



Interview with a cardiothoracic surgeon, Professor Sean Galvin

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➤ **Chey graduated from the University of Auckland last year, where he was the 2017 Editor-in-Chief of the New Zealand Medical Student Journal (NZMSJ). Chey is interested in pursuing a surgical career where he can incorporate education and teaching. He was invited to provide the inaugural interview as part of the new NZMSJ interview series.**

Prof Galvin is a Consultant Cardiothoracic Surgeon at the Wellington Regional Heart & Lung Unit, Wellington Regional Hospital, New Zealand (NZ). He graduated from the University of Otago in 2002 and obtained his fellowship in Cardiothoracic Surgery with the Royal Australasian College of Surgeons (RACS) in 2012. He is the supervisor of training for Cardiothoracic Surgery at the Wellington Regional Hospital, the NZ younger fellows representative on the RACS younger fellows committee, a member of the RACS Board of Studies for Cardiothoracic Surgery, the RACS NZ regional committee and the Wellington representative on the NZ National Cardiac Surgical Clinical Network. Prof Galvin holds clinical investigator and research positions with the Centre for Translational Physiology at the University of Otago, Gillies McIndoe Research Institute, and Victoria University of Wellington, and is involved with multiple editorial boards in international journals.

You're a cardiothoracic surgeon, so what does that mean and what do you do?

A cardiothoracic surgeon is a surgeon who deals with problems of the heart and lungs. For us, a significant portion of our workload is cardiac surgery, dealing with people with coronary artery disease, valvular heart disease, or thoracic aortic problems. Then another big part of the practice is lung surgery, so managing patients with lung cancer, benign diseases of the lung, mediastinal tumours, and chest wall difficulties or deformities. So in essence, it's pretty much a surgeon who deals with problems between the diaphragm and the neck.

Why did you choose cardiothoracic surgery?

It's a specialty with a good mix of critical care and surgery. It's highly technical surgery, there's a lot of fine motor skills and precision required in the operating room. There's a lot of collateral skills required to look after sick patients. I always enjoyed intensive care, emergency medicine, and cardiology when I was a registrar. Cardiothoracic surgery brings together a lot of those critical care issues in a surgical setting.

What do you most enjoy about your job?

I did a lot of general, vascular, upper gastrointestinal, and hepatobiliary surgery through my training and really enjoyed all of them. In cardiothoracic surgery you make an immediate difference to someone's quality of life. Often people come in with a fairly catastrophic problem or a new and life-threatening diagnosis, and most of them walk out of hospital dramatically better than when they came in. So it's really a dramatic, early effect on people's quality of life. And also, you know, to be able to take someone to the operating room who doesn't have too many other options and make a difference to them is quite important.

What are the challenges you face on a day-to-day basis?

I think some of the big things for us are the new technology, increasing cost of health care, managing more complex patients in the setting of increased resource constraints, and trying to do the best for every person in a limited health-care environment. So even if you take the example of transcatheter aortic valve implantation (TAVI)*, it is a lot more expensive than surgical aortic valve replacement, but for the people we do it on, it makes a huge difference to their life. So it's about balancing the need of the individual patient with the most appropriate resources available.

Say, for example, you're in a case where you're at a time critical component of the surgery, there's a lot of blood around and the pressure is mounting. How do you stay composed as a surgeon?

I think there's always going to be difficult scenarios but the thing about any type of surgery or specialty is that it becomes very routine. While probably 90% of cardiac operations might to an outsider look difficult and stressful, it's actually routine for the surgeon so there's only a small proportion that's sort of stressful. One of the important things is to have a strong team of people around you, a good registrar, good nurses and a good working relationship with the anaesthetist. In cardiac surgery as a specialty, there is a particularly close relationship between all members of the team, both within and outside of the operating theatre. So that really helps you cope with all those problems. There're always going to

be situations that push people or test people and I think having a team around you helps with that.

Speaking of the team, you have a perfusionist as well. Who is a perfusionist and how crucial are they in cardiac surgery?

A perfusionist is someone who manages the cardiopulmonary bypass machine; a machine that temporarily takes over the function of the heart and lungs. They are a critical part of the team. You know, we couldn't operate without them. We work very closely with them and we have good relationship with them. You have to have a good perfusionist to have a successful cardiac surgery program.

Can you describe a typical day as a cardiothoracic surgeon in New Zealand (NZ)?

Most of us get up early. Because our operating lists can be ten hours long, you try and get a lot of your tasks done before you get to the operating room. So typically we come to work, do ward rounds, and try and get to multi-disciplinary meetings. Our lists usually start between 8.15am and 8.30am. There're usually two cardiac cases in a day. That might be a bypass graft and a valve. Or it might be a single bigger case like a triple valve, or big aortic case. We often do thoracic lists, and in general, we do between two and three major thoracic cases a day. We usually finish around 6:00pm, then see the pre-ops for the next day, trying to fit in paperwork and other bits and pieces in between times.

We then have non-operating days, which involves a lot of the administrative stuff and seeing patients in clinic. Triaging referrals, doing college work, supporting the registrars, and going through the various training issues they need to be helped with. So it's a pretty full-on week usually.

Now that you've touched on training, what's it like in NZ?

NZ has typically got a pretty good training scheme. One of the disadvantages of sub-specialty training in Australasia can be the number of people that are around. Say, if you go to a big unit in Sydney or Melbourne, you might have a couple of senior house officers, a couple of unaccredited registrars, a couple of trainees, a couple of fellows, a couple of Medical Officer of Specialist Scales (MOSS), and then the consultants. In NZ there's a much closer relationship in cardiac surgery between the trainees and the surgeons. Typically if you look at trainee experiences, NZ rates very highly as a place to train. And I think the people that are produced in NZ are very well-trained surgeons.

Are there research opportunities and opportunities to train abroad?

I think research is something that's sort of a continual thing in cardiac surgery. It's a very heavily studied specialty in terms of outcomes, new technology, and research. So if you look all around the world, some of the biggest and most established registries in surgery are cardiac-surgical registries. In NZ, we have a national group that coordinates research. Our unit enrolls in a number of international trials and a number of them in combination with intensive care. There's a lot of outcome-based research that goes on.

With regard to working overseas, most New Zealanders would leave in their training or after their training for overseas fellowships. A lot of people come back, but some stay overseas. Australia is a pretty tight job market to break into long-term, but it's a very good place to go for fellowship work. There's a lot of job opportunities in the United States (US) for cardiac surgeons, especially ones that are well trained. Europe is a pretty good place to go to for fellowships as well. There's a lot of people now going to places in Asia like Hong Kong, especially for the thoracic surgery experience.

Where do you see the future of cardiothoracics?

I think cardiothoracics is evolving. It's historically been a very open surgical specialty. But there's a growing interest in minimally invasive techniques and transcatheter therapies. So the new generation of cardiac surgeons are likely going to be dual trained with wire skills and endovascular skills. A lot of that has been driven by transcatheter valve therapies. Even in my cohort, there's a group of cardiac surgeons who are primary TAVI operators in Australia and in the US. So you're going to see an evolution and a lot more sub-specialisation in people becoming specialists, in maybe thoracic, aortic, minimally-invasive, and valvular-heart-disease surgery. There is always going to be room for generalist cardiothoracic surgeons, but in the larger units there is going to be more of a push for sub-specialisation.

What's the work-life balance like for you?

Work-life balance is important. It's a bit more difficult in cardiac surgery, just because of the length of the operations and the amount of operating we do. But it's important to maintain a work-life balance in terms of outside interests and other things you do. It's just finding the sweet spot for the individual person depending on what specialty you do.

If you weren't in surgery, what would you be doing?

Probably either travelling or teaching, or a combination of the both!

That brings us to our final question, what would be your take home message for medical students?

I think cardiac surgery as a career is extremely rewarding. It's a pretty demanding specialty and it's pretty competitive to get in to training. However, there's been a real resurgence in people interested in cardiac surgery. So we're interviewing a lot of people now for limited training spots. I would certainly suggest getting some exposure to it as part of your training, in particular if you're interested in highly technical surgical specialties, but also if you find the management of sick patients interesting. If you're thinking about cardiac surgery as a career option, then you need to start planning early and structuring your career to get involved with some good mentors to push you in the right direction.

* TAVI: A procedure where you wedge a replacement valve into the position of the aortic valve via a long catheter through a peripheral artery or a small incision through the chest.

More information about cardiothoracic surgery can be found at the following links:

- Royal Australasian College of Surgeons (RACS), for Cardiothoracic Surgery programme details: <https://www.surgeons.org/surgical-specialties/cardiothoracic/>
- Health Workforce New Zealand, for workforce statistics: <https://www.kiwihealthjobs.com/rmo/pdf/Cardiothoracic-Surgery.pdf?pdf=Cardiothoracic-Surgery>
- Australia and New Zealand Society for Cardiac and Thoracic Surgeons, for society specific information: <https://anzscts.org/>