NEW ZEALAND
Anaesthesia
THE MAGAZINE OF THE NEW ZEALAND SOCIETY OF ANAESTHETISTS • APRIL 2025

Leading from Dunedin

Decommissioning reticulated nitrous oxide

The New Dunedin Hospital

PLUS:
Global health trips and anaesthetising exotic animals with NZASM25 international speaker Prof Fred Mihm

New Zealand SOCIETY OF Anaesthetists

Aotearoa NZ Anaesthesia ASM 2025

NOVEMBER 12 – 15

KIRIKIRIROA HAMILTON, WAIKATO

CLAUDELANDS EVENT CENTRE

Prof Fred Mihm
Professor of Anaesthesiology, Perioperative and Pain Medicine (ICU), Stanford University, California, USA

Dr Michael Seltz Kristensen
Consultant Anaesthetist
Rigshospitalet, Copenhagen University Hospital
Denmark

Prof Jamie Sleigh
Professor of Anaesthesiology and Intensive Care, Waikato Clinical School, University of Auckland

Iris Reuvecamp
Barrister and Solicitor,
High Court of New Zealand.
Solicitor of the Senior Courts, England and Wales

Dr Mark Hamilton
Clinical Lead Vascular Surgery, Northern Territory, Australia

2025

www.nzanaesthesia.com

New Zealand Society of Anaesthetists

ANZCA
Australian and New Zealand College of Anaesthetists
Te Whare Tohu o Te Hau Whakaora

APRIL 2025 | ISSUE 71

CONTENTS

14

Global health trips and anaesthetising exotic animals with NZASM25 international speaker Prof Fred Mihm

26

Removing the leaks. Decommissioning reticulated nitrous oxide in Dunedin

31

The New Dunedin Hospital with Clinical Transformation Group Chair Dr Sheila Barnett

Cover photo credit: Image by pvproductions on Freepik.

Publication dates

Published:
August 2025
December 2025
April 2026

Contributions and feedback

We welcome your comments on the magazine. If you would like to contribute ideas and/or an article please contact editor: comms@anaesthesia.nz

New Zealand Society of Anaesthetists
@thenzsa.bsky.social @theNZSA
New Zealand Society of Anaesthetists

Connect with your audience - advertise with New Zealand Anaesthesia!

Our advertising rates are very competitive. Find out more by contacting Tylar Peratiaki: advertising@valleyprint.co.nz

Magazine advertising is available on both standard and premium pages. Options include full page, half page and quarter page. Complimentary advertising is also included in our E-Newsletter (E-Zine) – conditions apply.

President's Column

Kia ora koutou,

Anaesthetists are at the heart of patient safety, surgical care and critical interventions. Our insight, expertise and knowledge are immensely valuable. Not only in our day-to-day work but also when it comes to taking part in shaping change for our profession and our patients.

This year has started with a lot of change, particularly at a national health governance level, and we know there are more developments to come. But let's not dwell on what we have lost or the what ifs - but look to the potential it offers and get involved to help shape positive outcomes from change.

There are many ways we can all get involved in shaping the future of anaesthesia in Aotearoa. Whether it's in advocacy, mentoring a junior colleague, contributing to sustainability efforts, or simply checking in with our team, every action counts.

In my February blog, I said how now, more than ever, we must stand together. Our community is stronger together when it comes to driving positive change.

Your support has allowed the NZSA to advocate by engaging with our Minister of Health, Te Whatu Ora Health New Zealand, ACC and the Minister for ACC, to name a few. Each time our message is clear, to highlight the value of our profession and actively seek that seat at the table.

The Minister of Health's announcement regarding the Government's review of health workforce regulation and its consultation paper is a key focus of work for the Society at the time of writing. Some of the proposed changes are deeply concerning for the threats they pose to patient safety, the integrity of our profession and the future of physician-led anaesthesia care in New Zealand.

Like many of you, I have increasing concern for the future of our profession and the safe provision of anaesthesia for our patients in New Zealand. Across the world, we are seeing shifts in healthcare policy and workforce planning that threaten the high standards of anaesthesia care we have long upheld. It is crucial that we remain informed and engaged as we navigate these challenges. With this in mind, we are sharing an article from the Association of Anaesthetists (AOA) Chair, Dr Tim Meeks, which examines the current situation in the UK. His insights highlight key issues that could have significant implications for our own healthcare system. I'd like to thank the AOA and the Australian Society of Anaesthetists (ASA) for permitting us to share this article from the ASA's March magazine. See page 19.

The NZSA has been invited to meet with the Minister of Health, Hon Simeon Brown. His recently released key health priorities, including partnering with the private sector to deliver more planned care, offer much to discuss. Any changes here need to be done in a cohesive model so as not to exacerbate

current barriers. We do not want to increase competition for staff across the two systems, we need to ensure patient safety when outsourcing more complex procedures to facilities with potentially fewer resources and after-hours staff availability, and for this to be fair and successful contracts need to appropriately recognise anaesthesia requirements, particularly when it comes to more complex patients.

This topic continues and sits behind our motivation to also reach out to the new Minister for ACC. With pressure to outsource or complete surgical work after hours to meet increasing demand we need to ensure this is done safely and through fair remuneration. We also continue to discuss this in our regular meetings with our ACC Health Partners.

I'd like to thank Dr Lynette McGaughran and Dr Andrew Cameron who the NZSA supported as anaesthesia representatives to an ACC working group reviewing procedure codes. The Society's also nominated further members who've raised their hands to take part in other engagement opportunities that are still developing.

We are also grateful to the network and committee members who've provided valuable feedback towards consultation documents that have assisted in guiding recent NZSA submissions on ANZCA guidelines under review.

Alongside engaging in these important conversations, we can also work together to provide more for our community and patients.

The new patient education resources have already expanded since their launch in December and we're now looking to provide more translations to help those populations

"There are many ways we can all get involved in shaping the future of anaesthesia in Aotearoa."

in need. Together we can improve health literacy and outcomes for all of our patients. These resources make it easier to communicate key anaesthesia concepts, risks, and procedures with patients in a clear, accessible way. I encourage you to share them with your colleagues, print the posters and hang them in your clinics - and get in touch with us if you're keen to help write new ones too! These are a community-wide initiative.

I'm delighted to share we're also working on te reo Māori resources for members. The intent of these will be to offer small, manageable and practical resources that are relatively easy to incorporate into your daily practice. We hope they will assist members in developing their cultural competency and enable you to feel comfortable in bringing small reo Māori phrases into your day-to-day.

We are privileged to have so many educational events available where we can connect, share knowledge and grow together in our practice. Closer to home we have the Paediatric Anaesthesia Network's educational meeting in May, AQUA in August and of course the Aotearoa NZ Anaesthesia ASM in November. As well as those further afield with the Pacific Society of Anaesthetists Annual meeting in August and the WFSA's World Congress in Morocco next year.

NZSA Vice-President Dr Jonathan Panckhurst and I enjoyed attending the Waikato and Northland Part 0 courses in February to welcome some of our newest anaesthesia colleagues and introduce the NZSA. We've

had a number of new trainee members join the Society in the past couple of months. Ka nui te mihi ki a koutou katoa. Welcome to you all, it's wonderful to have you join us!

With so many options available to us, let's keep working together to make changes for the better – to ensure that anaesthesia continues to thrive, that our voices are heard, and that our patients receive the safest and best care possible.

I would like to express my gratitude to Dr Hannah Middleton and Dr Sarah Tomlinson who completed their time as our Trainee Representatives on the NZSA Executive Committee. We deeply appreciate their mahi on behalf of our trainee community. E mihi nui ana, thank you very much. Our trainee reps are so valuable in the perspective they provide on behalf of our trainee community.

The NZSA Executive Committee is looking for new committee members keen to help set the strategic direction and contribute to strategic decisions for the Society and its members. If you're interested, please visit the NZSA website for more details or get in touch.

Ngā mihi nui,

Dr Morgan Edwards
President, New Zealand Society of Anaesthetists

PANNZ Educational Update Meeting

24 - 25 MAY 2025

The Paediatric Anaesthetist Network of New Zealand (PANNZ) promotes nationwide collaboration and communication among paediatric anaesthetists to ensure equitable, high-quality care for all children, while supporting professional development, peer support, and advocacy.

The PANNZ 2025 program includes optional **CICO and Resus Workshops** on the morning of Saturday, 24 May at the Manawa Simulation Centre, followed by the **PANNZ Update Meeting** at the University of Otago, Christchurch Campus. The **EPIC Workshop** will be held on Sunday, 25 May at Christchurch Hospital.

REGISTER BY SCANNING OR CLICKING THE QR CODE BELOW

SPANZA

New Zealand SOCIETY OF Anaesthetists

New Ministers

The NZSA has contacted both the new Minister of Health, Hon Simeon Brown and Minister for ACC, Hon Scott Simpson, seeking the opportunity to meet with them and discuss pertinent issues affecting our members and patients. The NZSA is scheduled to meet with Hon Simeon Brown in June.

Both of our Briefings for the Minister are available to read on the website. Each sharing the topics we wish to discuss further with suggestions on where we can work together to improve outcomes for patients and address barriers and concerns.

Read the Minister of Health Briefing booklet | Read the Minister for ACC Briefing Booklet.

Submissions

ANZCA Guidelines

The NZSA has submitted feedback to ANZCA's consultations on:

- PG47 Guideline on training and practice of perioperative diagnostic point-of-care ultrasound (POCUS)
- PG45 Rights to pain management
- PG18 Anaesthesia monitoring
- PG56 Difficult airway equipment

Thank you to the network members who shared their insight that helped shaped the suggestions and comments we could share.

IRD consultation on taxing charities

In March the IRD opened a consultation on Taxation and the not-for-profit sector. The NZSA submitted feedback during the consultation because there could be implications for the NZSA should current tax concessions for charities be removed or changed.

You can read copies of all submissions on the NZSA website here.

Patient Education Resources

Since launching in December, our free digital patient education resources have expanded and now also include the following topics:

- Bariatric surgery
- Joint replacement surgery
- Spinal surgery
- Epidurals and spinals
- Epidural for Labour
- Regional anaesthesia.

Plus, more posters with QR codes that you can download and print to help patients easily access this information.

Check them out – visit www.myanaesthesia.nz

Bluesky

The NZSA has joined Bluesky! We are excited to be joining the community, and the conversation, on this fast-growing social media platform.

Join us at @thenzsa.bsky.social

Join us on Bluesky

Get involved in guiding the strategic direction of the NZSA

Are you interested in joining the NZSA Executive Committee?

The NZSA Executive Committee is looking for new committee members keen to help set the strategic direction and contribute to strategic decisions for the Society and its members. The NZSA Executive Committee meets face-to-face to face three times a year and via Zoom for an hour every 6-8 weeks as required.

NZSA values a diverse Executive Committee that reflects our membership, so whether you're a new SMO, mid-career, or nearing retirement, your interest is welcome. This is a great opportunity to gain governance experience alongside a supportive group.

If you are interested, please contact the NZSA office at nzsa@anaesthesia.nz

Te Reo Māori Rauemi Resources

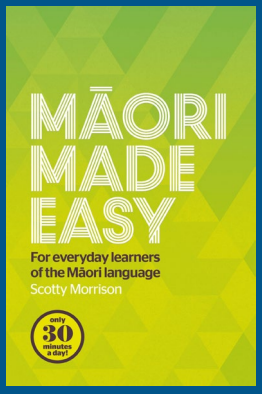
A collection of ideas for those interested in starting or growing their te reo Māori journey and understanding of tikanga. Please note these are just suggestions, none are endorsed by the NZSA.

Everyday Māori (Hemi Kelly) - Podcast:

This podcast focuses on teaching everyday Māori for practical use in daily situations with scripted dialogues and conversations, offering insights into different aspects of the language, including idioms and a wide range of sentence structures.

everydaymaori.com/empodcast

Māori Made Easy (Scotty Morrison) - Books:



Accessible guides to learning the Māori language no matter your level, written by popular TV personality and te reo Māori advocate Scotty Morrison. By committing just 30 minutes a day for 30 weeks, learners will adopt the language easily and as best suits their busy lives.

Visit the Penguin Book store

Manawa Māori - Instagram:

A supportive online community with access to a variety of Māori resources and exposure to the language. This social media account supports Manawa Māori's work providing te reo Māori courses and organisational support.

@manawamaori

The Wall Walk (Te Hīkoi Maumahara) - Self guided study:

As well as their in-person workshops The Wall Walk offers a self-guided online course taking you through New Zealand's unique history of Māori-crown relations through a Māori lens that aims to help learners view their own world through a Māori lens and act to improve Māori outcomes.

www.thewallwalk.co.nz

Te Aka Māori Dictionary - App for IOS or Android:

An easy-to-use Māori language dictionary. Just like the website version, search for words using English or Māori, filter results, and save definitions.

maoridictionary.co.nz

IOS App Google play store

NZSA Constitution Changes

We want your input

All incorporated societies, like the NZSA, are required to re-register under the new Incorporated Societies Act by April 2026, or wind up. To re-register, changes must first be made to the NZSA's constitution.

What is an Incorporated Society?

The New Zealand Society of Anaesthetists is an Incorporated Society. An incorporated Society is a membership-based non-profit organisation registered under the 1908 Act (or 2022 Act).

Being an incorporated society gives an organisation the ability to operate as a separate legal identity that can enter into contracts, employ staff and execute legal documents. It provides continued existence regardless of any changes in membership and means members are not personally liable for any debts or responsibilities of the group.

Why do we need to re-register?

The Incorporated Societies Act 1908 has been replaced with the Incorporated Societies Act 2022. All organisations that wish to remain Incorporated Societies must re-register under the new Act by April 2026, or wind up. The new Act introduces stronger governance frameworks and more modern standards and requirements for incorporated societies.

Not re-registering under the new legislation would require the NZSA to wind up, and all assets would be lost under the control of the Registrar of Companies.

How does re-registration affect the NZSA?

The new Act includes key changes that will impact the NZSA and requires changes to the Society's constitution. These are:

- All new members must consent to being members. This process is already in place through our signup processes.
- The Annual General Meeting must be held no later than six months after the Society's balance date (The NZSA's balance date is 31 December, and our AGM is usually held in November).
- Societies must have at least one contact person, and the constitution must specify how the contact person is appointed or elected.
- All Societies must have procedures for managing internal disputes in a way that is consistent with natural justice, and these must be documented in the society's constitution.
- Surplus assets (after winding up) must be given to an identified not-for-profit organisation or class of organisation that is identified in the society's constitution.

These changes will need to be made to the constitution before we can re-register under the new Act.

They also present an opportunity to review the constitution and address any other areas that may benefit from a review. This may include: timeframes for payment of fees and consequences of not paying fees.

The NZSA's current constitution can be read on the website here.

All NZSA members are an important part of this process. Changes can only be made with your support. We urge all members to keep in touch and attend all meetings where we will be discussing and voting on the constitution.

The process and timeline

This is an approximate timeline with specific meetings we encourage members to attend to help us shape changes to the constitution. However, feedback is welcome at any time.

- **Now:** Reviewing the constitution and preparing for re-registration.
  - The NZSA is reviewing the constitution, considering what changes need to be made to meet the requirements of the new Act and other areas to address, with an independent legal review.
- **August:** Special General Meeting (SGM):
  - The NZSA will hold a SGM to present the Society's financial report and vote on member fees.
  - A drafted constitution will also be shared for member feedback.
- **October:** A final draft constitution, following a review of member feedback, will be shared with all members as part of the AGM pack.
- **November:** Annual General Meeting (AGM).
  - Members will vote on the new constitution.
  - Members of the Executive Committee are elected/appointed.
- **November - December:** The NZSA prepares all paperwork to transition.
- **December - January:** The NZSA applies to re-register.

Invitations will be sent to all members to attend the SGM and AGM.

Share your feedback

Questions, feedback and suggestions are welcome at any time. Please get in touch via email to nzsa@anaesthesia.nz.

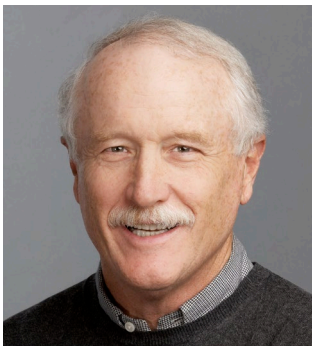
Aotearoa NZ Anaesthesia ASM 2025

This year's local organising committee are a small and mighty team from Waikato who are making the final touches to an intriguing scientific and magical social programme for this year's Aotearoa NZ Anaesthesia ASM in Kirikiriroa Hamilton.

The Scientific Programme

Our two international keynote speakers set the tone for a scientific programme featuring international and local experts covering a diverse range of topics.

Dr Michael Kristensen is a world-leading airways expert at the Copenhagen University Hospital, Rigshospitalet – a referral centre for ear-nose-throat, maxillofacial, trauma, and cancer patients in the Capital Region of Denmark, who also holds numerous positions on International Airway Advisory Committees. His particular interests include upper airway ultrasonography, front of neck access, and difficult airway predictors. He is widely published and offers free resources on airway management. Michael is co-editor of the Society for Airway Management textbook, Core Topics in Airway Management.



Professor Fred Mihm is Professor of Anesthesiology, Perioperative and Pain Medicine at Stanford University Medical. He's a regional anaesthesia expert and has a series of over 300 patients with pheochromocytoma, as well as numerous overseas volunteer missions. Aside from his routine academic duties, he has assisted in providing anaesthesia to rare and exotic animal species at San Francisco and San Diego zoos.

Plus, we'll be hearing from speakers based a little closer to home including:

- **Alan Merry Orator:** Prof Jamie Sleigh, Professor of Anaesthesiology and Intensive Care, Waikato Clinical School, University of Auckland.
- **NZSA Invited Speaker:** Iris Reuvecamp, Barrister and Solicitor, High Court of New Zealand. Solicitor of the Senior Courts, England and Wales.
- **ANZCA Invited Speaker:** Dr Mark Hamilton, Clinical Lead Vascular Surgery, Northern Territory Australia.
- Professor Guy Ludbrook, Professor of Anaesthesia, University of Adelaide and Royal Adelaide Hospital.
- Dr Louise Ellard, President, Safe Airways Society

Coupled with a workshop programme that aims to cover key areas of CPD. There will be a thoracic workshop on Wednesday 12th, the day before the NZ ASM starts. Then during the meeting an acute severe

behavioural disturbance ER workshop to help meet the required CPD Emergency Response category.

The Social Programme

Coming together for events like the NZ ASM is just as much about being able to connect with our Aotearoa community. The Social programme will showcase some of the best of the region with live music at the Welcome Function, and a trip to Hobbiton for a unique event on the Friday night.

Our Friday evening will start with a guided tour at sunset winding through the iconic Hobbiton movie set, including the recently opened Hobbit Holes. We will have the place to ourselves to see the Marketplace and Green Dragon Inn come to life after the tours. Offering food stalls right on the edge of the water, overlooking the Hobbiton set. It's an idyllic setting no matter your level of Tolkien or Lord of the Rings fandom.

Convenors Drs Tania Bailey and Ewa Johannsen look forward to welcoming everyone to the region later this year.

"The committee have been working hard to shape the programme and build a meeting that offers a wide variety of topics. The numerous workshops have been chosen to add value to your practice, whilst simultaneously satisfying several CPD requirements, including some of the new topics. We really hope you will be able to take away something specific to your practice – 'what will I do differently next week?'"

"We're lucky to have somewhere as unique as Hobbiton on our doorstep too. It will be a magical night in a special setting. We hope you'll join us and help make it a successful event."

"The numerous workshops have been chosen to add value to your practice, whilst simultaneously satisfying several CPD requirements"

Aotearoa NZ Anaesthesia ASM 2025 Feature Speaker

Professor Fred Mihm

Professor Fred Mihm is a critical care and regional anaesthesia specialist with an impressive array of experiences. A Professor of Anesthesiology, Perioperative and Pain Medicine at Stanford University Medical his special interests include the care of complex medical patients requiring high-risk anaesthetics and surgery. In particular Pheochromocytoma - a rare, life-threatening endocrine tumour, of which he has cared for more than 300 patients with this condition.

We are delighted to be welcoming Professor Mihm to Aotearoa in November as a keynote speaker at this year's Aotearoa NZ Anaesthesia ASM, where he'll be sharing his expertise across these special interests such as the Physiologic Difficult Airway, Stellate Ganglion Blockade and Perioperative management of Pheochromocytoma.

Alongside his academic pursuits, he has also volunteered his skills on numerous global health missions and in assisting with anaesthetising more than 100 animals at the San Diego and San Francisco Zoos.

Ahead of travelling to Aotearoa in November, Professor Mihm joined us for a kōrero about his other special interests. Starting right at the start, his first global health trip as a resident to San Pedro Sula, Honduras in 1978 with Plastic Surgeon Dr Donald Laub, founder of Interplast and colleague at Stanford.

"Donald initiated Interplast through a desire to do good for those in need in other countries and provide his trainees with exposure to conditions seen infrequently at home."

Values that align with Professor Mihm, who being raised in a Christian household often heard the directive 'love your neighbour'. This was a mandate he understood to be "lived out in tangible ways. Be ready to be generous with your time and talent and seek opportunities to do this".

"For me, 'my neighbour' has always had a global connotation. Growing up surrounded by others who worked in low-resource countries to help those in need, I jumped at the opportunity to do the same."

"But the personal rewards were so compelling. Once you start doing something like this you get the bug for it."

"In San Pedro Sula, we were based in a very small hospital and set up two OR tables in the same room. The room had one window with a fan in it that didn't work. Every day was blistering hot and by the end of the day, the halothane was so thick you could cut the air with a knife. But the personal rewards were so compelling. Once you start doing something like this you get the bug for it."

As luck or destiny would have it, Professor Mihm returned to the same hospital 41 years later. "It was quite special to go back to where I'd started and see how much it had changed. They'd built new facilities and there was an anaesthesia training programme with abundant opportunities for teaching, which is always an important part of these trips."

"As a specialist in regional anaesthesia and critical care, I've gravitated towards orthopaedic service trips in recent years. Regional anaesthesia instruction is highly valued overseas and at these locations, anaesthesia providers are always eager to

learn how to do regional blocks. I've also enjoyed some purely educational trips and was in Uganda earlier this year teaching at a small university anaesthesia training programme."

Accumulating over two years across 51 trips Professor Mihm has learned some valuable lessons.

His tips for anyone undertaking a trip to work in a low-resource area:

1. Find out as much as you can about what you're stepping into, so you're as prepared as possible. Find out how they practise, what kind of cases they do and what supplies you might need to bring.

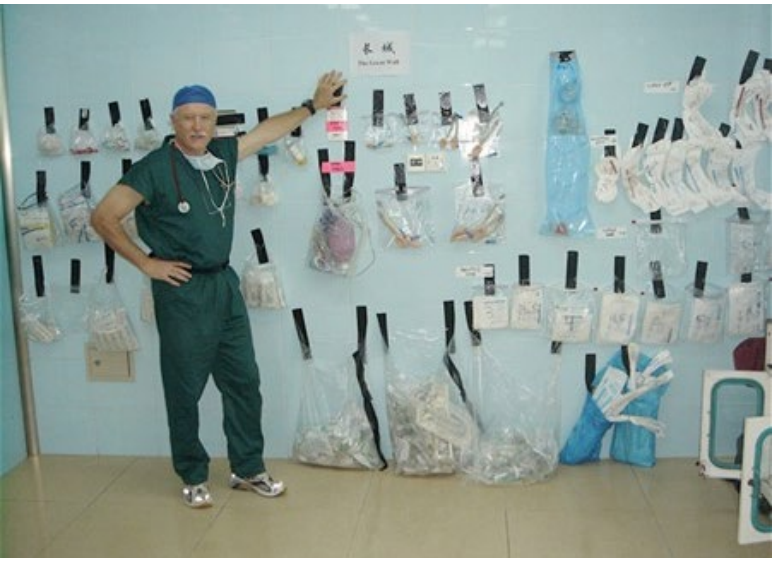
   "On one trip to Guatemala, we were operating in a clinic with no anaesthesia machine, just an oxygen cylinder. That was it. They really only did c-sections under IV ketamine. I was fortunate to know all of this before I arrived. I ended up bringing a syringe pump and chose a propofol/ketamine TIVA technique which worked well."

2. Take duct tape. Building an 'anaesthesia workroom' of usable supplies duct taped to a wall has become a signature of Professor Mihm's trips.

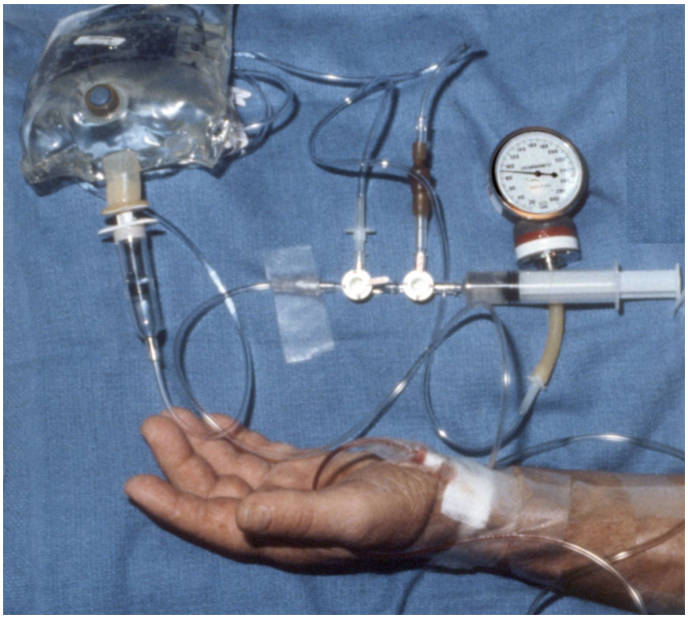
   "Particularly when you've brought these supplies with you, it makes them visible. Without a workroom or Tech to help you, the wall makes it easy to see what you have and what you're running low on. Anyone can access it quickly. In particular, the emergency supplies are placed in a specific section of the wall."

3. Be ready to improvise. "When I was a resident, I was taught to make a MAP Mobile using the aneroid monitor from a blood pressure cuff for real-time blood pressure monitoring without any electronic equipment. We often used it back home transporting seriously ill patients from the OR to ICU, long before portable transport monitors were developed. I've used this in Africa when they were planning heart surgery without an arterial line, and where there was no ability to measure intra-arterial blood pressure."

4. Be ready to learn something new. "During a trip to Vietnam focussed on hypospadias repairs, the prior year's anaesthetist commented during our



The great wall of anaesthesia.

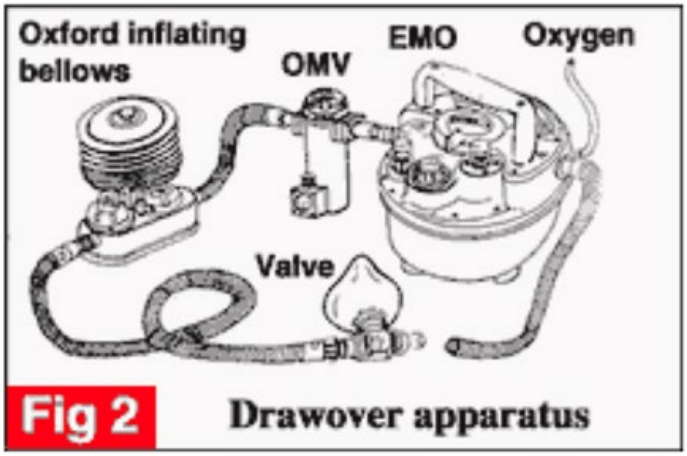


MAP Mobile.

handover that they placed trans sacral epidural blocks for all of the patients. I had to look it up and it turns out the sacrum has joints that I thought were fused very early in life - they aren't. You can go into the sacral joints between sacral S2 and 3 and insert an epidural catheter. It's exactly the nerve root level you want for this type of surgery. I'd never done it before or since that trip, but it was just amazingly easy to learn and it was effective in every patient that we cared for."

5. Know what's available. "You often have to think about the basics to be sure you won't get caught with assumptions that aren't true where you're working, for example, blood and oxygen. One question I always ask, especially if the surgeons want to do complex surgery is 'Can we get blood if we need it?' Knowing this might alter your plans or decision to do surgery."

   "The first time I went to Africa was in 1994 to Moshi Tanzania. Their primary general anaesthetic was Ether through a drawover vaporiser and manual insufflation with an Oxford Bellows, neither of which I had ever seen."



Components of a drawover circuit. A drawover system (figure 2) is designed to provide anaesthesia without requiring a supply of compressed gases. Atmospheric air is used as the main carrier gas and is drawn by the patient's inspiratory effort through the vaporiser, where the volatile agent, normally ether or halothane, is added. The mixture is then inhaled by the patient via a non-rebreathing valve.

They were also operating with general anesthesia using room air! There was no oxygen available, with their oxygen concentrator broken. If a patient needed supplemental oxygen post-surgery, it wasn't available. The latter has been true in a lot of places I've visited. You might be able to give some oxygen in the recovery room but sending a patient to the ward with even 1-2 LPM is something we take for granted."

The exotic animals

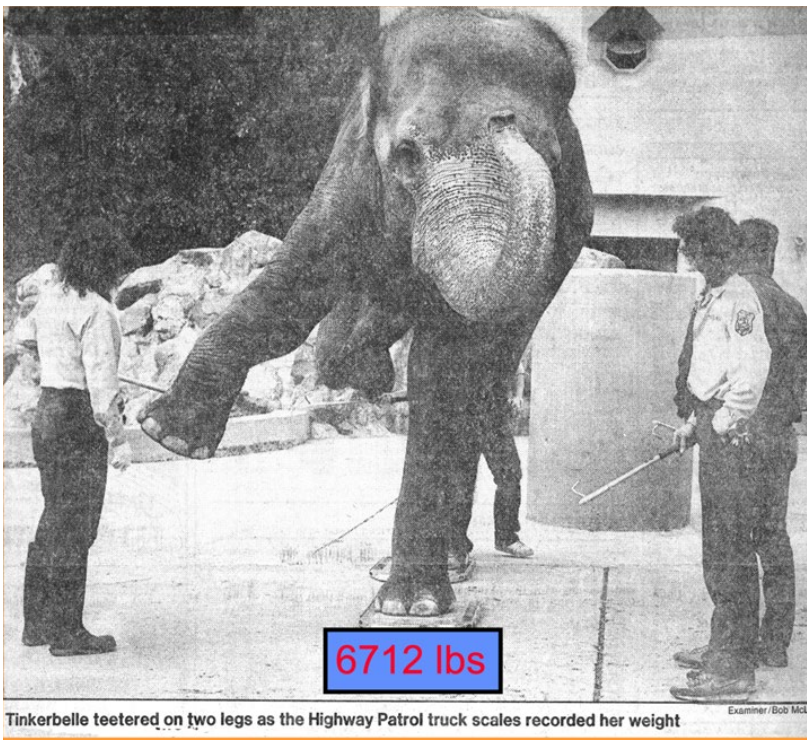
His other volunteering pursuit, a little closer to home, is assisting in anaesthetising all kinds of exotic animals including gorillas, giraffes, lions, tigers, penguins, chimpanzees, orangutans and elephants.

"A lot of American zoos will consult with human physicians, especially anaesthesiologists. Complications related to anaesthesia are one of the common issues when anaesthetising animals and when it comes to exotic animals there's typically only case reporting and word of mouth to investigate ahead of time in order to be prepared".

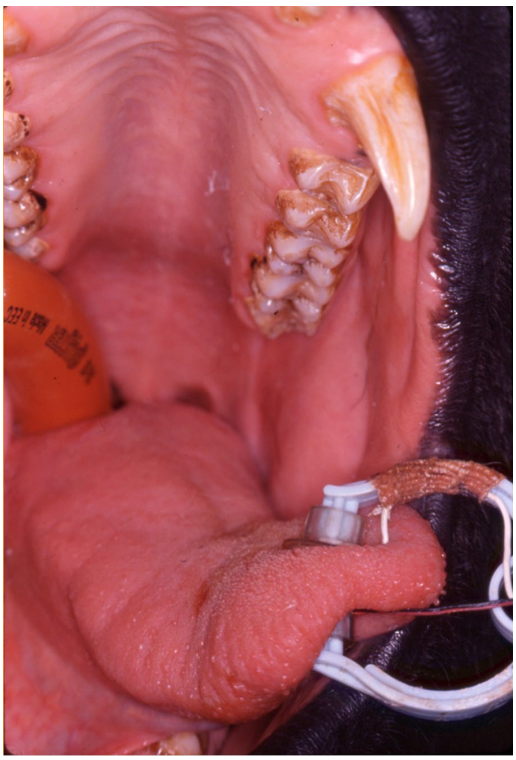
"Vets use a lot of the same or similar drugs - ketamine, halothane, isoflurane and sevoflurane with anaesthesia machines. But they also have many veterinary drugs that we don't use, for example the narcotic Etorphine. We used it on an elephant once. We gave her 2 milligrams of Etorphine and that was enough to do surgery on this animal weighing 6,712 lbs [over 3,000kgs]!"

"This is one of the few times that we knew the exact weight of the animal!"

When it comes to logistics ventilation and monitoring are the biggest considerations, particularly for the larger animals like elephants and rhinos. These larger animals spontaneously breathe while lying on their side during surgery.



Tinkerbelle teetered on two legs as the Highway Patrol truck scales recorded her weight


Pulse oximeter on gorilla tongue.

"You have to learn to modify equipment. Pulse oximeters don't work on Gorillas for example. Their skin is about 1cm thick and incredibly dark in pigment. I modified a pulse oximeter to a clip by dissecting an oximeter. By putting the LED on one side of the clip and the photodetector on the other we could clip it on an animal's tongue."

Safety also quickly comes to mind when you think about working with exotic and often dangerous animals.

"Part of the excitement is getting up close and observing these animals in a way you never otherwise could, but you have to juggle your personal safety and the safety of the animals."

The trickiest times are before and after anaesthesia.

"To start with you have to guess their weight to sedate them before they're brought to the zoo's hospital where we can weigh them properly. Guess too little and you're in the cage with them and you're in trouble, or too much and there's the risk they're over anaesthetised and the animal is in trouble."

"Then afterwards when you're putting them back in the cage it's dangerous because they're starting to wake. Typically, they're placed with their head near the bars of the enclosure while still intubated with a string tied to the end of the tracheal tube so you can pull the tube out when they start rousing. However, there's always the risk of complications and what to do if they get into trouble."

"We had an occasion with Koko the gorilla who went into respiratory arrest after getting back into her cage. She no longer had an IV and we had to decide whether it was safe to go into the cage and pull her out without giving her additional anaesthetic. In retrospect, we were right to do so, as she was down enough that there was no risk to us, but if we'd waited longer she wouldn't have survived."

The lions have created some of the more harrowing moments for Professor Mihm.

"To intubate a lion you have to put your arm right into their mouth and their mouth

is held open because we don't use muscle relaxants. Once after intubating one of the lions, he [the lion] started seizing quite violently and I had to hold on to the tracheal tube during the seizure so that the lion wouldn't have an accidental extubation.

"On another visit, I was supposed to be darting a lion to sedate it. You need a side shot and having been darted by the vet another time the lion knew something was up, so it had its eyes trained on the vet. I had a good shot from the cage next door but left the safety on and the trigger made a little click. The lion spun around in an instant and roared right at me. My hair was blown back by its hot breath, it was like a hot fan. It was horrible but pretty amazing. Their roar has a very low pitch and your whole body vibrates like you're standing next to a big base speaker."

Koko the signing Gorilla is the most interesting animal he's worked with.

"I was sceptical at first but the more I got to know Koko the more I started recognising some of the unique signs she was making. One time she gestured to her head wanting to know where my hat was because I'd always worn one the prior times I'd visited. She wanted me to sit close to the cage so she could see me better and I could hear her purring, they purr like kittens."

Both his work with the animals and time volunteering in low-resource countries offer adrenaline-pumping and deeply rewarding moments.

"Overseas work has a whole different kind of impact. There's something religious about it for me. You can't overestimate the impact or significance of providing free medical care that changes the trajectory of a single person's life. I know there's a lot of push towards capacity building and building the system up, which I applaud. But while you're there doing that, if you can also do something powerful for a single person that's hugely important. The act of doing it is a loud proclamation that an individual human being has infinite value, dignity and worth."

Anaesthesia Associates: The UK experience and some lessons learned

Originally published in the Australian Society of Anaesthetists March 2025 Magazine. Republished with permission.

For the uninitiated, Anaesthesia Associates (AAs) are non-physician providers of anaesthesia in the UK, forming part of the group known as medical associate professions (MAPS)[1, 2]. It is no exaggeration to say that this topic is one of the most divisive issues in UK Anaesthesia.

There is not space here for a forensic analysis, but other accounts are available. Whitaker[3] provides a political view and in recent weeks, Greenhalgh[4] and McKee and colleagues[5] have published thorough and compelling systematic evaluations of how we got to where we are. These should be viewed as essential reading. What follows is an outline of the key milestones leading to where we are, with some thoughts about how antipodean colleagues might avoid some of the pitfalls (although I make no promises...).

The model of non-physicians providing anaesthesia is clearly not new and exists all around the world in various forms. However, in the UK, beginning with the inception of the Association of Anaesthetists in 1932, anaesthesia has progressed from being not even recognised as a specialty to being one which is provided by specialist doctors, based upon an established system of undergraduate study in medicine and post-graduate training and exams within a college framework. Anaesthesia has an undeniable and very much envied reputation for safety first. Consequently, anything seen to reverse the existing model always had potential to cause upset, and with hindsight, perhaps that potential was unrecognised.

In the early 2000s, some UK anaesthetists began to be interested in developing non-physician anaesthesia provider roles and established local schemes under entirely local governance. This was by definition the province of enthusiasts, often in areas where physician cover was hard to recruit. These practitioners progressed to undertake a wide variety of anaesthesia procedures (including general, spinal and regional anaesthesia) under a variety of supervisory models. It is clear that many had great autonomy and became very experienced at their particular niche, working in what we would now term an extended role. However, they did not belong to any recognised staff group and their practice was unregulated, unlike any other group that provided direct health care interventions.

In time, a small number of universities went on to develop courses for AAs. Entry requirements are a health science degree or work in an allied health professional role, so commonly learners are drawn from occupations such as physiotherapy or operating department practitioner (in itself controversial by dint of taking away from cohorts with their own workforce pressures). The two-year degree is undertaken whilst working in a trainee AAs role in an employing hospital. Teaching is delivered locally and using online resources with workplace-based assessments, which some have criticised for the lack of independent verification of clinical competence. The

majority of time is spent clinically, gaining practical experience. At the end of the course, there is a final examination undertaken at the base university.

Nonetheless, most UK anaesthetists remained unaware of AAs and for many, the first they heard was in 2016 when the Association of Anaesthetists (of Great Britain and Ireland) and the Royal College of Anaesthetists issued a joint scope of practice document for AAs (now archived). This described the scope only at qualification, leaving it clear that pending national guidance, any extended roles would have to be under local governance.

The then absence of a mandatory register meant that the exact number of AAs working was not known, but there were fewer than 200. All might have continued quietly but for a perfect storm of circumstances, the first of which has nothing to do with AAs, but has to be taken into account.

This first circumstance was an agitated physician workforce. Several years of austerity with below inflation (sometimes zero) pay awards to doctors had led to a real terms decrease in salary from 2008 to 2022 of 20-30% for all grades of doctors, worse than for every other group of UK workers. For resident doctors, this also came on top of typical student loan debts of £80-100k, which would sap typically 6% of their income for most of their career. There were also severe bottlenecks in training, meaning hundreds every year could not progress and had to follow other career pathways or consider emigrating. For many locally employed doctors, it simply reinforced their feeling of being overlooked and exploited for service. This heralded a period of anger and unprecedented industrial action amongst doctors.

The second circumstance was the launch by the UK government in 2023 of its Long-Term Workforce Plan[6]. Amongst the document's many initiatives was an announcement to increase the number of AAs by 2000, albeit over a decade. There was no similar plan to increase training places for doctors. This was a red rag to a bull. For many it cemented the belief that the whole MAP programme was simply designed to replace doctors with cheaper non-doctor alternatives. As resident doctors were quick to point out, AAs do not incur any student debt from their course and are employed throughout training and if employed on a typical pay scale, would be in a better financial balance than a resident doctor for many years, leading many residents to question the balance of their personal investment versus reward. Added to unresolved worries about scope of practice and supervision, the die was set for conflict, played out in a fierce and often unpleasant battle on social media.

The debate was extremely polarising, with one extreme calling for the abolition of AAs entirely and the other pointing to the very successful schemes in place and to the need to get spiralling waiting lists under control. Some saw the government trying to do medicine on the cheap, some saw a means to provide health care in a locally responsive way. Some saw protectionism for doctors' jobs, others argued that what was being protected was the profession of anaesthesia.

The ultimate destination was an emergency general meeting of the Royal College of Anaesthetists, called by members making use of its rule- book[7]. Two of its resolutions specifically related to AAs: a pause on recruitment and a resolution that local opt-outs of national supervision standards were not supported, pending the onset

of regulation and the publication of a full national scope of practice. This led understandably to much doubt over the future of the AAs project.

The 2016 document had highlighted the lack of and need for regulation and for a national scope for extended roles. This vacuum created concern on all sides. It was expected that when a regulator was appointed, they would issue such guidance. Ultimately, this turned out not to be the case and it fell substantially to the Royal College of Anaesthetists to do this work, by which time much ground had been lost.

Regulation (of both MAPs and the curricula for their courses) eventually began in December 2024, enshrined in legislation which cements the MAP roles in law[8]. Legislation was passed using a statutory instrument, which drew some criticism as it was not honed by debate in parliament. The choice of the General Medical Council as regulator has been controversial, it having been a regulator only of doctors since its inception in 1858. This controversy is currently the subject of legal challenge[9].

Coinciding with regulation, the Royal College of Anaesthetists published its 2024 interim scope of practice for AAs[10]. The scope tries to navigate a tricky course, providing a safe scope for a non-medical workforce, one which is acceptable to supervising doctors but cognisant of the effects of a somewhat more limited scope than many originally envisaged. In keeping with the firmly-held views mentioned earlier, to some the scope is too restrictive, to others not restrictive enough. But to the majority it seems to have been accepted, if not welcomed, as a pragmatic starting point in an impossible situation, which will be subject to review and refinement in the light of future evidence.

This is far from the end of the AAs story; quite the opposite. Although the 2024 scope document was always for an early review, this will happen even sooner because the UK government has now, two decades after creation of the role, announced a formal review of the safety and place of MAPs[11], set to report in the spring. Who knows what it will conclude? Everyone looks likely to have to reconsider their position when it reports.

So what lessons are there for a government or health care system wishing to explore the introduction of AAs or an equivalent role? Doctors and policymakers will each have their own agenda, which should be anticipated. Occupants of the new role, once created, will also have theirs. Each of the paragraphs above has a lesson. Some could have been predicted, others were a product of circumstance, but all of them would be best avoided if re-running the project. There are specific important areas that should be addressed right at the outset to ensure they are understood and agreed by all parties: the purpose of the proposed role; the proposed scope of practice; the proposed model of supervision; and how medicolegal liability will be addressed.

“My takeaway is that we have done everything in the reverse order that should have happened”

The Association of Anaesthetists has been involved in all the key stages and has issued position statements along the way[12, 13]. We had two representatives on the Clinical Reference Group and Core Writing Group for the 2024 scope and we endorsed the document[14]. The involvement of anaesthetists' professional membership organisations such as ours and the Australian Society is vital.

For me, the biggest overarching lesson comes from considering the order of events in the UK:

1. Enthusiasts develop the AAs role;
2. Higher education courses are designed and implemented to support the role;
3. The first scope of practice is written;
4. A regulator is appointed;
5. Legislation is passed enshrining the role;
6. A government review into the safety and place of AAs and other MAPs is launched.

My takeaway is that we have done everything in the reverse order that should have happened and looking around me, to coin a punchline, "If I wanted to get there, I wouldn't start from here."

I wish you luck on your journey!

Dr Tim Meek
President, Association of Anaesthetists, UK

COI : TM was a member of the Clinical Reference Group that advised on the writing of the 2024 scope and of the Core Writing Group that produced it.

References

1. https://www.healthcareers.nhs.uk/explore-roles/medical-associate-professions
2. https://www.rcoa.ac.uk/training-careers/working-anaesthesia/anaesthesia-associates
3. https://www.newstatesman.com/politics/health/2024/08/medicine-wars
4. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5120160
5. https://human-resources-health.biomedcentral.com/counter/pdf/10.1186/s12960-024-00966-1.pdf
6. https://www.england.nhs.uk/publication/nhs-long-term-workforce-plan/
7. https://www.rcoa.ac.uk/news/outcome-rcoa-extraordinary-general-meeting-17-october-2023
8. https://www.legislation.gov.uk/ukdsi/2024/9780348255195/contents
9. https://www.pulsetoday.co.uk/news/regulation/legal-challenge-calling-for-gmc-to-set-pa-scope-passes-first-high-court-hurdle/
10. https://www.rcoa.ac.uk/training-careers/working-anaesthesia/anaesthesia-associates/interim-anaesthesia-associate-scope
11. https://www.gov.uk/government/news/new-review-of-physician-and-anaesthesia-associates-launched
12. https://anaesthetists.org/Portals/0/PDFs/Briefings/Anaesthesia%20Associates%20position%20statement_August_2019.pdf?ver=2019-08-28-205449-483
13. https://anaesthetists.org/Home/News-opinion/News/Position-statement-on-Anaesthesia-Associates
14. https://anaesthetists.org/Home/News-opinion/News/Association-statement-on-Anaesthesia-Associate-Scope-of-Practice-2024

Sharing our findings to improve outcomes

With 2024 John Ritchie Prize Recipient Dr Adele Macgregor.

Dr Adele Macgregor was awarded the 2024 John Ritchie Prize for her presentation *'Determining effect of ethnicity and parity on utilisation of obstetric epidural: a retrospective audit'* submitted for the Aotearoa NZ Anaesthesia ASM.

Adele shares what motivated this research, leading her first research project from conception to completion as a trainee, and why research is so important to her practice.

What influenced your choice of topic for this study?

We wanted to find evidence to determine whether Christchurch was providing an equitable service for all wāhine. Our clinical observations and conversations between practitioners led us to believe there may be differences in who has access to epidurals. We wanted to initiate that discussion and ensure that the way care is delivered in Christchurch does not create barriers to accessing epidurals for any patient.

I also noticed huge variations in what education patients have received about pain relief options during their pregnancies. In the epidural consent process, the first question I like to ask a birthing parent is how much they have learned about labour analgesia options throughout their pregnancies. Clearly, it's not ideal to provide that education while they are in labour. However, there is considerable variation in the information our birthing parents are getting.

What inspires you to get involved in research?

The central role it has in improving patient outcomes is what drives me. We can hypothesise and make all the assumptions we want in our day-to-day clinical practice, but without research to back those hypotheses, it's really hard to make changes and improve outcomes. Especially for our vulnerable populations.

Although I don't have a natural aptitude for research, I see it as central to my clinical practice. Learning how to do these studies well and in a culturally sensitive way is one of the most important things I can do to improve outcomes for my patients.

Has your research influenced your practice?

This study has significantly influenced my daily practice by ensuring I reflect on myself and my biases. Particularly when we engage in conversations or handover

about individuals—their background and experiences during their antenatal journey may affect their current experience. For women, especially younger women, pregnancy and birth are often the first time they spend considerable time in our health system as patients. Having a positive experience where they are treated fairly and listened to can influence their future interactions and those of their children moving forward.

Why did you submit your abstract for this study to the 2024 Aotearoa NZ Anaesthesia ASM?

I believe it's important for us to share our research findings with our population of practitioners, otherwise, what's the point in doing the research? Not sharing our findings can exacerbate inequities. We've found inequity and if we want to see change, we should all be considering if our practice could be contributing to this. Hopefully this might lead to more research in the area, educational resources for Māori and Pacific peoples or more conversations.

As a junior researcher, it also helps me develop more of an understanding of what good research looks like. Not doing research well can also lead to worsening equity and I want to do the best I can for the populations I'm asking questions of.

How do you juggle your research and training commitments?

It has been challenging at times. Setting realistic expectations has been important and approaching it in bite-sized chunks has helped. I've utilised time between my primary and final exams to do this latest project.

I've been involved in two other research studies, but this is the first I've taken from conception to completion. Where I've designed and led the project myself with lots of help. I've had a great team who've been patient with me and not put too many timelines on things, which helped. I've also had an incredible statistician, which I am grateful for, I would never be able to achieve the quality of results myself. It's important to find the right people and we've got some really supportive people in Christchurch who have been great at letting me borrow their time.

Any tips for other trainees considering research or their required audit for training?

Finding a project you're passionate about and are experiencing during your day-to-day clinical practice makes it easier to form hypotheses and develop ideas. As well as focusing on something you want to learn more about, and an area where you want to make improvements. This has really driven me. I have a little previous experience in investigating Māori health, but through the results of this study I've learnt a lot more about our Pacific populations. It has led me to discuss the results with Pacific health workers in Christchurch to learn about what might have contributed to our findings, which has been valuable in informing my own clinical practice.

You're moving to the next phase of the project, do you have an outlook of what you hope to achieve by the end of this next stage?

The results of our study showed the difference isn't as large as we expected, for multiple reasons, which is good. What we didn't expect is that there is a big difference between Pacific peoples but not so much with Māori.

The next step is to have a discussion with women birthing in both primary and birthing centres, to ensure that they have had enough information antenatally to feel as though they could make an informed choice about their labour analgesia options.

The main thing I'd like to learn is what access women in Christchurch have to antenatal education. To get a good understanding from those who want antenatal analgesia information, what information is out there, where people are accessing it, if they know where to find it and how robust it is. To understand the barriers and if the information they're being given is balanced and evidence-based.

We want to ensure that their preferences and needs are respected and prioritised. We, as practitioners, should not let our own bias influence the care they receive, and we want to ensure that there are no systemic barriers preventing a patient's preferences for labour analgesia from being central to the care they receive.

Removing the leaks

Decommissioning reticulated nitrous oxide

Dunedin leads the way in reducing environmental harm without reduction in clinical care.

- **Medical and anaesthetic gases are the fifth highest greenhouse emission source within health New Zealand Te Whatu Ora.**
- **Of these, nitrous oxide is the most significant contributor.**
- **The vast majority of reticulated (piped) nitrous oxide never reaches a patient but leaks into the atmosphere.**
- **Supplying nitrous oxide to patients from point of care cylinders will reduce waste, and environmental harm.**

One of the most potent greenhouse gases, nitrous oxide, is piped throughout many of our hospitals. This isn't news and once upon a time, it made sense to deliver it in a similar method as water, electricity and natural gas. However, unlike water and electricity, its use has substantially declined, and recent evidence confirms reticulated systems are prone to substantial leakage.[1]

Hospitals in the UK, US, Australia and here in Aotearoa are starting to decommission these reticulated nitrous oxide systems and move to point-of-care cylinders. An easy environmental win that maintains clinical choice.

Global Warming Potential (GWP) measures a greenhouse gas' ability to trap extra heat in the atmosphere compared to carbon dioxide, over 100 years. Nitrous oxide has a GWP of 273, meaning 1 tonne of nitrous oxide released into the atmosphere would create the same warming as 273 tonnes of carbon dioxide. Plus, it's an ozone-depleting gas with an average atmospheric lifetime of 110 years.

It's a big contributor to the carbon footprint of healthcare too. Health New Zealand Te Whatu Ora's Greenhouse Gas Emissions Inventory for the year 2023-24 lists medical gases and anaesthetic vapours as its fifth-highest emission source. It also calls out nitrous oxide as its highest direct greenhouse gas emission of all medical gases and anaesthetic vapours.[2]

Dunedin Anaesthetist, Dr Matt Jenks became aware of nitrous oxide's contribution following a full carbon footprint assessment of the Southern DHB in 2016-17. The assessment showed anaesthetic gases were the second largest source of greenhouse gas emissions in their district at 12%. The vast majority of this was coming from the large G cylinders feeding the reticulated nitrous oxide supply at Dunedin Hospital.

"We used 328 size G cylinders at Dunedin Hospital that year" Matt shares. "That's the equivalent of about 3,000 tonnes of carbon dioxide. Or about 17 million km driven in a car. That's a huge carbon footprint from nitrous oxide alone. Then when I benchmarked our use against other hospitals and the number of patients treated in our catchment, we were an outlier, using far more."

Matt presented his findings to the Facilities Team who tested the reticulated system. Initial pressure testing of the pipe network found no leak. However, when the wall

outlet seals in clinical areas were replaced, the results were noticeable.

“I’ve collected nitrous oxide cylinder use data each year since that carbon footprint report in 2016-17. We went from 328 size G cylinders per year to 56, just by replacing those outlet seals. A reduction from 3,000 tonnes of CO2 equivalent to 500. About the equivalent of 14 million fewer km driven in a car each year. It saves us about $150,000 per annum in terms of the cost for those cylinders.”

“The key distinction is the difference between cylinder use and clinical use. Cylinder use was much higher, only a small portion of what was being purchased was being used clinically, the rest was leaking.”

At around the same time, work in the United Kingdom was emerging that resonated with Matt. That 83-100% of nitrous oxide in the NHS’ manifold systems was leaking out to the atmosphere before reaching point of delivery.

“It was the same experience we had, and they were looking to decommission their reticulated networks. We hadn’t considered decommissioning in Dunedin but in 2022 and 2023 our G cylinder use tipped up to 83 cylinders. We could either go through the process again to try and find the leaks or go straight to decommissioning the system.”

Matt then worked with Heads of Departments still using reticulated nitrous oxide to consider moving to point-of-care cylinders. “It isn’t about removing this option for patients, but providing other, less wasteful, ways to get the nitrous oxide”, Matt explains. “That’s smaller bottles where and when you need them. Many were already doing this.”

Changing to point-of-care wasn’t an option for maternity due to their high use of nitrous

oxide for labour analgesia and occupational health and safety concerns around swapping large D cylinders. “For the paediatric and ED departments, the transition was straightforward”.

“It was also a little trickier for our operating theatres because we’re across multiple levels with different types of anaesthetic machines, so I took the de-reticulation proposal to the department. They could see the benefits and supported the change.”

“We started with a three-month pilot where we disconnected the machines from the wall in the anaesthesia department and trialled a point-of-care small cylinder system. With no major issues during the pilot, we removed the pipes to the machines altogether. Then in May 2024, we turned off key points in the system, de-reticulating all areas except maternity.”

“The hardest part has been determining how to measure what’s left in the point-of-care cylinders. Because nitrous oxide is a liquid that turns into vapour you can’t watch the pressure gauge like other gases. Our current solution for our main operating anaesthetic machines that have a yoke for the smaller

A cylinders is to have a backup immediately available. In our remote locations with machines that don't have a yoke and require a bigger D cylinder, we weigh the cylinder to estimate what's left and replace it as required. This is done by the Technicians scanning a QR code and typing in the weight after each use."

"We'll refine the system as we go but we just aren't getting through them. Since we went live in May last year the day surgery unit, maternity operating theatre, and radiology haven't had to replace a single D cylinder. The day surgery cylinder is the lowest at about 60% full."

"We'll know more later this year to understand how much our cylinder use has changed but we have significantly reduced the areas where the pipes can leak by decommissioning them and are hoping to see a significant drop."

"The decommissioning of nitrous oxide at Dunedin Hospital would not have been possible without the amazing support from our anaesthetic technicians, facilities team and my colleagues".

Portable D cylinder with QR code attached for technicians to upload cylinder weight.

Both Burwood and Riverside Theatre Block in Christchurch have recently switched off their systems too.

The decision has been made not to reticulate the New Dunedin Hospital. Aside from the maternity unit. "This was a daunting decision at the time and wasn't the norm" Matt explains, "but since then guidelines and position statements from Australia and the UK no longer mandate reticulated nitrous oxide. The Royal College of Anaesthetists state that reticulated nitrous oxide is no longer essential"[3]. These movements back up our decision here for the New Dunedin Hospital."

"It makes sense that de-reticulation is an anaesthesia-led change as historically we were the main user of nitrous oxide along with maternity services. Various other centres have asked about doing this in their hospital too, and there is a massive movement in Australian hospitals. There's so much to be gained – we will continue to have the option to use nitrous oxide for patients but reduce the amount wasted – an environmental win and a cost-saving win with no reduction in the ability to provide care."

1 Liu Y, Lee-Archer P, Sheridan NM, Seglenieks R, McGain F, Eley VA. Nitrous Oxide Use in Australian Health Care: Strategies to Reduce the Climate Impact. Anesth Analg. 2023 Oct 1;137(4):819-829. doi: 10.1213/ANE.0000000000006620. Epub 2023 Jul 20. PMID: 37471292

2. Health New Zealand Te Whatu Ora. Greenhouse Gas Emissions Inventory Report - FY2023/24 Baseline year + 1 (23 October 2024). https://www.tewhatuora.govt.nz/publications/greenhouse-gas-emissions-inventory-report-fy202324.

3 Royal College of Anaesthetists, Association of Anaesthetists, The College of Anaesthesiologists Ireland, Association of Paediatric Anaesthetists of Great Britain and Ireland, Obstetric Anaesthetists' Association. Consensus Statement on the Removal of Pipeline Nitrous Oxide in the United Kingdom and Republic of Ireland. July 2024. https://rcoa.ac.uk/sites/default/files/documents/2024-07/Consensus%20statement%20on%20removal%20of%20pipeline%20nitrous%20oxide.pdf

An update from Te Tāhū Hauora

Health Quality & Safety Commission

Te Tāhū Hauora
Health Quality & Safety Commission

New Zealand Trauma Registry and Trauma National Clinical Network: Annual Trauma Report

The Trauma National Clinical Network annual report for 2023/24 shows the lowest fatality rate for major trauma since the New Zealand trauma system was established in 2012.

This work is led by Health New Zealand | Te Whatu Ora, partnering with Te Tāhū Hauora Health Quality & Safety Commission, the Accident Compensation Corporation, and NZ Transport Agency Waka Kōtahi.

Key achievements highlighted in the annual report include:

- A continued decline in the fatality rate from major trauma. In 2023/24, 172 New Zealanders died from major trauma, with a case fatality rate of 6.5 percent. This is the lowest rate since the New Zealand trauma system was established over 10 years ago. The fatality rate has decreased across all age groups, with a notable reduction in mortality in recent years for those aged 65-79 years.
- Mortality from haemorrhage remains low. Haemorrhage is the primary cause of death in major trauma that is potentially preventable with optimal care processes. The proportion of deaths due to haemorrhage has continued to remain low since the introduction of the critical bleeding quality improvement programme in 2020 (4% in 23/24 vs 13% in 2020/21). (Find out more about the National critical haemorrhage project)

Read the Annual Trauma Report on the Health NZ website

Improving sepsis care in Aotearoa

We are working with ambulance providers (Hato Hone St. John and Wellington Free Ambulance) to create a first responder sepsis pathway tool.

The team will also update the pre-hospital sepsis tool, so it is aligned with the updated inpatient sepsis clinical pathways for adult, maternity, and paediatric patients.

Find out more about our work to improve sepsis care.

Anticoagulation Stewardship Programme (ACSP) summary report

The Anticoagulation Stewardship Programme was initiated in 2022 to improve the safety and effectiveness of anticoagulant use in Aotearoa New Zealand's healthcare system.

We've published a report presenting the main findings from testing in four hospitals across the country and outlining recommendations for future implementation and sustainability.

Read the Anticoagulation Stewardship Programme summary report December 2024

Collaborating for quality: a framework for clinical governance

We have been actively engaging with the health and disability sector socialising the "Collaborating for quality: a framework for clinical governance" since we launched the updated framework last November.

This has included being part of a Health New Zealand Clinical Governance working group, and socialising the framework with organisations such as the NZ Blood service, West Coast Health, Te Piki Oranga, and the Nurse Executive Aotearoa New Zealand.

Our one hour online clinical governance workshops cover how this framework differs from the 2017 framework, and how you can work through what clinical governance means to you within your clinical context.

Please contact us to request a workshop: Info@hqsc.govt.nz

Subscribe to the Te Tāhū Hauora newsletter or follow us on LinkedIn, Facebook, and Instagram.

The New Dunedin Hospital

With Clinical Transformation Group Chair Dr Sheila Barnett

The New Dunedin Hospital offers a unique opportunity to start completely new and design a more fit-for-purpose, future-ready hospital without the restraints of an old structure.

Now scheduled for completion in 2026 (Outpatient Building) and 2031 (Inpatient Building) the 'project' has utilised user engagement and clinical insight in various forms since its early inception. The Clinical Leadership Group (CLG), formed in 2017, developed the original overarching clinical and operational direction that fed into the early stages of the new hospital design. Now it is known as the New Dunedin Hospital Clinical Transformation Group (CTG).

CTG Chair, Dunedin Anaesthetist, Dr Sheila Barnett, describes the CTG as a clinical peer review group for the project. "Our overall aim is to make sure we've got a balanced product at the end of it. To inform the New Dunedin Hospital Project Team on how the design and digital work align with clinical and service needs and fit with what the building is designed to do. More recently the group provides clinical stewardship for the transformation and transition towards moving in, reflected in the name change."

Who are the Clinical Transformation Group?

The group represents a broad range of staff – clinical, administrative, service management, nursing and allied health, as well as consumer group representatives.

Sheila became the Chair in 2022, but her involvement started in the early stages

of the project "I was the day surgery unit clinical lead at the time and first got involved in sense checking the number of operating theatres proposed. I saw it as a good opportunity to get involved in something really special. My involvement has grown over time and I now hold a 0.5FTE position as Chair, in addition to my clinical work"

In the early stages of the design there were 50 user groups with more than 500 users across staff, consumer and patient representatives. Engagement was coordinated by a Southern Project Management Team.

"The range of voices has been valuable in this" Sheila explains. "Staff met directly with project managers and health architects to work through their units together. They'd share insight into what would work best and what should sit beside what. It was a unique model of user engagement and new to many of the architectural team."

"In the design stages, the original CLG were the clinical gatekeepers. We received design requests from our clinical colleagues, checked with experts, national guidance and literature, and then provided a recommendation for the project."

"A key part of the job has been balancing the traditional view of clinical advocacy (fighting for the best outcome possible from a clinical perspective), with the full realities, complexities, and restraints of such a large project. It's been a very different experience for me."

The CTG continues to advise on the redesigns, but time restrictions have inhibited the extent to which the user groups could be involved in the 2022 and 2025 redesigns, compared to the early stages of the project.

"User engagement has been more limited through the subsequent redesigns, but the historical user input has been retained in documents and plans. We have continued more targeted consultation with key operational and clinical leads for each area."

Over the years, when large scale cuts were proposed, the CTG submitted clinical impact statements for each of the proposed redesigns.

"These are large reports we compiled in partnership with our Southern Project Management, and operational and clinical colleagues. It was important that decision makers understood the clinical consequences, costs down the line and operational impacts of each decision. We reported to the project leadership and, by invitation, communicated directly with the Ministers of Health and Finance. These reports have been an unexpected role our Southern team had to fulfil and a huge task over a short amount of time. Together with the campaigning by the Southern community, we believe that they have directly contributed to scaling back or reversing many of the proposed cuts."

"It's been a long journey with design reworks, repeated reviews, and changes of government, but we are confident the New Dunedin Hospital is better for the consistent Southern engagement that we have brought."

Designing a future fit hospital

Describing the hospital as a 'complex machine' Sheila points out how being future fit is mostly about efficiency and patient flow. "Keeping patient flow moving, letting spaces flex to accommodate variable demand, and being adaptable for future changes in use."

"Our [the Southern team's] general principle has been 'long life, loose fit'. We keep this in mind for every area - What does this space need to do now? Can it be made flexible for other uses? What might it need to do in the future? Is there anything we're doing that's going to disrupt future flexible use? Everything else is mobile, flexible and changeable."

"The Australasian Health Facility Guidelines (AusHFG) is a 'recipe book' of standard components that is informed by clinical experts, health planners and health architects. We've followed this as a base unit unless there's been a good reason not to. Then applying the Dunedin and Southern context and considering the potential future use to guide our recommendations."

"One example of this was recommending lift sizes. The Health Technical Memoranda provided UK-based international lift sizes that are quite old, and the ICU group was concerned they were too small. So they mocked up a lift with clinical scenarios and found they couldn't safely manage certain patient groups in that size of space. CTG took the recommendation back to the project and key lifts were upsized."

"We've also looked at emerging technology, national guidance, and local expertise and taken a lot of learning from previous builds

Image supplied.

in other locations by watching how they've aged over time."

Future-proofing the theatres

"Future-proofing the theatres has been about improving efficiency by utilising turnover times, reducing potential bottlenecks and standardising the theatres themselves."

"Making spaces like the pre-op holding and post-op care as flexible as possible will improve patient flow and efficiency on the theatre floor by allowing us to share the space. We've allowed for the pre and post-op areas to be co-located and the bays to be multipurpose for different stages of a patient's journey so we can flow into each other during busy times of the day and flow back when it's quieter."

"We've also prioritised spaces like set-up rooms that facilitate parallel tasking in areas as throughput driven as theatres."

"The 23-hour unit will also be on the theatre floor. It will offer short overnight single-stay care for predictable elective surgery, but those beds could also be stage 2 or 3 recovery beds offering continuous flexibility of spaces."

"All of the theatre suites will be the same size and orientated in the same way with the ability to facilitate all orientations. This standardisation will allow them to be easily switched to a different specialty in the future if needed."

"As the day surgery lead I have a particular interest in the day procedure unit. This will be four theatres and four procedure rooms in the outpatient building and I think it has the potential to become semi-autonomous - where day surgery is a speciality in itself. We have a great day surgery team already and I'm looking forward to being able to provide really positive patient care with them. Where there's a sense of wellbeing for our patients associated with coming in for your procedure."

"At the moment we have a small day surgery unit, disconnected from other perioperative areas. The theatres aren't big enough to do the work we need them to do and there are inefficiencies in patient flow.

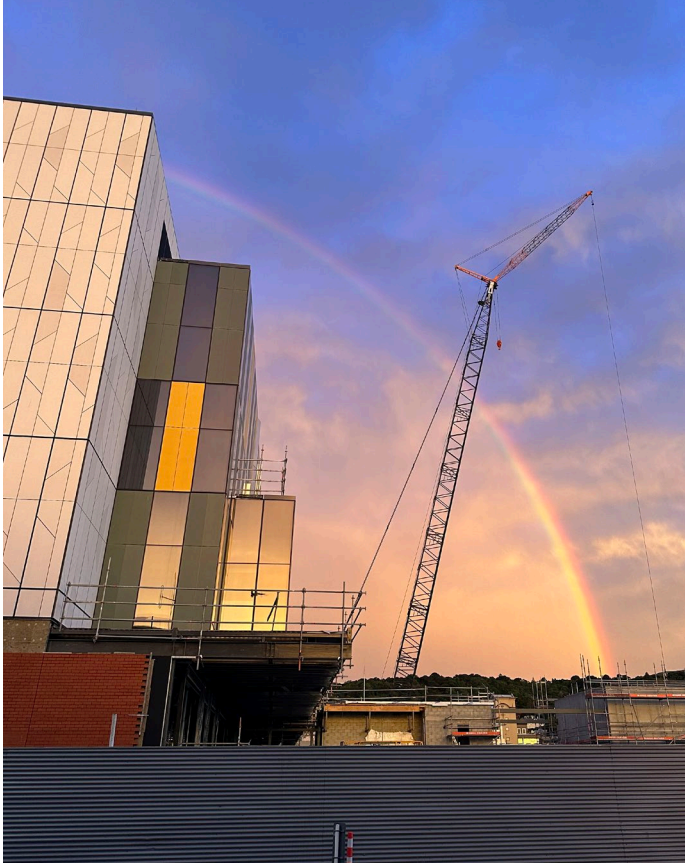


Image supplied.

How will this improve healthcare in Dunedin?

The flexible spaces will allow Dunedin to move and embrace future models of care.

“A key benefit of designing a whole hospital, instead of one department or block at a time, is that we can design a unified building that’s fit for purpose. Departments are purposefully located to optimise efficiency of movement and patient flow. Dedicated facilities, like the 23-hour and day surgery, will enhance elective surgery, allow us to do more complex operations and help a wider range of patients.”

“The patient spaces have all been designed with a balance of safe oversight and privacy. The majority of the patient rooms will be single rooms with an ensuite and a pull down bed for a family member, which will make a world of difference in patients’ experiences.”

“We’ll also be fully digital when the inpatient building comes online, documenting patient information and their stage in their journey more visibly, coordinating care appointments (both were key issues identified by our consumer reps) and automating our inefficient paper trails.”

“Other digital solutions include the use of automated dispensing cabinets throughout the entire hospital which should reduce drug errors and better protect staff. As well as patient check-in kiosks, digital wayfinding and digital scheduling for outpatient clinics.”

“So much of this is going to be a game-changer.”

A new view and the final outcome

“Through this work, I’ve gained a real appreciation for the complexities of running the hospital, how everything works together and for my colleagues, particularly service managers and general managers. We’re all a small cog in such a big machine.”

“I also have a deeper understanding of getting involved in change and finding a way through an issue by breaking it down into manageable steps and identifying who we need to talk to in a productive way. And a little more about media and politics.”

“We’re pleased with the outcome of the most recent announcements. It was the best result we could have hoped for. We’re building the New Dunedin Hospital and we’ve gained back some of the space we lost a couple of years ago. There is some redesign to come and compromises will need to be made, but overall it’s a very good outcome for this stage in the game.”

“The outpatient building is taking shape now too. It’s looking really good and I know people will be pleased to see activity restart on the inpatient site after all we’ve been through.”

Real World Anaesthesia Course, Christchurch, September 2024

Dr Shona Bright
Consultant Anaesthetist, Royal Perth Hospital

It felt like winning the golden ticket. I had set multiple alarms on my phone to make sure I was online and ready when applications opened for the 2024 Real World Anaesthesia course (RWAC) in Ōtautahi Christchurch. The COVID-19 pandemic had forced a three-year hiatus on the course delivery, leading to a huge demand and interest in this course. And with very good reason. This turned out to be, hands down, the absolutely best five days of post-fellowship education I have encountered.

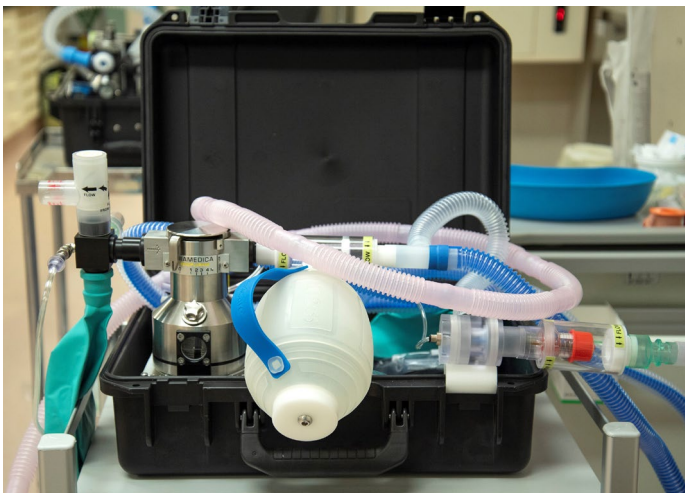
The RWAC has its origins in Tasmania in the late 90s. Drs Haydn Perndt and George Merridew had originally called it the Remote Situations, Difficult Circumstances, Developing Country Anaesthesia (RSDCDCA) course. Understandably, in due course, a name change was required. 'Real World' refers to the reality that 75% of the world's population live in low- and middle- income countries. Our anaesthesia training in rich countries such as Australia and New Zealand, is undertaken with automated end-tidal control software, state-of-the-art ventilation workstations, modern videolaryngoscopes and now, even AI-enabled ultrasound imaging systems. This does not prepare us for work in the Real World. Without pressurised gases and electricity, the 'modern anaesthetist' is up a creek without a paddle. Lack of fancy toys aside, there is still a great deal more to working in the Real World that is uncovered in this course – communication, culture and ethics to name just a few topics.

This was the fourth time that RWAC has been held in Christchurch. The first being not long after the devasting earthquakes of 2011. Just being in the city was inspiring. There is still evidence of damage to buildings and infrastructure, but the resilience of the people and the revitalised buildings everywhere made it a very exciting place to be. The tenacity, perseverance and grit of the city was evident everywhere. Visiting Christchurch in spring was also a delight. The gardens, the blossoms, the crisp air and the perfectly sunny spring days were refreshing. The city was buzzing with energy whilst also being surrounded by the tranquillity of nature. If you haven't been to Christchurch before, it should be on your to-do list. There is so much to see, do - and taste. The RWAC local faculty were very generous and show-cased their city with extracurricular activities throughout the five-day course, so it didn't feel like we were stuck inside missing anything.

What made this course especially amazing was the faculty. There were nearly the same number of instructors as there were participants, which not only provided incredible opportunities to learn but developed a real sense of camaraderie within the group. The course co-convenors Drs Wayne Morriss, Ron Pereira and James Dalby-Ball were the absolute powerhouses of the course. They were so approachable - nothing was too much trouble for them. They are genuine and humble people, as are the rest of the faculty. Not only were there instructors from New Zealand, there were anaesthetists from around the world – Sierra Leone, Nepal, Fiji, the UK, Darwin and Melbourne.

Instructors of all ages, bringing with them a huge amount of experience, expertise and enthusiasm to the RWAC. All there just for us. Amazing. Programmed throughout the course were presentations by the various instructors reflecting on their own journey and experiences providing healthcare in the Real World. So many stories and insights were shared; they were all truly inspiring. If any of them happen to be reading this – a huge thank you from all the participants. Your efforts were truly appreciated.

The operating theatre sessions for the RWAC were conducted within both the old and new parts of Christchurch Hospital. The remainder of the course was held at a facility called Manawa, right next to the hospital and the Avon River. Meaning heart, patience or breath in Te Reo Māori, Manawa is a brand new, purpose-designed, state-of-the-art health research and education facility. Furthermore, it has a great little coffee shop at the entrance - essential for the jetlagged Aussies within the group! Manawa, the city of Christchurch and the amazing instructors provided the best foundations for a great course. The course content, refined over the last 30 years, is however, the fundamental reason why this course is so good.



One thing I was particularly looking forward to in the course was the in-theatre teaching about draw-over anaesthesia. As a trainee at Royal Hobart Hospital, I had previously had the opportunity to play with the components of draw-over circuitry, but never to a point where I would have felt comfortable actually using it. Getting to do so on consenting adults in a safe, monitored environment was a highlight of the course – well worth the protracted process of getting temporary New Zealand medical registration for it. For the instructors, it was a mammoth logistical task, which was carried out incredibly smoothly. The local anaesthetists tasked with actually looking after these patients were also amazing – they were incredibly obliging as we swanned in, did the fun stuff, then left.

Not only did we each get the opportunity to perform draw-over anaesthesia – we had some epic simulations. I won't provide any spoilers, but they were next level, very creative and a lot of fun. Think anaesthesia crisis with overlaid issues of language, culture and limited resources. Each scenario really put the pressure on, highlighted important non-technical points and provided a lot of opportunity for reflection (and laughs). The Manawa Simulation Centre and staff –

especially anaesthetists Drs Kelly Tarrant and Dan Hartwell, should be very proud of what they have developed – it is truly a world class, high-fidelity sim centre. The real star of the sim sessions, however, was the Oscar-deserving performance by Dr Elenoa Fesaitu, who put her heart, blood, sweat, tears and screams into her simulation. Totally next level!

The course content covered many other aspects of working in challenging environments – equipment maintenance, electrical safety, psychological adaptation, difficult clinical problems, preparing to go, ethics of aid, teaching, and much more. And nothing was sugar-coated. We were put under no illusions that global anaesthesia, whatever format, location or situation – none of it would be a walk in the park. The challenges facing global anaesthesia and surgical care are huge.

Thankfully, in addition to the lectures, workshops, simulations and reflections throughout the five-day course – we were provided with a course manual. This reference book has been carefully curated over the years, and is packed with a lot of useful information, making it an essential travel companion for any expedition.

During the week we were given opportunities to chat, debrief and depressurise with some extracurricular activities. If Dr Bryce Curran ever needs a career change – he would make a brilliant tour guide. He provided us with a running commentary as we bussed through the city and up into the beautiful Port Hills. On a sunny spring afternoon, we enjoyed walking (or running) in the hills, followed by the challenges of a "Clip 'N' Climb" indoor rock-climbing centre and tasting of some delicious local wines. We were totally spoilt. These opportunities really added the right amount of balance to this course.

To finish, I would like to quote three clever people.

Firstly - *"I never went to a course where I enjoyed EVERY aspect of it"*. Dr Michael Kalkoff, RWAC 2024 course participant.

And next - *"We need to advocate, educate and collaborate to provide the best possible care for patients worldwide. There are many opportunities for us to help our colleagues working in the Real World and this course will provide some of the knowledge and skills to make a difference"*. A/Prof Wayne Morriss, RWAC 2024 Convenor.

And last of all - *"Be the change you wish to see in the world"*. Mahatma Gandhi (paraphrased).

As anaesthetists, we have been afforded so much privilege. We've already won the lottery; how about paying some of that forward? Do the world a favour and attend a future RWAC, then get out into the Real World.

Healthcare services for Auckland City's most underserved

Fifty-six – is the average age of death at the Auckland City Mission's Calder Health Centre. 'Homelessness affects people's bodies, and it means we die early' were the words shared by Manutaki - Auckland City Missioner, Helen Robinson, during last year's Aotearoa NZ Anaesthesia ASM Gala Dinner.

The Auckland City Mission - Te Tāpui Atawhai was the official 2024 Aotearoa NZ Anaesthesia ASM charity partner. Their HomeGround building in Auckland City serves as a central community hub offering a wide range of support services in one location including: permanent homes for 80 people; Haeata, a communal dining room providing over 300 people with one hot meal a day; withdrawal services with 15 social detox beds, alongside 10 medical detox beds that are run by Te Whatu Ora; a hub where people can get an assessment of their needs, access to housing support and MSD; and access to a variety of activities grounded in Te Ao Māori including weekly Waiata and Kapa Haka.

It's also the home to the Calder Health Centre, a general practice clinic that provides a range of low-cost health and social services.

The Mission's GM Health Services, Brendan Short, spoke with the NZ Anaesthesia to provide more insight into the unique health challenges and the approach taken by the Calder Health Centre and the Mission's health services to support those in need.

The Calder Health Centre isn't your usual general practice clinic

The people we see often have highly complex needs, impacted by poverty and circumstances that make it difficult to maintain physical or mental health. Many have been excluded from specialist and primary care services for numerous reasons, leading to both latent and acute health issues when they reach us. In addition to physical and or mental health concerns, they often face significant social challenges.

The Calder Health Centre is a VLCA (Very Low Cost Access) clinic and one of the lowest copayment clinics in the country. However, copayment is not a barrier to accessing our health services; we see everyone, regardless of their ability to pay.

Nurse Fiona at Calder front desk.

Our team includes a doctor four days a week, a nurse practitioner five days a week, a nurse prescriber, practice nurses, and a full-time outreach nurse. We also have a part-time mental health nurse and full-time health and social services coordinator.

As a nurse-led practice, the Calder Health Centre offers both booked and walk-in appointments. Around half of our roll of 2,300 are Māori. Standard consultations last 30 minutes, and most patients attend around 7-9 appointments annually - significantly more often than in a typical general practice clinic.

Our services include a lot of what you would expect to see at a general practice, such as bowel screening, vaccines, and sexual health services as well as wound care, which can be difficult for people to manage in unsterile environments. We also offer a podiatry clinic and a minor surgery clinic.

We are able to approach healthcare a little differently from your typical general practice clinic, thanks to the support we receive. This enables us to better meet the needs of the people we see and engage them in healthcare that they might otherwise miss out on.

Navigating the healthcare system can be challenging for anyone, but it's even more challenging for those who are experiencing homelessness, living in poverty, or who carry a mistrust of health and other statutory services due to negative experiences in the past.

Our entire team use a trauma-informed approach. We may not always know the personal histories or triggers people come with. What might seem like a routine conversation to us could be deeply triggering for someone who has experienced significant trauma and had no support to process it. This awareness is integral to how we engage with people to support them to continue receiving clinical care.

It's highly relational work

Two positions less commonly seen in a general practice clinic are our Health and Social Services Coordinator and our Outreach Nurse. Both are highly relational positions.

The Health and Social Services Coordinator supports people to align their health needs and their housing, benefits, and legal issues. This non-clinical role focuses on those with the most complex presentations and ensures they can access outpatient appointments. The role also involves providing a lot of palliative care support.

The Outreach Nurse's primary focus is engaging with our marginalised populations who would not otherwise access support and often end up in the emergency room. By going out to people in the places where they are, whether at pop-up clinics for high-risk groups at the needle exchange, the Auckland City Library, Mission-run housing services, or rough sleeping spaces, the Outreach Nurse encourages people to engage with the healthcare system. While some of these engagements may take place at the Calder Health Centre, the Outreach Nurse will support people to engage wherever they're going to feel most comfortable.

These roles help develop long-term relationships with the people we serve, leveraging those relationships to provide ongoing health support. For example, last year a person came into the clinic with concerning presentations that we felt required specialist support. They were referred to the hospital but went alone, and the appointment did not go well. They left partway through the consultation.
We continued to engage with them through the Calder Health Centre, and the hospital later contacted us to inform us that the person had a significant head injury. The Health and Social Services Coordinator, through the relationship they had built with this person, was able to say, 'I think we need to give this another go, I think we need to get you up there. There's something serious going on. How can I support you to do this?' This is just one example of many similar cases we see.

The Mission provides additional services beyond HomeGround, including transitional housing services. While people accessing these services are not expected to visit Calder, many often do because of the trust and relationships we have built with them. This is especially important for those who have had negative healthcare experiences in the past, and helps us to ensure people continue to engage with the healthcare system.

Dental services are coming!

This initiative addresses a critical gap in healthcare services for New Zealand's most marginalised populations. Many New Zealanders struggle to meet their dental needs, and providing dental services has been a long-held dream for the Mission - to address that gap and engage the people we see in that care.

HomeGround was built with a designated space for dental care, and since mid- last year, we've been working on a project to bring this vision to life. Our business plan has been approved, and we're currently in

the process of purchasing and arranging the installation of equipment. We hope to be operational by July 1st!

The health services we currently provide (including the social withdrawal services) require an additional $1.2 million to operate on top of existing contracts. In the current financial year, the Calder Health Centre is running at a deficit of nearly $630,000, and the social withdrawal services are running at a deficit of just over $530,000. We are able to deliver the services we do and meet these costs, thanks to the generosity of those who donate to the Auckland City Mission.

I include this context to demonstrate why our dental service has been designed using a model that will not add to that financial burden. Financial sustainability is key, and we believe we can achieve this, again thanks again to the generosity of our donors. We have a few dentists who have kindly donated their time, expertise and knowledge. Our scope and services will be based on Work and Income's Immediate and Essential Dental Treatment Grant, which enables a limited range of dental interventions.

We will initially open three days a week and don't anticipate having any difficulty filling our chair. To begin with, we will prioritise those who are already engaged with other services the Mission provides. We are mindful that this small-scale response can't meet the widespread need for accessible dental care in this country, and that's tricky. But we also know that many of the people who will engage with this service are unlikely to have visited a dentist in many years, perhaps since they were at school. Often their issues are exacerbated by their complex circumstances, and they end up in

Outreach Nurse & Health and Social Services Coordinator.

the ED or hospital, which ultimately costs the public system more.

For those who have significant histories of trauma, the thought of engaging in dental care for the first time in decades comes with a lot of apprehension. It will be crucial for us to leverage our relationships to support people into the dentist's chair and provide care that we know will help them feel better about themselves, both physically and mentally.

We see the need daily and understand how difficult it is for people to engage in what is publicly available. When we think about what better looks like, for us, it comes back to getting people engaged in healthcare. Our goal is to contribute to the continuum of care by planning and delivering services that meet their needs. We know this isn't the be-all and end-all of what's required. But we can get it started, make it successful, and then think about what's next.

Guest Contribution

Transforming the Peri-Procedural Experience: Integrating NPHTI Skills into Paediatric Anaesthesia Practice

Dr Natasha Epari

As a paediatric anaesthetist at Perth Children's Hospital and co-chair of the Effective Peri-Procedural Communication (EPIC) subcommittee within the Society for Paediatric Anaesthesia in New Zealand and Australia (SPANZA), my focus is on improving the peri-procedural experience for children and their families.

Recognising the long-term impact medical experiences have on a child's perception of healthcare, I have worked to enhance communication and reduce anxiety. Attending the National Pediatric Hypnosis Training Institute (NPHTI) Fundamentals workshop in November 2023 was a significant milestone, equipping me with new tools to support young patients and their families.

Children and adolescents undergoing medical procedures often feel uncertain and powerless, while caregivers experience stress that heightens overall anxiety. Over the past decade, I have refined my peri-procedural communication skills to improve patient experiences. The EPIC workshop, which combines theory, hands-on learning, and small-group practice, has been instrumental in developing effective communication techniques.

The NPHTI workshop in Adelaide was a natural next step in my training. This internationally recognised programme provided advanced instruction in paediatric hypnosis, expanding my ability to use hypnotic techniques to help children self-regulate, build resilience, and cope with medical procedures. I was eager to explore how hypnosis could be applied in paediatric anaesthesia, and this workshop allowed me to build confidence in integrating these techniques into my clinical practice.

A core principle of paediatric hypnosis is its ability to reframe negative thoughts and behaviours that contribute to anxiety. By employing relaxation techniques, guided breathing, and methods like 'The Magic Glove,' I have helped children shift their focus from fear to positive imagery, leading to more comfortable medical experiences. These techniques also extend beyond medical settings, teaching children valuable self-regulation skills for future challenges.

The small-group component of NPHTI training allowed me to refine my skills and gain confidence in daily practice. Collaborating with peers who share similar goals provided valuable insights and strengthened my ability to teach these techniques to colleagues, promoting their integration into hospital-wide care.

The impact on my clinical work has been significant. Recently, I cared for a six-year-old who initially agreed to inhalational induction but refused the mask upon entering the anaesthetic room. In the past, such a situation might have required premedication. However, by building rapport

and using hypnotic language, I helped reframe her thoughts, allowing her to stay calm and cooperate with IV cannulation using an imaginative technique. Her success empowered her and reset expectations for her family and medical staff regarding what is possible in procedural care.

While Perth Children's Hospital already offers a perioperative anxiety service, my NPHTI experience highlights the value of such programmes for other institutions. A dedicated service would provide children and families with pre-procedure interventions, equipping them with anxiety management tools and a structured plan before hospital admission.

Attending the NPHTI workshop has had a transformative impact on my practice as a paediatric anaesthetist. Training in paediatric hypnosis has enhanced my communication skills, empowered patients and families, and significantly reduced procedural anxiety. It has also given me the confidence to teach these techniques to colleagues, broadening their application across healthcare teams. As I continue to incorporate these methods, I am confident that the benefits will grow, leading to calmer, more resilient children and families navigating medical care.

You can find out more via the following websites and how to register for either the EPIC or NPHTI workshops: www.epickids.org.au I www.nphti2025.au

Bradycardia and asystole in a healthy patient during laparoscopy: a webAIRS case report

Dr Anna Steer, Dr Martin Culwick, and the ANZTADC Case Report Writing Group

De-identified webAIRS incident report

A healthy patient in their mid 40s with a normal BMI was undergoing general anaesthesia for an elective laparoscopic procedure. Shortly after insufflation of the peritoneum the patient developed severe bradycardia. Surgeons were immediately notified and desufflated the peritoneum. Atropine 1200 micrograms was administered intravenously followed by a fluid bolus. Despite these measures, the bradycardia progressed to asystole prompting a Code Blue call and commencement of external cardiac compressions (CPR). The patient had return of spontaneous circulation within approximately 30 seconds of CPR. Following the procedure, the intraoperative events were openly disclosed and discussed with the patient. No adverse outcomes were reported and the patient made an uneventful recovery.

webAIRS reports:

The described case report is one of 35 similar incidents reported to webAIRS since its inception in 2009. The majority of these reports involve healthy, female patients, less than 50 years of age, undergoing elective procedures. A significant percentage of these patients required CPR. While most incidents report no lasting harm to the patient, they remain significant events due to the potential risks involved. It is likely that such incidents are underreported, suggesting that more anaesthetists may have encountered this complication than the data currently reflects. A detailed analysis of events during laparoscopic surgery with an additional focus on the potential equipment faults is planned for 2025.

The Australia and New Zealand Tripartite Anaesthetic Data Committee (ANZTADC) are encouraging anaesthetists to report all cases to webAIRS where an event in this clinical setting has occurred.

Recent safety issue

There has been a recent increase in reports of significant cardiovascular events following insufflation of the peritoneum. Safer Care Victoria has released an alert to hospital and operating theatre staff regarding a potential equipment fault in high flow insufflation units for laparoscopic surgery[1]. Intra-abdominal pressures and CO2 flow rates can be variable when insufflating the peritoneum resulting in both under-insufflation and over-insufflation. Over insufflation resulting in elevated intra-abdominal pressures can lead to severe bradycardia and/or asystole. A/Prof Suzi Nou has encouraged ASA members to report these incidents to webAIRS via a recent video recording distributed via the ASA and various social media outlets.

Perioperative cardiac arrest during laparoscopy

Perioperative cardiac arrest, defined by five or more chest compressions and/or defibrillation in a patient having a procedure under the care of an anaesthetist, is an uncommon but significant complication of anaesthesia[2, 3]. The recent National Audit Project 7 report highlighted bradycardia as the second most common cause of perioperative cardiac arrest[2]. Insufflation of the peritoneum during laparoscopic surgery is a well-recognised precipitant of bradycardia, occurring in approximately 15% of laparoscopic surgical cases[4]. Yong et al. analysed data from the Australian Incident Monitoring Study (AIMS) and identified 14 cases of cardiac arrest during laparoscopic surgery, with bradycardia preceding cardiac arrest in 75% of these cases[5]. Furthermore, Myles reported bradyarrhythmias, including asystole, are common during laparoscopic procedures, particularly during CO2 insufflation or manipulation of pelvic structures[6]. Hoda et al. also reported on asystolic cardiac arrest during balloon insufflation for endoscopic extraperitoneal radical prostatectomy, suggesting a severe vagal reaction as the cause[7]. Hypercapnia, decreased venous return, and vagal response to peritoneal distention are likely precipitants[8]. These studies emphasised the need for awareness among anaesthetists and surgeons of this phenomenon and the potential life-threatening cardiovascular effects[6-8]. Management recommendations include immediate deflation of the pneumoperitoneum, atropine administration and cardiovascular support (5, 8). Whilst there is insufficient evidence to support prophylactic anticholinergic pre-treatment, prompt recognition and management of these perioperative cardiac events results in low morbidity and mortality outcomes[2, 9].

We need your data!

Please report any incident in your anaesthetic practice, including near misses and no harm events to anztadc.net. Your data is de-identified, protected by qualified privileges and will help to further increase patient safety in anaesthetic practice across Australia, New Zealand and maybe world-wide!

1 Therapeutic Goods Administration DoH. Recall Action Notification High Flow Insufflation Unit UHI-4©: Australian Government 2024 [cited 2024. Available from: https://apps.tga.gov.au/.

2. Armstrong RA, Soar J, Kane AD, Kursumovic E, Nolan JP, Oglesby FC, et al. Peri-operative cardiac arrest: epidemiology and clinical features of patients analysed in the 7th National Audit Project of the Royal College of Anaesthetists. Anaesthesia. 2024;79(1):18-30.

3. Bright MR, Endlich Y, King ZD, White LD, Concha Blamey SI, Culwick MD. Adult perioperative cardiac arrest: An overview of 684 cases reported to webAIRS. Anaesthesia and Intensive Care. 2023;51(6):375-90.

4. Dabush-Elisha I, Goren O, Herscovici A, Matot I. Bradycardia During Laparoscopic Surgeries: A Retrospective Cohort Study. World J Surg. 2019;43(6):1490-6.

5. Yong J HP, Runciman WB, Coventry BJ. Bradycardia as an early warning sign for cardiac arrest during routine laparoscopic surgery. Int J Qual Health Care 2015(27(6)):473-8.

6. Myles PS. Bradyarrhythmias and laparoscopy: a prospective study of heart rate changes with laparoscopy. Aust N Z J Obstet Gynaecol. 1991;31(2):171-3.

7. Hoda MR, Friedrichs M, Kummel C, Nitzke T, Popken G. Asystolic cardiac arrest during balloon insufflation for endoscopic extraperitoneal radical prostatectomy. J Endourol. 2009;23(2):329-31.

8. Shifren JL AL, Finkler NJ. Asystolic cardiac arrest: a rare complication of laparoscopy. Obstet Gynecol. 1992;79(5(Pt 2)):840-1.

9. Steer AE, Ozcan J, Emeto TI. The role of anticholinergic medication in the prevention of bradycardia during laparoscopic gynaecological surgery. Aust N Z J Obstet Gynaecol. 2019;59(6):777-80.

webAIRS

WebAIRS is an online anaesthetic incident reporting system for Australia and New Zealand.

We need you to submit your de-identified reports to our database.

By disseminating lessons learned from reported incidents, our team aims to improve patient safety and enhance the quality of perioperative care.

Registering and contributing to webAIRS has many benefits, including;

- Enhanced patient safety
- Professional learning and development through CPD credits
- Data-driven policy and guideline improvements
- Collaboration and knowledge sharing.

To learn more visit www.anztadc.net

WebAIRS is administered by ANZTADC, the Australian and New Zealand Tripartite Anaesthetic Data Committee – a joint initative of the Australian Society of Anaesthetists, the New Zealand Society of Anaesthetists and the Australian and New Zealand College of Anaesthetists.

Australian Society of Anaesthetists®

New Zealand SOCIETY OF Anaesthetists

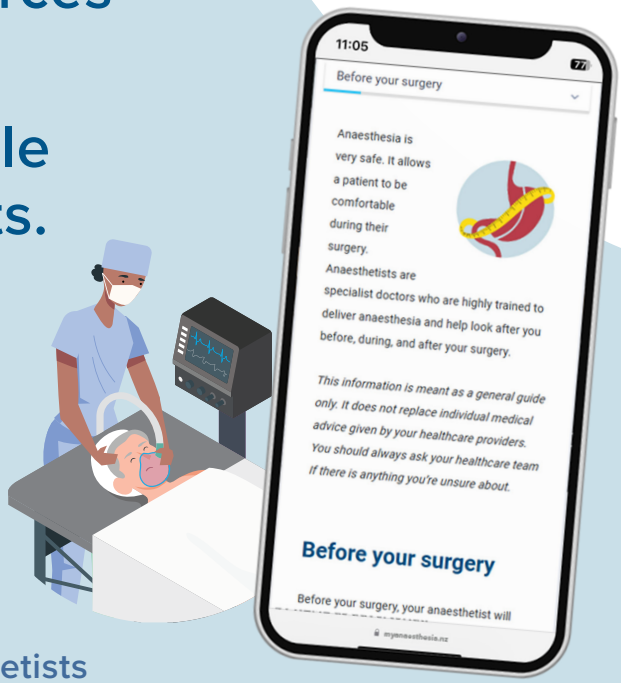
ANZCA Australian and New Zealand College of Anaesthetists and the Faculty of Pain Medicine

myanaesthesia.nz

New Zealand SOCIETY OF Anaesthetists

Patient education resources about anaesthesia.

Free, digital and available for you and your patients.



VISIT MYANAESTHESIA

Provided by the New Society of Anaesthetists