

QUEENSLAND CHILDREN'S HOSPITAL AND THE CHILDREN'S HOSPITAL AT WESTMEAD

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Wow what an adventure I am having with my career in perfusion so far! And I am loving it! It is hard to believe it has only been 22 months, and what I have experienced during this time at the tender age of 23 is crazy to look back on.

I was first exposed to perfusion straight out of my undergraduate degree in pharmacology, from the University of Auckland. After showing interest, I had the privilege of being invited by the perfusion team at Waikato DHB to voluntarily observe cases, which I did every Friday for six months. During this time, I got to understand many of the ins and outs around perfusion. A trainee role then came up, and I was lucky enough to become the first trainee in 12 years.

The traineeship has been amazing so far, providing me with many experiences that are setting the foundation of me as a perfusionist and as a person. I have presented at the New Zealand Cardiac Surgery conference in Tongariro and the Waikato Cardiothoracic evening. I was a part of the inaugural three-person team demonstrating to the public the cardiopulmonary bypass machine at the National Fieldays [The Fieldays is an annual national agricultural show and field day event held in mid-June near Hamilton, New Zealand–Ed.]. I have also demonstrated the same decommissioned cardiopulmonary bypass machine at the community Science Spinners volunteer programme in Hamilton. The programme allowed low decile schools [Lower decile schools have more students living in poorer communities, and are consequently better funded–Ed.] to be exposed to uncommon careers in science. I taught the children the basics of the bypass machine and made them aware of cardiac disease.

All the while, I was hitting the books and always aiming to stay ahead with the trainee course. In the OR environment I acquired a range of new perfusion skills under the stewardship of perfusionists from the USA and England. Then of course there are my amazing mentors, our great perfusion team at Waikato DHB, Emma Peplow and Jack Bhana. With support from Susan Arnold-Barron, our semi-permanent locum from Wellington.

So, what an adventure so far. But yes, there's more! I was lucky enough to have both Carla Zazulak from Queensland Children's Hospital and Killian O'Shaughnessy from Westmead Children's Hospital in Sydney to organise my experience through their perfusion units, introducing me to paediatric perfusion.

I arrived in sunny Queensland and was welcomed by Carla their team leader. The hospital was a wonderful experience in itself – the kid friendly colours and smiles created a beautiful atmosphere for not just the children and their families, but also the staff.

After changing into our scrubs, it was action stations after they received an emergency request for VA ECMO in PICU on a four year old, who previously had an MVR a few days prior. We walked into the patient receiving ECPR, having active external then internal cardiac massage prior to cannulation. Carla made me aware that ECPR is a unique group of ECMO patients that Queensland Children's is seeing more of every year. In Waikato, we have only put two patients on ECMO in the last two years. Watching Tony and Carla prepare the primed ECMO circuit in this emergency situation was inspiring, their coordination and communication was seamless for the complexities I now know for paediatric ECMO. The transition in each step of the procedure from cannulation to going-on and running the ECMO was great to observe. The following day I watched Carla perform a VSD case. The difference between adults and paediatrics was again reinforced very quickly, opening my eyes to the next world of perfusion that I had not experienced. Carla's technique was an example of the precision and accuracy that is essential in paediatrics. Her style was inspiring to observe, teaching me intricate skills with flawless communication that is priceless in perfusion. The next day I observed Tony perfuse an ASD procedure, his style was different to Carla's, but just as enlightening. He enjoyed quizzing me and ensuring, that as a perfusionist in the making, I had obtained one of the ultimate skills – of always being one step ahead! This kept me on my toes and reminded me there is still a lot for me to learn in perfusion. This case had a 16 minute clamp time, a new found surgical, perfusion, anaesthesia pace that I had never experienced before, introducing me to the new generation of surgical speed.

Their unit ran flawlessly, with thorough checklists and intricate and precisely chosen disposables for each patient. Their non-clinical time was filled with research projects, stock-taking and informative conversations. I learnt numerous skills that I was unaware were on offer. An example of this is when Nicole taught me the differences in their disposables and Mahesh walked me through the different ways of priming their ECMO circuit. This allowed me to bring home new practices and knowledge from this unit, making the trip hugely worth-while.

My next trip was to Westmead Children's Hospital, with Killian the team leader, Hannah, Casey and their locum Vicky. The timing of my trip meant I walked into a VA ECMO, which Hannah had instituted the night before, after a complicated TGA procedure with a seven hour bypass. This enabled me to compare the two ECMO procedures. Queensland Children's Hospital used the Jostra Rotaflow and QuadroxD oxygenator combo whilst Westmead Children's used the Levitronix CentriMag system with the Medos oxygenator. I then deciphered their strategies and reasonings for their preferences, exposing me to the vastness of not only bypass, but also ECMO.

The cases in the following days were TOFs with two different surgeons and perfusionists, Casey and Killian. It was great to watch the different perfusionists interact with others in the OR and perform their perfusion techniques. The light-hearted humour and amicable behaviour that one of their surgeons permitted in the operating theatre was a unique experience.

Being welcomed with open arms to two different paediatric units who showed their way in perfusion was amazing. It enabled me to up skill in many aspects of perfusion that I did not know existed. From a trainee's point of view, many can get immersed and lost in their own units and regimented to the walls of their practice, but getting out and reminding yourself

and others of the varying aspects in perfusion is a great way to keep your skills updated, technology advanced and eyes open.

I would like to again thank Carla Zazulak, Tony Black, Mahesh Naidu and Nicole Shrimpton from Queensland Children's Hospital, and Killian O'Shaughnessy, Hannah Lea and Casey Edwards from Westmead Children's Hospital for allowing me to step into their perfusion worlds. In the near future, I am hoping to visit other units from around New Zealand.

We from Waikato would love to reciprocate this experience to other trainees from around Australasia.



L-R: Nicole Shrimpton, Mahesh Naidu, Tony Black, Britney Westbrook, Carla Zazulak; Queensland Children's Hospital



Britney Westbrook & Hannah Lea; Westmead Children's Hospital



Britney and Anthony discussing a neonatal 'wet lab' circuit