dr Richard Gardiner developed a survey for patients undergoing sternal nerve blocks in the postoperative period. Data collection from these surveys is ongoing and seeks to improve patients' experience at Royal Jubilee Hospital.

Publications

1. References 1. Chui J, Hegazy A, German M et al. Point-of-Care lung and cardiac ultrasound (LUCAS) study in hip fracture patients: a prospective cohort study. *Can J Anesth* 2023;70:1474-1485

St-Paul's Hospital

Leadership

Dr. Anne-Marie Madden took over from Dr. Bobby Lee as the Head of the SPH Division of Cardiac Anesthesia. Dr. Anne-Marie Madden is the co-Head of the UBC APT Cardiac Anesthesia Division.

Human Resources

SPH welcomed back Dr Dmitry Mebel from his 3-month fellowship in structural heart echocardiography at Beth Israel Deaconess Medical Center in Boston. Dr Ken Macdonald retired in December 2023 after an impressive career in Cardiac Anesthesiology at SPH.

Publications

1. Pitfield AF, Bedard A, Bashir J, Bruce S, Augoustides JG, Cormican DS, Marchant BE, Fernando RJ. Anesthetic Management for Cardiac Surgery During Pregnancy Complicated by Postoperative Threatened Abortion. *J Cardiothorac Vasc Anesth*. 2023 Jan;37(1):158-166. doi: 10.1053/j.jvca.2022.09.098. Epub 2022 Oct 3. PMID: 36319562.
2. Spence J, Belley-Côté E, Jacobsohn E, Lee SF, D'Aragon F, Avidan M, Mazer CD, Rousseau-Saine N, Rajamohan R, Pryor K, Klein R, Tan EC, Cameron M, Di Sante E, DeBorba E, Mustard M, Couture E, Zamper R, Law M, Djaiani G, Saha T, Choi S, Hedlin P, Pikaluk R, Lam WY, Deschamps A, Whitlock R, Dulong B, Devereaux PJ, Beaver C, Kloppenburg S, Oczkowski S, McIntyre WF, McFarling M, Lamy A, Vincent J, Connolly S; B-Free Investigators. Benzodiazepine-Free Cardiac Anesthesia for Reduction of Postoperative Delirium (B-Free): A Protocol for a Multi-centre Randomized Cluster Crossover Trial. *CJC Open*. 2023 Jun 8;5(9):691-699. doi: 10.1016/j.cjco.2023.06.001. PMID: 37744662; PMCID: PMC10516716.

3. Li KC, Coley MA, Chau A, Dotto A, McMillan A, Chiu H, Ree R. Rotational Thromboelastometry-Guided Use of Synthetic Blood Products in Cardiac Transplant Patients: A Retrospective Before-After Study. *J Cardiothorac Vasc Anesth.* 2023 Jul;37(7):1121-1128. doi: 10.1053/j.jvca.2023.02.042. Epub 2023 Mar 4. PMID: 37005203.
4. Tran, K. C., Fayowski, C. D., Chaworth-Musters, T., Purkiss, S. E., Chau, A., Bennett, M. T., & Chan, W. S. (2023). Post-partum maternal bradycardia: A case series and literature review. *Obstetric Medicine*, <https://doi.org/10.1177/1753495X231178407>
5. Ongoing Research: Cognitive Outcomes after Dexmedetomidine Sedation in Cardiac Surgery Patients: CODEX Trial. Lead Site: Sunnybrook Health Science Centre Site PI: Dr. Raja Rajamohan Status: Actively Recruiting since May 9th, 2022
6. The Efficacy of Superficial Parasternal Intercostal Plane Catheter for Sternal Pain Reduction in Patients undergoing Cardiac Surgery with Complete Median Sternotomy: A Quadruple-Blinded, Randomized, Placebo-Controlled Trial Lead investigator: Dr. Tim Jen
7. Outcomes after Perioperative Stroke in Cardiac Surgical Patients Lead Investigator Dr. Alana Flexman
8. Feasibility of Perioperative Stroke Screening Tools in Cardiac Surgery Patients: A Pilot Study Lead Investigators: Dr. Alana Flexman, Dr. Terri Sun
9. Pragmatic Cluster Crossover Randomized Trial: Benzodiazepine-free Cardiac Anesthesia for Reduction of Postoperative Delirium (B-Free). Site lead: Dr. Raja Rajamohan

Vancouver Acute Department of Anesthesia

Leadership

Dr. Sean McLean took over from Dr. Juliette Atherstone as the Head of the VADA Division of Cardiac Anesthesia. Dr. Atherstone is now the co-Head of the UBC APT Cardiac Anesthesia Division. Dr. Patrick Hecht is now the Director of Perioperative Echocardiography for VADA. Dr. Darren Mullane remains the CSICU Medical Director (appointed in 2022). Drs. McEachern and Foglia have taken over the role of Co-Directors of the VGH Cardiac Anesthesia Fellowship training program. We thank Dr. Darren Mullane for his contributions to developing the VGH Cardiac Anesthesia Fellowship over the past two years.

Human Resources

VGH welcomed back Dr. Graham Noble into the Cardiac Division. Dr. Julena Foglia joined the group after completing her cardiac anesthesia fellowship at VGH and The Mazankowski Alberta Heart Institute.

Publications

1. Multidisciplinary Management of a Patient With Good Syndrome Postthymectomy for Redo-Sternotomy, Ascending Aortic Replacement, and Aortic Valve Repair. Foglia J, Schuelein S, Ruiz JC, Kim JMS. *J Cardiothorac Vasc Anesth.* 2023 Dec 30;S1053-0770(23)01017-0. doi: 10.1053/j.jvca.2023.12.039. Online ahead of print. PMID: 38307739 No abstract available.

2. Fatal cerebral air embolism post esophageal endoscopy with dilatation: A case report. Hamilton K, Orde M, Finlayson G. *Med Sci Law.* 2023 Nov 13;258024231212878. doi: 10.1177/00258024231212878. Online ahead of print. PMID: 37960837
3. Prevention of postoperative atrial fibrillation in cardiac surgery: a quality improvement project. Egan S, Collins-Smyth C, Chitnis S, Head J, Chiu A, Bhatti G, McLean SR. *Can J Anaesth.* 2023 Dec;70(12):1880-1891. doi: 10.1007/s12630-023-02619-8. Epub 2023 Nov 2. PMID: 37919634 Free PMC article.
4. Intrathecal hematoma as a neuraxial complication of lumbar cerebrospinal fluid drainage for endovascular repair of a thoracic aortic aneurysm. Deck M, Grocott HP, Yamashita MH. *Can J Anaesth.* 2023 Nov;70(11):1845-1846. doi: 10.1007/s12630-023-02588-y. Epub 2023 Oct 13. PMID: 37831351 No abstract available.
5. Extracorporeal life support in trauma: Indications and techniques. A, Romano K, Tansley G, Al-Khaboori S, Thiara S, Garraway N, Finlayson G, Kanji HD, Isac G, Ta KL, Sidhu A, Carolan M, Triana E, Summers C, Joos E, Ball CG, Hameed SM. *J Trauma Acute Care Surg.* 2024 Jan 1;96(1):145-155. doi: 10.1097/TA.0000000000004043. Epub 2023 Jun 29. PMID: 37822113
6. Cerebral Oximetry: An Imperfect But Still Valuable Brain Monitor. Grocott HP. *Ann Thorac Surg.* 2024 Mar;117(3):633-634. doi: 10.1016/j.athoracsur.2023.09.041. Epub 2023 Oct 10. PMID: 37820891 No abstract available.
7. The Year in Thoracic Anesthesia: Selected Highlights from 2022. Alfaras-Melainis K, Fernando RJ, Boisen ML, Hoffman PJ, Rosenkrans DJ, Teeter E, Cardi AI, Laney J, Reagan A, Rao VK, Anderson M, Luke CB, Subramani S, Schisler T, Ritchie PJ, Gelzinis TA. *J Cardiothorac Vasc Anesth.* 2024 Jan;38(1):29-56. doi: 10.1053/j.jvca.2023.09.006. Epub 2023 Sep 9. PMID: 37802689 Review.
8. Development and Publication of Clinical Practice Parameters, Reviews, and Meta-analyses: A Report From the Society of Cardiovascular Anesthesiologists Presidential Task Force. Kertai MD, Makkad B, Bollen BA, Grocott HP, Kachulis B, Boisen ML, Raphael J, Perry TE, Liu H, Grant MC, Gutsche J, Popescu WM, Hensley NB, Mazzeffi MA, Sniecinski RM, Teeter E, Pal N, Ngai JY, Mittnacht A, Augoustides YGT, Ibekwe SO, Kilbourne Martin A, Rhee AJ, Walden RL, Glas K, Shaw AD, Shore-Lesserson L. *Anesth Analg.* 2023 Oct 3. doi: 10.1213/ANE.0000000000006619. Online ahead of print. PMID: 37788388
9. Effect of colchicine on perioperative atrial fibrillation and myocardial injury after non-cardiac surgery in patients undergoing major thoracic surgery (COP-AF): an international randomised trial. Conen D, Ke Wang M, Popova E, Chan MTV, Landoni G, Cata JP, Reimer C, McLean SR, Srinathan SK, Reyes JCT, Grande AM, Tallada AG, Sessler DI, Fleischmann E, Kabon B, Voltolini L, Cruz P, Maziak DE, Gutiérrez-Soriano L, McIntyre WF, Tandon V, Martínez-Téllez E, Guerra-Londono JJ, DuMerton D, Wong RHL, McGuire AL, Kidane B, Roux DP, Shargall Y, Wells JR, Ofori SN, Vincent J, Xu L, Li Z, Eikelboom JW, Jolly SS, Healey JS, Devereaux PJ; COP-AF Investigators. *Lancet.* 2023 Nov 4;402(10413):1627-1635. doi: 10.1016/S0140-6736(23)01689-6. Epub 2023 Aug 25. PMID: 37640035 Clinical Trial.

10. Regional Anesthesia With Paravertebral Blockade Is Associated With Improved Outcomes in Patients Undergoing Minithoracotomy Cardiac Surgery. Hsieh M, Kim D, Peng D, Schisler T, Cook RC. *Innovations (Phila)*. 2023 Jul-Aug;18(4):357-364. doi: 10.1177/15569845231190638. Epub 2023 Aug 10. PMID: 37585808 Free PMC article.
11. Is the Latency Between Symptom Onset and Diagnosis a Confounder in Understanding the Potential Relationship Between Intraoperative Blood Pressure and Long-Term Neurodevelopmental and Neuropsychiatric Disorders in Children? Lemanowicz AN, Grocott HP. *Anesth Analg*. 2023 Jun 1;136(6):e32-e33. doi: 10.1213/ANE.0000000000006415. Epub 2023 May 19. PMID: 37205815 No abstract available.
12. A multidisciplinary comparison of transfusion and perioperative support for high-risk cardiac surgery at three large academic centres in North America. Jacobs JW, Shih AW, Lombard FW, Bartoszko J, Mullane D, Cserti-Gadzewich C, Eichbaum Q. *Transfus Med*. 2023 Aug;33(4):337-348. doi: 10.1111/tme.12972. Epub 2023 May 12. PMID: 37170673
13. A brain-based definition of death and criteria for its determination after arrest of circulation or neurologic function in Canada: a 2023 clinical practice guideline. Shemie SD, Wilson LC, Hornby L, Basmaji J, Baker AJ, Bensimon CM, Chandler JA, Chassé M, Dawson R, Dhanani S, Mooney OT, Sarti AJ, Simpson C, Teitelbaum J, Torrance S, Boyd JG, Brennan J, Brewster H, Carignan R, Dawe KJ, Doig CJ, Elliott-Pohl K, Gofton TE, Hartwick M, Healey A, Honarmand K, Hornby K, Isac G, Kanji A, Kawchuk J, Klowak JA, Kramer AH, Kromm J, LeBlanc AE, Lee-Ameduri K, Lee LA, Leeies M, Lewis A, Manara A, Matheson S, McKinnon NKA, Murphy N, Briard JN, Pope TM, Sekhon MS, Shanker JJS, Singh G, Singh J, Slessarev M, Soliman K, Sutherland S, Weiss MJ, Shaul RZ, Zuckier LS, Zorko DJ, Rochweg B. *Can J Anaesth*. 2023 Apr;70(4):483-557. doi: 10.1007/s12630-023-02431-4. Epub 2023 May 2. PMID: 37131020 Free PMC article.
14. Rationale and design of the colchicine for the prevention of perioperative atrial fibrillation in patients undergoing major noncardiac thoracic surgery (COP-AF) trial. Conen D, Popova E, Wang MK, Chan MTV, Landoni G, Reimer C, Srinathan SK, Cata JP, McLean SR, Trujillo Reyes JC, Grande AM, Gonzalez Tallada A, Sessler DI, Fleischmann E, Maziak DE, Kabon B, Voltolini L, Gutiérrez-Soriano L, Tandon V, DuMerton D, Kidane B, Rajaram R, Shargall Y, Neary JD, Wells JR, McIntyre WF, Blum S, Ofori SN, Vincent J, Xu L, Li Z, Healey JS, Garg AX, Devereaux PJ; COP-AF Investigators. *Am Heart J*. 2023 May;259:87-96. doi: 10.1016/j.ahj.2023.01.018. Epub 2023 Feb 7. PMID: 36754105 Clinical Trial.
15. Seventy-seven days on veno-venous extracorporeal membrane oxygenation for severe acute respiratory distress syndrome from SARS-CoV-2. Shuster C, Kanji H, Isac G, Jeovens R, Sidhu A, Kalan S, Yee J, Finlayson G. *Perfusion*. 2023 Sep;38(6):1311-1314. doi: 10.1177/02676591221103545. Epub 2022 Jun 2. PMID: 35653234 Free PMC article.

Clinical Trials

1. **TRICS IV:** - An international, multi-centre, randomized controlled trial to assess transfusion thresholds in younger patients undergoing cardiac surgery. [clinicaltrials.gov: NCT04754022](https://clinicaltrials.gov/ct2/show/study/NCT04754022) Enrollment: 50 patients at VGH. Estimated completion Jan 2025 VGH P.I. Darren Mullane. Sub- Investigators: Juliet Atherstone, Joel Price
2. **FARES II:** Prospective, multi-center, active-control randomized trial comparing pro thrombin complex concentrate with frozen plasma in bleeding adult cardiac surgical patients. [Clinicaltrials.gov: NCT05523297](https://clinicaltrials.gov/ct2/show/study/NCT05523297). Enrollment: 50 patients at VGH. Estimated date of completion October 2024. VGH P.I. Darren Mullane. Sub Investigators: Bevan Hughes, Andrew Shih
3. **Albumin Utilization for Intravascular Volume Replacement in Adult Cardiac Surgical Patients: A Multicentre Retrospective Cohort Study.** Enrollment: 50 patients at VGH. VGH P.I. Darren Mullane
4. **TEVAR and CSF Drain Complications Study.** Currently going through ethics. Site in vestigators: Julena Foglia, Darren Mullane, Joel Price, Raju Heran, Hilary Grocott

Quality Improvement Projects

1. **TEVAR Temperature management QI project.**
Personnel: Jamie Head, Darren Mullane, Travis Schisler, Hilary Grocott.
2. **IPU Quality Initiative for TEVAR surgery.**
Personnel: Joel Price, Darren Mullane, Jason Faulds
3. **Parasternal blocks for Cardiac surgery**
Personnel: David Olmstead, Sean McLean, Travis Schisler
4. **QI for Perioperative TEE**
Personnel: Simone Schulein, Sean McLean, Patrick Hecht, Darren Mullane, Chris Durkin, Cyrus McEachern, Bevan Hughes
5. **ERAS for MIS Mitral Valve Repair.**
Personnel: Travis Schisler and Darren Mullane
6. **ERAS for Robot-assisted MIDCAB**
Personnel: Travis Schisler and Darren Mullane

NEUROANESTHESIA

2023 members:

Dr Bali Dhaliwal	Dr Jon McEwen
Dr Cynthia Henderson	Dr Yvonne Peng
Dr Henrik Huttunen	Dr William Rieley
Dr Sandy Kisilevsky	Dr Evan Shao
Dr Lynn Martin	Dr Jason Wilson
Dr Kelly Mason	

Division Member Updates:

The neuro division lost a long serving and dedicated neuroanesthesiologist with the retirement of Dr Lynn Martin in 2023. Many current anesthesiologists in the lower mainland will have trained under Dr Martin and will fondly remember her calm and pragmatic approach to patient care. We wish her the very best in retirement.

Dr Yvonne Peng relocated from Vancouver to Montreal with her young family in 2023. She has taken a position with the Montreal General Hospital (MGH) which is part of McGill University Health Centre. She is missed by the entire department of anesthesiology at VGH. We thank her for her contributions to the neuroanesthesia division over the past few years.

Resident Education:

Dr Evan Shao remains in the role of Neuroanesthesia Resident Subspecialty Co-ordinator.

In 2023, in response to an enlarging group of UBC anesthesiology residents, the VGH subspecialty block was modified to 8 weeks in duration to include neuroanesthesiology, spine, and vascular surgery rotations. Residents now spend 2-3 weeks in neuroanesthesiology at VGH (previously residents were guaranteed 3 weeks in neuroanesthesia). Exposure to neuroanesthesia also occurs at VGH on-call and at other teaching centres in the lower mainland including Royal Columbia Hospital.

With the change in subspecialty rotation, residents now have a staggered start to the block. For pragmatic reasons, the resident 'Question of the Month' was thus eliminated in 2023 as a requirement for the neuroanesthesia portion of the block. Answers to past questions can be found here: <https://www.vghanes.com/neuro-questions-of-the-month>.

The neuroanesthesia resident journal club was hosted by Royal Columbian Hospital on November 8, 2023. The following two papers were presented for discussion:

1. Sherwin et al. 2023. Influence of semaglutide use on the presence of residual gastric solids on gastric ultrasound: a prospective observational study in volunteers without obesity recently started on semaglutide. *CJA* 70(8): 1300-1306.

The paper was presented by Dr Kathleen Li (R2) and supervised by Dr Alan Tung. The authors found that patients on semaglutide, despite typical overnight fasting, had a significantly higher incidence of full stomach contents compared to controls. Further study is required but concern is raised for aspiration risk in patients when semaglutide has not been held. Optimal timing of semaglutide interruption in the perioperative period remains controversial.

2. Ma et al. 2024. Intraoperative Use of phenylephrine versus ephedrine and postoperative delirium: A multicenter retrospective cohort study. *Anesthesiology* 140(4): 657-667.

The paper was presented by Dr Namhee Kim (R2) and supervised by Dr Edmond Li. In summary, there was an association between phenylephrine and a higher incidence of postoperative delirium but prospective RCTs are required to confirm this effect.

Fellowship Training:

Dr Rieley continued in the position of the Neuroanesthesia Fellowship Program Director in 2023. The fellowship program retains its International Council of Perioperative Neuroscience Training (ICPNT) accreditation through 2025.

Dr Stewart Brown completed neuroanesthesia fellowship in June 2023 and returned to the UK to complete a remaining 6 months of anesthetic training. He has accepted a 12 month locum position at Vancouver General Hospital to commence in the spring of 2024. The successive fellow, Dr Amy Mitchell, started fellowship in July 2023

Presentations:

Kisilevsky, AE. Top Articles in Perioperative Neuroscience 2022. CAS Annual Meeting, Quebec City, PQ, June 2023.

Shao, E. Perioperative Management of Post operative Pain in Patients Undergoing Complex Spine Surgery. CAS Annual Meeting, Quebec City, PQ, June 2023.

Brown, S. Reducing Nitrous Oxide Waste. CAS Annual Meeting Poster Presentation, Quebec City, PQ, June 2023.

Mitchell, A. Perioperative Considerations of Moyamoya. CAS National Rounds (online), November 2023.

Mitchell, A. Spinal Surgery in the Polytrauma Patient. VGH resident teaching, November 2023.

Pain Management

The Division of Pain Management has continued to see growing activities as well as ongoing interest provincially and regionally in the arena of chronic pain and pain medicine.

After the formal announcement of Pain Care BC (PCBC) as a provincial health improvement network last year there has been an appointment of a medical director in addition to an operations team. PCBC is dedicated to working with health-care partners to optimize health outcomes for patients living with pain and to improve the quality and coordination of pain services across B.C. The network is starting work to look at the provincial services and advocate for the one in five British Columbians that suffer from chronic pain.

Educational opportunities continue through the BC Echo Program. The monthly meetings provide multidisciplinary case-based education for all health care providers within the province in the area of pain management. The program includes regularly scheduled meetings that are organized through PainBC and are available free virtually. For further information and to access prior topics please see the following: <https://painbc.ca/health-professionals/education/echo>.

The Canadian Pain Society continues to provide monthly National Pain Rounds to discuss a range of basic science and clinical topics. The rounds occur on the last Friday of each month and more information can be obtained from the following link. <https://www.canadianpainsociety.ca/painrounds>.

Perioperative Medicine

Division Highlights:

In 2021 Dr. Su-Yin MacDonell (SPH) proposed the creation of the Perioperative Medicine division of UBC Medicine. Perioperative Medicine fellowship-trained anesthesiologists are now found in many hospitals in BC, including Lions Gate, St. Paul's, VGH, and Victoria. The focus of the division has been engagement, collaboration (both in anesthesia and in other specialties) and education.

A provincial group of those engaged in perioperative medicine was created, not only to disseminate information on perioperative medicine, but also to ask questions and share information between one another.

Dr. Lindi Thibodeau (Comox Valley Hospital) is leading an exciting collaborative project called "Perioperative Care Alignment and Digital Screening Committee" with collaboration from the BCAS and Perioperative Clinical Action Network. This committee has diverse representation in both site and specialty and is creating an alignment of pre-surgical screening, perioperative medication management, choosing wisely investigations, and prehabilitation guidelines. Dr. Thibodeau is presenting the proposed perioperative standardization of pre-admission screening at the 14th Annual Whistler Anesthesiology Summit in March 2024.

Dr. Amelie Pelland (Lions Gate Hospital) is the CAS Perioperative Section Chair. After her perioperative medicine fellowship she practiced in Quebec, St. Paul's Hospital/Lion's Gate and now practices solely at Lion's Gate Hospital. She continues to lead the resident Perioperative Medicine academic days in addition to her leadership role within CAS.

Resident Education:

Perioperative medicine has been a dedicated subspecialty rotation since 2019. Until recently, this was composed of both a junior and senior rotation. The junior rotation was discontinued to maximize other learning opportunities, but the senior call-protected rotation has been increased from three weeks to four weeks this year. Given the recent expansion of the Anesthesia residency program and the addition of teaching sites; a Perioperative Medicine Anesthesia Training Committee has been created. This committee has a chair, pertinent site representations and junior/senior residents. The committee aims to create and maintain a new model of perioperative medicine training that has a priority of high-quality training that is universally available to all trainees.

Dr. Mario Kovacevic (R5) created a perioperative medicine website and has summarised almost 75 key perioperative papers. Residents who complete their senior rotation routinely assist this project by summarizing new perioperative papers. These summaries can be found at sphpom.com under "curriculum".

St. Paul's Hospital hosts two weeks of Perioperative Medicine academic days and we look forward to this year's perioperative medicine academic days in March/April 2024 being led by Drs. Pelland and Yu.

Multi-Disciplinary Rounds:

St. Paul's hosts a provincially broadcast monthly rounds on a topic within perioperative medicine. The program frequently gets asked to include other provinces on this monthly teaching and looks forward to broadening its reach. The Perioperative Medicine division is looking for other sites to present on one of these rounds to share information and encourage discussion.

A successful journal club was held on October 10, 2023 and led by the SPH perioperative fellow, Dr. Michele Homsy. This hybrid event was not only held in person at Boulevard Kitchen and Oyster Bar, but also broadcasted to BCAS members (organized by Dr. Alan Tung, BCAS education chair and RCH anesthesiologist). This hybrid format allowed people to discuss perioperative medicine and maximized participation. It probably was the best attended UBC journal clubs to date, with over 100 people (in-person and online combined) attending this session.

St. Paul's Hospital hosts two weeks of Perioperative Medicine academic days and we look forward to this year's perioperative medicine academic days in March/April 2024 being led by Drs. Pelland and Yu.

Research Report:

Ongoing:

1. ALOFT. RCT of GA versus neuraxial for vascular surgery. RCH PI/Project lead: Drs. Dan McIsaac/Susan Lee.
2. Anesthesia Technique in COVID-19 Positive Hip Fracture Patients. (Manuscript in-press at Canadian Journal of Anesthesia). PHC PI/Project lead: Dr. Janny Ke.
3. Association between wildfire smoke exposure and emergency room visit, readmission, and death after major inpatient surgeries: a retrospective population cohort study. PHC PI/Project lead: Dr. Janny Ke.
4. Association between extreme weather events and postoperative adverse outcomes: a systematic review. PHC PI/Project lead: Dr. Janny Ke.
5. BuTT-OUT. Pilot RCT of remote intervention vs control for smoking cessation. RCH PI/Project lead: Dr. Susan Lee.
6. Continuous noninvasive troponin monitoring in patients after noncardiac surgery: prospective feasibility cohort study. PHC PI/Project lead: Drs. Charles Yu and Janny Ke.
7. Defining the Minimal Clinically Important Difference (MICD) of Days Alive and At Home (DAH) within 30 days after inpatient noncardiac surgery. PHC PI/Project lead: Dr. Janny Ke.
8. Development and internal validation of models involving vital signs to predict troponin level and myocardial injury after noncardiac surgery: a single-centre retrospective cohort study. (Presented at the Oct 2023 American Society of Anesthesiologists conference by 2023 graduate Dr. Ryan Best). PHC PI/Project lead: Dr. Janny Ke.
9. Development and internal validation of a model to predict the risk of functional decline after discharge from elective total knee arthroplasty in functionally independent elderly adults: a retrospective population cohort study. PHC PI/Project lead: Dr. Janny Ke.
10. Machine learning modeling of intraoperative hemodynamic predictors of postoperative morbidity and health utilization outcomes (manuscripts in progress, presented at the Oct 2023 American Society of Anesthesiologists conference). PHC PI/Project lead: Dr. Janny Ke.
11. Mortality and outcomes after perioperative stroke (Master's Candidate Jaycee Farmer): Analysis of a large cohort of non-cardiac and cardiac surgical patients who experienced a perioperative stroke; identified predictors of poor outcome after perioperative stroke in these populations. Presented results at the ASA 2022 & SNACC 2022. PHC PI/Project lead: Dr. Alana Flexman.
12. Mizubuti GB, Maxwell S, Shatenko S, Braund H, Phelan R, Ho AHM, Dalgarno N, Hobbs H, Szulewski A, Haji F, Collins P, Tan CHE, Couture EJ, St-Pierre M, Denault AY, Azzam MA, Amir A, Miller EC, Allard R, Tanzola R, Lapierre D, d'Empaire PP, Mashari A, McDonald S, Smith R, Borger J, Gonzalez N, Li GJ, de Souza CM, Lucy M, Sidhu S, Kruger M, Maher NP, MacDonell DS, Prabhakar CPK, Fridfinnson J, Arellano R. Defining Competencies for Basic Proficiency in Point-Of-Care Ultrasound in Anesthesiology: A National Delphi Consensus. Pending publication.
13. Predictive Time-to-Event Model for Major Medical Complications After Colectomy. PHC PI/Project lead: Dr. Janny Ke.
14. PREPARE Trial. Ottawa based exercise-based prehabilitation study in frail elderly. RCH PI/Project lead: Drs. Dan McIsaac/Susan Lee.
15. Screening for stroke in surgical patients 2022-2023: A feasibility study to investigate the application of large-vessel occlusion stroke screening tools in surgical patients. Abstract presented at the ASA 2023. PHC PI/Project lead: Dr. Alana Flexman.
16. TAK-330. Takeda trial for emergency reversal of DOAC. RCH PI/Project lead: Dr. Susan Lee.
17. The impact of enhanced postoperative continuous vitals monitoring for high-risk patients in-hospital and at home on days alive and at home after surgery within 30 days postoperatively: A pilot randomized controlled study. PHC PI/Project lead: Dr. Janny Ke, co-investigators Drs. Charles Yu and Su-Yin MacDonell.

Published:

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Regional Anesthesia

Clinical Report:

In 2023, regional anesthesia continued to play a major role in delivering high quality patient care in the perioperative setting at all UBC-affiliated sites. In addition to providing perioperative anesthesia and analgesia, regional anesthesia continues to improve surgical throughput in a system with finite resources, while also helping to reduce our climate footprint.

St. Paul's Hospital (SPH) have continued on with its well-established block room program with upper and lower limb blocks, in addition to paravertebral blocks for the breast program at Mount St. Joseph's Hospital (MSJ). Femoral nerve blocks are also being provided as part of hip fracture pain management at SPH.

At Vancouver General Hospital (VGH), the Perioperative Anesthesia Intervention Service (PAIS) has continued to grow due to an increasing need for regional anesthesia in the perioperative setting. A variety of upper limb, lower limb, and truncal blocks are performed regularly by the PAIS team. The hip fracture and rib fracture protocols have continued to provide improved analgesia and optimal care for these clinically vulnerable patient populations. The use of suprainguinal fascia iliaca, pericapsular nerve group (PENG), and serratus anterior plane blocks have been on the forefront of these patient care protocols. With ongoing plans for OR expansion at VGH, regional anesthesia will continue to play a key role in the perioperative setting.

While recognizing historical concerns regarding TNS, lidocaine spinals have also made a comeback at VGH/UBCH for appropriate TURP procedures and for same-day discharge total hip arthroplasty cases (STAR program, led by Dr. Don Young). In addition to reducing our environmental impact, there is improved discharge times with faster resolution of the spinal anesthetic compared to bupivacaine.

High volume of regional anesthesia continues to be practiced with a diverse number of blocks at other UBC-affiliated sites frequented by residents and trainees. This includes, but is not limited to, SMH, Burnaby Hospital, RCH, LGH, and Victoria.

Academic Report:

Training of Residents:

With the significant growth in the size of the UBC residency program, regional anesthesia training is now distributed to multiple sites in addition to an increase in the duration of training to 6 weeks from the original 4-week rotation. Typically, each resident will spend 2 weeks

at SPH and 4 weeks at either VGH or SMH in order to have a wide breadth of regional anesthesia experience. With representatives from the regional training sites, the Regional Anesthesia Training Committee oversees these rotations to ensure high quality experience for both the residents and faculty. The 2023-2024 academic year is the inaugural year of this new set up and we look forward to having more hospitals added to the list of training sites in the coming year. Following their regional rotations, residents may also request additional regional anesthesia days at MSJ on their general rotations at SPH for further experience in paravertebral blocks for breast surgery. Initial feedback has been largely positive from resident and faculty, with plans for ongoing further reassessment to maintain these strong educational experiences.

In May 2023, there was excellent resident turnout for the UBC Regional Anesthesia Academic Day Workshop. This was made possible with collaboration between the UBC Anesthesia Lead Residents and faculty from SPH, VGH, and Burnaby Hospital, who were able to teach a variety of clinically relevant nerve blocks on live models at multiple different stations.

Training of Fellows:

SPH have continued on with their strong regional anesthesia fellowship program with a mixture of international and Canadian fellows. Dr. Rana Hamidzadeh completed her fellowship at SPH and returned to VGH on staff in 2023. Dr. Dan Werry headed off to Dalhousie and will be completing his one-year fellowship in regional anesthesia before returning to VGH in 2024.

Conferences:

The regional anesthesia workshops were once again expertly organized by Drs. Chris Prabhakar and Peter Rose at the Whistler Anesthesia Summit (WAS) in 2023. In typical fashion, these were well received by the attendees and there was a good turnout of instructors from various UBC-affiliated sites.

In 2023, Dr. Gramberg and Dr. Wong transitioned out of their roles as Co-Department Heads, and have been replaced by Dr. Iyer as Co-Head for SMH, and Dr. Karwa as Co-Head for JPOCSC, while Dr. Vesely continues in the SMH role.

Research Report:

UBC faculty have continued to work with the residents and fellows in performing high quality research and publishing articles in the area of regional anesthesia. The following are some of the recent publications:

1. Nourouzpour N, Jen TTH, Bailey J, Jobin PG, Sutherland JM, Ho CM, Prabhakar C, Ke JXC. Association between anesthesia technique and death after hip fracture repair for patients with COVID-19. *Can J Anaesth*. doi: 10.1007/s12630-023-02673-2. Epub 2023 Dec 21. PMID: 38129357.
2. El-Boghdadly K, Albrecht E, Wolmarans M, Mariano ER, Kopp S, Perlas A, Thottungal A, Gadsden J, Tulgar S, Adhikary S, Aguirre S, Agur AMR, Altıparmak B, Barrington MJ, Bedford N, Blanco R, Bloc S, Boretsky K, Bowness J, Breebaart M, Burckett-St. Laurent D, Carvalho B, Chelly JE, Chin KJ, Chuan A, Coppens S, Costache I, Dam M, Desmet M, Dhir S, Egeler C, Elsharkawy H, Bendtsen TF, Fox B, Franco CD, Gautier PE, Grant SA, Grape S, Guheen C, Harbell MW, Hebbard P, Hernandez N, Hogg RMG, Holtz M, Ihnatsenka B, Ilfeld BM, Ip VHY, Johnson RL, Kalagara H, Kessler P, Kwofie MK, Le-Wendling L, Lirk P, Lobo C, Ludwin D, Macfarlane AJR, Makris A, McCartney C, McDonnell J, McLeod GA, Memtsoudis SG, Merjavy P, Moran EML, Nader A, Neal JM, Niazi AU, Njathi-Ori C, O'Donnell BD, Oldman M, Orebaugh SL, Parras T, Pawa A, Peng P, Porter S, Pulos BP, Sala-Blanch X, Saporito A, Sauter AR, Schwenk ES, Sebastian MP, Sidhu N, Sinha SK, Soffin EM, Stimpson J, Tang R, Tsui BCH, Turbitt L, Uppal V, van Geffen GJ, Vermeulen K, Vlassakov K, Volk T, Xu JL, Elkassabany NM. Standardizing nomenclature in regional anesthesia: an ASRA-ESRA Delphi consensus study of upper and lower limb nerve blocks. *Reg Anesth Pain Med* 2023;0:1–11. doi:10.1136/rapm-2023-104884
3. Chedgy EC, Tang R, Struss WJ, Lowe G, Sawka A, Vaghadia H, Froehlich K, Black PC, Gleave ME, So AI. A randomized controlled trial investigating rectus sheath catheters following radical cystectomy. *BJU Int*. 2023 May 31. doi: 10.1111/bju.16094. Epub ahead of print. PMID: 37259473.
4. Klaibert B, Lohser J, Tang R, Jew M, McGuire A, Wilson J. Efficacy of ultrasound-guided single injection erector spinae plane block for thoracoscopic wedge resection: a prospective randomized control trial. *Reg Anesth Pain Med*. 2022, doi:10.1136/rapm-2022-103602.

OBSTETRIC ANESTHESIA

Included as part of the BC Women's Hospital report

DR. JAMES BROWN
DIVISION HEAD

PEDIATRIC ANESTHESIA

Included as part of the BC Children's Hospital report

DR. SIMON WHYTE
DIVISION HEAD

Thoracic Anesthesia

Membership:

In 2023, there were 10 members in the Division of Thoracic Anesthesia at Vancouver Acute - Dr Chris Durkin, Dr Gordon Finlayson, Dr Brett Fitzmaurice, Dr Patrick Hecht, Dr Bevan Hughes, Dr Jens Lohser, Dr Sean McLean, Dr Sandy Pitfield, Dr Kali Romano, and Dr Travis Schisler. The division looks forward to welcoming Dr Julia Cory who is returning in 2024 from a cardiothoracic fellowship at The Alfred Hospital in Melbourne, Australia.

Education :

The UBC Anesthesiology residents complete a six-week rotation in Thoracic Anesthesia. Two of these weeks are at Vancouver General Hospital and four more at either Surrey Memorial Hospital, Kelowna General Hospital or Victoria General Hospital. Emphasis is placed on the preoperative assessment for lung resection surgery and understanding bronchoscopic anatomy to inform lung isolation strategies and ultimately develop a plan that is safe, patient-centered and considers the risk and benefits of all approaches. Evidence based one-lung ventilation strategies are discussed as are approaches to the less common scenarios of anterior mediastinal masses and pulmonary hemorrhage. Residents also gain exposure to several different approaches to esophagectomy including MIS, Ivor Lewis and trans-hiatal. Opportunities are plenty to acquire skill in thoracic epidural, paravertebral catheter, and serratus anterior catheter placement. The division remains engaged with leading the thoracic themed academic days as well as providing mentorship for a UBC wide thoracic journal club.

Research

The division continues to remain active in both local and international research projects. Dr Sean McLean was the site lead for the international COP-AF trial looking at the prevention of perioperative atrial fibrillation in patients undergoing thoracic surgery that was published in 2023. Dr Schisler continues to contribute to the “Thoracic Year in Review” published annually in the Journal of Cardiothoracic and Vascular Anesthesia. The division is collaborating on quality improvement work alongside thoracic surgery to discover best practices for pain management after VATS lobectomy surgery with results and recommendations expected in 2024.

Lung Transplantation

The lung transplant program continues to expand in frequency and complexity. In 2023, 77 double lung transplants were completed with excellent outcomes.