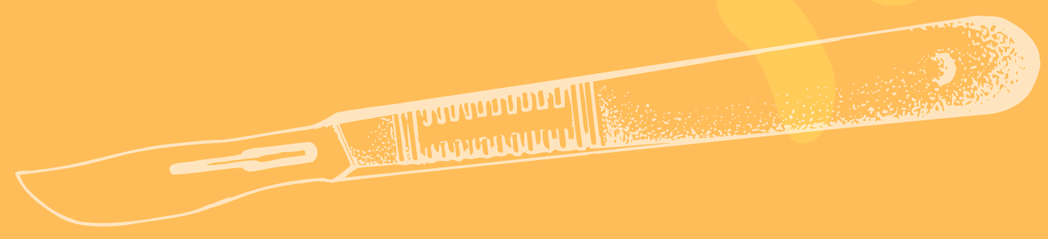
DONNA EATON

SURGEON OF THE MONTH



You are an internationally trained Consultant Thoracic and Lung Transplant Surgeon, with a PhD in Cellular and Molecular Biology.
What first got you interested in these areas?

I very much enjoyed the surgical specialities as a medical student, having a research background with an interest in Neurosciences, I had thought that Neurosurgery would be a good pairing of the 2. I got an SHO post in neurosurgery but didn't find the surgery so appealing. My next post however, was as a CT SHO at Guys Hospital, London, which at that time was already a very strong thoracic unit. I have loved thoracic surgery from the start of that rotation until now. I was lucky enough to work for some incredible mentors, both in London and Birmingham, who were all outstanding thoracic surgeons, generous teachers and hugely motivational to me.

I did my fellowship in lung transplantation, as I wanted to gain experience and confidence with advanced thoracic resections such as pulmonary artery reconstruction. I would encourage anyone with an interest in thoracic surgery to spend some time in lung transplantation - both explantation and implantation are valuable to the thoracic surgeon.

What have been your personal career highlights and what are you most proud of ?

I've been lucky enough to have scrubbed into some novel, complex and interesting surgeries with some of my surgical heroes both, in the UK and around the world. I've been an invited speaker at many of the meetings, and now teach on some of the courses that I attended as a trainee. To be involved in these means a great deal to me and I feel honoured to attend.

I have helped to expand the role of nurse specialists within our department. We have manged to fund a clinical nurse specialist (CNS) for enhanced recovery (with a huge decrease in patient length of stay) and the first thoracic advanced nurse practitioner (ANP) in ROI. These highly trained specialist nurses are working within our department, providing a level of continuity and expertise that only comes with permanent dedicated staff. They run the lung cancer survivorship clinic and programme, the chest drain clinic and have developed many of the departmental protocols. In theatre, our thoracic ANP scrubs with me for most of my cases and is the first assistant for all robotic cases.

Shortly after my appointment, in collaboration with one of the transplant physicians we introduced a lung volume reduction MDT. This allows our emphysema patient to be worked up, managed and appropriately treated, either with best medical management, lung volume reduction (LVR) procedures (surgery or endobronchial valves) or indeed considered for transplantation. We also have a number of patients who are referred for transplantation but, following review at the MDT, go on to have an LVR procedures instead.

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In your experience, having trained in minimally invasive and robotic surgery in a variety of healthcare systems, be it in Toronto, Dublin or the UK – where do you see these areas progressing in the future and are they feasible within the NHS? Is there anything students and trainees can be doing to start getting ahead in these areas?

When I started training, minimally invasive surgery was reserved for only the simpler/easier cases. Now, due to the technological advances, many of our most complex cases are done minimally invasively and open surgery is becoming less common. Most of the large thoracic units in the UK are performing the majority of thoracic surgery thoracoscopically and many now also have robotic access. These skills are now part of the repertoire of any trainee in thoracic surgery and as technology and confidence increases, more surgery will be done through these minimally invasive techniques. One of the things I love about thoracic surgery is the wide range of surgical approaches and surgeries, and the challenges that that variety brings. I would recommend all students and trainees to embrace new technologies and expose themselves to minimally invasive surgery as much as possible.

What is the role of robotic intervention amongst conventional approaches? How can the lessons learned in the pioneering of robotic thoracic surgery be applied to and benefit other specialties?

Our robotic programme at the Mater started as a multi-speciality programme. This has helped not only with making the business case for purchase but also affords us all the opportunity to learn from one another. I think we often learn most from stepping outside our own speciality surgical boundaries.

Since your appointment as the Head of Thoracic Surgery at the Mater Misericordiae University Hospital in Dublin and lead for Robotic Thoracic Surgery in the unit, you have hugely increased the range of specialist procedures available to patients in Ireland. What were some of the barriers you had overcome to offer treatments that weren't previously feasible?

I have found the Irish healthcare system and the Mater team have been incredibly open to embracing new technology and techniques. The unit has always had a very much 'can do' attitude and right from the start of my appointment I felt supported to introduce procedures not previously offered. Sadly many of the new technologies require considerable finance (laser pulmonary resection, robotic surgery) and this was certainly the biggest obstacle.

When I was first appointed, our staffing was still joint with cardiac surgery, which led to some difficulties with managing the hugely increased thoracic surgery volume and complexity of the thoracic cases, this was however supported by the appointment of our Thoracic CNS and ANP.

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All transplant centres are striving to improve both organ donation and utilisation, but what would you say are some of the biggest challenges in developing an effective modern lung transplant programme? In your opinion, what needs to change to optimise organ utilisation?

Lung transplantation is a very resource heavy speciality with a multi-stage pathway. In addition to the transplant physicians and surgeons there is an extensive, highly talented MDT that work closely together and with the patients, to provide care both pre, peri and post-transplantation.
Increasing organ utilisation requires increasing public awareness and increased engagement from end of life care givers. Programmes such as the 'clinical champion/lead' for organ donation', the appointment of a clinician in each acute hospital with a specific remit of their job to be championing organ donation, will help to identify potential donors, maximise donor referrals and allow coordinated care of the donor and the retrieval.

How do you manage the emotional toll of patients and their families awaiting suitable lungs for transplantation? Do you think transference and countertransference play a greater role in patients whom you've known for a long period of time throughout the process?

There is an emotional element to all clinical jobs. Whilst surgical specialities (perhaps especially transplantation) are in the main, enormously rewarding, there is the emotional toll associated with poor outcomes for patients. For transplantation, this includes the disappointment of patients being deemed unsuitable, or deteriorating on the list and not making it to transplantation, or, particularly tough for the surgical team and families, it is patients not surviving their peri-operative course. I think the main thing to recognise is that you are not alone and that the lead surgeon is just one of the multi-disciplinary team. The whole team rejoice in the successes and also feel the disappointment of any losses. Its important to support one another within the group and to work in an environment where individuals feel comfortable voicing their emotions. It is extremely important to have a strong support system and interests outside of the work place.

What are some of the biggest ethical considerations when deciding suitability of a patient for lung transplantation?

Transplantation raises many ethical considerations; for recipient selection, one big issue raised is the listing of patients who have damaged their lungs, most commonly through past smoking. However, all patients have to have completely abstained from smoking and be nicotine free prior to listing.
The ethical aspects of listing are well managed in Ireland through the multi-disciplinary transplantation team. Patients are listed when the team agrees they are suitable and have a reasonable likelihood of being transplanted whilst on the waiting list. We are lucky to have a fairly high rate of organ donation in Ireland and a very active transplantation programme. Our objective is to ensure that we make the best use of the donated organs, honouring the special gift the donors and their families have made.

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Ex-vivo lung perfusion (EVLP) is an exciting development widening the pool of suitable donors. Could you talk us through its basic principles and the potential implications for clinical practise in the future?

EVLP is a novel technique used to allow extended evaluation and or reconditioning of donor lungs. The donor lung is brought back to the transplant unit and reperfused with an oxygen rich solution (cannulae having been placed in the pulmonary artery and the solution returning to the machine via the pulmonary vein cuff). Once the lungs are rewarmed, they are ventilated via the trachea. Now the lungs can be carefully reviewed (gas exchange analysed, fluid shift monitored) and diagnostic tools applied (bronchoscopy, manual palpation, histopathology, microbiology etc).

EVLP allows careful assessment of 'marginal' lungs and manipulation of lungs for diagnostic and therapeutic purposes, without the immediate demand of fully supporting the donor. It may prevent the use of lungs associated with a poor outcome (post graft dysfunction). It increases the conversion rate (donor offers that proceed to transplantation) not only by the use of EVLP itself but also increasing the number of donor offers that the team assess. An additional factor is that lungs can be kept healthy for many additional hours through the use of EVLP, allowing optimisation of theatre utilisation and allowing a number of transplants to proceed sequentially.

Finally, research is constantly being undertaken to decrease rejection of transplanted organs. Do you think a passion for research is an essential quality for someone wanting to pursue a career in transplantation? What advice do you have for students and trainees wishing to gain more experience and exposure to transplant-based research?

I think in any area of medicine or surgery a research background is important to allow us to optimise our clinical practise. A research background allows you to implement critical analysis of clinical trials. This in turn helps us to implement and advance evidence based practice, allowing us to contribute to the development of new approaches to treatment and care of patients.

Carrying out even a small piece of research as a student or trainee is helpful, encouraging papers and research later in your career and boosting your CV. I would encourage anyone interested in research to approach their local unit. There is often the opportunity for a keen student, willing to donate their time, to carryout research such as data collection - hopefully leading to a poster or publication.

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