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IN THEATRE

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In Theatre

Women's health

The College

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From the President

Dr Vijay Roach
President

This issue of *O&G Magazine* addresses a core attribute of our speciality – surgery. Surgical care has been an essential component of healthcare worldwide for over a century and underpins the practice of obstetrics and gynaecology. RANZCOG is committed to training surgeons to the highest standard through mentoring, simulation, assisting, primary operating and research. Exposure for our trainees to many surgical procedures has declined markedly, in less than a generation, with advances in non-surgical therapeutic options, availability of long-acting reversible progestogens and other pharmacological agents, declining parity and, generally, a more conservative approach to medicine. On the other hand, there has been a dramatic shift in the way that we perform surgery. Those of my vintage remember treating an ectopic or ovarian cyst via laparotomy or the advent of laparoscopy where you put your eye directly to the scope while trying to manipulate an inadequate instrument with one hand! We would kneel on the floor to perform a hysteroscopy, covered in fluids from various sources. As our talented authors outline, laparoscopic surgery with a television monitor is now the standard of care and we are rapidly exploring new frontiers with 3D laparoscopy, fluorescence and robotics. This has led to a significant improvement in outcomes for our patients, not just because of the technology, but because the techniques themselves address the underlying pathology more effectively, with the surgical management of endometriosis being the leading example.

The declining volume of procedural surgical training available to our trainees remains a concern and is discussed in one of the magazine articles.

While commonly attributed to the increasing medicalisation of gynaecology, other factors also contribute, including changes in the workforce at all levels. The College is acutely aware of this issue and, in collaboration with our trainees, we have developed strategies to address this reduction in training opportunities, including a systematic review of surgical procedure numbers and training opportunities outside of traditional settings, both local and overseas. High quality, and appropriate quantity, in surgical procedural training remains a high priority for the College, recognising that, in order to deliver equitable access to healthcare for women in Australia and New Zealand, a workforce with a broad range of skills is the most desirable scenario.

Surgery is not without its negative and unintended consequences and I am pleased that the editors have challenged us with the issues of the ageing surgeon, the risk of infection and the need to audit our outcomes (you cannot know if you do not measure). Our profession has had to navigate the failure of systems, and ourselves, with the improper use of vaginal mesh that has had significant consequences for many women. While much of the blame lies with medical device companies and poor regulation, the College recognises that we too hold responsibility and we are actively supportive of better training and regulation through the establishment of a mesh registry, among other initiatives. We acknowledge that, when surgical complications occur, it is the patient who suffers.

The last few months have involved a lot of travel for the Board and as your President, the highlight was joining our colleagues in Hamilton, New Zealand for their RSM. The excellent scientific content was underpinned by the recognition and integration of Māori culture into every aspect of the program. Our brains were stimulated but, perhaps more importantly, we came away with a better understanding of the importance of connection with the land, ancestry and community and the relevance that this holds for us as medical practitioners. With Board member John Regan and CEO Vase Jovanoska, I joined many from Australia and New Zealand at the RCOG in London. Despite the wettest June since 2012, we enjoyed reconnecting with our UK colleagues and the cutting-edge presentations. The current President of RCOG, Prof Lesley Regan, will join us in Melbourne in October for our ASM and be presented with an Honorary Fellowship. We also congratulated President-elect Eddie Morris on his recent election. At the time of writing, I am about to fly to Port Moresby to join members of the Pacific Society for Reproductive Health for their ASM. I'm particularly looking forward to spending time with RANZCOG Fellow and luminary, Dr Glen Mola,

whose contribution to Pacific women's health is extraordinary.

Within the College, there is a lot of activity. We are pleased to welcome a new Director of Education and Training, Olly Jones, who has extensive experience in Australia and overseas. Former College President Michael Permezel has commenced a new role as Dean of Education, reporting to the CEO and providing professional advice on educational matters to the College. We are currently preparing for the AMC Comprehensive Report for re-accreditation, due to be sent to the AMC in September 2019. The dynamic Andre Khoury joins the team as Head of Public Affairs and already has his finger on the pulse. Working closely with our Membership and Engagement staff, Andre has been monitoring media and increasing our social media output. Your President might become an influencer! The College, our members and the general public responded swiftly and vociferously to an opinion piece in an Australian newspaper questioning the place of men in obstetrics. We stated emphatically that a person's sexuality, gender, race or religion does not determine their ability to provide competent or compassionate healthcare.

The College is more than an institution. It is the membership. It is you. This July we remember Dr Christopher Kollenberg, a dedicated specialist who contributed an enormous amount to teaching in Australia and the Pacific. He was also a committed College contributor serving on many committees, particularly as Chair of the NSW Training and Accreditation Committee. The NSW State Committee, Past President Ian Fraser and dear friends of the Kollenberg family, Henry and Marea Murray, joined Chris' wife Cathy and daughters Ruth and Hannah for a special dinner to celebrate Chris' life.

Finally, we return to the ever-present theme of culture, the importance of respectful communication and the negative impact on individuals and organisations when individuals and groups are marginalised, bullied or harassed. It has to stop, and we have to be active participants in improving the behaviour of doctors, supervisors and administrators, particularly in an environment of unequal power relationships. Unproductive criticism, hurtful or demeaning behaviour, sexist or derogatory comments have no place in our College and the consequences have, too often, been significant and inadequately addressed. The articles in this issue of *O&G Magazine* encourage us to 'Operate with Respect' and recognise that better communication and relationships will only improve our working environment, our own wellbeing and the outcomes for our patients.

From the CEO

Vase Jovanoska
Chief Executive Officer

It's been another busy quarter at RANZCOG, and the College has some key pieces of work that I am excited to share with you.

Operating with Respect

Building respect in the medical workplace and eliminating discrimination, bullying and sexual harassment has been a constant theme within medicine and specialist medical colleges over the last couple of years.

Led by the excellent work of the Royal Australasian College of Surgeons (RACS), the aim has been to identify and remove bad behaviour in order to improve patient safety and work environments.

To help build a culture of respect in obstetrics and gynaecology, the Operating with Respect module developed by RACS is available to all RANZCOG trainees, Fellows and specialist international medical graduates (SIMGs) via the CLIMATE eLearning website, linked to from the eLearning tab of the RANZCOG website. CPD points are available at completion of this module.

The aim of this module is to help Fellows, trainees and SIMGs improve their knowledge and understanding of unacceptable behaviours, enabling them to recognise when they occur and the adverse impact they have on individuals, team performance and patient safety.

As mentioned in the previous issue of *O&G Magazine*, the College also has a Respectful Workplaces workshop to support the development of respectful workplace culture across training sites.

The College's goal is to make hospitals and other environments that our members work in safe and positive. Instituting and supporting healthy workplace cultures, leadership and professionalism in obstetrics and gynaecology is a key part of this.

We all need someone to talk to confidentially sometimes and Converge International is now available to Fellows, trainees and SIMGs. RANZCOG has partnered with Converge International as a confidential support service that is available any time. This service can be used for any personal or work-related matter and is also available to family members seeking support.

Converge International employs more than 1600 qualified specialists trained in counselling, social work and psychology. I encourage you to talk about this useful resource with your colleagues.

Gender Equity and Diversity

The newly formed Gender Equity and Diversity Working Group (GEDWG), reporting to the RANZCOG Board, is separately undertaking important work to identify and address existing gaps in College policy and processes that hinder equitable, inclusive and diverse ways of engaging with, being a part of, and contributing to, the College.

This work will result in a Gender Equity and Diversity Policy, to be released later this year, and the group looks forward to continuing to improve gender equity and diversity for all RANZCOG members.

Organisational values

Like all members of RANZCOG, College staff are involved and invested in the outcomes and work of the College every day. The work that staff are committed to reflects our current staff values:

- Respect
- Accountability
- Member Services
- Teamwork
- Integrity
- Wellbeing.

In 2019, we hope to work together with members to develop values that can be shared between RANZCOG members and staff, with a common vision and outlook for the future. These core values will also communicate who we are as a College, strengthen our identity and solidify our way of working together.

Annual Scientific Meeting

In October, the RANZCOG 2019 Annual Scientific Meeting (ASM) will be held in Melbourne, and we are expecting more than 1000 specialists, sub-specialists, trainees, medical practitioners and SIMGs, and other healthcare professionals to attend.

Keynote speakers Prof Basky Thilaganathan, Dr Ranee Thakar, A/Prof Sawsan (Suzie) As-Sanie and Prof William Grobman, each bring a vast amount of knowledge and expertise that no doubt will be warmly received by attendees.

The theme for this year's meeting – Stop. Start. Continue – suggests an opportunity to pause and reflect on practices that all members and trainees should consider abandoning, based on evidence that suggests they are either ineffective or not cost effective. The meeting will explore the evidence to consider starting new therapies and provide important updates on the ways in which the speciality of obstetrics and gynaecology should continue to evolve.

This year's theme also relates to the theme in the beginning of this article; the need for all of us – Fellows, trainees and College staff – to take time out to reflect on our own behaviours in the workplace and how we can be part of positive cultural change.

I am pleased to announce that the ASM will once again have a crèche to accommodate families, providing everyone the opportunity to attend this networking and professional development event.

From the highly anticipated keynote speakers within the scientific program, to the array of workshops for all interests and an engaging social program on offer, in the vibrant city of Melbourne, it will be an event not to be missed.

I look forward to seeing you there.

LEADERS IN FOCUS

Dr Kirsten Connan
MBBS(Hons), FRANZCOG, DDU
MMedEd (Gender and Leadership)

This feature sees Dr Kirsten Connan in conversation with RANZCOG members in a broad range of leadership positions. We hope you find this an interesting and inspiring read.

Join the conversation on Twitter
#CelebratingLeadership @RANZCOG @connankf

Prof John Newnham AM FRANZCOG

Prof John Newnham graduated in medicine from the University of Western Australia (UWA) in 1976. He pursued postgraduate training in O&G in Australia, South Africa (KwaZulu), the UK and the US. He completed a two-year Fellowship in Perinatology at UCLA, California, and returned to Australia in October 1984. Prof Newnham became a certified subspecialist in maternal-fetal medicine in 1992, was appointed the Inaugural Executive Director for Women and Infants Research Foundation in 1995, and accepted the role of Head of the School of Women's and Infants' Health (now Division of Obstetrics and Gynaecology) UWA in 1999. He continues to hold these, and many more, major appointments within Western Australia.

Prof Newnham has more than 390 publications and 12,000 citations. He has been involved in long-standing collaborations including the US, Canada, China, Japan, Netherlands, Germany, UK and Australia, and he remains an Adjunct Professor at Peking University, Beijing, and Honorary Director of Obstetrics at Nanjing University, China. The John Newnham Oration at the Annual Conference of the Australian and New Zealand DOHaD Society was named in his honour in 2015.

Prof Newnham's enduring and career-long passion has been to discover and understand how events before birth may influence a person's subsequent health and wellbeing, and how interventions at the earliest times may prevent lifelong illness. Prof Newnham is well known for the creation of the pregnancy-intensive lifetime cohort study, now known as The Raine Study (1989), and more recently the Australian Preterm Birth Prevention Alliance (2018). Both these initiatives were world-first programs and have contributed heavily to Australia being recognised as a global leader in preterm birth prevention and investigation of the early life origins of adult health and disease.

During his career, Prof Newnham has been awarded a total of $26m in competitive grant support, including 21 NHMRC ($15.6m) and six NIH (US$7.2m) grants.

Prof Newnham was a finalist for the Western Australian of the Year Awards (2019) and was recently awarded the prestigious Australian Medical Association (WA) Hippocrates Award for Outstanding Contribution to Medicine (2019).

What does a typical day look like for you?
My weekdays are allocated equally between clinical work (maternal-fetal medicine) and research, and I work to be intentional with my time, ensuring I avoid the noise, minimise travel, constantly prioritise and combat the FOMO to attend every meeting.

The highlights of each day are opportunities to interact with others. I am privileged to work with amazing colleagues and inspiring patients, as well as members of our community who support my passion for preterm birth prevention.

Weekends are with my family on our farm in Margaret River. Having the farm has enforced opportunities for relaxation, plenty of physical work and time away from medicine.

Why did you choose O&G and your career pathway?
Even as a young child I was fascinated with the origins of life, the 'how' and 'where' of life. Reading books on explorers was a staple of my childhood.

My original plan in medical school was to become a general surgeon in the Kimberley, but after a short

stint in orthopaedics, I very soon realised this was not my craft group or area of interest. Falling back into my interest of the 'how' and 'where' of life, obstetrics soon became my true passion.

After six months of obstetrics in a Zulu hospital in South Africa (KwaZulu), with over 10 000 births a year, my thirst to research the early life origins of adult health and disease was ever stronger. With perinatology an emerging field, I soon set off to California as the first from Western Australia to subspecialise in this area. The rest, as they say, is history!

What is the Raine Study?
The Raine Study is a cohort study of Western Australian children followed from 16 weeks gestation to adulthood, designed to investigate the developmental origins of health and disease.

This study was the world's first pregnancy-intensive long-term cohort study extending into adulthood and recruited 2900 participants who are now 28–30 years of age. Four generations are included and more that 500 publications have resulted in providing invaluable information on development in fetal, child and young adult life across the fields of medicine, environment, employment and community. To date, the Raine Study has approximately 80 000 phenotypic variables on each participant and provides research opportunities for 150 scientists worldwide.

Data from the Raine Study continues to be used to refine antenatal care; provide the world's best evidence that prenatal ultrasound studies are safe; define reference ranges for many developmental milestones; and explore hypotheses that are only possible when longitudinal data are available from participants across ages extending from fetal life up to their current 28–30 years.

Can you tell me about the background to the Whole Nine Months and the Preterm Birth Alliance?
I've spent more than 30 years researching the origins of preterm birth. During that time, our unit has apologised to many families for whom we have not been able to prevent their baby's preterm birth. In response to our and others' research and the aspiration to change preterm birth statistics, in 2014, I launched the Western Australian Preterm Birth Prevention Initiative. This included the release of new clinical guidelines, a state-wide educational outreach program for healthcare practitioners, a public health campaign for women and their families ('thewholeninemonths'), and the commencement of a dedicated preterm birth prevention clinic at King Edward Memorial Hospital.

In its first full calendar year (2015), the initiative lowered the rate of preterm birth in Western Australia by 7.6 per cent and in the tertiary level centre by 20 per cent. The significant reduction extended from the 28–31 week gestational age group onwards. Calculation of the estimated number of preterm births averted in that year was 200, of which 45 were in the less than 31 week gestational age group.

The program was then expanded nationally, and in June 2018, this led the development of the Australian Preterm Birth Prevention Alliance with key partners from each state and territory. This Alliance is the world's first national program aiming to safely reduce the rate of harmful early birth across its population.

Prof John Newnham AM.

How do you ensure work-life balance?
I did this badly in the early days, spending too much time at work. I am, however, fortunate to have a truly amazing wife (Susie) and three fabulous adult children (Elizabeth, Prue and Richard) who keep me engaged in other aspects of life.

Our family purchased a farm (beef) in Margaret River 31 years ago and this has forced me to keep busy physically on weekends. Over time, I have become much more balanced, but I remain just as committed and passionate about my work.

If you could, would you do anything differently in your career?
I would have loved a mentor when I began my specialist career. Prof Brian Trudinger and I were the first in Australia to practice in the area of 'perinatology', so we were very much 'solo fighter pilots'. I also had to be a self-taught clinical academic because there was no senior person to act as my mentor within obstetrics in Western Australia at that time.

What advice would you give to a trainee starting their career?
Enjoy it. Take every opportunity to learn. Always value your colleagues and your patients.

I have loved every minute of my career! Obstetrics is truly a wonderful specialty and we still have so many 'unexplored continents' to learn about.

What three words best describe your life?
Freedom to explore.

Are you willing to be contacted by trainees for career advice/mentoring?
Absolutely. My door is always open.

Prof Jason Abbott
BMed(Hons), FRANZCOG, FRCOG, PhD

Prof Jason Abbott, gynaecologist and laparoscopic surgeon, is the immediate past president of the Australasian Gynaecological Endoscopy & Surgery Society (AGES), the medical director of Endometriosis Australia, the Professor of Gynaecological Surgery School of Women's and Children's Health, UNSW Medicine, one of the Chief Investigators for the National Endometriosis Clinical and Scientific Trials (NECST) Network, and is Senior Editor of the *Journal of Minimally Invasive Gynaecology*. Prof Abbott also heads the GRACE research unit at UNSW, is the founding director of Alana Healthcare, and supervises multiple PhD, honours and master's students, and has over 120 peer reviewed publications.

Prof Abbott is passionate about research driving clinical care and, when not working, can be found at his farm delivering a newborn calf, taking a chainsaw to a fallen tree or slow-cooking a batch of his famous (and crazy-hot) sweet chilli sauce!

What led you to obstetrics and gynaecology?
It was definitely obstetrics that made me want to pursue a career in O&G. I had early exposure to the delivery suite as a medical student and, from my third year of medicine, that was all I wanted to do. With placements as an intern and then six months during my residency, it was just as well that was my chosen path, since I had not done much else (excepting nights, relief and surgical terms). I did not really understand gynaecology, having limited exposure, but when I did, it was clear to me that there was so much that was unknown. Now, 25 years later, there is still so much unknown, but I see improvements.

What have been your career-defining moments?
- My first delivery (thanks Janet)
- My first caesarean delivery as an intern (thanks George Angus)
- Being awarded the FJ Browne Medal
- Being awarded my PhD
- Promotion to Professor – I was in the car when the Dean of Medicine at UNSW called to tell me I had been successful, and I was so emotional (it was very unexpected – at least for me). I think I may have cried, but since I had my tear ducts removed to enhance my steely façade, that seems unlikely!

Were you a 'born leader'?
I have always been self-confident, and leadership comes naturally.

I guess I was the bossy kid, giving directions about what we were going to play and how it was to be played, and that has continued. I have a strong sense of science and ensuring that there is an evidence base to what we do (hence the research), and don't mind getting on my soapbox to preach about evidence (I know, shocking)! I used to worry about people not liking me and how that would affect leadership opportunities, but the more my career advances the less I worry about that. The drive to be liked is far less important than the drive to do what is right and evidence based.

Where did you learn your leadership skills?
This was initially with sports and community groups, then high school councils and debating teams, a career as an aerobics instructor (where leading in lycra is a whole new leadership spin!) then roles as trainee representative for the College and then TAC.

Working with Dr Vijay Roach on the NSW TAC as deputy chair was the first time I had leadership mentoring. I learned volumes from Vijay: ethics, procedural importance, active listening and compromise.

As I have matured, I have increasingly recognised that compromise is very important if you want to work collaboratively. More recently, I have had increasing roles with government, consumers and community groups, and these skills are absolutely paramount to good leadership. I have enjoyed working with leaders from non-medical fields and have continued to learn from them. I enjoy that aspect of leadership enormously.

How have you sustained your leadership?
Leadership definitely requires continuous work. You must have capacity to delegate, you must have the security to accept the accuracy and diligence of those you delegate to, and you must be committed to support and engage with all those you come into contact with in your role as leader.

One of the most rewarding components of leadership is the nurturing and development of those around you. I have really enjoyed working with people who have different backgrounds, fantastic ideas and commitment to a variety of causes. Stepping back from what you see as the way forward and taking stock of those ideas, those skillsets and those values has often led to changes in my leadership vision – and frequently for the better.

Prof Jason Abbott.

You also need to recognise when your chosen pathway is not the right one to take. Stop; evaluate and change direction.

Working with the next generation of leaders, soaking in their enthusiasm and, most importantly, nurturing, supporting and promoting them – that, to me, is sustaining.

Do you hold a role within RANZCOG?
I chair the AGES/RANZCOG committee advising on endoscopic surgery and this includes many aspects of surgical training.

There has already been considerable discussion around where surgery may go, and we need to continue this dialogue and make sure that we identify factors that will improve gynaecological surgery that is focused on women and not on doctors.

We often speak about the separation of our specialty in two, and I think we must firmly consider the consequences of what that would look like and the impact on services across our two nations. I am strongly in favour of having a skilled workforce that can provide high-quality surgical care for emergency situations, since that will save lives. I am also in favour of noting that we cannot train all Fellows in advanced gynaecological surgery and we have to define what that means and how that affects women. Importantly, it cannot disadvantage women, but increasing patient demands for perfect outcomes means rationalising surgery and training fewer surgeons to a higher level to maximise quality.

I don't pretend that I have the answer as to how that will occur or the numbers needed, but surgery is increasingly complex and heterogenous and we no longer are the specialty who does four operations and that is all. Asking the difficult questions and perhaps suggesting difficult answers is what needs to be done.

What do you see as the challenges for current RANZCOG trainees?
There is no doubt that our profession is incredibly rewarding and diverse, but that diversity is also one of the greatest challenges. In a relatively short timeframe, the demands of our vocation and the expectation of perfection (both from ourselves and our patients) has become increasingly apparent.

I think one of the greatest challenges is to choose what you will not do in your practice and identify your limitations. It is simply not possible to be expert in all aspects of our profession and, therefore, understanding where you draw the line for you is very important.

As a gynaecological surgeon, you need to ask what is best for the patient and not what is best for you, and always keep that as your mantra. We do have a barrier to accepting that we don't know everything and the admission of not knowing as being a failure. I think that is a sign of enormous insight and a marker of a good obstetrician and gynaecologist.

What role has AGES played in your career?
I have been a member of AGES for more than 20 years now and it is an integral part of my career.

I have seen the Society mature and develop and its evolution has been one of the greatest reasons for its continued success. It has moved from survival mode, requiring substantial defence of just about every action in surgery to the modern, innovative and inclusive society it is today.

As I have become involved in the general board and then the executive, I have had the pleasure to work with brilliant, dedicated and committed individuals and learn some valuable lessons along the way.

There is a great challenge to keep members and sponsors happy and engaged and all within the necessary confines of good governance, and with the view of improving women's health.

What are the current challenges for AGES?
It is often said that AGES was a 'boys club' and I think that is correct; but, then again, it comprised male specialists because that was our demographic.

With nearly 85 per cent of trainees and 50 per cent of College Fellows being female, that has changed, and so too has AGES. AGES now has great diversity on the Board (40 per cent female representation) and I hope this will carry into its future top-level leadership.

Identifying what members want and need is imperative for any contemporary society and that is a challenge. Surgery has changed in gynaecology in an enormous way and we have seen the rise and fall of products and procedures in the space of 15 years. Paying close attention to the science, evaluation of techniques and the importance of information to all are the greatest challenges to the Society and I think are complex and difficult to predict. In my farewell speech as President, I noted that my contribution to AGES is there for the Society to evaluate, modify or reject – it has to be that way when you have been a leader. That is part of the joy, to see what happens to the shape of the organisation when you leave and celebrate its evolution to its next great height.

Can you tell me about your role with Endometriosis Australia?
I have been the Medical Director for Endometriosis Australia since its inception and to be a part of a charity that has been developed from scratch has been a huge undertaking and an amazing opportunity.

Working with co-founder and Board Director, Donna Ciccia, has expanded my view of the patient experience. Donna is like the Endometriosis Eveready bunny and just goes and goes and goes with phenomenal energy. It was groups including Endometriosis Australia who have brought about the National Action Plan in Endometriosis (the first for any disease in this country) and that has been an enormous step forward.

Continued political engagement has also led to specific endometriosis research funding and the NECST Network is the vanguard of future endometriosis research in the country.

Having worked in endometriosis and pain research all my career, it is absolutely clear that the only way that we will change the direction of endometriosis is through large-scale and collaborative projects with buy-in from clinicians and the backing of our scientist colleagues to contribute the components that we do well separately but need to combine for the answers to crystallise. The other critical component is engagement with the consumers and to understand what they want from research and to get them involved. It is only with this inclusive approach that we can progress. Individual pathways are a sure-fire way to keep our knowledge base where it is currently – and that is not acceptable.

Do you see yourself as a feminist?
Absolutely! The qualification of that is that I am totally committed to the health and welfare of all women, but not to the exclusion of men's health and welfare, since that would be sexist, and I don't accept sexism in any form. However, the reality is that we do not yet live in a world that is gender equal. We must continue to assert the equality of women so that we come to the place where everyone recognises that gender is not important. I do think it can occur, but we need to continue to work on it.

How do you ensure work-life balance?
Richard and I go to the farm, get our hands covered in soil in the vegetable patch, pick whatever is in season and eat it right there, watch the bees and learn about their behaviour, raise cattle and learn how to grow better pasture. We sit on the porch and talk about work, economics, politics, irrigation problems, or the problem with the carburettor in the quadbike and how to solve it.

Going to the gym and doing yoga is great for the body, brain and soul and spending time with family and friends – which usually involves eating, talking and laughing. I love the creative release of photography and the introspection that it allows me. Most important is remembering that being a doctor is part of my life, not its entirety, and that I am most definitely replaceable in my vocation.

What advice would you give to a trainee starting their career?
Try lots of different things. Learn what you are good at and keep doing it. Learn what you are not good at and stop doing it. Look after your own health. Do something that is not medicine. Love your job or change it. Take time to reflect and enjoy the white space.

If you could, would you do anything differently in your career?
It is something I have reflected on and the answer is no in terms of direction. I should have listened more and spoken less, but some things never change.

Do you have any regrets?
Not having children; but like so many couples who face that reality, we have resolved and evolved.

What three words best describe your life?
1. Dedication
2. Education
3. Inspiration (I am always in search of it!)

What would you tell your younger self if you had the chance to go back in time?
Be more patient with yourself and those around you.

Editorial

Dr William Milford
MBBS(hon), FRANZCOG
Staff Specialist, Redcliffe Hospital and Director, Kindred Midwifery, Obstetrics and Gynaecology

The words 'in theatre' convey so many intimations. The thrill. The pomposity. The responsibility. The pursuit of perfection. The teamwork. The hierarchy.

It is the aspect of our jobs that inspires countless dramatisations and is most mythologised by the community. In contrast, the words 'in clinic' seem drab and inspire only thoughts of packed waiting rooms and piles of charts to be dictated.

The operating theatre is a unique place within the hospitals in which we work. Born of the anatomical amphitheatres of the Renaissance and evolved from the noisy, dirty and crowded tiered spaces of the 19th century, theatre still carries insinuations of spectacle and performance. Indeed, ask any trainee what yardstick they use to measure their own progression and it will usually be procedural performance in the operating theatre. As consultants, such is the emphasis that we make special provisions to ensure that our lists run well, that we are well rested and that we have exactly the equipment and teams that we need. This is in direct contrast to how we regard the rest of our duties and marks the operating theatre as a different place in our psyches.

In this issue, the editorial team have deviated from delivering a variety of 'how to' guides for procedures and have instead intentionally decided to focus on the 'meta' aspects of operating in theatre. There are useful contributions providing technical advice on a number of dilemmas from ergonomic safety through tips and tricks for operating upon obese patients to anaesthesia and the prevention of surgical site infections. Sadly, we were not able to provide an article on ERAS (early recovery after surgery), but it is a worthy topic in this area. The RCOG Scientific Impact Paper titled Enhanced Recovery in Gynaecology is a good resource on this subject.[1]

Training is also touched upon, with controversial questioning about whether FRANZCOG surgical training is fit for purpose, and at the other end of the spectrum, a discussion about finding the appropriate time in a career to shelve those white wellington boots.

Non-technical skills in the operating theatre are quickly becoming a fundamental issue in procedural specialties. The impact of recent controversies regarding surgeon behaviour, bullying and harassment and trainee welfare has seen a renewed focus on these soft skills. At the same time, there is increasing evidence that unprofessional behaviour by surgeons does have a direct effect on patient safety, with a recent study by Cooper et al demonstrating that surgeons who were complained about by their co-workers on the basis of their behaviour had a significantly increased risk of complications.[2] Such is the recognition of the importance of this that the Royal Australasian College of Surgeons has developed, and is now delivering, a workshop on non-technical skills for surgeons focusing on situational awareness, communication, decision-making, leadership and teamwork.

It is in this context that it is very pleasing to see a plethora of articles discussing these soft skills in the operating theatre in greater detail and with a context relevant to our specialty. There is a focus on safety and quality as well as articles on behaviour and professionalism.

Perhaps it is time for broader recognition that being in theatre means so much more than just being procedurally proficient and that this recognition should bring with it more formalised teaching of these skills to our trainees and provision of such resources for the members of the College.

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#TheatreCapChallenge: safety changes and the PatientSafe Network

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The crucial role of effective communication in the operating theatre has been emphasised in recent years. The advent and demonstrated effectiveness of the Surgical Safety Checklist has been an instrumental victory for those championing improved patient care.[1,2] Unfortunately, medicine has been slow to understand and adopt the science of ergonomics and human factors.[3]

The adoption of ergonomic science principles will result in a paradigm shift in medicine. This has great propensity to improve patient safety through improving interpersonal co-operation and team performance.[3-5]

As seen through the surgical checklist initiative, medical professionals have been pushing for safety systems change, trying to enable 'bottom-up' change to help other providers do their jobs well. Patient safety and patient-centred care are emerging as key drivers in healthcare reform. Medical errors have been reported as the third biggest cause of death in the USA – the exact figure is unknown due to lack of transparency.[6] The PatientSafe Network (PSN) is a group that has decided it is perhaps time we address this staggering statistic from within.

Medicine is unpredictable and precious time is lost when clinicians cannot remember the names of other people in the operating theatre (OT).[7] In addition to helping in time-critical emergencies, named theatre caps can help prevent staff misidentification in seemingly routine procedures.[7-9] One of the most tragic cases was when an anaesthetist, believing a staff member to be a nurse qualified in checking blood allowed blood to be given to a patient.[10] Unfortunately, the staff member was a theatre porter and the wrong blood was given, which resulted in the patient's death. Staff misidentification was felt to be a major contributory factor.[10]

The #TheatreCapChallenge is the remarkable result of one doctor's slightly 'awkward' decision to scrawl his name and profession across his forehead. This seemingly small action has reverberated globally, as a shared desire to change the attitude towards safety in medicine. The idea reduces the chance of delays in identification between colleagues who's faces are normally obscured by surgical gowns and face masks.[7] In addition, health professionals in the modern environment can find themselves working in four or five different hospitals, with hundreds of different people. The ability to quickly identify people in unfamiliar places can prevent embarrassing and dangerous situations from developing. This initiative was born after months of deep reflection, mentoring and learning about change management. It is well recognised that humans are very poor at remembering names. After first introduction, even when not distracted, we only remember 30 per cent of names.[7,11] Alison Brindle, a British midwife, came across the idea and developed the hashtag #TheatreCapChallenge. Alison had been handed equipment accidentally from physicians who mistook her for someone else several times. The initiative began to receive international support.[12]

Four days after the hashtag was released on social media, the initiative was reported on in *The Times* newspaper. Two days later, it was on the front page of the *Sydney Morning Herald*.[12] The article received more than a million reads two days in a row. It received more than 300 000 likes and more than 30 000 comments, mainly from patients[12] who thought it was an obvious improvement. A recent survey, as yet unpublished, found that 89 per cent of 228 respondents working in healthcare institutions feel that operating theatre staff should clearly display their name and role at all times.[12] In another survey of over 1000 individuals, 87 per cent of frontline staff supported name and role theatre hats.[12]

This remarkably simple idea, to write your name and role on your scrub caps, helped change the culture of the operating theatre, from anonymous to collaborative, which made it easier to coordinate.

Dale Carnegie once famously said 'A person's name is to him or her the sweetest and most important sound in any language'.[13] It is then easy to understand why knowing and recognising a team member by name results in increased trust, promotes work engagement and has a clinical improvement through helping optimise teamwork.[7-9] Medical staff – from surgeons to nurses, midwives and students – have taken to social media to share photos of themselves embracing their new way of enhancing safety culture in medicine.

Healthcare is emotive, and the different professions and command structures can breed conformity and resistance to change. Some senior theatre staff have fiercely resisted the change.[12] Those working within the industry the longest can be particularly influential and prevent change. While 100 per cent of medical and nursing students supported the initiative, this number fell to 55 per cent for surgeons with more than 20 years in healthcare.[12] Even though theatre uniforms look like pyjamas, the addition of a name and role on theatre hats seemed to be a step too far.

Within one institution, a senior surgeon has prohibited presentations on the #TheatreCapChallenge. In addition, managers have refused to address this despite being aware. The culture of a whole institution can be influenced significantly by one individual. At the same time, name and role theatre hats have been adopted by several trusts in the UK National Health Service, endorsed by the Australian Society of Anaesthetists, and supported by the American Society of Anesthesiologists, the European Society of Anaesthesiology, and RANZCOG.[12]

It has been New South Wales policy since the Garling Inquiry in 2008 that we should display our names and roles.[14] We just haven't been doing it. A 'Name & Role' project group has gathered information to help promote the #TheatreCapChallenge further. The group contains professors of communication, experts in simulation, nurses, midwives, surgeons, operating department practitioners, anaesthetists and many others.

Currently, in many theatres, people are nearly unidentifiable to the detriment of communication, teamwork and ultimately, patient care.[7-9] Theatre caps are one way we can enhance communication and promote safety culture. This need for rapid identification is especially important in a constantly cycling workforce, in a hospital system that is gaining in complexity.[12]

2222 – Hospital emergency numbers

The #TheatreCapChallenge is only one of the initiatives being driven by the PSN. All our initiatives look to improve patient outcomes, through ergonomics human factors design improvements. Another important initiative is the Australian Standardisation of the Hospital Emergency Number (ASHEN) that has achieved great progress and is building momentum to achieve international standardisation. This project was created to save lives and decrease morbidity from unnecessary delays through overcoming staff struggling to recall what their hospital emergency number (HEN) is during a time critical emergency. In an ongoing survey of Australian hospitals and healthcare facilities, more than 51 separate HENs have been identified in over 268 institutions (approximately 29 per cent of all identified hospital and healthcare facilities).[15] There were different numbers within a single local health district or area health service, or the HEN changed depending on the time of day. Errors in communication regarding the HEN have been found to occur in 13 per cent of studied deaths from in-hospital cardiac arrests.[16] This is another example of 'bottom-up' safety changes that can create more reliability and performance by engaged healthcare providers. Standardisation will ensure that trained healthcare workers can perform effectively in all health facilities throughout the world.

Figure 1. Dani wearing his theatre cap.

Transparency

In the UK, the NHS produces a subjective league table based on the feedback of frontline staff, focused on how well they believe their opinions are listened to. This transparency can help positive change to spread. An example of this form of transparency that the PSN is driving is with the ASHEN initiative. All hospitals have been displayed on a map, indicating visually which institutions have upgraded to the standardised 2222 number. Displaying information in this way is helpful in encouraging standardisation and in helping to raise awareness. We are looking to encourage the same internationally in the future, to help the public understand which hospitals and institutions are proactive in change and encourage a safety culture, and perhaps other aspects of patient care. For instance, which hospitals use:

- the standard hospital emergency number?
- name and role identification?
- safer oxygen cylinders?
- vivid antiseptic solutions?
- standard labelled drug ampoules and prefilled syringes?
- resuscitators that supply sufficient oxygen?

Bottom-up change from frontline staff

Safety culture is determined by the individual's safety attitudes, beliefs, behaviours and values. It is the way safety is perceived, valued and prioritised in an organisation.[17] This culture reflects the real commitment to safety at all levels in the organisation, or 'how you behave when no one is watching'. We can all contribute to a positive safety

culture through considering how the design of work, tools, artefacts and environments helps or hinders our work. Through one small change at a time, we can improve our system.

A paradigm shift needs to occur among managers and senior staff. Instead of focusing on telling frontline staff how to do their jobs, there needs to be greater emphasis on making it easier for them to do their jobs well. To us, the authors, this is what ergonomics human factors design is all about: providing an environment that makes it easier for us to do our jobs well. This requires much greater collaboration with all interested parties, particularly frontline staff. This is how the PSN operates.

The PSN is a not-for-profit charity focused on collaborative implementation of effective safety interventions. We bring together different sources of expertise to improve patient safety.

We can now work in ways not available to us in the past. Through social media, networked international teams can help to improve patient safety and the effectiveness of services. Social networks such as Twitter, Facebook, LinkedIn and others allow us to collaborate efficiently, sharing information. Other software platforms (we're using BaseCamp) allow us to use this information within focused project groups of passionate individuals. It's amazing to see this in action and to be part of it through the PSN.

Perhaps you and your colleagues could do something similar or join us and be a champion for change.

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Prevention of surgical site infections

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A surgical site infection (SSI) is defined as 'infection related to an operative procedure that occurs at or near the surgical incision within 30 days ... or within 90 days if prosthetic material is implanted'.[1]

Causative organisms are usually skin flora, including strep species, Staph aureus and coagulase negative staph. Commensals from any mucosal surface involved will also be present.

Patient risk factors for surgical site infection are predictable; smoking, obesity, diabetes, malnutrition, immunosuppression, old age. Patients with evidence of active infection prior to elective surgical procedures should complete treatment for the infection prior to surgery.

Smoking cessation reduces the risk of wound complications, even if only achieved within six weeks of the surgery.[2]

Emergency procedures have a higher rate of surgical site infections. Open procedures have higher rates than minimally-invasive and laparoscopically-assisted procedures. Measurement of individual surgeon's SSI rates can reduce infection rates.[4]

Protective surgical factors include preoperative antibiotics, perioperative infection control, surgical technique and avoidance of surgery, where possible, in patients with concurrent infection.[3]

There is no evidence for bowel preparation in reducing SSIs unless the colon is to be operated on directly.[4]

Antibiotics are used to reduce the volume of micro-organisms present at the surgical site at the time of the procedure.[6,9] For adequate drug levels in the tissue at the time of incision, antibiotics should be given within 60 minutes of the start of surgery.[6] There is some evidence that repeat dosing may be effective in prolonged surgeries (more than four hours) or with excessive blood loss (1.5 L).[3]

Compliance with preoperative antibiotics is improved using surgical 'time-outs'.[9]

Suggested preoperative antibiotic regimes for gynaecology surgery:[6,7,10]

- Augmentin 1.2 G IV (ceftriaxone 2 G IV if penicillin allergic, gentamicin 3 mg/kg IV if anaphylactic)
- Cefazolin 2 G IV plus metronidazole 500 mg IV (gentamicin and metronidazole if penicillin anaphylactic)

There are no recommendations for prophylactic antibiotics in IUCD insertion, hysteroscopy, diagnostic laparoscopy LLETZ or HSG unless prior infection is suspected.[11]

Caesarean section:

- Ceftriaxone 1 G IV (teicoplanin 800 mg IV and gentamicin 3 mg/kg IV if allergic)
- Cefazolin 2 G IV (clindamycin 600 mg IV as 20-minute infusion if anaphylactic

The antibiotics should be given 30 minutes before the caesarean – ideally at the time of cannulation – to achieve bactericidal levels prior to incision.[7,11] This reduces the risk of postoperative endometritis and surgical site infection by approximately 50 per cent. In the past, concerns of drugs reaching the fetus meant that antibiotics were delayed until after cord clamping, but trials have not observed any increase in neonatal sepsis rates among patients randomised to preincision antibiotics. Whether the magnitude of benefit is the same for elective as emergency caesarean section is unclear.[9,11]

Infection control practices are evidence based and reduce SSIs by up to 40 per cent.[3] These practices include:

- Hand hygiene pre-operative 'scrubbing' by surgical team and hand washing by anaesthetic team.
- Surgical attire with scrubs, gloves and shoe covers/hats/masks that should not be worn outside the operating theatre.

Table 1. Surgical sites vary widely in infection risk.

Bowel	4.3–10.6%
Gastric/liver/pancreas	2.8–12.3%
Coronary	3.3–3.7%
Joint	0.7–1.7%
Eye	0.14%
Gynaecology	2–18%
Caesarean section	3.4–4.4% (emergency 3–15%)

- Hair removal should be done using clippers rather than a razor; however, any preoperative hair removal actually increases infection risk.
- Skin disinfection – there is no firm evidence that preoperative patient bathing reduces SSIs.[5] Preoperative washing by patients with regimes using chlorhexidine wash are commonly used but not proven to be beneficial or cost effective.
- Systematic reviews show that skin cleansing with chlorhexidine reduces skin flora more than povidone-based preparations and should be applied in horizontal stripes for best effect.[5]

Good surgical technique reduces the risk of SSIs:[9,10]

- Minimise use of electrosurgical devices to reduce the volume of tissue necrosis. Areas of necrosis act as a nidus for infection.
- Avoid excessive traction on the wound edges – ring-shaped wound protection devices are available for atraumatic tissue retraction and to stop wound edges drying out.[8]
- Avoid excessive tension on sutures to reduce tissue ischaemia
- Effective haemostasis to reduce the need for blood transfusion
- Keep tissues moist

There is no real data to show differences in SSIs with different types of dressing postoperatively or with use of topical and local antibiotic delivery methods.[3]

Other perioperative measures that may reduce SSIs include:[3,7,9,10]

- Perioperative normothermia seems to be better than hypothermia for avoiding SSIs.
- Limiting of traffic through the operating theatre as, unsurprisingly, the number of people and frequency of door openings is related to the number of airborne particulates.
- Good glucose control – perioperative hyperglycaemia is associated with higher rates of infection.
- High flow oxygenation, though robust evidence is lacking.
- Avoidance, where possible, of blood transfusion.

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Simulation: a solution for multiple problems

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There is a saying that if you only have a hammer, every problem looks like a nail. While this is not true in most circumstances, when it comes to the issues that are problematic in the theatre environment, it might truly be said that for every problem that might arise, there is a simulation-based solution. From surgical rehearsal to demonstration of competence, from team communication to environmental hazard identification, simulation is playing an increasingly important role in both training and improving patient safety in theatre for procedures in gynaecology and in obstetric surgery.

Simulation and surgical skills training

The use of simulation as an education tool to assist in the gaining of surgical competency is very well established. In gynaecological laparoscopy, improvements in performance have been demonstrated with virtual reality simulators[1] and with simple box trainers.[2] In addition to laparoscopic skills, simulation has been shown to improve confidence and performance in hysteroscopy,[3] cervical surgery[4] and even vaginal hysterectomy.[5] The argument is no longer whether or not trainees need exposure to simulation trainers, it has become whether or not trainees must demonstrate competency on a simulator before being permitted to perform specific procedures on real patients. If training time is not mandated, trainees fail to complete simulation training programs, despite being aware of the likely benefits to their own skills and practice.[1] This is possibly due to the pressure on trainees to complete other activities, and to prioritise clinical work over education time, with resource allocation and adequate funding a clear potential barrier. Preshaw et al interviewed patients and hospital managers in the UK and concluded that mandatory demonstration of competency using simulation was supported by these two groups of stakeholders, despite the identification by the managers of resource conflicts between clinical and educational equipment and time.[6]

In Australia and New Zealand there is not yet a standardised approach to surgical simulation training, although the picture is rapidly evolving. In 2016, 87 per cent of trainees had access to simulation, but few training programs had a simulation curriculum or adequate supervision.[7] Reports to the RANZCOG Simulation Training Advisory Group (STAG) this year suggest that laparoscopic simulation curriculums are in use in Queensland, New Zealand and Western Australia. In some units, trainees are not permitted to perform laparoscopic surgery as the primary operator unless they are up to date with their laparoscopic simulation training competencies, and it is likely that this approach will become standard practice.

Simulation can also be used to rehearse rare, or even unique, patient-specific procedures. In 2016, a team from the Mater Mother's Hospital undertook Australia's first full procedure simulation for in-utero spinal surgery on a 24-week-old in-utero baby with spina bifida.[8] The simulation included teams from the Vanderbilt University Hospital and the Mater, allowing the identification of differences in surgical terminology, including instrument names between the Australian and American teams, and improving procedural familiarity and safety prior to operating on a real patient. Simulation has also been used to create 3D patient-specific models for surgical rehearsal, allowing theatre warm-up and practice with no deficit in patient care,[9] although this application has yet to become widespread in gynaecological surgery.

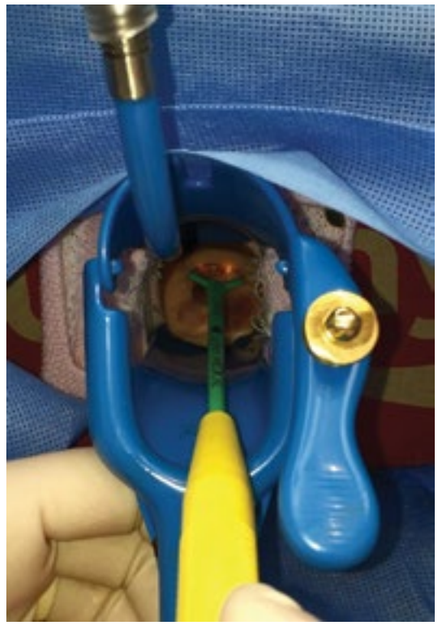

Figure 1. Surgical simulation for skills in LLETZ procedure.

Simulation for communication skills in theatre

Non-technical skills are highly relevant to the theatre environment. Failure in communication leads directly to poor outcomes in theatre, and communication skills of theatre team members are directly related to speed of crisis resolution in the theatre environment.[10] In a 2017 study, a team from Harvard used standardised ratings tools for non-technical skills to test the correlation between the nontechnical skills of surgeons and anaesthetists and time of resolution of two theatre emergencies: intraoperative haemorrhage causing haemodynamic instability and difficult airway resulting in hypoxia.[10] Higher non-technical skill ratings resulted in significantly faster crisis resolution in both scenarios. The clinical relevance of both of these simulated situations to the obstetric surgical setting is obvious.

Simulation training has also been associated with improved empathy for patients in the theatre setting.[11] The operating theatre is a highly technical environment, which patients can find distressing and anxiety-provoking. Simulation and roleplay are effective tools to increase the empathy scores of healthcare providers working in theatres. Again, the relevance to the theatre setting of obstetrics and gynaecology is obvious.

Teamwork and leadership skills are essential components of non-technical skills. Simulation has been shown to be a useful way to assess leadership in emergency situations that might arise in the theatre setting, including postpartum haemorrhage in obstetrics.[12] A recent study of leadership utterances in this setting showed that leadership is commonly shared in this clinical scenario, in contrast to the commonly held perception of singular leadership by the senior surgeon or obstetrician.[12] It may be that simulation will prove to be a useful way of improving teamwork and leadership skills in the specific arena of the operating theatre; the international ViSIOT (Video-Supported Simulation of Interactions in the Operating Theatre) currently underway will seek to address this exact question.[13]

Conclusion

Simulation can never truly be the answer to all the difficulties encountered in the complex, high-stress and rapidly expanding arena of the operating theatre. It can, and must, play a part in improving the training and skills of all members of the operating theatre team, and in the planning and execution of the complex pathways undertaken by patients journeying into that environment. Properly applied with due consideration, simulation has the potential to improve outcomes and enhance patient safety – a goal for all stakeholders in this space.

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Figure 2. Testing new processes and team coordination in the operating room.

Providing anaesthesia in gynaecological surgery

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Much like for the aviation industry, the community expectation in a developed country such as Australia is for perioperative anaesthetic to be low risk. It is fortunate that, due to the high quality of anaesthetic and gynaecological training and practice in Australia, that modern-day perioperative risk is indeed low. To achieve these positive outcomes, anaesthetists must consider a multitude of specific issues pertaining to the patient and the planned surgical procedure. This is particularly so for gynaecological surgery as it encompasses a broad range of procedure types, operative duration, complexity and associated risk. There are often anaesthesia-gynaecological compromises that need to be reached through good communication and discussion in order to achieve safe and effective surgical outcomes (such as the opposing desires for the degree of Trendelenburg during laparoscopic surgery).

In this article, we will summarise some of the major anaesthesia-related gynaecological issues facing the perioperative team for routine elective gynaecological surgery.

Airway management

At the induction of anaesthesia, mask ventilation of the patient by hand prior to endotracheal intubation or laryngeal mask insertion is routine. During this mask ventilation, inadvertent insufflation of the stomach with gas may occur. This can result in increased risk of gastric perforation during laparoscopic entry, particularly with the Palmer's point. Communication between the anaesthetist and the gynaecologist is essential, with recognition of difficult mask ventilation and pre-emptive emptying of the stomach with an orogastric tube.

Pneumoperitoneum

Pressurised insufflation of gas into the peritoneal cavity causes visceral stretch that may result in vagal effects, such as bradycardia, which may be so profound as to be interpretable as asystole. Management is via anticholinergic agents, such as atropine, releasing the pneumoperitoneum and CPR (if only to circulate the anticholinergic agents). These effects are usually transient and may be prevented with judicious use of pre-emptive anticholinergics, particularly when vagal effects are noted on ECG, even with innocuous stimuli (such as when cleaning the umbilicus prior to access).

Venous air embolism, a potentially fatal complication, may result from inadvertent pressurised gas insufflation of a vascular structure during creation of pneumoperitoneum. An anaesthetist's first recognition of this event may be only moments after commencement of insufflation, through a sudden and progressive reduction in end-tidal CO_2 observable on the anaesthetic monitor. This abnormal decrease in expired CO_2 is produced via occlusion of pulmonary vessels with insufflation gas preventing normal CO_2 transfer to the patient's expired gases. Venous air embolism may also present as arrhythmia, hypotension and hypoxia. In the worst cases, a large volume of gas reaching the heart may produce an 'air-lock' which prevents forward flow of blood from the right ventricle to pulmonary circulation and will result in cardiac arrest. Management of this event includes immediate cessation of gas insufflation, support of the circulation with fluids and vasopressors, repositioning to the left lateral position to keep gas in the right atrium, and CPR to maintain cardiac output, which may also potentially break up the 'air-lock'.

Prolonged laparoscopic surgery, especially with significant operative intervention (such as high-grade endometriosis) results in progressive circulatory uptake of the CO_2 that has been instilled into the peritoneum, which is highly soluble in the blood. Greater than physiological minute ventilation is often required, which may be challenging to achieve in

obese patients in the Trendelenburg position as the abdominal contents encroach upon the thoracic structures, reducing lung compliance and pulmonary functional residual capacity. Resultant relative hypoventilation may produce hypercarbia, respiratory alkalosis, cardiac arrhythmia, decreased cardiac contractility, cerebral oedema and narcosis. In patients with significant cardiorespiratory disease, laparoscopy may not be appropriate, necessitating laparotomy.

Positioning

Trendelenburg positioning may result in gastric juice regurgitation which, due to gravity, may flow from the oral cavity towards the eyes that may result in conjunctival and corneal damage. Hence the use of occlusive eye tapes (such as Tegaderm) is often used.

Increased hydrostatic pressure in the body areas below the heart (such as the head and neck when in Trendelenburg) may result in laryngeal oedema, which can present as stridor and acute airway obstruction post extubation. Anaesthetists often exercise caution after prolonged Trendelenburg positioning and perform a 'cuff-leak test' where the endotracheal cuff is deflated and a leak of inspiratory gas around the endotracheal tube is sought prior to extubation. If a leak is not present, the anaesthetist may reposition the patient sitting up for a period of time, or potentially delay extubation by transferring the patient to an intensive care setting to allow airway swelling to subside slowly.

Laparoscopy in lithotomy (especially when combined with Trendelenburg) increases the risk of lower limb ischaemia secondary to increased lower limb venous pressures combined with reduced lower limb arterial pressures due to hydrostatic forces. Lower limb compartment syndrome may occur rarely, particularly in the presence of poorly positioned stirrups causing excessive pressure on the calves.

Extreme Trendelenburg positioning may also carry risk of the patient slipping and associated neurological injury, particularly if the legs are in lithotomy. It is often useful for anaesthetists to use an electronic inclinometer (most modern smartphones have this functionality built-in) in order to monitor and negotiate degree of Trendelenburg.

Indicator dyes

Where ureteric injury is suspected, anaesthetists are occasionally requested to administer intravenous indicator dyes such as indigo carmine. All such agents are associated with anaphylaxis, hypotension and a transient false decrease in oxygen saturation when measured with pulse oximetry.

Reversal agents

Most laparoscopic procedures require the anaesthetist to provide muscle relaxant medications in order to provide a near-motionless operative field. These medications require reversal prior to emergence. Sugammadex is one such reversal agent and is unique in that it may bind certain drugs, including hormonal contraceptives. Accordingly, women using oral contraceptive medications who have received intraoperative sugammadex require counselling and must use an additional non-hormonal contraceptive method for seven days postoperatively to maintain contraception. It is important to note that this effect is unique to sugammadex and does not occur with other more commonly used reversal agents, such as neostigmine.

Hysteroscopic surgery

Operative hysteroscopic procedures, especially in the setting of prolonged surgery with high distention pressures, may be associated with inadvertent circulatory uptake of distention fluids such as glycine. Excessive uptake may result in fluid overload and hyponatremia. In worst cases, potentially fatal pulmonary and cerebral oedema may occur. Prevention is via close monitoring of fluid balance for distension fluids instilled, minimisation of distension pressures and monitoring of arterial blood sodium levels.

Recovery

Many patients presenting for gynaecological surgery suffer from chronic pain and may be tolerant of opioids due to chronic use. Frequently, acute-on-chronic post-surgical pain is difficult to manage and unexpected admissions for day surgery patients due to this complication are common. Opioid-tolerant patients should be managed with multimodal analgesia while taking into account their baseline opioid requirement. Regional analgesia is a useful adjunct in severe cases. Where chronic pain is an issue, anaesthetists will often discuss the analgesic management with the patient's pain specialist.

Postoperative nausea and vomiting (PONV) is also frequent and is another cause of unexpected admission after day surgery. Of the commonly recognised risk factors for PONV (female, past history of PONV or motion sickness, non-smoker, emetogenic surgery such as gynaecological surgery and postoperative opioid use) gynaecological patients will often have many, if not all, risk factors. Management of PONV is via risk stratification and pre-emptive management where PONV is likely (such as pre-emptive intraoperative antiemetics, choosing anaesthesia techniques associated with less PONV, such as propofol infusion based anaesthesia, as well as avoidance of emetogenic agents such as nitrous oxide).

Ergonomics of laparoscopic surgery

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Close your eyes for a moment and let me take you on a journey – the scene is a regular elective operating list at your public hospital, the theatre at a bracing 20°C. The consultant, male and 185 cm, has a new senior registrar assisting, female and 158 cm. The patient, BMI of 55, is on the usual operating table with its usual range of adjustment, lying on 2 cm of gel mat and HoverMatt®. Due to her BMI she also has a Trenguard® in place, adjusted so that the frame protrudes from the side of the table by 10 cm. The right arm is on an arm board because the anaesthetist had trouble getting IV access. Ports are inserted quite medially because of the pannus, instruments selected and Trendelenburg applied. The surgeon is reasonably well placed and can see the monitor near the patient's right foot. The shorter assistant calls for a platform to stand on, but finds that because of natural shorter arm length she has trouble reaching. She stands too far forward because of the arm board and struggles with the difficult catches on the one-size-fits-all instrument handles. The surgeons must twist to reach and see the monitor, placed too high. Two hours later, this challenge in OH&S is over.

Sound familiar? Ergonomics derives from the Greek words ergon (work) and nomoi (natural laws). Combined, they create the modern concept of the science of work and a person's relationship to it. In application, ergonomics is the discipline focused on making tasks and products comfortable and efficient for the user.

Laparoscopic surgery's (LS) advantages to our patients are well documented. De Quervain published on the importance of operating table height in 1906[1] and over the past two decades the very different ergonomic implications of laparoscopic surgery have slowly been explored.

The great epidemic?

The exact prevalence of musculoskeletal disorders in surgeons is unknown due to reporting bias, study design and lack of a standardised assessment tool. Estimates of up to 73–88 per cent are common, or as little as 20 per cent if we assume survey non-responders have zero pain.[2] In LS, surgeons face multiple physical issues that directly expose them to risk of developing musculoskeletal disorders. These include static body posture, repetitive upper extremity movements, overreaching and force exertion from adverse positions and inefficient instruments. This is exacerbated by duration of work, time pressures, 2D vison and limited range of instrument movement and demand for precision. LS also presents higher risk than open surgery.

Compared to all other occupations, these prevalence estimates can be considered excessive, with rates of 22–24 per cent average across other professions.[3] We also have the unique situation of grossly disparate physical characteristics in our workers, as above, and a 'one size fits all' mentality in design of our equipment.

Factors linked to musculoskeletal disorders

Male versus female surgeons

The average male height in Australia is 175 cm, hand length 18.8 cm, and the female average is 161 cm and 16.8 cm. Female surgeons are significantly more likely to seek treatment for hand injuries and other musculoskeletal disorders and report more cases of shoulder discomfort when controlled for hand size. Surgeons with smaller hands report greater difficulty using laparoscopic instruments than those with medium to large hands ($P<0.001$).[4] Specifically, instrument handle design was reported as a cause of physical complaints in up to 83 per cent of respondents[1] with reports of pressure areas (36 per cent), neuropraxia (26 per cent) and uncomfortable posture (57 per cent). Instrument design was considered a significant factor in surgeon disc prolapse.[5]

Surgeon experience

Perhaps contrary to expectation, surface electromyography has demonstrated that assistants exhibit greater activation of biceps, triceps and trapezius muscle groups compared to primary surgeons and are therefore more likely to experience ergonomic stress.[6] Similarly, several studies report surgeon experience as a highly relevant determinant of ergonomic stress, with more experienced surgeons less affected.[7] It is not known whether this reflects technique or muscle conditioning.

Surgeon versus operating table and patient height

Guidelines for the height of work surfaces for standing workers in industry or offices who are performing precision, light or heavy work have existed[8] for decades, but only recently has this work appeared in the LS ergonomic literature. It is increasingly apparent that operating tables cannot be adjusted sufficiently low to allow for the height of 95 per cent of surgeons in the context of LS, with most tables being too high.[1] Modern operating tables adjust for a surface height of between 73 and 122 cm. On top of this, we need to add the patient's abdomen and the often-considerable extra space created by pneumoperitoneum. Surgeons compensate for this by elevating their arms and shoulders with resultant muscle strain and tension with loss of dexterity, or by climbing on to a step. This limits their movement as well as access to foot switches required by most laparoscopic diathermy devices, resulting in a cluttered and potentially unsafe foot space and awkward posture.

So, what is the optimal table height? Matern et al's elegant study [1] considers the varied heights needed to activate four laparoscopic handles (shank, pistol, axial and rod) and assuming an insertion angle of 20 degrees and elbow angle of 90 degrees indicates a working height of 103 cm. However, the lowest operating table height (73 cm) added to the 'average' insufflated patient diameter of 40 cm gives a height of 113 cm. This will prove to be too high for 95 per cent of surgeons.

The importance of elbow angle

This dictates the eventual height of the operating table; the perfect height lies between 70–80 per cent of elbow height.[9] This study determined that the most relaxed (electromyography neutral) posture for the upper limb lies with arms slightly abducted, retroverted, rotated inwards at the shoulder and with an elbow angle of 90–120 degrees. When the height of the operating table was set at less than 80 per cent of elbow height, significantly more neutral shoulder positions were recorded at 90 per cent and above ($P<0.05$).The most neutral wrist excursions were recorded with heights of 70–80 per cent, and heights in the lower range introduced back flexion of up to 25 degrees. This means an unachievable table height of between 29–69 cm.

Monitor position

Ideally, the visual axis of the surgeons' work should approximate their mechanical axis. Prospective studies indicate decreased operating time for moderate complexity LS procedures.[10] The screen is preferably positioned in the surgeons' direct line of sight, in line with their forearm–instrument motor axis. The screen height should be positioned below eye height to allow 'gaze down viewing', allowing alignment with the motor axis.

This research commenced with the advent of monitor-rich workplaces in the 1980s and suggests that eyestrain is influenced by monitor distance and vertical angle. The neutral orientation of the human eye in the orbit is at an angle of 15 degrees gaze down. In a relaxed state, the accommodation of the unrefracted human eye is approximately 1.3 dioptres, giving a focal length of 0.8 m and average convergence distance is 1 m. Here, the orbital and ciliary muscles are in their most relaxed state.[10]

These studies demonstrate strong correlation with observed personal preference and efficiency trial data, recommending a monitor distance of 0.8–1.2 m, although this may be increased for larger high-resolution screens.

Patient positioning

The importance of this cannot be overemphasised. I make it a point to always check positioning and safety of the patient, including pressure points, before scrubbing. The well described principles of patient positioning include the ability to sustain prolonged head down position, which in most cases cannot be accommodated by a standard operating table mat. Favourites include gel mats, bean bags and the Trenguard. The latter usually comes with an extended frame that protrudes from the lateral edge of the operating table, providing a sharp corner to lean on for the duration of the laparoscopy. The frame can easily be cut to just less than the width of the table without impairing its properties. Pronounced Trendelenburg renders it necessary for the surgeon to stand further towards the patient's head, and so arm boards must, in every circumstance, be removed.

Position of scrub nurse and instrument table

Generally, the dynamics of LS are very different to open surgery – a smaller number of longer instruments that are usually a 'set piece' and once the place. For ease of access, I favour 'saddle bags' over the patient's thighs, which allow the instruments to be spread out for easier access. This also avoids the possibility of delicate Maryland bipolar tips being damaged when dropped to the bottom of a quiver. Snarls and tangles with leads are common even when your operating space is immaculately organised, and the nurse can assist with this and the cleaning of diathermy tips if on the same side as the surgeon.

Diathermy pedals

Most cases will require the core unipolar pedal together with a bipolar button. The unipolar pedal should be positioned on the floor below the patient's hip joint, as close as possible to the table without

getting caught beneath. The bipolar button, however, should be against the unipolar pedal but on its lateral side, or it will be caught under the table when you need it most! Both pedals should be within natural, easy reach and should have sufficient tactile properties to be activated without needing to look.

Alertness, performance and body temperature

Body and ambient temperature are closely aligned to performance of cognitive and fine motor tasks.[11] Performance is best with a body temperature just above 37, and an ambient temperature of 22°C.

Instrument design

Angle between instrument handle and shaft for complex laparoscopic suturing

Ahmed et al[12] demonstrated that the optimal angle of handle to shaft for bowel suturing is 40 degrees. This outcome was determined through objective analysis of suture accuracy, together with leak pressure of bowel repairs. Bear in mind that we use a large variety of needles in gynaecology and, so, just as with open surgery, we will need a variety of needle drivers. Fine angled needle drivers as above are not suitable for closing a vaginal vault.

Handle design

The design of laparoscopic instruments over the last 10–20 years has invariably concentrated on the ringed, pistol grip handle with a round, rotating shaft and a single- or double-action grasping tip. Gutierrez Diez[13] demonstrated that laparoscopic instruments require 3–5 times the muscle contraction force of open instruments, due to a 3–6 times less efficient transfer of energy. In addition, there is a decreased efficiency of grip due to wrist flexion and ulnar deviation imposed by pistol grip design. The rings themselves are, with few exceptions, not designed to accommodate the surgeon's hands, leading to excessive pressure in use.

Where to from here?

Although the past two decades have seen enormous industry- and clinician-led strides in energy sources and particularly microprocessor technology, most mechanical laparoscopic instruments have developed little. We need to pursue instruments with contact surfaces of a design enabling light contact with optimal energy transmission, different sizes for different surgeons' hands (both male and female) and, most importantly, operating tables designed for laparoscopic surgery. The most obvious improvement will be tables enabling a suitably low operating height so that we can discard the humble chequer plate step.

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Considerations for the obese obstetric patient

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In line with the global obesity health epidemic, Australia-wide data show 46 per cent of pregnant women are either overweight (BMI 25–30) or obese (BMI ≥30)[1] and rates in rural areas are even higher, with over 65 per cent overweight or obese.[2] More significantly, the rates of high-order obesity are increasing; our local data at Western Health reveal over 6 per cent have morbid obesity (BMI≥40) and 1 per cent are super obese (BMI≥50). This prevalence means obesity is now considered to be the most common medical problem in pregnancy.[3]

Obesity is associated with a higher chance of adverse pregnancy outcomes including gestational diabetes, hypertension and pre-eclampsia, fetal macrosomia, induction of labour, prolonged labour and failure to progress, shoulder dystocia, failed instrumental delivery and postpartum haemorrhage (PPH).[4,5] It is therefore not surprising that obese women have an increased risk of requiring theatre, whether for a caesarean section, trial of instrumental delivery or management of PPH. Despite the prevalence of obesity, there remains a lack of certainty about many risk-mitigation strategies for intraoperative and postoperative care. We will outline some practical approaches to help with the challenges of operating on obese parturients and update areas of uncertainty.

Capability assessment and preparation

Many maternity services transfer women above a particular BMI threshold (commonly BMI≥40) in recognition of capability constraints. While this can limit the chance of needing to manage a morbid- or super-obese pregnant woman, all services should have protocols in place in the event of an unplanned presentation. Incorporating morbid- or super-obese patient scenarios into simulation training (such as PROMPT) can support appropriate responses to unplanned presentations requiring theatre.

Equipment, positioning and personnel

Clear communication to theatre staff about morbidly obese patients will help ensure that appropriate personnel and equipment are available. Training in safe manual handling should be mandatory for all staff members involved. The weight limits of operating tables and stirrups should be clearly labelled, with the option of width extenders if necessary. Other required equipment includes lifts or hoists for transfer, longer surgical instruments and retractors, and appropriately sized blood pressure cuffs, thromboembolic deterrent stockings and pneumatic compression devices.[3,6]

Obesity adds to total theatre time, with associated increased risk of pressure sores and neural injuries highlighting the importance of careful positioning to maximise surgical exposure while reducing injury.[7] A 10–15 degree left lateral tilt is recommended to reduce the risk of supine hypotension, which is more pronounced in obese women, due to the added weight effect of the panniculus.[8]

Whether managing a PPH, instrumental or caesarean, the presence of senior, experienced staff (midwifery, nursing, anaesthetic and obstetric) can help limit operating times and support timely decision-making if any of the multitude of potential complications arise.

Anaesthetic considerations

Obesity and pregnancy are both known to cause physiological changes that increase the risk of anaesthetic complications. There is a higher incidence of other medical comorbidities that may complicate anaesthesia, such as obstructive sleep apnoea, hypertension, ischaemic heart disease and gastro-oesophageal reflux disorder.[9]

Regional anaesthesia (epidural or spinal) is preferred, but is more difficult due to adiposity and distortion of anatomical landmarks. Multiple attempts are often required and there is a higher failure rate.[3] Although

general anaesthesia is avoided whenever possible, it is more common in the obese obstetric patient.[5] The challenges include higher rates of difficult intubation, aspiration and postoperative atelectasis.[6] The obstetrician also needs to be aware of the increased anaesthetic and operating time required, which may necessitate alterations to planned elective lists and earlier recourse to caesarean section in unplanned cases.[7]

Consultation with an anaesthetist in the third trimester is recommended to undertake a risk assessment, additional testing as required and patient counselling. Although RCOG guidelines recommend routine anaesthetic consultation for women with a BMI of 40 or more, policies need to be individualised to local areas depending on the volume of patients, capacity and capability of the local anaesthetic department, and availability of antenatal and pre-operative education to women.[6]

Caesarean section

Wound asepsis

Obesity increases the risk of wound complications.[10] When prepping the abdominal skin, it is important to ensure the area under the panniculus and the groin have also been thoroughly cleaned. Although not specific to the obese patient, a Cochrane review has shown that cleansing the vagina with iodine or non-alcoholic chlorhexidine pre-operatively probably reduces the risk of post caesarean section endometritis.[11]

Antibiotics

Antibiotic prophylaxis prior to skin incision reduces the risk of wound complications and cephalosporins are commonly used.[6] There remains uncertainty about optimum dosing in the obese population, with US guidelines suggesting 2 g cephazolin in patients less than 120 kg and 3 g cephazolin in patients over 120 kg.[8] Whatever dose is used, it is important to ensure administration 30–60 minutes before skin incision. This can be difficult to achieve and consideration of patient pathways to support this is likely to reduce infection rates.

Incision

There is ongoing debate regarding the optimal incision to facilitate good access to the pelvis and lower uterine segment, and to minimise the risk of wound complications.[3,4] Senior involvement in deciding the appropriate incision and an individualised approach are recommended:

- A suprapubic transverse or Pfannensteil incision under the panniculus often has less adipose tissue and is closer to the pelvis; however, the incision sits in a moist anaerobic environment and is at risk of poor healing or infection.[10] If a Pfannensteil incision is chosen, a panniculus retractor (such as Traxi®) can be useful in enhancing surgical site visualisation and reducing the number of staff required to assist.
- A transverse incision above the panniculus at the level of the umbilicus may be suitable for some women. With the abdominal wall anatomy distorted by a large panniculus, the umbilicus is more caudal than its usual position and a para or supraumbilical incision may offer good access to the uterus, although may hinder access to the lower uterine segment and increase the risk of a classical or vertical hysterotomy. This type of incision requires division of the rectus muscle and is more vascular, but has the strength of a transverse repair and avoids burying the wound under the panniculus. Transverse incisions are associated with less postoperative pain, enabling earlier mobility and improved respiratory effort.[4,8]
- A midline incision may offer excellent exposure, but is associated with more postoperative pain and has increased wound complications when compared with a Pfannensteil incision.[3,10]

Surgical considerations

To overcome the challenges of operating deep in the pelvis in an obese patient, the use of deep retractors, adequate lighting and longer instruments are helpful; the latter should be immediately available in theatre rather than being collected as the need arises. Meticulous haemostasis, closure of the recuts sheath, and closure of the subcutaneous adipose layer if 2cm or more, reduces the risk of wound complications.[3] Subcutaneous drains have not been shown to reduce the risk of wound complications.[4]

Dressing

A prophylactic negative pressure wound therapy (NPWT) device may reduce the risk of wound complications; however, there is significant cost associated with using these and further research is needed before they can be routinely recommended.[12]

Postoperative care

General principles of postoperative care include adequate analgesia, early ambulation and early return to diet. Additional considerations include careful monitoring of respiratory and infectious morbidity, the need for high-dependency unit admission, and early physiotherapy involvement. Senior clinician review to ensure optimised postoperative care is required; the common practice of leaving the most junior member of the team to review postoperative obese mothers is inadequate.

Infections

Postoperative infections remain a major complication. There is a higher risk of endometritis and wound complications, including wound collections, infections and dehiscence.[6] Use of postpartum prophylactic antibiotics may be of benefit among obese women, although again, further research is needed before this can become recommended practice.[13]

Venous thromboembolism

Pregnancy, obesity and immobility all increase the risk of venous thromboembolism. Although guidelines vary internationally, there is consensus that early mobilisation, antithrombotic stockings and mechanical devices are recommended in addition to pharmacological prophylaxis during admission.[6,8] There is also potential benefit in weight-based dosing and some jurisdictions recommend prolonged low molecular weight heparin for up to six weeks for those at particularly high risk.[14]

Summary

Obesity is associated with increased obstetric risks and higher rates of theatre usage. Preparation, planning, practice, provision of suitable equipment and presence of senior experienced staff are important to mitigate risks. Other approaches such as NPWT devices, extended antibiotics, prolonged and dose-appropriate thromboprophylaxis should be considered, although the evidence base is still maturing and general recommendations remain hard to support given the potential costs and risks.

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IN THEATRE

Gynaecological surgery for bariatric patients

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The increasing obesity rate in Australia is causing a burden to the health system, as managing these patients is a medical and surgical challenge. In this article, I aim to provide some practical tips that may make the surgical management of these patients easier, and hopefully improve patient outcomes.

The World Health Organization (WHO) defines overweight as a body mass index (BMI) greater than 25, and obesity greater than 30.[1] Obesity can further be divided into:[2]

- Class 1: BMI 30 to ≤35
- Class 2: BMI 35 to ≤40
- Class 3: BMI ≥40

Waist circumference is another measure of health that is useful in clinical practice. WHO reports a waist circumference greater than 94 cm for men and 80 cm for women as a marker for increased risk of chronic disease.[1]

In 2014/15 six million Australian adults (36 per cent) were overweight and 5 million were regarded as obese. This equated to 27.4 per cent of female adults, an increase from 18.9 per cent in 1995.[4] The average waist circumference for women in 2015 was reported to be 87.5 cm.[3]

Waist/hip ratio (WHR) is also a useful method to assess obesity. A WHR greater than 0.85 indicates abdominal obesity rather than the more typical female distribution over sub-umbilical areas, hips and thighs.[4] This central obesity can be particularly challenging to operate on.

A review of 159 025 benign hysterectomies from the American College of Surgeons National Safety and Quality Improvement Program from 2005–16 showed that abdominal hysterectomy carried a 17 per cent increased risk of morbidity for class 1 obesity, 55 per cent increase for class 2 and 163 per cent higher for class 3 obesity. Only class 3 obese laparoscopic patients experienced a significant increased morbidity when compared to patients of normal BMI.[5]

In addition to the surgical challenges, obesity is also associated with type 2 diabetes, cardiovascular disease, breast and endometrial cancers, and increased mortality.[6] These patients have a four-fold increase in pre-existing conditions when compared to patients of normal BMI.[7]

A prospective study using the Danish Hysterectomy Database over five years compared complications from 20 353 women having benign hysterectomies and found obesity was associated with increased risk of bleeding, infection and re-operation after open hysterectomy.[8] A number of studies found the increase in postoperative complication rate and morbidity associated with obesity has not been observed after laparoscopy, but only after laparotomy;[3,7,9,10] though there is some evidence to the contrary.[11]

When awake, the diaphragm and intercostal muscles can act against the weight of thoracic and abdominal fat; however, with muscle relaxation the compensation is lost and the lungs are subjected to this weight. The resultant effect is a fall in transpulmonary pressure in dependent lung regions, atelectasis of the posterior segments of the lower lobes, decrease in end expiratory lung volume, reduction of respiratory compliance and increased airway resistance. The addition of pneumoperitoneum displaces the diaphragm cephalad, thereby increasing atelectasis, reducing functional residual capacity, decreasing respiratory compliance and increasing airway resistance, compounding the effects of obesity. Trendelenburg increases peak inspiratory pressure, reduces respiratory compliance and impairs arterial oxygenation.[12] Gynaecological surgery on obese patients combines two of these factors, and all three if minimally invasive surgery is performed. Therefore, gynaecological surgery on obese patient poses a number of anaesthetic issues.

As a result, surgery on bariatric patients should only be undertaken with the aid of a multidisciplinary team comprising a surgeon, anaesthetist, physician, intensivist, surgical nurses and allied health staff, including physiotherapist, dietitians and psychologist. Hospitals that undertake surgery on obese patients require appropriate infrastructure – that includes bariatric operating beds and ward furniture – and must be adequately staffed. Mobilising a morbidly obese patient postoperatively can require two or three people and, if inadequate, can be an occupational health and safety risk to staff and possibly cause injury to the patient.

Pre-operative

As obese patients have increased comorbidities, a thorough medical history is essential. Special attention should be placed on whether patients are on oral anticoagulation therapies, as bridging with enoxaparin or unfractionated heparin may be required, or on a sodium-glucose co-transporter-2 (SGLT2) inhibitor, which will require cessation up to three days pre-op.[13] Medical input should be sought to optimise co-existing conditions.

If pathology allows for a delay in surgery, a weightloss program should be undertaken with the aid of a dietitian and psychologist. Even a pre-operative weightloss of a few kilos can reduce the liver volume that can be useful in the retraction of bowel from the pelvis. As these patients can have airways that are difficult to intubate, an anaesthetic review is required. I think that some form of bowel preparation is useful in reducing rectal and sigmoid volume, thereby aiding exposure in the pelvis. This can be achieved with rectal medications and will not cause fluid or electrolyte imbalances that can occur with oral mechanical bowel prep.

Mode of surgery

A number of studies report less intra-operative and postoperative complication when bariatric patients are treated via a minimally invasive approach rather than via laparotomy;[3,7,9,10] however, I think that it is important to individualise the management based on pathology, comorbidities, previous surgery, degree of head down that can be achieved and fat distribution. A very high WHR may make a vaginal operation or a laparotomy via a transverse suprapubic incision more feasible than a laparoscopic approach. The surgeon should also play to their strengths and apply the technique they are most comfortable and experienced with.

Consideration should be given to a hybrid operation, where aspects of different modalities can be incorporated. If vault closure is too difficult laparoscopically due to instrument reach or exposure, close it vaginally. A laparoscopic hand port can be used to make laparoscopic surgery easier. A diagnostic laparoscopy can be performed to confirm no bowel adhesions to uterus or adnexa prior to a vaginal hysterectomy. Securing the infundibular-pelvic ligaments laparoscopically then proceeding to a vaginal hysterectomy and bilateral salpingo-oopherectomy will minimise the amount of time required in Trendelenburg position. The options are numerous and should be tailored to the individual patient and pathology. Anaesthetic considerations will also play a role in the mode of surgery. If insufficient Trendelenburg can be achieved, then a laparotomy or vaginal operation would be preferred.

Operating theatre requirements

A bariatric operating table with ability to attach side extensions and bariatric strips are vital. Care should be taken to confirm that the fulcrum of the bed is under the patient's pelvis, so the head is lowered rather that the pelvis raised when Trendelenburg position is applied. Just as head-down position assists access to the pelvis, lateral tilt should be considered to help expose the pelvic sidewalls.

Crepe bandage applied to the arms and thighs can help secure excess tissue and prevent injury. Care should be taken to prevent pressure areas. Ergonomics of the operating theatre are important, and surgeon injury can be reduced with standing platforms and adequate retractors. Long operating instruments, a head light for an abdominal and vaginal surgery and bariatric laparoscopic ports and instruments will also assist in making for a successful operation.

Vaginal surgery

A retrospective review of 3757 patients undergoing vaginal, lap-assisted or total lap hysterectomies for benign pathology between 2005 and 2012 reported shorter operative time with vaginal hysterectomy, regardless of uterine size and BMI,[14] suggesting that vaginal surgery is extremely useful in this cohort of patients.

Suturing the labia majora laterally, and at times the tissue over to mons pubis cephalad, with interrupted sutures, or taping the panniculus cephalad or laterally, and the use of a Lone Star retractor (endotherapeutics) will aid exposure. Due to difficult access, consider use of an advanced electrosurgical device to allow pedicles to be secured and divided in a single manoeuvre.

Minimally invasive surgery

In a retrospective cohort study comparing non-obese, obese and morbidly obese patients, Peng et al report no difference in conversion rate and complications, but longer operative time, suggesting laparoscopy on obese and morbidly obese patients is safe and feasible.[15]

Minimally invasive surgery can only be successful with a reasonable degree of head down; therefore, non-slip mattresses, such as memory foam, are important. I avoid bean bags as they can cause pressure areas and make application of a self-retaining retractor post to the bed difficult if conversion to laparotomy is required.

Testing Trendelenburg prior to commencing of surgery will give the anaesthetist an indication of ventilation pressures and likelihood of completing the surgery minimally invasively. Regardless, once entry and exposure is established, the operation should continue with the least amount of head down and at the lowest pressure required to provide adequate vision and exposure.

The position of the umbilicus can vary dramatically with obesity. Therefore, only bony landmarks should be relied upon. As a result, I suggest entry at Palmers point, rather than the umbilicus, as the left costal margin serves as a landmark. An oral-gastric tube to decompress the stomach prior to attempting pneumoperitoneum at Palmer's point is critical to minimise injury to the stomach.

No ideal entry technique has been established and there is no significant difference in terms of safety;[16] however, Veress entry is associated with higher rate of failed entry, extra-peritoneal insufflation and omental injury.[17] In obese patients, I prefer Veress needle insufflation or direct optical entry, as Hassan entry in obesity requires a deep, narrow dissection and offers poor vision. It also makes closure difficult, with increased risk of incisional hernia formation.

When attempting to enter the peritoneal cavity with a Veress needle or direct optical entry at Palmer's point, it is important to introduce the instrument perpendicular to the skin, so it is directed medially. If directed perpendicular to the operating table, it can skim off the side of the peritoneal cavity and remain extraperitoneal. I suggest choosing an entry technique to use when entry is deemed difficult, and use it for all cases so that it is familiar and comfortable, instead of resorting to a rarely used technique in a difficult situation.

The vertical depth from the anterior abdominal wall to intra-abdominal viscera is proportional to intra-abdominal pressure.[18] An intra-abdominal pressure of 10 mmHg results in 0.6 cm between abdominal wall and intra-abdominal viscera, while an intra-abdominal pressure of 25 mmHg increased this distance to 5.6 cm.[19] Tsaltas et al reported no untoward physiological changes at intra-abdominal pressure of 25 mmHg when patients were supine.[20] As a result, I think it is reasonable to insufflate to a pressure of 25

mmHg for optical entry and port placements prior to reducing the pressure. I routinely place my first port at Palmer's point and then request Trendelenburg. This allows assessment of the pelvis and ability to place the remaining ports in areas that will provide maximum benefit, depending on the operation.

Suturing the panniculus to the upper thigh and mons with a number of interrupted silk sutures is useful in reducing the weight of the abdominal wall on the chest, stabilises the abdominal wall and decreases the pressure of the panniculus on the ports, especially the supra-pubicly.

Port placements tend to be more superior in obese patients, as the umbilicus is often at or below the pubic symphysis. The supra-pubic port should never be placed under the panniculus, as the surgeon will have to push against the abdominal wall in order to manipulate the instruments. Additionally, care must be taken not to 'buttonhole' when placing the supra-pubic port.

Spending time to mobilise the sigmoid colon ensures that the large bowel can be retracted out of the pelvis and mobilising the ceacum aids retracting the small bowel from the pelvis. Applying an Endoloop® ligature to an appendices epiploicae and retrieving the thread via the Palmer's point port or an Endo Close™ will help with retraction of the colon. Endoscopic fan retractors can also be helpful, especially for small bowel retraction.

Do not be concerned about introducing additional ports if it helps with access and triangulation of tissue. The benefit of minimally invasive surgery will not be lost with a few extra ports, but certainly will if there is conversion to a laparotomy. Uterine manipulators effectively provide an extra hand and are a must if performing a hysterectomy or require retraction of the uterus. Advanced vessel sealing devices will minimise instrument changes. Ureters can be difficult to see along pelvis sidewalls in obese patients, and ureteric stents can be used to aid their identification. Skeletonising pedicles prior to their division can reduce the risk of ureteric injury further.

If the overlying bladder is making closure of the vault difficult, and the assistant is required to retract bowel, the bladder can be sutured to the abdominal wall via a straight needle passed supra-pubicly. If the abdominal wall is too thick to introduce the straight needle, the bladder can be sewn intracorporeally and the suture retrieved supra-pubicly using an Endo Close. Alternatively, a T'Lift® can be used. The AirSeal® insufflator is useful in minimally invasive surgery on bariatric patients as it reduces pressure fluctuation and can allow for surgery at lower pressures.

Generally, the Da Vinci robotic surgical platform requires more Trendelenburg; however, often lower pressures can be used, as the robotic arms tend to support the anterior abdominal wall. The articulated instruments provide a greater range of motion and are ideal for operating in a confined space, while reach to the pelvis is rarely an issue. Reduced surgeon fatigue is another advantage of the robotic platform.

A meta-analysis of 51 observational studies involving 10 800 obese patients with endometrial cancer report a laparoscopic conversion rate of 6.5 per cent, a robotic conversion rate of 5.5 per cent at BMI more than 30, and 7.0 per cent and 3.8 per cent respectively at BMI more than 40. Inadequate exposure was reported as the most common reason for conversion. Patients not able to tolerate Trendelenburg were identified in 31 per cent of laparoscopic conversions, but interestingly, only in 6 per cent of robotic conversions.[21] This study revealed no difference in complication rates between laparoscopic and robotic surgery on obese patients.

Robotic surgery offers a shorter learning curve,[22] no reported difference in complications across BMI groups;[21,23] and shorter hospital stay and less blood loss when compared to open surgery.[24] Therefore, it may be an ideal option for lower volume surgeons choosing to operate on bariatric patients. At closure, I suggest an Endo Close needle to ensure adequate closure and minimise hernias of all port sites 10 mm or greater.

Laparotomy

Again, bony landmarks should be used to decide on position of incisions at laparotomy. As with laparoscopy the incision, transverse or longitudinal, needs to be more superior than on patients of normal BMI. Sutures can again be used to stabilise and retract the panniculus and avoid transverse incisions under the panniculus due to difficulty with wound care and risk of infection.

Self-retaining retractors are vital to achieve adequate exposure and reduce assistant fatigue. The addition of an Alexis® retractor is useful in reducing the width of the abdominal wall so the surgeon can get closer to the operative field. It also serves to stabilise the abdominal wall so tissue does not protrude around retractor blades.

As with laparoscopy, spending time to mobilise and reflect the bowel will pay dividends, vessel-sealing devices and ureteric stents are useful and the principle of skeletonising pedicles to minimise injury to surrounding tissue holds true. A BMI greater than 30 is an independent risk factor of incisional hernias,[25] so meticulous care should be taken when closing the rectus sheath.

A Cochrane review found that uncertainty remains as to whether negative pressure wound therapy reduced mortality, dehiscence or seroma formation when applied in a prophylactic setting.[26] Despite this, I have a low threshold to consider a drain in the adipose layer or a negative pressure dressing. Skin should be closed with interrupted sutures or staples that can be removed in the event of a wound infection.

Postoperative

An intensive care admission is often required postoperatively. Ongoing involvement of medical teams to treat co-existing conditions, especially maintaining tight blood glucose control, is important. Medical and mechanical thromboprophylaxis will reduce thrombo-embolic events and have low threshold for prolonged thromboprophylaxis.

Continued input form dietitians and physiotherapists for chest physiotherapy and mobility aids recovery, and as long as no bowel surgery has been performed, I encourage early feeding and mobilisation as per enhanced recovery after surgery (ERAS) protocol.[27]

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IN THEATRE

Ergonomics: keeping the surgeon safe

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Ergonomics is the study of a person's efficiency and safety in their working environment. It is the way we design and use equipment to optimise performance. This article will review how the layout of equipment in theatre and common errors in surgical posture can contribute to the development of musculoskeletal symptoms or injury, as well as ways to avoid this.

Scope of the problem

Musculoskeletal symptoms are a prevalent issue for the gynaecology surgeon. A Canadian web-based survey of 495 O&G practitioners demonstrated high rates of lower back (75.6 per cent), neck (72.9 per cent), shoulder (66.6 per cent), upper back (61.6 per cent) and wrist/hand (60.9 per cent) pain[1] within the preceding 12 months. Rates were higher in women than men, with an approximately two-fold odds ratio, which is in keeping with evidence from other studies. Many respondents felt that surgery caused or exacerbated their symptoms, yet these symptoms are often ignored. Other risk factors include volume of surgical cases,[2] surgeon inexperience and lack of awareness of ergonomic principles.[1]

Laparoscopic surgery poses its own unique set of challenges to surgeon safety, owing to factors such as the relative static nature of surgeon posture, difficult operating position, potential for prolonged surgical time and the use of hand-help operating tools that require great precision of movement.[3] In addition to musculoskeletal discomfort or injury, laparoscopic surgeons may experience ocular strain as well as mental stress and fatigue. The effect of these symptoms on surgeon health, performance and productivity may also have a wider reaching adverse effect on quality of patient care and efficiency of the healthcare system.

Intra-operative considerations

Equipment

It is important to consider the arrangement of the relatively large amount of equipment required in theatre for a laparoscopic case. Appropriate use provides space for the surgeon to move freely, without having to adopt an awkward posture or use extremes of range of movement to accommodate or use equipment.

Surgeon posture

Common errors in surgeon posture, which may also contribute to discomfort and injury, include forward head position, shoulder elevation and asymmetry in weight bearing.[4] A forward head posture increases the relative weight of the head on the cervical spine and can lead to degenerative changes.

Strategies for improving posture include:

- Tucking in both arms of the patient (which needs to be negotiated to accommodate anaesthetic needs). This creates more operating space for the surgeon, allowing a more comfortable posture to be adopted.
- Developing a routine of regularly resetting posture, shifting position and performing stretches during longer cases to reduce lactic acid build-up in the muscles and load on the musculoskeletal system.

Education and training

A 2013 literature review, conducted by the Urogynaecology Department of the Harvard Medical School, demonstrated a significant lack of awareness of ergonomic principles by surgeons. In response to these findings, they created an accessible educational video to demonstrate these principles.[4] (This can be accessed via www.youtube.com/watch?v=gmAFvfHn4UQ). This type of educational resource should form part of initial surgical skills training for trainees, as well being referred to regularly by experienced surgeons.

RANZCOG laparoscopic simulation courses are run four times per year in New Zealand and are fully funded for trainees. These courses include in-theatre practical teaching on how to optimise the surgical environment, as well as exercises using lapsim computers and training boxes. Laparoscopic surgeons have to undergo a steep learning curve as we deal with unique physical and cognitive challenges. These include factors such as learning to accommodate for the fulcrum effect of instruments, the reduction in haptic feedback, the smaller degree of freedom in movements and the translation of two-dimensional images. These factors can result in poorer performance and significantly higher mental stress – both of which can be improved with the use of simulation training.

As well as education and simulation, physical fitness may have a role to play on the development of physical symptoms during laparoscopic surgery. For example, Tse et al[5] described a trunk endurance training program resulting in a reduction in discomfort and error rate during a laparoscopic simulated task. If injury does occur, surgeons may need to use analgesics, physiotherapy, reduce their surgical workload or take sick leave to cope with musculoskeletal symptoms related to operating.[2]

Table 1. Optimal arrangement and use of equipment in theatre.

Equipment	Optimal use/position	Effect
Monitor/screen (see photos)	Neutral position, in direct line of sight of surgeon and assistant. Placed at 80–120 cm away from the surgeon, adjusted to ideally 15 degrees below eye level.[4] Use of screen for each surgeon or assistant.	Avoids excessive neck torsion. Reduce the work of accommodation and the extra-ocular muscles, reducing eye strain and fatigue. Optimises screen position for each team member.
Surgical bed	Set operating table height to approximately 80% of the surgeon's ground-to-elbow height.[2] Hold instruments at elbow level, with a range of 90–120 degrees of elbow flexion and relaxed shoulders.[4] Pre-operative positioning of the bed in the theatre to allow maximal sliding of the bed toward the anaesthetist. Use of standing stool.	Optimal working surface height avoids the need for the surgeon to compensate with excessive arm abduction, shoulder elevation and ulnar wrist deviation,[3] which predisposes to musculoskeletal fatigue and injury.[2] Allows the operating table height to be set at its lowest possible level. Optimises working surface height; however, also limits range of movement options.
Electrosurgery equipment • Foot pedals	Place adjacent to the primary surgeon's foot, in line with the target instrument and directed toward the target quadrant.[4]	Reduces asymmetry of position, such as excessive shifting of weight to the contralateral foot and lower limb.
• Advanced energy devices	Handheld activation negates the need for foot pedals.	Reduces strain of the feet and lower limbs by avoiding dorsiflexion. These, however, come at a significant increase in cost or may not be the most readily available or appropriate tool for the surgical task.
Gel foot pads	Gel pad positioned underfoot.	Can help to reduce discomfort in the back, neck and feet with prolonged periods of standing.
Surgical bean bag	Securely positioned and activated underneath patient, especially in cases of elevated body mass index.	The resultant reduction in table width (in comparison to bed extensions) reduces the truncal abduction required to reach the patient. Also prevents the patient from sliding on the table while in Trendelenburg.
Surgical instruments	Select the appropriate tool and use the instrument only for the purpose for which it was designed. For example: Get familiar with all available instruments. Use shorter instruments where appropriate. Use an instrument with right angled or articulating tips.	Correct instrument usage results in: Typically, shorter time to task completion.[2] (Prolonged periods of instrument use can lead to digital nerve compression and neuropathy.) Less mechanical work of the hand to complete the task. (Laparoscopic instruments require three to five times the muscle contraction force of open instruments.) Manipulation of instrument without such extreme ranges of wrist movement.

Conclusion

Ergonomics includes the ongoing search for technology that alleviates these challenges. Easier activation energy devices, light and camera sources may become more readily available, such as voice-activated equipment and flat foot controls that employ rotation for activation.

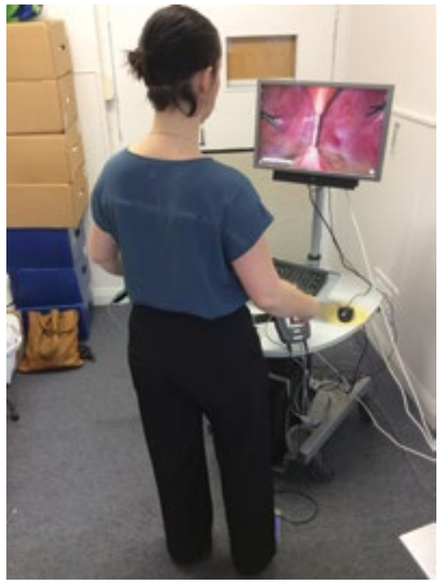

Figure 1. Good posture, neutral spine position, relaxed shoulders, easy access to foot pedal.

Figure 2. Poor posture with angle of spine, loading left hip, abducted arms.

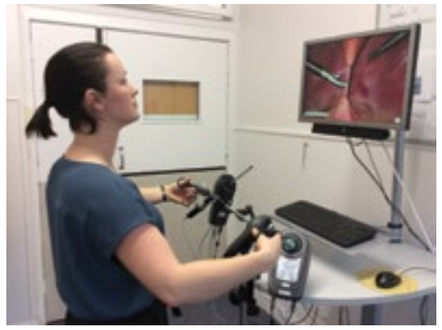

Figure 3. Monitor in suboptimal position, resulting in upward angle of gaze and somewhat forward head position.

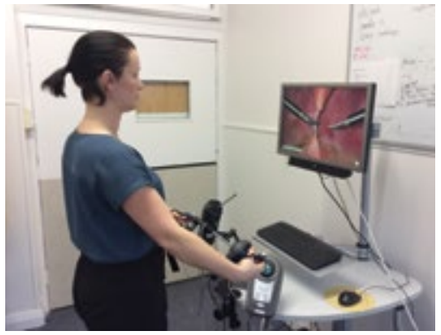

Figure 4. More comfortable head position with slight downward angle of gaze.

But for now, remember:

- Head back, shoulders down and a balanced posture.
- Re-set or stretch in longer cases.
- Take a few extra moments for theatre setup.
- These measures could improve your quality of life and longevity as a laparoscopic surgeon.

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Hysterectomy: choosing from four approaches

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> 'Now one must not suppose the uterus to be essential to life. For not only does it prolapse, but in some cases, as Themison has related, it has even been cut away without bringing death.'[1] – Soranus of Ephesus, 120CE

The history

In the history of medicine, the uterus holds a prominent place – often of ill-repute. From its designation in ancient Greece as the source of hysteria as well as many unrelated ailments in women, one would imagine its removal as being the pinnacle of medical achievements. The first descriptions of vaginal hysterectomy (VH) were by Themison of Athens in 50BCE, followed by VH for a gangrenous prolapsed uterus (unfortunately with en bloc resection of the bladder and ureters) described in 'Gynaecology' by Soranus of Ephesus in 120CE.

These early cases were almost invariably fatal. Then, in the 17th century, midwife Percival Willoughby reported a remarkable case of autosurgery, when Faith Haworth is said to have become so frustrated with her procidentia that she one day cut her uterus free. After a brief period of unconsciousness, her bleeding settled and despite a vesicovaginal fistula, she survived for many years.[2]

The first planned and successful VH was performed by Langenbeck in 1813 for a case of suspected cervical cancer; his claimed success was ridiculed until the patient's death 26 years later, when post-mortem confirmed surgical absence of the uterus.[3]

In 1809, the world's first planned laparotomy was performed for an ovarian cyst, paving the way for the first successful transabdominal hysterectomy (TAH) by Burnham in 1853.[4] Hysterectomy grew in popularity and with improved asepsis, anaesthesia and surgical technique, mortality rates fell from more than 80 per cent in the 19th century to less than 3 per cent in the 1920s. The majority of procedures during the 20th century were performed abdominally, although there were many notable advocates of vaginal hysterectomy (including Heaney, Green-Armytage and Navratil).

In 1988, the first total laparoscopic hysterectomy (TLH) was performed by Harry Reich,[5] leading to rapid development of laparoscopic skills among gynaecologists and an additional surgery in the armamentarium against uterine pathology.

The landmark 2004 eVALuate trial compared TLH with VH and TAH in parallel randomised controlled trials (RCTs). While there were no differences in the (underpowered) vaginal versus laparoscopic arm, compared to the abdominal approach laparoscopic hysterectomy took longer and had more complications but resulted in quicker recovery, shorter hospital stay and better medium-term quality of life.[6] However, technical abilities, training and experience, equipment and surgical techniques have all advanced in the last 15 years, making the application of that data to modern practice debatable. Furthermore, yet another approach has been added to the canon of hysterectomy techniques in the form of robotic hysterectomy, increasingly available at centres across Australia and requiring new skills and expertise.

Although rates are falling with the advent of non-surgical management options for fibroids and heavy menstrual bleeding, hysterectomy remains one of the commonest major surgeries in Australia, with one-in-five women undergoing hysterectomy by age 50. Each year, 30 000 hysterectomies are performed in Australian hospitals, making experience and confidence essential for the trainee gynaecologist.[7]

But, how is a trainee to choose the optimal approach? We have asked four consultants to advocate for each of the abdominal, vaginal, laparoscopic and robotic approaches.

Abdominal hysterectomy – Dr Eman Al Naggar

When I was given a very old edition of Bonney's Gynaecological Surgery as a young registrar, I studied it from beginning to end. It fascinated me how much surgical preparation and comorbidities had changed with medical advances and enlightened me to the significance of different hysterectomy approaches.

For many years, abdominal hysterectomies have been performed by most gynaecologists, possibly due to the fact that acquiring open surgical skills is easier due to the practise of caesarean section, and that the hand-eye coordination isn't as challenging as in laparoscopic surgery.

It offers visual and tactile examination of the abdominopelvic structures, which can be beneficial in diagnosing diseases that aren't yet visible, and allows easy manipulation of the uterus. Abdominal incisions offer easier adhesiolysis and allow for easier packing of the bowel with wet packs, which are superior to laparoscopic retractors in helping to reduce bowel injury.

Furthermore, some patients will ask to retain their cervix, which is easily performed abdominally. This may preserve urinary function, and sexual function in women with cervical orgasms, thanks to preservation of the uterovaginal nerve plexus and the maintenance of cervical position. RCTs have failed to prove these claims.

For large uteri, laparoscopic morcellation has been advised against by the TGA, leaving laparotomy as the only option in some cases. Finally, the space of Retzius has historically been entered via laparotomy for concurrent urogynaecological procedures; however, with laparoscopic advances that is no longer the case.

Although recovery and morbidity are generally higher with an open approach, in selected patients, the advantages may outweigh the risks.

Vaginal hysterectomy – Dr Todd Ladanchuk

In an era where minimally invasive surgery is promoted, vaginal hysterectomy for benign gynaecological disease should be the evidence-based minimally invasive approach of choice. The 2015 Cochrane Review recommends that vaginal hysterectomy should be performed whenever possible.[9] 'No advantages of LH over VH could be found; LH had a longer operation time, and TLH had more urinary tract injuries.' ACOG states that the evidence supports vaginal hysterectomy as being associated with better outcomes than laparoscopic or abdominal routes, being safer and more cost effective.[13]

The rate of vaginal hysterectomy in Australia is falling as the rate of laparoscopic hysterectomy rises. From 2000–2014, Wilson et al found a fall in the rate of vaginal and abdominal hysterectomy and an increase in laparoscopic hysterectomy,[7] suggesting that gynaecologists are moving away from the vaginal approach in favour of the laparoscope.

There are a variety of reasons for this trend. There may be a perception that laparoscopic and robotic hysterectomy is better and more advanced. The commercial interests of industry in laparoscopic and robotic surgery precludes promotion of vaginal hysterectomy. World records have been awarded for laparoscopic hysterectomy further increasing its 'coolness.' As the number of vaginal hysterectomies declines, so does trainees' exposure to this technique, and the skill set may one day become lost.

Vaginal hysterectomy is the evidence-based choice for what is in the best interest of women. Colleges and gynaecologists must strive to continue to perform vaginal hysterectomy, include it in curricula and encourage trainees' interest in vaginal hysterectomy. Then we can ensure we are providing 'Excellence in Women's Health' for the next generation.

Laparoscopic hysterectomy – Prof Yee Leung

The laparoscopic approach to hysterectomy can vary widely, from laparoscopically assisted vaginal hysterectomy to total laparoscopic radical hysterectomy. Variations include single incision and natural orifice translumenal approaches,[8] with ongoing refinements using new technologies.

Compared to abdominal hysterectomy, laparoscopic hysterectomy offers faster return to normal activity, shorter hospital stay, less wound infection, non-inferior outcomes in endometrial cancer and better quality of life.[9-11] Possible disadvantages include longer operating time and increased urinary tract injuries,[9] while vault dehiscence rates are comparable.[12]

For trainees, decisions regarding the approach for a hysterectomy can be confusing. Where possible, a minimally invasive approach for a hysterectomy is preferred.[9] Factors to consider include:

- Patient factors
- Pathology present
- Proceduralist's skills
- Place where surgery is being performed

The chosen modality is often dictated by the surgeon's preference and skills. The overarching principle is to adopt the approach that 'will most safely facilitate removal of the uterus and optimise patient outcomes.'[13] Where there is anticipated extrauterine pathology, a high index of suspicion for cancer in an enlarged uterus, or the need to perform sentinel node biopsies, vaginal hysterectomy would not be the favoured approach. The choice of a laparoscopy or laparotomy would then depend on the surgeon's skillset.

Training for the different approaches is dependent upon the preceptors at a training site. Each site may have a preference for one particular approach or have sufficient caseload and expertise to offer training in all approaches. With current caseloads at many training sites, it is becoming difficult for trainees to become competent with all approaches to a hysterectomy at the completion of their training time. Where possible, it would be ideal to gain as much experience with the laparoscopic approach for the above reasons.

Robot-assisted hysterectomy – Prof Maneesh Singh

Despite rapid adoption in the US, Australia has been slow to embrace robotic-assisted hysterectomy (RAH) perhaps due to cost without demonstrable improvement in outcomes. Surgical expertise in laparoscopy and lack of robotic surgical training have also led to the sluggish uptake. RCTs comparing laparoscopic and robotic hysterectomy should be interpreted with caution given substantial variation in skills and surgical proficiency of surgeons and their teams. Individual surgeon bias and patient selection make transference into practice complex.[14]

RAH may have prolonged surgical time and lack tactile response; however, with experience and improved technology this can be overcome. Furthermore, RAH may achieve a shorter length of stay, with no difference in blood loss or postoperative complications.[15]

RAH is associated with a higher incidence of cuff dehiscence versus TLH (1.64 versus 0.64 per cent); however, judicious use of electrocautery at the vaginal cuff by blended cutting rather than coagulation current and the use of a two-layer cuff closure or barbed suture may decrease the risk.[16]

A Cochrane review concluded, despite moderate–high overall risk of bias, that complication rates of RAH and TLH might be comparable, but that RAH was an operator-dependent and expensive technology.[17] More recently, a Danish study concluded that the national introduction of robotic surgery was associated with improved survival irrespective of age and body mass index for women with early endometrial cancer.[18]

Initially, the robot was seen as an expensive tool in gynaecology, but advantages have been shown with increasing use in a variety of patients, including less blood loss and analgesia requirements for women with large uteri, and higher rates of same-day discharge for women over 65.[19,20]

As RAH becomes more available and cheaper, uptake and training will increase. Ultimately, the mode of hysterectomy resides with the surgeon's expertise; correct patient selection and robotics can only be enhanced by the availability of dedicated surgical teams proficient in its use.

Conclusion

There are several options for hysterectomy, each with benefits and shortcomings, and none with suitability for every patient and pathology. The most recent evidence suggests a faster return to normal activity following vaginal, rather than abdominal, hysterectomy. This is also the case for laparoscopic hysterectomy when compared to abdominal, although urinary tract injuries are more common. In randomised trials, laparoscopic hysterectomy has not been shown to offer a benefit over vaginal, while there is no robust evidence of robotic offering a benefit over laparoscopic. Importantly, the benefits and risks of each approach appear to be related to surgical expertise.[9]

In summary, the approach to hysterectomy should be selected based on patient factors, the pathology being treated, surgical experience and patient preference. The options and their potential benefits and risks should be discussed with the woman and a shared plan for management agreed upon. Where appropriate, minimally invasive approaches offer improved recovery over a laparotomy; however, there remains a role for each method in modern gynaecological practice. Trainee surgeons should endeavour to accrue experience in each approach to allow them to offer the best possible care to their patients.

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Bullies, bystanders and a mandate for change

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'You're so stupid… you're just so stupid.' My consultant continues, 'If I were your supervisor, I'd fail you for the entire term, because you're just so stupid.'

Tears roll down my cheeks, behind my surgical mask. I blink repeatedly, trying to make clear the structures I am trying to operate on. The faster I finish this operation the faster this verbal abuse will end, but the yelling from behind me doesn't help my confidence. I need to clearly identify the structure and cut it, but for the patient's sake, I want to be calm when I make the definitive cut. I must first do no harm.

'Am I going to have to scrub in for this operation?' he asks. I don't respond. There is no response I can give that will help. The last two hours have demonstrated that. 'You are completely useless.' he says, walking out to the scrub sink.

With my consultant out of the theatre, I quickly and safely complete the key steps of the operation. From here, closing the wound and putting the dressings on will be straightforward.

In an hour's time, I will phone a senior colleague from the safety of the female changeroom. He will tell me that I need to get better at dealing with this man's abuse. He will tell me that he can hear the shaking in my voice and that I need to be stronger. The consultant will be my supervisor in my next term, and he has told me that he will fail me for the entire term, because in his eyes I am too stupid to pass. I know that I am not stupid, but I also know that this is not about IQ, or EQ, or anything that I can control.

I was lucky. I will later learn that a bystander reported my consultant's behaviour and some remedial action is taken. I will never know who the bystander was, and will never be able to thank them, but I will remain ever grateful for their intervention.

Medicine is a hierarchical profession. Bullying is culturally ingrained in Australian healthcare, and operating theatres have traditionally witnessed particularly poor behaviour. Hidden out of sight of the general public and human resources departments, the behaviours of theatre staff – and particularly surgeons – are constrained only by their personal professionalism and perceptions of what constitutes acceptable conduct.

I've heard it was worse in years gone by; that back then, surgeons threw scalpels. I graduated from medicine in 2001. I've seen a scalpel, and other instruments, thrown. I've seen theatre staff reduced to tears. Derisive comments, yelling, shouting, abuse and sexual harassment. I once took a small step backwards in a theatre corridor for my own personal safety, as I judged that if my verbally abusive consultant chose to hit me with his raised hand in front of witnesses, the extra 20 cm distance between us would improve my chances of avoiding significant physical injury. Things may have been worse in the past; that does not indicate the present situation is acceptable.

Scope of the problem

In 2015, the Royal Australasian College of Surgeons' (RACS) expert advisory group (EAG) found that 54 per cent of RACS trainees and 45 per cent of Fellows less than 10 years post-fellowship reported being subjected to bullying, with senior surgeons and surgical consultants reported as the primary source of these problems.[1] Every year, one in six healthcare workers report that they have been bullied at least once. [2] In 2016, RANZCOG found that 60 per cent of Fellows and trainees that responded indicated they had been bullied in the O&G workplace, with 34 per cent indicating they had been bullied while working as a consultant.[3]

Bullying and other unprofessional behaviours affect the way we work, the quality and safety of the care we deliver, our mental health and our self-esteem.[4] We need system-wide interventions to combat this quality and safety problem, and we also need to evaluate interventions to assess their success in reducing unprofessional behaviours and in improving clinical outcomes.

A study of Australian surgeons' responses to harassment of a colleague during simulated operating theatre scenarios found that participants failed to acknowledge 30 per cent of harassment incidences.[5] If you have worked in an operating theatre you know what this looks like. It can be unconscious, but it can also involve active adoption of 'retrospective deafness and blindness'. The assistant gazes at the wound with rapt attention, the scrub nurse carefully cleans clean instruments and the anaesthetist displays a quiet fascination with the chart. We're all aware of what is going on, and we're failing to acknowledge or challenge the problem because of the hierarchy of our profession, or our conflict-avoidant natures, or because of the misconception that bullying behaviours, such as intimidation and ridicule, are necessary teaching tools. Because the perpetrators have power, and we perceive – correctly or incorrectly – that we do not have the power to change what is happening; or, not without significant personal cost.

Definitions

Workplace bullying is defined as 'repeated and unreasonable behaviour directed at a worker, or a group of workers, that creates a risk to their health and safety'.[6]

'"Unreasonable behaviour" is behaviour that a reasonable person, having regard to all the circumstances, would expect to victimise, humiliate, undermine or threaten the person to whom the behaviour is directed.'[7]

Bullying can be a human rights violation, affecting a worker's right to be free from mental, emotional and physical violence, and their right to a safe work environment.[8]

Unprofessional behaviours also include discrimination and sexual harassment. While sexual harassment occurs frequently in medical workplaces, 'doctors who have been sexually harassed or assaulted by other doctors remain a largely invisible population' and more support for victims and research into this problem is required. Existing research suggests that victims perceived that in order to respond in a 'professional' manner, they should discount the event and its effects, and return to the workplace.[9] Such idealised notions of professionalism are obstacles to addressing the unprofessional behaviours and, perversely, place the responsibility for behaviour change on the victim rather than the perpetrator.

Actions by various organisations

In the last four years, multiple organisations have taken significant steps to address bullying and other unprofessional behaviours in our workplaces and operating theatres (Table 1). Many of these seek to improve the ability of victims and bystanders to recognise and call out unprofessional behaviour, either directly or indirectly.

Colleges

RACS established an EAG for advice on the prevention of discrimination, bullying and sexual harassment. The EAG identified the three core areas of cultural change and leadership, surgical education and complaints management.

Following the EAG, RACS developed an educational course 'Operating with Respect'. The course provides advanced training in recognising, managing and preventing bullying and unprofessional behaviours. It aims to foster behavioural self-regulation and the ability to moderate the behaviour of colleagues.

RANZCOG has established a Trainee Support Unit, and a train-the-trainer 'Supporting Respectful Workplaces' workshop, which was developed for trainees, specialist international medical graduates (SIMGs) and Fellows who are involved in the training program, aiming to ensure training environments are free from bullying and unprofessional behaviours.[10]

Private hospital

Ramsay Health Care Australia launched its 'Speak Up for Patient Safety' program, which is based on the Vanderbilt University Medical Centre model. It aims to identify and address behaviours that undermine a culture of safety through peer messenger conversations and by providing assertiveness training to staff.[11] Evaluation of the Vanderbilt model found that it 'can yield improved staff satisfaction and retention, enhanced reputation, professionals who model the curriculum as taught, improved patient safety and risk-management experience, and better, more productive work environments.'[12]

Public hospital

St Vincent's Hospital Melbourne introduced its 'Ethos Program', also based on the Vanderbilt University

Table 1. Action examples from Colleges, Australian private and public hospitals, and government.

Date	Organisation type	Organisation	Action
March 2015	College	RACS	Expert Advisory Group established
July 2016	College	RACS	Operating with Respect program
May 2017	Private Hospital	Ramsay Health Care Australia	Speak Up for Patient Safety program
July 2017	Public Hospital	St Vincent's Hospital Melbourne	Ethos Program
October 2017	College	RANZCOG	Training Support Unit, and train-the-trainer 'Supporting Respectful Workplaces' workshop
June 2018	Government	Australian Human Rights Commission	National Inquiry into Sexual Harassment in the Workplace
April 2019	Government	Victorian State Government	'Know Better, Be Better' campaign

Medical Centre model.[13] St Vincent's Health Australia received a NHMRC grant to evaluate the behavioural accountability intervention's outcome on patient safety in four hospitals over four years.[13] The evaluation of any program is crucial; interestingly, one year into the Ethos Program, staff members raised concerns about 'trivial complaints' being made through the system, which were reported to have caused significant stress for the subjects of complaints. It was also reported that female staff received 30 per cent more complaints than male staff members.[13]

Government

Australia's Sex Discrimination Commissioner, Kate Jenkins, is undertaking a national inquiry into sexual harassment in Australian workplaces.[14]

The Victorian State Government has announced an awareness campaign to reduce bullying and harassment in Victorian public hospitals. The 'Know Better, Be Better' campaign aims to raise awareness of bullying and harassment, actions and reporting behaviour, support and guidance, and legal/workplace/management considerations. The campaign has placed independent facilitators in two metropolitan and four regional hospitals to provide support for workers.

Avenues for change

There are multiple avenues for change, and evaluating the interventions is a key element of achieving cultural change, so we do not perpetuate the ostrich approach or provide band-aid solutions. For too long the emphasis has been on modifying the victim's response, instead of the actions of bystanders, perpetrators and leaders. Measures to improve diversity and inclusivity in our organisations may also play a role, given that anecdotal evidence suggests victims are more likely to have attributes that are different to the prevailing cultural norm – be they related to race, ethnicity, gender identity, sexual orientation, religion or other differences.

In the last four years, we have seen significant efforts to create changes. Will the interventions make a difference to our operating theatres and hospitals? Only time and rigorous evaluation will tell. But in the interests of our colleagues and our patients, we must acknowledge and address power imbalances, bullying and unprofessional behaviours. If we want safe workplaces free from bullying, we must speak up, listen and act.

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Operating with Respect: educating for change

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A high-profile event in 2015[1] prompted the Royal Australasian College of Surgeons (RACS) to undertake a large-scale research project, including quantitative prevalence surveys and qualitative data. The results were sobering, with 49 per cent of Fellows, trainees and international medical graduates reporting being subjected to discrimination, bullying or sexual harassment. The behaviours were reported across all surgical specialities, and in all Australian states and New Zealand.[2] There were hundreds of qualitative submissions detailing behaviours that clearly had significant and long-lasting effects on the recipients.

> 'The actual bullying behaviour was essentially belittling and intimidation, public humiliation, deprivation of teaching and blocking of opportunities to learn to operate. He repeatedly told me that surgery could not be taught, that being a surgeon was an innate quality that I did not have as I was a weak personality. He would criticise me in front of others and make me do menial tasks. He once physically grasped me by the collar when I was doing a ward round. He shouted at and pushed me through the door to a meeting....The harder I tried the more he became contemptuous of me.'[3]

The prevalence of bullying (excluding discrimination and sexual harassment) was inversely correlated with seniority, affecting 54 per cent of trainees and 45 per cent of Fellows less than 10 years post-Fellowship. Different patterns of behaviour were experienced by specific groups – the overall prevalence of sexual harassment was 7 per cent but was reported by 30 per cent of women, while the overall prevalence of discrimination was 18 per cent but reported by 27 per cent of international medical graduates.[2]

In response, RACS embarked on Building Respect, Improving Patient Safety, an ambitious multi-year program addressing surgical culture, surgical education, diversity and equity, and a complaints process.[4] As part of this program, Operating with Respect undertakes to educate all surgeons and trainees about unacceptable behaviours.

What has been done so far?

An online learning module has been developed and mandated for all Fellows, trainees and international medical graduates. This module defines unacceptable behaviours, explains their negative effects on patient safety, examines the contexts in which they occur and recognises speaking up as a professional responsibility. This module has been completed by 98 per cent of the target group. A demonstration version of the module is available for those outside the target group.[5]

RANZCOG members have access to the module via Climate: www.climate.edu.au/course/view.php?id=254.

The Operating with Respect one-day workshop was launched in April 2017. This course provides evidence-based advanced training on the practical strategies and skills necessary to create respectful surgical environments, build personal resilience and respond to unacceptable behaviour. The course is mandated for all leadership groups in the College including the council, major boards and committees, the Court of Examiners Executive and all training and research supervisors, comprising approximately 700 surgeons in total. Although attendees from the target group are prioritised, the course is also available for other surgeons where capacity permits, resulting in 1020 surgeons having now completed the course.

The Speak Up app was launched in May this year and is designed to complement the workshop, although it can be used as a standalone app. It provides resources for conducting 'cup of coffee' conversations. These are informal, non-hierarchical interactions with colleagues to raise awareness of unacceptable behaviours, prompt reflection and reinforce expectations.

A one-day course, Operating with Respect for Trainees, has been piloted and will be further refined before a wider launch. This course is being developed collaboratively with trainees and has the same aims as the course for surgeons. Particular care is being taken to teach strategies and skills that take account of trainees' position within surgical teams.

Why is operating with respect important?

There is rapidly increasing literature showing that unacceptable behaviours are not simply a matter of 'hurt feelings'. They negatively affect patient safety, team performance and doctor wellbeing, and cannot be compensated for with technical competence alone.[6] The negative effect of incivility on team performance can be measured

Figure 1. The Operating with Respect online module reflects real-life workplace contexts.

in a randomised control setting[7] and co-worker reports of unprofessional behaviours are positively and statistically significantly correlated with the incidence of postoperative complications.[8] Creating a respectful surgical environment can no longer be considered 'extra' or 'nice to have'. It is a routine competence for ensuring good patient outcomes.

What are the key principles of the Operating with Respect course?

The Operating with Respect course has been developed by surgeons for surgeons, cognisant of modern healthcare settings, which are complex and demanding. It assumes that everyone is capable of lapses into disrespectful behaviours and avoids stereotyped language such as 'bullies', 'perpetrators', 'victims' or 'angels'.

The course asks all surgeons to be reflective practitioners who can recognise their own triggers. Scripts or strategies are developed as a way to respond to these 'amber moments' in a considered way, instead of reacting in an instinctive way. The idea of deliberate, rather than habitual, actions is extended to surgeons' role as team leaders, in order to build respectful environments through behaviours that flatten the team hierarchy.

The course does not take a prescriptive view of behaviours, and explores the concept that context is essential for the interpretation of behaviours, as well as the related concept that there is often a gap between how a behaviour is intended and how it is received. This moves away from the simple definition of specific behaviours as 'above the line' or 'below the line' and provides a more nuanced and real-world approach. For example, it may be entirely respectful to raise one's voice if trying to communicate in a noisy theatre, while in the same theatre it would be disrespectful to raise one's voice to belittle or reprimand. Similarly, a casual remark with no ill-intention may be perceived to be disrespectful by a recipient due to previous experiences. Recognising these gaps between intention and perception leads to the notion that respectful environments require psychological safety for open dialogue and discussion of differences, rather than polarising judgements about 'right' and 'wrong'.

The course explores informal approaches to unacceptable behaviours. Existing approaches often offer a binary approach – either staying silent or embarking on a formal complaint approach. Staying silent normalises unacceptable behaviours, while formal complaint processes can be prolonged and result in repercussions for the reporter. Informal approaches provide a continuum of responses between these two extremes. The 'cup of coffee' conversation is taught and practised in the course, based on data showing that 71 per cent of recipients of a 'cup of coffee' conversation do not receive any further reports in the subsequent year.[9]

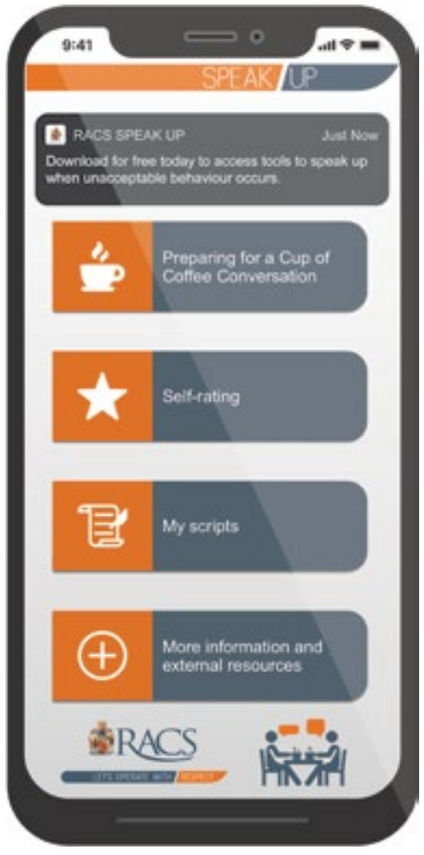

Figure 2. The RACS Speak Up App.

Where to from here?

The negative effects of unacceptable behaviours are increasingly recognised across the profession of medicine. Multiple prevalence surveys in different organisations, including RANZCOG, have found high rates of unacceptable behaviours.[10-13] For the most effective action, educational efforts must be complemented by policy and regulatory supports, particularly in workplaces. We must collaborate, share resources and strengthen the ties between colleges so that we can establish respectful environments throughout our interprofessional teams in the workplace. Our patients deserve nothing less.

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Checklists for safe surgery in New Zealand

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If I was doing a skydive, I would expect the team managing my jump to have undertaken safety checks and to have discussed the plan, so that everybody is clear on their role and the equipment needed to ensure a safe jump is in place.

Surely, I should expect the same from a team managing my surgery? Particularly if there is good evidence to show that undertaking simple checks and communicating well improve the likelihood of my operation being performed safely.

This article summarises the evidence for surgical checklists and briefings, and the New Zealand Health Quality & Safety Commission's (the Commission's) experience of implementing these tools nationally.

Surgical safety checklists

Checklists have long been used in industries where errors are unacceptable, such as aviation, the military, nuclear power and law enforcement.

Their applicability to healthcare was recognised and studied. Researchers observing the interaction between surgical team members described the negative impact of poor communication on performance and safety.[1-3] The complexity of medical care, coupled with inherent limitations in human performance, make it critically important for surgical teams to speak up and express concerns – and to have tools to support that.[4]

In 2008 the World Health Organization (WHO) introduced the surgical safety checklist as a tool for clinicians to reinforce safety practices and foster better communication and teamwork between clinical disciplines.[5]

A 2014 systematic review noted checklists 'have been shown to significantly improve patient outcomes subsequent to surgery, and therefore their use is being widely encouraged and accepted'.[6] It also concludes that using the checklist improves teamwork and communication, and this may be behind the reduced rates of morbidity and mortality seen in the studies.

Implementation in New Zealand

The checklist was introduced as a national initiative in New Zealand by the Commission in 2011, as a response to an apparent high rate of perioperative adverse events compared with other countries. All (publicly funded) district health boards (DHBs) and a number of private surgical hospitals participated.

The program was relaunched in 2015 as Safe Surgery New Zealand (SSNZ), with a more explicit emphasis on its use to support improved teamwork and communication within surgical teams. This included nationally consistent use of a paperless poster checklist, a stronger focus on completion of all components of the three parts of the checklist (sign in, time out and sign out), and an emphasis on team engagement with each part of the checklist. The literature links a focus on these areas with improved team engagement and reduced complication rates.[7,8]

Since 2015/16, all DHBs have used direct observational audit to report quarterly on use of the three surgical checklist parts and the levels of team engagement with each part. The results are then made publicly available by the Commission.

Overall, national performance in each of the process measures has improved over time and currently sits in the mid-to-high 90 per cent region. However, there is considerable variation between DHBs and enduring issues with collecting the minimum number of required observation points in some DHBs.

Briefings and other tools

SSNZ also promotes other communication interventions to complement the checklist – particularly briefings at the start and end of the theatre list.

A start-of-list briefing takes five minutes or less and allows any issues that might affect the smooth running of the surgical list to be identified early. This includes any human factors that can lead to error, such as tiredness and fatigue, nutritional or emotional state, multi-tasking and loss of awareness.[9]

A briefing typically opens with team introductions, which include the name and role of each team member. Staffing matters are raised; anaesthetic safety checks are talked about; changes to the list or clarification about the list are discussed; equipment and instrumentation issues are communicated; and the time for the list is confirmed.

Briefings help to increase the safety culture of surgical teams.[10] They can also result in efficiencies. For instance, a 2015 study in an orthopaedic setting reported a 72 per cent reduction in the rate of unexpected delays per case (from 23.1 per cent to 6.5 per cent).[11]

Debriefing occurs at the end of an operating session and involves all members of the theatre team assessing what they did well, what the challenges were and what they will do differently next time.[12]

There is anecdotal evidence that start-of-list briefings in particular are increasingly being held by New Zealand operating teams. (While national data are collected and reported, it is currently less reliable than data relating to Checklist use.) A 'take five to save lives' promotional campaign was held in late June 2019 to raise awareness and demonstrate the benefits of holding a briefing. All surgical teams were encouraged to undertake a briefing on that day. More than 60 surgical teams across public and private hospitals reported they had held a briefing on the day and of these respondents, more than 80 per cent said their surgical team typically does start-of-list briefings.

SSNZ is complemented by other national programs aiming to improve the safety and efficiency of care and to improve operating team culture. The NetworkZ program, which is being implemented across DHBs, involves surgical simulation and reinforces the use of checklists, briefings, teamwork and communication skills. The Royal Australasian College of Surgeons 'Operating with Respect' course aims to equip surgeons with the ability to self-regulate behaviour in the workplace and to moderate the behaviour of colleagues in order to build respect and strengthen patient safety.

Importance of culture change

It is hoped that over time these programs and other initiatives will support a culture in operating theatres that strengthens patient safety. Recent evidence suggests that operating room culture is associated with patient outcomes[13] and a common theme across studies relating to the checklist has been the need for implementation to be supported by an underlying safety culture change.

National surgical safety culture surveys held since 2015 are encouraging. A third iteration of the survey was conducted in 2019 and showed improvements since 2015 across almost all of the dimensions measured. Statistically significant improvements included a 30 per cent increase in participants saying team discussions (briefings and debriefings) are common and a 20 per cent increase in surgical teams always discussing the operative plan before incision. Improvements seen in clinical indicators such as the rate of deep vein thrombosis/pulmonary embolism may also be a reflection of the programs and culture associated with safe surgery in New Zealand.

Conclusion

The use of surgical checklists has been shown to reduce adverse events and improve patient outcomes. Start-of-list briefings and end-of-list debriefings support improved communication, better identification of recurring issues and a reduction in unexpected delays. A safety culture that encourages communication tools and speaking up gives a solid foundation for patient safety. There should be no question that these tools will be used when putting your wellbeing in the hands of others, regardless of the context.

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Reflect to perfect surgical performance

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A few years ago, I was at a dinner party and got chatting to an engineer from overseas about mishaps and complications that happen in both our industries. During dinner, he turned to the host of the party (another surgeon) and asked: 'So, what would you say your complication rate is?' She replied, 'Very low. ' The engineer continued, 'Less than 10 per cent?". 'Definitely, ' she said. 'Less than five per cent? ' 'Yes, maybe about one per cent. ' The host's husband, who had overheard the conversation, asked, 'How about the lady you had to take back to theatre for a bleed? Or the patient with the deep vein thrombosis? And do you remember the patient with the infected port site?' When reminded, the host remembered every one of these events. As surgeons, we sometimes don't remember complications as factual events because they trigger an emotional response. They perhaps remind us that we are not as great, invincible and heroic as we would like to be.

Can reflection reduce complications?

We know that complications are the biggest killers of hospitalised patients. In Australia, complications kill twice as many patients as traffic accidents. Research also suggests that half of all complications that develop during a hospital admission are preventable. While doctors face increasing external pressures to be more accountable, many would also agree that external monitoring focusing on adherence to quality criteria misses the mark. This is because for independently minded, top-performing doctors the feeling of being 'checked on' does not create buy-in, but resistance.

My research shows that reflection can decrease complication rates by 30–40 per cent. Yet, how many surgeons reflect? And how many of us have the tools to help us do this effectively?

Self-reflection requires a specific mindset and willingness to look in the mirror, even when we anticipate unfavourable outcomes. Overweight people who are not willing to step on a scale are unlikely to lose weight. The issue with denial is that if we don't recognise and take ownership of an issue, we don't develop a need to fix it.

Why aren't surgeons better at reflection?

The following are possible reasons that surgeons struggle with reflection:

Isolation

Once doctors work independently and without the supervision of 'bosses' who keep an eagle eye on trainees, getting useful feedback can be challenging. Doctors can be geographically isolated, especially in remote communities, where there are only one or two specialists. Typically, gathering to exchange ideas and issues is difficult. Isolation can also be perceived. Some people are not comfortable sharing sensitive data with their colleagues because they associate complications with failure.

Lack of access to clinically meaningful data

Hospital data are not typically available to individual doctors. Even if it was made available, the quality of these data would be poor and meaningless for individual learning. Quality registries capture relevant data, but the primary goal of this activity is to inform health policy. It's also easy to enter data into a registry, but it's much more arduous to extract it.

Attitude

Like my friend at the dinner party, we all prefer to hear about how great we are and avoid talking about our failings. Reflection requires an attitude that acknowledges our vulnerability.

Many surgeons say, 'I know I'm okay anyway'. Some say they have a list of their patients, but never actually reconcile their patients with outcomes. Others, in conversation with colleagues, say that they record outcomes, when in reality, they don't. Others again would say that if there was a problem, they would hear about it somehow.

Reflection also requires additional resources. The surgeon's practice has to enter data into a database, which is time-consuming and creates an extra cost. Some question the return on this investment.

Patient-reported data are not available

'It's all about patients' is easily identified as lip service if we don't capture the patient perspective. One of the most common questions patients ask before surgery is, 'What can I expect from surgery?' This question is hard to answer because formal and quantitative feedback from patients about their post-surgery outcomes is virtually non-existent. Outcomes that are important to patients include pain, nausea, fatigue and the ability to perform normal daily activities.

What tools are available to help us reflect?

A few years ago, I felt overwhelmed by my complications in surgery for advanced ovarian cancer, and I was keen to understand how my complication rates compared with that of other surgeons. There were some tools available at the time, but they were insufficient to answer my question.

- **Department-based audit.** All patient data at our gynaecological cancer centre is audited for clinical quality indicators. Typically, the data is not stratified by confounders (complexity of the surgery, medical comorbidities) or the type of procedure. Surgeons who perform more minor surgery or procedures for benign diseases can expect lower complication rates compared to surgeons whose workload is predominantly cancer.
- **Morbidity and mortality meetings.** These meetings allow surgeons to discuss complications, near-misses or other events (such as omission of treatment) freely. The value of morbidity and mortality meetings is that they are constructive, not punitive, and learning points are developed based on selected cases.
- **Patient survey.** For many years, I have sent a survey to my patients six weeks post-surgery. The learning from those surveys has been invaluable. I ask my patients about how easy it was to contact my office, how friendly and professional they feel my staff is, how their anaesthesia went, and so on. The survey results indicate how well the patients felt treated, but no comparisons are possible.
- **Data from my practice management system.** Any practice management system collects massive amounts of data, but it cannot inform us clinically because virtually all of it is for administration and billing purposes.

I realised there was not one tool available that would accurately inform me about the meaningful outcomes that I care about as an active surgeon. I was looking for something that would give me confidential and secure access to information so that I can reflect without the threat of repercussion and so that I could interrogate my data at any time. I resolved to do something about it.

How SurgicalPerformance can assist with reflection

In 2012, with a team of software developers, I built a web-based database that is secure and fulfils all the criteria of a modern medical database; that is, it collects information to generate insights.

SurgicalPerformance.com is innovative because the information collected accounts for all parameters that could possibly have an impact on outcomes. Some of the patient factors are already routinely collected, others (such as the ASA score) needed to be added. To create the software, we had to document surgical procedures and break them down into small components so that our users can quantify them. Most importantly, we needed to record outcomes that are relevant to the surgeon. These outcomes have not been collected previously, because often they are specific to the procedure.

We then built a platform where users can quantify every data variable so that users can interrogate the database interactively and generate insights. Recently, we created a statistical algorithm to quantify the risk of a patient developing a complication, which allows us to report risk-adjusted complication rates. Again, this has never been done previously.

As a surgeon, I can now compare myself against others. Only I know my own outcomes, but I have more than 110 000 cases for comparison. Identifiable data are never shared with any third parties or the courts, but non-identifiable data are used for medical research. To date, we have written three scientific papers using SurgicalPerformance data.

The paper I am most proud of is the most recent paper, which is going to be published soon. It correlates familiarity of the surgical team (assessed by the surgeon) with surgical complications that were captured four to six weeks after surgery. In brief, the incidence of surgical complications following major gynaecological surgery was reduced by 30–40 per cent if surgical teams were familiar. As a SurgicalPerformance user, I can now check how the familiarity of my surgical team stacks up against others.

In collaboration with AGES, SurgicalPerformance has developed online morbidity and mortality webinars that run twice a year. O&Gs can anonymously submit a case for discussion, and we will develop learning points based on the case. By doing this, SurgicalPerformance is creating a community of users.

RANZCOG grants CPD points; 12 cases entered into SurgicalPerformance will earn 1 hour/1 CPD point. For my recent CPD cycle, I was able to collect all points through SurgicalPerformance.

SurgicalPerformance.com has just launched PROMS (Patient-Reported Outcomes) for gynaecology. PROMS allows to easily ask patients and gather feedback on outcomes that are important to them (such as pain, fatigue, mobility) after gynaecological procedures. A separate score will also inform users about how likely a patient is to recommend you to family or friends. PROMS is used in conjunction with SurgicalPerformance or as a stand-alone feature.

The future of insights

Without insights, working as an O&G or other surgeon in any country will become increasingly difficult in future. Insights are developed when we use analytical tools to reflect, inform us and lead to savvy decisions.

With SurgicalPerformance, we can use insights about where we are excelling (for example, 'It seems I am pretty good at this procedure'); share quantified risk factors with patients; identify factors that could lead to better outcomes (for example, 'My rate of XYZ is higher than I want it to be'); and simply quantify things we already thought to be true.

Today, we have the tools available to us to help us reflect without professional or personal repercussion. How do we justify not using the insights available to us, particularly when our patients, colleagues and future doctors are increasingly better informed every day?

While I am unashamedly biased towards SurgicalPerformance.com, I am also a dedicated user of the system. This is because what I have learned from using it has transformed my practice on multiple levels. While not perfect yet (there's still time!), reflection has made me a much better surgeon than I could have otherwise been.

FRANZCOG training: suitability for surgery

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The performance of surgical operations is recognised as the most complex psychomotor activity that a human can perform.[1] The overall aim of surgical training is to provide society with a knowledgeable, skilled and up-to-date cohort of professionals who strive to maintain and develop their expertise over the course of a lifelong career. In short, the goal is to train surgeons who create the best possible outcomes for patients while simultaneously minimising deaths, complications and poor functional results.

Despite this aim, published surveys indicate that the majority of new RANZCOG Fellows are not confident, nor feel competent, to undertake independent surgical practice.[2] This is sadly not a problem that only exists within obstetrics and gynaecology in Australia – it is well recognised worldwide and within many surgical specialties.

It has been recognised by RANZCOG that a standard Fellowship qualification can no longer signify that recipient can do 'everything'[3] and the latest curriculum review with the introduction of advanced training modules (ATM) was designed to improve surgical access and training for surgically inclined trainees. But the question remains – is FRANZCOG training suitable for a surgical specialty; can it train gynaecologic surgeons?

Development of expertise

Gynaecologic surgery consists of a broad range of surgical techniques, encompassing vaginal, open and laparoscopic surgery. Traditionally, training in gynaecologic surgery was based on an apprenticeship model, where large volumes of cases were experienced with various levels of involvement, to obtain expertise. Ericsson[4] famously argued that mastering a skill requires 10 000 hours (or 20 hours a week for ten years) of deliberate practice. Multiple changes in training, including increasing trainee numbers and advances in the medical and interventional management of gynaecologic conditions rather than surgical management, has resulted in decreased surgical patients.[5] Regrettably, it would be very difficult to imagine any of our general O&G trainee workforce getting 20 hours of operative practice or preparation time per week to gain this expertise.

This is significant, as it has been clearly demonstrated that the level of a gynaecologic surgeon's training influences their surgical skill and expertise. A retrospective review of 2000 cases in a single site demonstrated that surgeons who had undergone additional training to the standard FRANZCOG had shorter operating length of time and decreased complication rates.[6] Additionally, while the surgeon's level of experience did not influence the complication rate, the current case volume was the most significant predictor of lower complications. I would hypothesise that this is itself sufficient evidence that FRANZOG training simply isn't adequate for surgical training.

The issues with FRANZCOG training

At six years in length, FRANZCOG training is comparable to other surgical specialties, but is unique in that it truly is a dual training program with that time divided between both obstetrics and gynaecology. While there are surgical opportunities in both, it does also mean double the non-technical or non-surgical requirements. It is also well documented that obstetric service forms a predominant part of trainees' work, which further exacerbates the problem.[3] Most trainees feel that that while the hours they worked were adequate to achieve their non-technical skill, they did not feel confident in achieving their technical skill requirements.[7]

The decrease in surgical caseload is well documented and is the most significant issue faced by FRANZCOG training.[7] In an average general rotation, a trainee could expect to find themselves in the operating theatre for four hours per week and these cases will be shared between the consultant, the senior registrar, the registrar and resident. This is far below the required hours to achieve expertise for the trainee, or to adequately maintain the consultant's surgical skill and surgical volume. The actual operating time in each rotation will also vary, as will the actual rotations experienced by each trainee, leading to discrepancies in surgical exposure and experience within each cohort. Table 1 exhibits the variation in surgical exposure for a cohort of Year 4 trainees from Western Australia. It also compares the numbers from a trainee from 10 years ago, demonstrating the substantial overall decrease in exposure. The decrease in surgical numbers is further exacerbated by the fact that 60 per cent of surgical procedures are now performed within private hospitals and there is little integration of RANZCOG training into the private sector.[9]

Table 1. Operative numbers of trainees from Western Australia at four years completed training.[8]

At 48 months	Caesarean	Major abdominal	Simple lap	Complex lap	Advanced lap	Major vaginal
Trainee 1	258	30	54	63	10	63
Trainee 2	376	63	111	96	25	90
Trainee 3	235	38	92	56	18	47
Trainee 4	271	41	85	71	37	82
Average	285	43	85.5	71.5	22	60
Trainee 10 years ago	590	140	298	119	18	195

Another significant issue within FRANZCOG training is the quality of teaching available for trainees. There is no formalised education toward teaching during FRANZCOG training. Obermair[2] showed that between 20 and 25 per cent of respondents rated their consultants' teaching ability as 'poor'. The reasons for this are probably twofold. Firstly, two thirds of RANZCOG graduates find work within the public system, meaning these same undertrained and unconfident new consultants are expected to train trainees themselves.[9] The second reason is that the number of senior consultants available for teaching is decreasing, with a large percentage of older Fellows retiring, further reducing the available teachers for the trainee.[9]

RANZCOG has changed advanced training to incorporate ATMs with an aim to improve access to surgical training; however, this has not addressed the true operative case shortage. The vast majority of trainees will be required to complete the Gynaecology Generalist Module, yet published data from RANZCOG have shown that a significant number of sites do not meet the minimum surgical case number criteria required.[10] While we set target standards to be met from a case volume point of view, the trainee that does not complete the adequate number of procedures is not penalised, which is repeatedly stated in the curriculum. In addition, the purported surgical numbers have been boosted recently with the allowance of 'double counting' where more than one trainee can claim a procedure. While this method allows senior trainees who are supervising their juniors to still gain logbook experience, the reports of numerous trainees claiming the single procedure may reflect an inadequate caseload and procedures being counted where minimal input has been made.

The learning curve for hysterectomy has been well documented, with the number of cases required to achieve proficiency ranging from 20–30 for vaginal hysterectomy and between 30–145 for laparoscopic hysterectomy.[8] Despite this, the required number of hysterectomies to complete the Advanced Generalist Gynaecology ATM is five cases, combining abdominal, laparoscopic and vaginal. While there is an expectation that trainees will complete other modules during their advanced training, there is no penalty for not doing so. This is clear evidence that most trainees completing their generalist training program will have failed to achieve surgical proficiency.

How does it compare?

Having completed both a FRANZCOG and a surgical fellowship, I feel a comparison is a suitable way of judging FRANZCOG training's suitability. The Australasian Gynaecological Endoscopy and Surgery Society (AGES) Fellowship is a two-year program aimed at producing laparoscopic surgeons. Sites must apply to AGES for a two-year accreditation, proving their caseload and other minimal criteria and accreditation will be removed if they have failed to maintain the requirements. Each site must have a minimum of two approved supervisors and they are offered surgical teaching training by AGES through the Train The Trainer Workshops. A trainee must complete a minimum of 110 laparoscopic procedures during their fellowship, which is nearly six times higher than what is expected in the generalist ATM. Finally, private hospital operating is integrated into their timetables and trainees spend on average one day per week as the primary operator and a similar amount of time as a first assistant. This use of the private sector optimises the first operator experience of the trainee on the cases that are then theirs. Similar training models exist in the surgical subspecialties of gynaecological oncology and urogynaecology.

Who are we training?

The final question to be answered is whether there really is a role for a 'generalist'. Surgical outcomes improve with surgeon volume and there is a growing belief that every woman deserves a high-volume gynaecologic surgeon.[11] American data suggest that 80 per cent of gynaecologists are low volume and that the average gynaecologist performs 8.5 hysterectomies per year.[12] A large meta-analysis published by two FRANZCOG-trained gynaecologists showed that gynaecologists performing procedures once a month or less were found to have higher rates of adverse outcomes.[13] It was demonstrated that low-volume surgeons had a 30 per cent increase in the risk of experiencing any in-hospital complication, a 60 per cent increase in the risk of incurring an intraoperative complication and a 40 per cent increase in the risk of incurring an in-hospital postoperative complication. With this in mind, we must ask who should be doing the surgery, if our aim is to have the best outcomes for outpatients.

Conclusion

Gynaecologic surgery has been caught up in a perfect storm with increasing numbers of trainees competing for an ever-decreasing caseload. The absence of adequate training targets and the lack of enforcement of the low existing targets are sinking the surgical ship. The spiral downwards is worsening as the training program outputs consultants who then become new trainers themselves, still trying to learn the basics. Most generalists will not perform enough cases per year to maintain their surgical skills and decrease their adverse outcomes.

In its current status, the FRANZCOG training program is not adequate for training a surgical specialist. Perhaps it is time to face the truth – not everyone can be a gynaecologic surgeon and not everyone should.

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Measuring the power of placebo

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Surgery is not what it used to be. Prior to the discovery of general anaesthesia (or antibiotics), surgical procedures in the early 19th century were mostly performed as a last resort – and reported by those who experienced them to be a 'terror that surpasses all description', with conscious patients, excruciating pain and considerable mortality.[1] Jump to the 1850s, and the work of dentist William Morton culminated in a public demonstration of how general anaesthesia facilitates surgery (the removal of a jaw tumour) without movement or complaint from the patient. Even so, the use of chloroform anaesthetics was associated with one death for every 3000 surgeries performed. Fast forward to the 21st century, and general anaesthesia is now a safe, routine, medical procedure. Research across a broad range of surgical cases suggests that, for fit and healthy patients, the risk of anaesthetic-related death is very low. Currently, anaesthetic-related mortality falls between 0.4–1 death recorded for every 100,000 procedures performed, with most postoperative deaths associated with the primary disease.[2,3]

There are implications that come with this safer access to surgical intervention. Medical comorbidities that would have previously posed an insurmountable obstacle to surgery are no longer an absolute barrier, where there are appropriate staff and equipment for the level of presenting complexity. Surgery is also no longer confined to lifesaving, last resort procedures, and can be performed for a range of chronic conditions, minor complaints and cosmetic purposes. In 2017, there were 2.2 million admissions to Australian hospitals involving elective surgery, as compared to 340,000 emergency presentations requiring surgery, the most common of which was the humble appendicectomy.[4] As the range of possible surgical interventions continues to grow, the need for an evidence-based treatment choice is essential.

Placebo surgery, or sham surgery, can be used to demonstrate an effect of surgical interventions in randomised controlled trials (RCTs), isolating the actual intervention from any unintentional, beneficial effects from other aspects of the operating theatre – anaesthetic, skin incisions or perioperative care. Placebo surgical procedures have an unsurprisingly strong placebo effect – invasive placebos are associated with a stronger perceived effect than non-invasive placebos, as is the decisive diagnosis and approach to treatment, which is usually associated with surgical treatment. Over the years, the results of placebo controlled RCTs have shed significant light on contemporary practice. A recent systematic review of placebo surgical trials found that of the 53 studies identified, there was no difference in the outcomes for the surgical and placebo cohorts in 27 cases (51 per cent).[3] It was also noted that most of the identified trials investigated surgical treatments for conditions that were not life-threatening, but negatively affected daily function and quality of life (GORD, Parkinson's disease, obesity, chronic pain).

The use of placebo-controlled RCTs is hardly a novel concept. In 1939, there was reported improvement of angina pectoris in a single patient who underwent an internal mammary artery ligation. It was 20 years later that this treatment, which has no clear physiological basis, was found to be no more effective than a placebo procedure of a single skin incision.[5] Since that landmark trial, there have been several other notable placebo trials investigating the benefits of invasive procedures and, at times, disproving popular treatments. In 1981, 30 patients with Meniere's disease refractory to medical treatment participated on a double-blind controlled study investigating the efficacy of an endolymphatic sac-mastoid shunt. The 'placebo' surgery in this study was a regular mastoidectomy, and participants recorded their symptomatology three months prior to and twelve months following surgery. Interestingly, at the time of the study, it was found that while there were minor differences in recorded symptom improvement between the two groups, both intervention and placebo groups improved significantly.[6] Following this, a subsequent study examined the longitudinal effects of the intervention three years later and there was no difference in outcomes reported between the intervention and placebo groups.[7]

While various peri-operative aspects of gynaecological surgery have been subject to placebo-controlled trials, including the use of chewing gum for stimulating postoperative bowel activity, pre-emptive port site local anaesthetic and the use of ginger as a prophylactic antiemetic, placebo-controlled RCTs for gynaecological surgical interventions are limited. In 1994, Sutton et al[8] assessed the efficacy of laser laparoscopic surgery for treatment of pelvic pain associated with endometriosis. The recruited 63 women underwent a laparoscopy and were allocated to either the intervention group (laser) or a placebo group, with possible removal of fluid from the Pouch of Douglas for visual diagnostic purposes. Both groups were followed up three and six months after surgery, and after the second review, patients were made aware of their group allocation and laser laparoscopy was offered to the placebo group. This study found that there was statistically significant pain improvement in the intervention group as compared to the placebo group. Interestingly, it was noted that the rate of pain improvement was less than previous retrospective cohort studies of laser laparoscopy had reported. It was also reported that the placebo effect of non-interventional surgery on pain, which was evident in improvement for both groups at three months, was no longer affecting the participants by the extended six month follow up. This initial improvement in pain in the placebo group may be partly attributable to the removal of peritoneal fluid for diagnostic purposes that resulted in an unintended short-term beneficial effect. There were several significant limitations of the study noted, including the single measure for patient symptoms (pain scale), exclusion of grade IV endometriosis cases and the lack of histological diagnosis for any patients in the trial.

In 2004, Abbott et al undertook a placebo-controlled RCT of 39 women with histologically proven endometriosis.[9] This study compared immediate laparoscopic excision of endometriosis with an initial diagnostic laparoscopy, where both arms of the study received surgical excision of any remaining pathology six months later. Outcomes were measured as changes from baseline pain scores, quality-of-life assessments and sexual activity questionnaire scores. This study found a reduction in pain scores for all participants at six months, regardless of their randomisation, with a significantly symptomatic improvement across all measured outcomes for the surgical intervention group (80 per cent), as compared to the placebo group (32 per cent). The authors noted that, within a placebo model, it is expected that participants may be more conservative in rating their symptoms when they know they may have had interventional surgery, and this may account, in part, for improved scores for the placebo group. The authors also noted that the placebo response was similar to the findings of Sutton et al,[8] but the nonresponse rate in the surgical group (20 per cent) was less than in the Sutton et al study (38 per cent). This may have been due to the disease distribution of the participants, with stage 1 disease the most common diagnosis in the prior study, but a minority of cases in the Abbott et al study. The authors ultimately concluded that surgical intervention can improve quality of life for patients with endometriosis, but also that pelvic pain is not always secondary to endometriosis, when it is present.

Overall, placebo-controlled trials have clearly been shown to benefit surgical practice. Even when providing unexpected results, trials may not necessarily deem an intervention as not therapeutic, but it may identify another unintended mechanism affecting the results. There is a level of trust required in undertaking surgical procedures, and this, along with the invasive nature of surgery, is likely to heighten the placebo effect when evaluating effective procedures. While these trials are invaluable, unlike medical placebo controlled RCTs, all surgery comes with a risk profile, even when minimally invasive, and adverse outcomes of surgical procedures typically last longer (wound infection, adhesion, herniation) than those of medications. In response to growing ethical concerns around placebo-controlled surgical trials, Savulescu et al[10] have proposed 'essential criteria' which, when fulfilled, would assist to ensure that surgical placebo-controlled trials are ethically sound. These criteria include: current uncertainty regarding the efficacy of a surgical procedure, preliminary evidence that either the procedure will result in significant improvement in outcomes or suspicion for a placebo effect, minimisation of any risks and no deception in implementation of the trial, and finally, that the area of investigation is clinically important with findings that can significantly impact on clinical practice.[10] Meeting these expectations, placebo-controlled trials can safely continue to inform surgical practice by supporting effective procedures that can be proved to enhance outcomes, while identifying ineffective interventions and reducing the risk of unnecessary harm to patients.

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Coping with adverse outcomes in O&G

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'Never stop learning from your mistakes.'[1]

More than 20 years ago, in my first few weeks as a registrar, I was asked by a senior colleague to perform a straightforward minor procedure as they were busy. A senior registrar would supervise me. I agreed and went to the theatre to find the patient – whom I had not met or consented – asleep and prepped. My supervising doctor arrived. I started with dilating the cervix and then introducing an instrument into the uterine cavity. On withdrawal of the instrument, I was immediately confused at the yellow and tan tissue that was coming out of the cervical os. It suddenly hit me that I had pulled out a loop of the small bowel.

A general surgeon was called, a midline laparotomy and small bowel resection were performed. The patient was admitted to the ward after what should have been a minor day procedure. Through all of this, I felt incredibly distressed for the patient who I had harmed in a major way and had not even met before it happened. Understandably, I was very concerned about my future career in O&G. Would I ever be able to work again in a field that I loved so much? I went to meet the woman with a senior consultant. I was told to let them do the talking. She didn't want to see me again.

She eventually went home and I never saw her again, but for a long time I had constant thoughts running through my head about her and her future. How could I have been so stupid? Why had I perforated her uterus? How could I have injured her as I did? Was I the only registrar to have ever done this? Is this the right specialty for me or is this all just too hard? I had trouble sleeping and knew that it was affecting all my interactions with family and friends, but mostly with the patients I was caring for.

I had support from my fellow registrars, but nothing from my consultants or hospital management. It was as if nothing had ever happened. That was, until, the expected complaint letter arrived in my mailbox at work. It sat unopened for several days as I dreaded what judgement was held in its pages. I eventually got the courage to open the letter, which I read with trepidation. The patient wanted to know why she had such a poor outcome, and she wanted an apology. Of course, I was sorry. I was devastated and ashamed that I had caused her injury. The complaint was passed onto management and I was asked to attend a meeting with senior staff and management to address the patient's concerns. A formal response and apology to the complaint letter was sent. One of my senior consultants tried to console me by saying the letter's 'Angina in an Envelope' would eventually stop.

The complaint was eventually resolved. I continued to work and train as a registrar in a specialty I love. Looking back, the whole incident was magnified due to the swiss-cheese effect of not meeting and consenting the patient first. I still frequently reflect on that incident so early in my career and the permanent effect it had on a woman who I had barely met, the effect that it has had on my practice over the last 20 years, and how very easily it could have ended my career as a gynaecologist.
– Michael Wynn Williams

There is no question that the medical environment has seen rapid positive change over a few short decades, but doctor care still lags behind. Obstetricians and gynaecologists have the highest rates of burnout among doctors, 46 per cent of respondents in the 2018 Medscape Physician Burnout and Depression Survey reported having an issue.[2] Physician health and wellbeing need our urgent attention.

It is undeniable that adverse events are a fact of life in our profession. How we deal with these medical complications is a crucial element in protecting our overall wellbeing.

Adverse events are unintended consequences of healthcare management and result in temporary or permanent disability, death or prolonged

Box 1–3. Toolbox for dealing with adverse outcomes.

Immediate

- Acknowledge and confront the adverse outcome
- Seek advice from a supervisor or clinical director
  Open disclosure with your patient and their family
  - Be sure to remain patient centred
  - Apologising for the adverse outcome is okay
  - Avoidance makes things worse
  - Take someone senior with you for support
- Consider reducing or sharing your immediate clinical load
- Contact your indemnity provider
  - Not only to advise them of the adverse event, but also to access help and support services
  - Write details of the case down and provide a report to your medical indemnity provider

Short term

- If possible, continue to communicate with the patient and their family
- Acknowledge and be aware of the effect an adverse event can have on you
  - What thoughts and feelings are you having?
- Debrief with trusted colleagues
  - Research has identified that the ability to cope with errors may be dependent on appropriate reassurance by colleagues and supervisors.[6]
- Lean into your support systems – friends, family and peers
- Self-care
  - Exercise, meditation, mindfulness, stress management
  - Apps for mindfulness, meditation
  - Don't let fear stop you from accessing help
  - Talk to your GP
  - Talk to your psychologist, or get one
  - Beyond blue: 1300 22 4636
  - Lifeline: 13 11 14
  - Headspace: 1800 650 890
  - Services and support from your medical indemnity provider
  - Doctors Health Service: www.drs4drs.com.au
  - State-based doctors health services
- Think about the hours you're doing and upcoming cases you have
  - Do you need time off?
- Address your feelings of self-doubt
  - Do you need a mentor with you in your upcoming operating list to provide extra support during this time?

Moving forward – long term

- Continue your self-care
  - Look out for burnout and long-term effects
- Examine and grow from the experience
  - Not just through a focus on the medical facts, but through acknowledgement of the emotional effect the event caused
- Read
  - Every Doctor by Leanne Rowe and Michael Kidd
  - Complications: A Surgeons Notes on an Imperfect Science by Atul Gawande
  - Avant: www.avant.org.au/member-benefits/doctors-health-and-wellbeing/healthy-knowledge-and-career/understanding-the-legal-process/dealing-with-adverse-events/
  - MIPS: www.mips.com.au/education/cpd-resources/adverse-outcomes
  - Medically Induced Trauma Support Services: www.mitsstools.org
  - MITSS Annotated Bibliography: Impact of Adverse Events on Caregivers available online at: www.mitsstools.org/uploads/3/7/7/6/3776466/annotated_bibliography_-_impact_of_adverse_events_on_caregivers_update_0312.pdf
- Watch
  - A notification was made about me: A Practitioner's Experience: www.youtube.com/watch?v=0N5zfLfHiwk
    "If there was one thing I could do differently…I would go and talk to someone right at the beginning, because then I would have known I wasn't alone and that would have really helped the process."
- Attend workshops
  - www.cognitiveinstitute.org/courses/building-resilience-and-avoiding-burnout/
- Legal ramifications - 'Angina in an Envelope'
  - Don't put off or ignore legal action
- Moving on
  - Be an advocate – make changes at the individual level and within your organisation
  - Examine your practice and make changes if needed
  - Consider joining or starting a peer support network
  - Consider having clinical supervion http://clinicalsupervision.org.au/clinical-supervision/

hospitalisation.[3] The incidence of adverse events ranges from 5.7–12.9 per cent, with surgical adverse events being the largest contributor.[3] In a 2019 systematic review and meta-analysis, Tanaka et el found the incidence of adverse outcomes in gynaecological hospital admissions to be 10 per cent.[3]

In 2000, Wu introduced the idea of the 'second victim' in adverse events. Although patients are always the first victims, the doctors themselves can also be significantly affected. Wu explained what we all know instinctively – that 'the doctor who makes the mistake needs help too'.[4] The psychological and emotional consequences of being involved in adverse events as a doctor have been shown to be similar to those of the patient. They often involve feelings of grief, agitation, worry, guilt and anger.[5,6] This can lead to decreased quality of life, burnout, increased use of alcohol and drugs, depression, anxiety, suicidal thoughts and, for some, a decision to change career pathways and even suicide.[7,8]

The emotional stress of adverse events has the potential to persist and have significant long-term consequences. In a 2019 systematic review exploring the impacts of patient complications on surgeon wellbeing, one study reported that one-third of doctors met the criteria for acute traumatic stress one month after experiencing a major surgical complication. Participants in another study described emotional distress that impaired their performance for weeks following an adverse event. Some participants reported stopping certain procedures altogether and some chose early retirement.[6]

The impact of adverse outcomes on you as a doctor

Be aware of the negative impacts that adverse events can have on us personally. There can be long-term negative consequences of adverse events and this awareness can lay the foundation for establishing effective coping strategies.

How do we deal with adverse outcomes and ensure we don't fall into the trap of unhealthy behaviours?

Looking out for each other

The support from colleagues has been documented to be a critical component of coping with adverse outcomes.[6] Healthcare professionals need personal reassurance and professional reaffirmation, which can really only be provided through the support of trusted colleagues. Collegial support can help to avoid the feeling of clinical isolation that often follows an adverse event.[6] On the contrary, further harm can occur if unhealthy colleague interactions occur.

Toolbox for helping colleagues

- Make sure you ask, 'Are you okay? Don't just assume your colleague is okay
- Don't forget to talk about how they are feeling, not just the medical facts and decision-making of the case
- Acknowledge the distress of your colleague
- Be a sounding board and listen without judgement
- Share your stories and experiences
- Follow up and check in

The care of patients and their families will always remain the priority in any adverse events; however, the welfare of doctors must also be a top priority. Yielding to the expectation of perfection must be a thing of the past; we must now look carefully and sympathetically at how we develop and nurture a culture of support around adverse outcomes at the individual, collegial and organisational level.

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The ageing surgeon: when are you too old to operate?

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> 'Growing old is no more than a bad habit which a busy man has no time to form'.
> – Andre Maurois, The Art of Living (1885–1967)

Ageing is inevitable and the alternative considered inferior. Surgeons are not exempt from the impost of advancing years notwithstanding their training, experience, undoubted wisdom or enthusiasm for continuing work. On the positive side, higher education, actively working and physical fitness have all been shown to delay the inevitable march of cognitive decline.

Surgery is time critical and technical. It is dependent on the integration of multiple faculties, including crystalline and fluid intelligence, fine and gross motor skills, stamina, and a host of generic 'non-technical' skills such as communication, situational awareness and insight.

In 2017, 29 per cent of 7650 Fellows of RANZCOG and Royal Australasian College of Surgeons (RACS) were aged over 60.[1] Evidence suggests that performance (a combination of the knowledge and the ability to execute a task) declines with age. This is neither linear nor uniform across groups or individuals.

Age is only one factor that can affect performance. Combinations of fixed and progressive deficits (eyesight, hearing, fine motor skills and stamina) can combine with reversible or remediable problems (depression, stress and substance misuse) to alter performance and threaten patient safety. A study by Thomas et al[2] showed age to be a factor in referrals to AHPRA, although surgeons were referred more often for communication and behaviour than surgical outcomes.

Many of us have been involved in cases where age-related factors may have been involved, but lacking clear pathways and mechanisms to intervene, we tend to 'let it go by' as the default position.

Why don't surgeons retire?

Doctors as a profession, and surgeons perhaps more so, over-invest in work in terms of both personal and material returns. They tend to identify as 'what I do' rather than 'who I am' and impending retirement threatens this status. Many surgeons altruistically want to continue to contribute, and others in small specialty areas who contribute unique skills have trouble with succession planning. The financial burdens of divorce, re-partnering and second families weigh disproportionately on our profession, as do poor financial planning and the tendency to be 'soft' targets for get-rich scammers. The label 'relevance deprivation' is aptly applied to many recently retired surgeons.

The Medical Board of Australia (MBA), on advice from the 2017 Expert Advisory Group,[3] identified age and isolation as compounding factors in poor performance and referrals to the regulators. In our profession we recognise that these can occur together in the semi-retired O&G surgeon on the locum circuit, some of whom resume procedural work (including intrapartum and operative obstetrics) not practised for many years.

The multifaceted nature of ageing means that to base retirement or change of scope of practice on chronological age alone will fail both ways: the premature retirement of surgeons functioning well in their 7th, and indeed 8th, decades and the 'too late' retirement of others whose suitability to continue work as a surgeon has, for a variety of reasons, passed its use-by date. This argues strongly against a 'one size fits all' approach of mandated retirement for surgeons at say, age 65 or 70.

The recognisable markers for declining surgeon performance vary from the more obvious to the very subtle, the latter being easy to ignore or ascribe to another cause. Gross markers such as mortality and morbidity (return to OT, avoidable complications, transfusion rates and post-op admission to ICU) should be flagged by standard risk management systems and highlighted by regular peer meetings, where these quality activities are supported. Other changes such as poor communication, delayed or wrong decisions and work avoidance may fly under the radar for some time, with resultant avoidable patient harm.

The measuring tools for assessing the ageing surgeon identified as 'in trouble' are resource-intense, confronting and largely unvalidated. Individual outcome data is seldom available, and knowledge of accumulating incidences is siloed by various stakeholders (employer, MDO and regulator), meaning that earlier interventions to remediate, restrict or retire a problematic surgeon are lost.

Who's involved in the issue?

Recent qualitative research[4] undertaken by the author during a six-month sabbatical leave explored the opinions of experts from multiple stakeholder groups, all of whom were involved in the governance of older surgeons. Interviews were conducted with representatives from surgical colleges, employers (public and private), regulators, medical defense organisations and several member organisations (such as AMA). Each contributed both unique and common opinions on various aspects of the ageing surgeon.

Compulsory health and cognitive testing after age 70 – what does this mean?

Firstly, this recommendation from the EAG is less threatening than many have assumed. The recommendation is both evidence-based and proportionate and will involve those doctors who wish to remain on the register beyond 70 having firstly a three-yearly health check that includes cognitive screening and secondly a performance assessment at a similar interval. What these will look like is still to be determined, and the MBA have commissioned an expert working group to further define these recommendations. The medical colleges will undoubtedly be involved in supporting members as the requirements are implemented. While this instrument is likely to be too blunt and generalised to specifically identify the ageing surgeon who is at risk of patient harm, it may act as a valuable screening tool prompting more in-depth review of the under-performing older surgeon.

Is current governance failing to adequately protect the public from under-performing ageing doctors?

While under-performance can affect any doctor at any age, for the senior doctor, age-related factors (sensory, motor and cognitive) may well feature in the causation, as may remedial deficits such as substance misuse and some treatable mental health conditions.

Hospital credentialing should be the key governance tool for ensuring that all practitioners in any setting work within a scope of practice appropriate to their training and current skill set. Too often this process lacks authenticity and is impaired by conflicts of interest and the service needs of a clinical unit. Annual performance reviews with open inquiry with respect to career plans and intended change to scope of practice, combined with support for transitions should be mandated in both public and private settings.

With some exceptions, in the private sector there are specific risks for monitoring the ageing surgeon, including less robust governance, financial conflict of interest and clinician mobility, all of which can prevent adequate responses to failing performance across all specialties, including surgery.

Reducing or changing scope of practice

Simplistically, doing less with respect to volume and complexity and taking more time to do it should be a practical answer to winding down as a surgeon. Additional measures such as ceasing on call, assisting rather than operating and getting involved in teaching, mentoring and coaching can all keep the older Fellow occupied well through their 70s and beyond. There are some negatives to this approach – studies show that surgical volume, not surgeon age, is the main contributor to outcome.[5] Going off call limits exposure to acute surgery and further reduces volume and taking on 'less complex' surgery may be a false premise for safety, in that any case can become complex.

Should cognitive decline be part of the ageing spectrum, teaching, mentoring and coaching are not going to benefit patient care and may add to the harm.

When should the regulator get involved?

The MBA has the primary role of protection of public safety. It fulfils this duty by registering doctors and setting standards for safe, ethical and competent practice. The range of tools available to the MBA include voluntary undertakings by practitioners in response to conduct or performance concerns, through to imposed restrictions or removal of registration (and licence to practice, either temporarily or permanent). Unless there is a demonstrated immediate threat to patient safety, the preference of the regulator (and other stakeholders) is that solutions to performance issues be mediated at a lower level, including input from the surgeon, their employer, colleges and if appropriate, medical defense organisation. Our study supported an approach based on John Braithwaite's theory of Responsive Regulation,[6] wherein most of the controls and maintenance of standards are concentrated at the base of a regulatory pyramid, with surgeons themselves given the support and tools to monitor and respond to change in performance. The next level of college, medical regulator and MDO then becomes involved next, with the regulator (whose legislated powers allow the strongest intervention) stepping in when recidivism and lack of insight continue to threaten best practice and safe delivery of care.

The challenges for professional colleges

RANZCOG has responded to the MBA with an updated online CPD program – the Professional Performance Framework. Included in this will be a requirement for practitioners to report on their individual practice performance, including scope, volume and outcomes.

Our college is currently in the early stages of establishing a senior Fellows group that will be part of a continuum of RANZCOG member support. RACS have an active senior surgeons group and resources for members to guide transition to retirement. The RACS group also have a session at each ASM to highlight relevant work around ageing and medical practice, as well as 'showcasing' successful examples of transition to retirement.

The challenge remains to design a framework to support the late career surgeon that avoids a unidimensional approach based solely on age. To achieve this, we must normalise the conversation about ageing and starting planning for retirement well before the event. Notwithstanding the need to avoid any ageist aspects of guidance around this issue, the evidence supports some mandated age-related assessments of sensory faculties, general health and cognition, as per the MBA recommendation. RANZCOG should proactively engage with other colleges, employers, regulators and MDOs to promote a collaborative approach to this issue, which that is more likely to succeed than either resisting the inevitable or continuing the current 'silo' approach where each stakeholder manages individuals in reaction to an identified problem. This should permit the recognised attributes of senior clinicians to be harnessed to improve, rather than detract from, the quality of care offered to our patients.

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Reclaiming the word 'surgery' in obstetrics

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Caesarean section surgery comprises approximately 30 per cent of surgeries in low-middle-income countries each year, and is one of the most commonly performed operations worldwide.[1-3] The Lancet Commissions on Global Surgery 2030 has deemed caesarean section surgery a bellwether operation, a key surgery that needs to be able to be performed in all hospitals.[4,5] Access to safe obstetric surgery and anaesthesia for pregnant women is also now part of universal health coverage and Sustainable Development Goal 3.[6]

In Australia and New Zealand, nearly 115 000 women undergo caesarean section surgery each year.[7] Fortunately, unlike many areas of the world, Australia and New Zealand have some of the lowest maternal mortality figures, with mortality being rare and overall pregnancy morbidity being low.[8,9] The low maternal morbidity and mortality is due to healthcare systems that support access to high-quality obstetric surgery and anaesthesia.

Despite large numbers of pregnant women undergoing safe obstetric surgery and anaesthesia, and the broad positive impact that this essential surgery has on maternal health in Australia and New Zealand, obstetric surgery (caesarean section surgery) is often left out of the important area of research around, and implementation of, key surgical outcomes and endpoints. It is also rarely covered in the emerging field of perioperative medicine in anaesthesia.[10]

Perioperative medicine is concerned with the medical management of patients from the time they are considering surgery, through their surgery, to full recovery. It is widely applied in the areas of colorectal, urological, hepatobiliary and gynaecological surgery.[11] The marginalisation of obstetric surgery from other important major abdominal surgeries disadvantages pregnant women and their babies, and eventually, if not addressed, will leave these two important populations (pregnant women and babies) behind, once again.

There are likely to be at least two significant reasons why this marginalisation exists. The first is a shift over time in the naming of obstetric surgery from caesarean section, or caesarean delivery, to the emerging term of caesarean birth.[12] While the term 'birth' is not inaccurate, and may appeal to, and even reassure, some sectors and consumers, it does not ultimately serve to advance the care of pregnant women. Instead, it leads to an underestimation of the risks associated with this surgery by consumers and even their advocates, and to an undervaluing of the contribution made by surgeons (obstetricians) and obstetric anaesthetists to the excellent maternal and neonatal health outcomes for women who undergo this surgery.

The second reason is the assumption that pregnant women's biological issues are fundamentally different from other adults. This assumption leads to the requirement to segregate an essential surgical operation for a vast number of women from other essential surgeries such as colorectal, cardiac or neurosurgery. Again, while this may provide comfort on the surface, the underlying theme of segregation, this removal from mainstream surgery and anaesthesia, has impacts that ripple through the clinical, research and educational spheres. The creation of metaphorical, and sometimes actual, brick walls between specialties further exaggerates the silo and specialty (and subspecialty) hierarchical mentality so common in medicine. These walls inhibit the development of important personal, departmental, hospital and community collaborations that drive professional respect and understanding, which ultimately lead to better care for pregnant women.

In 2019, as leaders in the safe care of pregnant women in Australia and New Zealand, obstetricians and anaesthetists must reclaim the word 'surgery' when it comes to caesarean section and embrace the success we have created – a safe intraoperative environment in which women and their support team can experience the birth of a baby. As a collaborative team, we need to change the view that caesarean section is somehow a lesser mode of birth or a lesser form of surgery. We must ensure that the clinical advances that are occurring in perioperative medicine, anaesthesia and surgery, pain medicine, research, and quantity and safety, are routinely embedded into the perioperative care of pregnant women.[10]

As leaders, we must also accept the inevitable and luxurious position that a society with low maternal mortality and morbidity can have – that nothing can ever go wrong. Our role is to respect and educate those who should know better, those who have forgotten, and those who have never known what the world looks like without essential obstetric surgery and anaesthesia.

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Q&A

For the broader *O&G Magazine* readership, balanced answers to those curly-yet-common questions in obstetrics and gynaecology.

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Q A patient asks about the use of apps to track their menstrual cycle and fertility. What advice should they be given?

A Period and fertility apps have recently become increasingly popular and there is currently a range of different apps on the market to choose from. These apps enable users to track their menstrual cycle with their smartphone, provide predictions about the timing and progression of one's period, including relevant physical and mental processes related to the cycle, and provide information about fertility. As such, these apps can assist users in predicting ovulation and achieving or preventing conception. Some apps also market themselves as digital contraception tools.

As promising and innovative as many of these apps appear, they vary in price, quality, design, functions, inclusiveness and safeguards offered to users regarding data privacy and security. Before using an app, patients should ask a range of questions, which will help them navigate the search for a period tracker tailored to their expectations and needs.

Are there any risks in using period and fertility apps?

Many period and fertility tracking apps are available for download free of charge. While this makes them easily accessible to potential users, one should be aware that they work on the basis of a trade-off. In this equation, the app provides information about the menstrual cycle and makes relevant predictions, in exchange for user data. Hence, the use of such app is not technically 'free' or without risks.

Some free-of-charge apps are known to sell data to third parties, while others promise to only share de-identified data with researchers.[1] Before one starts using an app, it is advisable to do a background check and see if the app has a history involving data selling or leaks of sensitive user data.

Furthermore, it is also useful to know who is behind a particular app. A recent investigation by the Guardian uncovered that a popular women's health and fertility app with a user base in the US, Europe, Latin America and Africa has been 'funded and led by anti-abortion, anti-gay Catholic campaigners' and involves guidance from medical advisers who are not licensed to practice in the US.[2] The app is collecting detailed information about women's sex lives while promoting natural forms of family planning, which are among the least-effective contraceptive methods.

Background information about investors and app development teams matters as it can generate concerns regarding potential hidden agendas, which could be shaping the focus, content and quality of advice offered to users as well as raise additional worries about 'data mining' for specific interest groups. App stores may provide information about companies and developers behind particular apps and the withholding of such information, including contact or website details, may signal that an app is less than trustworthy.[3]

These issues considered, the user might want to take extra precautions to ensure that an app of their choice is likely to serve their best interests or decide to continue tracking their cycle using older traditional methods.

Which functions and modes of use do apps offer?

Different apps offer different functions. If one desires to engage in period tracking for the purpose of avoiding pregnancy, an app that overestimates the ovulation window is preferable, while an app offering a more conservative prediction of ovulation would be suitable for users trying to get pregnant.[4] Some apps also enable users to tailor functions according to their preferences. For example, users who do not wish to procreate can switch off fertility functions in some apps and focus solely on period tracking. Several apps can be used without having to set up an account, which can help to keep tracking more confidential.

What happens with my data?

Some period and fertility apps collect sensitive personal data about their users. For example, some apps ask detailed questions about users' sex life or pregnancy plans. It is, therefore, important to get an understanding about which data are being collected by an app, if and how the data are stored and what happens with the stored data.

To get a clearer idea about data handling, it is important to carefully read an app's privacy policy. This can be a time-consuming and demanding task as privacy policies are often extensive and use legal terminology, which can make them harder to understand. Yet, the sensitivity of the collected data and the possibility of a leak or misuse are significant issues, bearing risks that are not to be taken lightly.

For example, it was recently reported that one of the most popular period and ovulation-tracking apps was sharing data about users' menstrual cycles and procreative plans with Facebook.[5]

Privacy policies should be transparent about data handling. If there is a lack of transparency or a chance that an app might share user data with third parties outside of the context of academic research, these are reasons for concern and a quest for a safer way of tracking. When using an app, it is always advisable for users to check the privacy settings on their devices for ways to opt-out of data collection.

Is this app for me?

The content and guidance offered by apps can often be targeted to and relevant for selective user groups. Many apps are designed for younger cisgender (those who identify with the gender assigned to them at birth) women who are in heterosexual relationships and want to have children. For example, many apps involve implicit assumptions that users have sex with male partners and some only offer options for logging sex in the context of fertility tracking.

As such, apps can exclude some potential users, such as LGBTIQ (lesbian, gay, bisexual, transgender, intersex and queer) users, those who do not seek sex because they are asexual and users not wanting to procreate or undergoing perimenopause.

Accordingly, not all apps targeting women are free of gender stereotypes.[6] A recent study combining an analysis of app reviews, with a survey and follow-up user interviews, noted that gender stereotypes and lack of inclusiveness leave some users feeling alienated.[4] Some study participants also report finding apps infantilising and insulting, especially when their design is being dominated by pink colour and images of flowers and love-hearts, with one user explaining, 'a lot of them just felt kind of condescending or like they were designed by dudes who were designing what they thought a woman would like.'[4]

Finding inclusive and gender egalitarian apps requires more effort, but there are some options on the market patients can choose from.[7]

How reliable are digital contraception apps?

One particular area of fertility app patients ought to be cautious about involves contraception apps. While there has been much hype about digital contraception, with some apps being marketed as having similar efficacy to barrier or hormonal contraceptive methods, latest evidence calls these claims into question.

It has been reported that several women fell unintentionally pregnant while using an app, which has been certified for use as a contraceptive method in Europe and FDA-approved in the US.[8] Subsequently, it turned out that the 'correct use' of the app was predicated upon a very idealistic notion of the user, one with a strictly regular daily routine, sleeping patterns and significant tech user literacy. As such standards and rigid behavioural patterns are difficult to achieve, digital contraception remains less reliable to many.

Should I agree, as I am being encouraged, to use an app by a third party?

Some employers have been found to 'encourage' their employees' use of period and fertility apps. In some cases, the alleged purpose was for companies to have an overview of how many employees were pregnant or planning to have a child.

One such case involved bosses accessing information about how many workers using one provider's fertility, pregnancy and parenting apps were experiencing high-risk pregnancies, gave premature births as well as their most searched medical questions.[9]

This information is obviously highly sensitive and, once in employers' hands, it can have significant effects on predominantly women's employment status, promotion opportunities as well as women's position in the labour market more generally.

Beside employers, insurance companies have also been known to encourage the use of self-tracking mobile health technologies and, at times, offer better insurance deals to those who agree to self-track.[10]

Taking into consideration the sensitive nature of the data collected by many apps and their potentially serious implications for access to employment opportunities and health insurance services, patients might have good reasons to abstain from allowing third party access to their personal data.

Conclusion

There is currently a range of diverse apps on the market, with new technologies being constantly developed. Potential users need to be aware that apps can significantly differ in quality and that their use can raise issues and risks related to data privacy and security, including negative implications involved in menstrual surveillance by employers, insurance companies or other third parties.

When approached by patients for advice, it would be good if health professionals could inform patients about the chances and risks involved in period and fertility tracking and suggest to them core questions and concerns to consider when searching for an app suitable to their interests and needs.

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Supporting those with perinatal mental illness

Dr Laura Biggs
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PANDA – Perinatal Anxiety & Depression Australia

Each day in Australia on PANDA's National Perinatal Anxiety & Depression Helpline, we talk to expecting and new parents affected by perinatal mental illness. While every story is different, there are many common themes, including parents not expecting that this would happen to them, not recognising that they are sick, or knowing something is wrong but avoiding seeking help due to concerns they will be perceived as a bad parent.

As well as providing critical support to callers, PANDA strives to raise awareness of this common and serious illness so that families can recognise what is happening and get help as soon as possible. Our more than 300 Community Champions are at the heart of this work. Megan, one of our Champions from Western Australia, has allowed us to share some of her story:

> I now realise I was incredibly anxious from about 22 weeks. When I developed pre-eclampsia and was stuck in hospital, people kept telling me that it would be okay; however, after a difficult birth resulting in my baby needing to be resuscitated and then taken to the NICU, I felt like the rug had been pulled out from under me. I found out a few hours after her birth she was missing fingers and had other birth defects and health concerns that no one could explain to me and although I didn't realise it at the time, my anxiety was rapidly increasing.
>
> I was constantly worried something was going to happen to my daughter, she was not well, and I wanted to do everything in my power to protect her. I would be with her 24/7, it was rare that anyone else even held her. She screamed constantly, I didn't trust anyone else would or could give her the care she needed. I knew my anxiety wasn't healthy at this stage and started dropping hints at appointments with doctors that I was anxious.
>
> I went to my GP to ask to see a psychologist, she asked me a few questions, did an Edinburgh Postnatal Depression Scale, which I always lied on, told me we had a great connection, that it was no wonder I was a little anxious because of her health concerns, that I needed some sleep and told me I didn't need a referral and sent me on my way.

Perinatal mental illness

Although Australia is acknowledged as a world leader in perinatal mental health, a significant number of Australian parents are not identified as at risk of, or experiencing, perinatal mental illness, and factors such as stigma and shame prevent many from seeking help. With early identification and access to appropriate care, it is possible to reduce the severity of illness, minimise the need for specialist perinatal mental healthcare, and improve health outcomes for the entire family unit.

Megan, a PANDA Community Champion, with her daughter and son.

Specific estimates of the prevalence and incidence of perinatal mental illness vary due to methodological and population differences between studies. There is, however, wide agreement that mental illness in the perinatal period is common and of critical importance, with up to one-in-five expecting or new mothers experiencing anxiety and/or depression.[1]

For every 1000 women who give birth, it is estimated that 1–2 will experience postnatal psychosis.[2] Although less common than anxiety and depression, psychosis often presents in the early weeks following birth with acute onset and rapid deterioration, with most women requiring admission to an inpatient mental health facility.

PANDA's National Helpline

In 2010, PANDA was funded by the Australian Government to provide the National Perinatal Anxiety & Depression Helpline, supporting families and health professionals Australia wide. The Helpline manages approximately 12 000 calls each year.

PANDA's Helpline works with callers across the spectrum of perinatal mental illness: difficulties with transition to parenthood, mild to moderate to severe symptoms of anxiety and/or depression, and other mental health issues. The Helpline is staffed by a skilled team of professional counselling staff, and a peer support (volunteer) program is offered for callers experiencing mild anxiety or depression. The first time a parent calls the Helpline a full biopsychosocial and risk assessment is completed, with ongoing support calls provided to assist callers while they make vital connections to services local to them.

The Helpline is free and available Monday–Friday 9am–7.30pm AEST/AEDT on 1300 726 306.

Risk factors

The perinatal period can be a period of vulnerability for women's mental health, although some women are more likely to experience perinatal mental illness than others. Key risk factors include a lack of partner support; inadequate social support;[3,4] history of abuse or domestic violence;[3,5] a personal history of mental illness;[3,6] low self-esteem; and, as was the case for Megan, past or current pregnancy complications.[3,7]

Although not all of these factors are modifiable, early identification of risk factors presents opportunities to put additional supports in place to help protect the woman's, and her family's, mental health during pregnancy and the early years of their child's life.

Seeking help

As Megan's story demonstrates, a range of factors can act as barriers to parents seeking help, including stigma; worry about being perceived as unable to cope; lack of knowledge about available services and how to access them;[8] discrimination;[9] and practical limitations, including financial and transportation difficulties, and language barriers.[10] Community awareness regarding perinatal mental illness remains poor, particularly regarding anxiety and mental health challenges experienced by men.[11]

Resources to support your practice

Megan's story illustrates the reality that many parents will not openly tell their care providers how they are really feeling. Undertaking a thorough psychosocial health assessment early in pregnancy and regularly enquiring about psychosocial health throughout the perinatal period can help to ensure every parent receives the care and support they need.

In addition to the Helpline, PANDA provides a number of resources that can help you support the mental health of the women and families you care for:

Mental Health Checklist for Expecting and New Parents

You might like to point parents to this handy checklist available at panda.org.au. It provides a quick, anonymous, accessible way for expecting and new parents and carers to explore their emotional wellbeing, identify potential symptoms of perinatal mental illness, and seek help. The checklist includes 30 tick-box, plain language questions covering a wide range of symptoms and associated risk areas. Users can access a printable PDF summary of their responses at the completion of the checklist, which they can use to start conversations with their care providers.

Consumer approved resources

- PANDA's website provides consumer friendly information, including stories of recovery shared by our Community Champions
- Our second website, howisdadgoing.org.au, has been specifically developed for expecting and new dads
- PANDA, in collaboration with our Australia-wide network of lived experience volunteers, has established a suite of consumer and health professional resources that can be viewed and ordered at panda.org.au

A final word from Megan

Obstetricians and gynaecologists can play a key role in enabling parents to discuss how they're really feeling, which can be an important first step in the recovery process. As Megan explains:

> I found speaking openly and honestly about how I felt and what I was experiencing was empowering and the turning point for me.

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Obituaries

Dr Sarwat Fouad Shenouda
1957–2019

Sarwat Shenouda was born in Al Minya in Egypt on 12 October 1957, the third of four brothers to Fouad Shenouda and Marguerite Youssef.

He finished school in Cairo and worked briefly as a waiter in London in 1975 before completing medicine at the University of Ain Shams in December 1981. He completed a Master of Clinical Pathology in 1985 and worked in several specialities in Egypt before migrating to Australia.

He married his wife Gilan in 1986 in Melbourne and had two children, son Rami in 1990 and daughter Mayar in 1992. He worked around Australia as a GP and later began specialist training with RANZCOG. He first worked at the Northern Hospital in Melbourne to complete his Fellowship training in 2000. He remained at Northern Hospital as a consultant; a post he held until his death. He also worked as a consultant at Kilmore District Hospital (until 2019) and at the Royal Women's Hospital until 2005.

He made an enormous contribution to the obstetrics and gynaecology unit at the Northern hospital and was part of the local and hospital community throughout this time. Sarwat was a great clinician and he loved teaching. He was a passionate supporter, educator and mentor of medical students, midwives, RANZCOG trainees and international doctors.

He was the backbone of the obstetrics and gynaecology unit during some challenging times and for many years he volunteered to do many extra days of on call when the unit was short staffed.

Sarwat got along extremely well with the people he worked with and regarded them as family. He was immediately recognisable with his own familiar greeting and his warm personality filled every room. His generosity was immeasurable, and he loved to share food, laughter and love with anyone that crossed his path.

He had been extremely brave, but also realistic, in his fight with his illness for more than five years. He had multiple surgeries, radiotherapy, chemotherapy and hospital admissions, yet throughout he remained very positive about life and work. He became extremely close to God in the last few years of his life, which helped bring him further joy and peace in addition to the love and support of his family and friends.

Sarwat Shenouda peacefully passed away on Friday, 10 May 2019 surrounded by his family. He will always be remembered by his loved ones as a great human being.

Dr Rami Shenouda

Dr Andrew Ngu

Dr Paul Howat
FRANZCOG

Dr Sarwat Fouad Shenouda

Dr Ronald Rutherford Elvidge
1923–2019

Ron Elvidge, obstetrician, gynaecologist and All Black captain died recently, aged 96.

Ron attended John McGlashan College in Dunedin. There he was Head Prefect in years 1939 and 1940. He was swimming, boxing and fives champion, runner up in cross country, broke numerous athletics records and was a member of the first XV and first XI at the age of 14.

In the following years he pursued and tried to balance both rugby and medical studies, sometimes with difficulty. During the war he was a member of the Otago Medical Corps. He gained a NZ University Rugby Blue.

From 1942–1950 he played 30 games for Otago, for a time captaining the team that held the Ranfurly Shield for 18 games. Thus earning his god-like status as reported in the Otago Daily Times. 'When Elvidge walks down the street he turns more heads than Bing Crosby would'. He also played 19 games, including nine tests for the All Blacks, as captain on seven occasions.

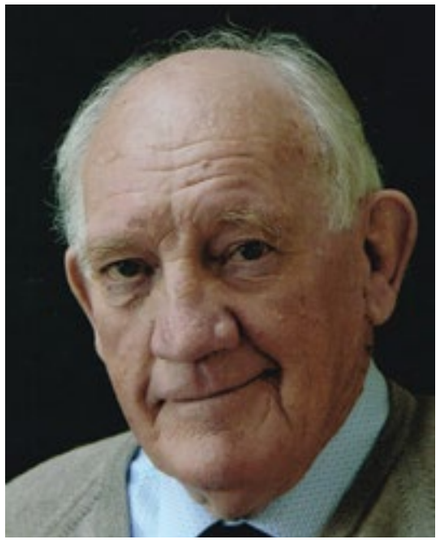
His most memorable game, an event that would appear to come straight from the 'Boys Own' magazine, was the third test against the British Lions in 1950, an era when replacements were not allowed. The All Blacks were trailing 3–0, and were down to 14 players when Ron left the field with a serious shoulder injury and a deep cut to his head. 'With his arm hanging loose and experiencing great pain' he returned to the field playing in a roving role. He received the ball, dived through a fierce tackle and scored a try that won the match and the series for New Zealand. That was his last game of rugby.

He graduated MB ChB in 1948, did his house surgeon years in Dunedin, including time in Sir Bernard Dawson's Department of Obstetrics and Gynaecology, thus sparking his interest for specialisation. He enjoyed participating in the hospital culture even to the extent that in the role of Father Christmas he drove his sleigh, a baby Austin car, around the ground floor wards, but had to walk the upper floors with his bag of goodies.

In 1950 he went to England to begin specialist training in O&G, with residencies in Shrewsbury, Edgeware General Hospitals and Oxford. There he was greatly influenced by the renowned New Zealanders, John Stallworthy and Bill Hawksworth. He passed his MRCOG in 1956.

Ron married Prue Browne and in 1956 they returned to New Zealand where Tim, James and Jo were born. He joined the oldest Auckland O&G specialist practice with Tom Plunkett, Alastair Macfarlane and Bruce Grieve. Obstetrics was Ron's forte. Within a very short time he had the busiest practice in Auckland; every expectant father wanted his child delivered in the large, safe hands of the ex-All Black captain.

He also obtained a visiting position at St Helen's Hospital and a short time later at National Women's Hospital he joined the 'B' team with visiting specialists, Bruce Grieve, Bernie Kyle and Ian Ronayne. He enjoyed and was proud of his team at NWH and contributed to postgraduate teaching. Ron performed his private gynaecological surgery at Rawhiti Hospital in Mt Eden where he learned laparoscopy skills in the late 1970s.



Dr Ronald Rutherford Elvidge.

In the mid-1970s Ron gave the writer half of his obstetric practice and so started another long, happy association. Many families much appreciated the care and attention the partners gave to arranging adoptions of babies born in their practice.

Ron became a Fellow of the RCOG in 1972, served on the College Council 1976–79, and apart from that involvement he strenuously avoided hospital politics and committees.

He had other quirks too, such as writing abbreviations in the margins of his clinical record – most not appropriate for publication. A favourite one was UTC – 'Uncle Tom Cobley and all' – referring to the growing demand for the father to be present at the delivery of his baby.

Forty years of a new happy life started in 1978 when he and Dawn Ulrich married. Three years later they moved to a lifestyle block and set up a kiwifruit orchard, but Ron continued in practice in the city until retirement in 1988. Then more time was given to social golf and bridge, community activities, U3A groups studying cosmology, geology and world religions, meeting old colleagues, enjoying a Saturday rugby match and holidaying at his beach in the Bay of Islands.

His was a life to be celebrated, a life of achievement and courage, generosity and humility.

Prof Ron Jones
FRANZCOG

Dawn Elvidge

This obituary was first published in The New Zealand Medical Journal, 2019, Volume 132 Number 1496.

Dr Murray William Elliot
1921–2019

Murray Elliott died on 4 May 2019 at the age of 97. After a private cremation, a Memorial Service was held in St Augustine's Anglican Church, Hamilton on 30 May 2019.

Murray was born and educated in Adelaide, graduating in Medicine (University of Adelaide) in 1943.

In 1944 he enlisted in the army, initially posted to Cowra, the site of a Japanese POW internment camp, and then to Rabaul, at the time of Japanese surrender in 1945. He later volunteered for service within the British Commonwealth Occupation Force (BCOF) in post-war Japan, where he spent two years, during which time he developed a keen interest in Japanese culture and creative arts. The favourable impressions remained with him and later expanded to other Asian countries, notably New Guinea and Indonesia. His expertise was subsequently duly recognised by his appointment to the council of the National Gallery of Australia in the early 1980s.

Returning to Adelaide in 1947, Murray commenced O&G training and in 1949 sailed to England to sit the MRCOG. On board the ship he met his wife, Jill (Gillian) Earnshaw. On return to Australia, he established his successful private practice in Brisbane. He gained visiting specialist appointments to the then Brisbane General & Women's Hospitals, resigning in 1965 in favour of a more senior appointment in gynaecology at Princess Alexandra Hospital.

In 1979, Murray obtained Fellowship of the Royal Australian College of Obstetricians and Gynaecologists (RACOG) aiding the College in a co-operative scheme with the aim of assisting the advancement of O&G services in Indonesia. Pursuing his Asian interest, in 1977 and 1984, Murray led medical teams to Sumatra and Sulawesi.
In civilian life, Murray maintained his service in the RAAMC, eventually becoming national Army Consultant in O&G with the rank of Colonel. He was awarded the Efficiency Decoration (ED). His sense of duty extended to the activities of the St John Ambulance Brigade, both state and national, the Order honouring him with a Knighthood. He served on College Regional Council, as well as Queensland State Committee.

His varied achievements were recognised in 1993 by the award of AO.

Murray is survived by his wife Jill, their four children, (Jonathon, Rachael, Mark and Simon) 13 grandchildren, and one great granddaughter.

Reflecting on a long life, his achievements were indeed praiseworthy, involving multiple forms of service. He had the admiration of all – his family, a wide circle of friends, medical colleagues and those in various other disciplines and, not least, his many patients.

Dr Brian Hill
FRANZCOG

Geoffrey James Bishop
1933–2019
Geoff Bishop, one of Melbourne's leading O&Gs, died on 1 June 2019, aged 86 years.

Following his graduation from Melbourne University, Geoff chose O&G as his future career and trained at the Royal Women's Hospital, Melbourne and at Mill Road Hospital, Liverpool. He worked in Liverpool for three years where he experienced the poverty, the Flying Squad rescues of complicated deliveries and honed his obstetrical skills to perfection. He was offered a permanent position at Liverpool by Sir Norman Jeffcoate but chose to return to Australia in 1965.

He was appointed an honorary gynaecologist at the Queen Victoria Memorial Hospital, Melbourne, and rapidly developed a busy private practice in O&G. The practice covered a large area as he attended hospitals from the CBD to Hampton, some 18 km and at times, a 40-minute drive away. His children remembered long drives on a Saturday morning as he visited his patients, usually listening to 'The Goon Show' and 'My Word' on the car radio. His later practice extended to the Monash Medical Centre and Box Hill Hospital.

Geoff was an excellent teacher; he believed strongly in the value of clinical experience and exposure to the real problems faced by patients. He, along with other consultants, always helped prepare the registrars for their specialist examinations. He was a superb clinician and excellent surgeon. He was greatly respected and trusted by his medical friends and colleagues and was known at the Queen Vic as 'the doctor's obstetrician'.

Geoff had an exceptional commitment to Women's Health. He was passionate about our duty to teach our profession, to contribute to all College activities as well as the wider world community of international women's health. He set the standard for those who followed by combining his practice with many voluntary activities. These included:

- Member and Chairman, Victorian State Committee RCOG/RACOG
- Member of Council RACOG, including several terms in Executive Positions
- Member of Council of AOFOG, including terms on the Executive and as President
- Chairman, Organising Committee AOFOG conference Melbourne
- Member of the Medical Board of Victoria
- Member of the Australian-Asian Association of Victoria, including terms as President
- Consultant O&G work for the WHO
- Teaching and Training roles throughout Asia in places such as Bangalore, Mandalay, Karachi, Jamshedpur, Sendai, Ulaan Bataar, plus many more. He was the first International Fellow of the Mongolian Association of Obstetrics and Gynaecology.

After his retirement from private practice he, with much pleasure, took on the role of honorary curator of the RANZCOG Museum and Library. He also gifted the College with a barbeque, which still stands in the carpark of College House bearing his name on the plaque.

Geoff was a man of life; he welcomed it, supported it, devoted himself to it and thoroughly enjoyed all aspects of it. He received everything in the busy world with enthusiasm, engagement and good humour. He loved fellowship and went to great lengths to celebrate it. Those who worked with him will recall countless occasions of capacious socialising, full of fun, laughter and that particular glint in his eye. He had very many friends in the world of O&G, spanning the hospitals and countries he worked in over the years. He respected and enjoyed all Asian cultures and this endeared him to his Asian colleagues, all of whom reciprocated with their respect and friendship. On one occasion, when Geoff was hospitalised with a severe illness, the then President and Secretary General of AOFOG flew from Singapore to Melbourne just to see and support him.

Geoff loved his family, his garden, swimming, tennis, golf and fishing. His was a full and fulfilled life. He is survived by his wife Ruth, their children and grandchildren.

Geoff was very appropriately recognised for his enormous contributions to O&G by receiving an AM in the Australian honours system, and the highest possible recognition from RANZCOG, the President's Medal.

His friends and colleagues have been privileged to have known Geoff, to have worked with him and to have shared his love of our profession, his love of friendship and his devotion to promoting excellence in the provision of women's health in the world.

Vale Geoff.

Dr John Campbell OAM
FRANZCOG

Tom Bishop

Letter to the Editor

A/Prof John Svigos
FRANZCOG

Dr Basil Antonas
FRANZCOG

We wish to respond, if we may, to the thoughtful observations of the respected Editor-in-Chief of *ANZJOG*, Prof Caroline de Costa, in *O&G Magazine* Vol 21 No 2, Winter 2019.

At the outset, we wish to acknowledge the efforts of trailblazers such as herself, Dr Christine Tippett and many other dedicated female Fellows, too numerous to mention individually, in achieving the gender equity that currently exists in our College, despite impassioned comments to the contrary in terms of an inequity in 'positions of power'.

We have witnessed this extraordinary and welcome change in the past 40 years that we have been serving women and their babies, our families, our College and our communities in various capacities.

We just wonder whether Prof de Costa not receiving any considered letters to the editor regarding male gender imbalance is because of our current-day obsession with political correctness and the fear of censure that some males may have that if they 'cross the line' in their attempt to offer some commentary on this topic, and even more so in suggesting a solution such as 'positive discrimination', which is freely put forward as a compulsory initiative by those wishing to promote female gender equality.

Predictions of a male gender dearth within our specialty have been projected for a considerable period of time with respected College representatives, Dr Louise Farrell and former President, Dr Rupert Sherwood, providing insightful comments into this eventual outcome in *MJA* in 2012.[1]

Has this prediction now been replaced by a perception that there is an active barrier to males entering obstetrics and gynaecology?

The reasons for this turnaround are multiple and complex and beyond detailed discussion in a Letter to the Editor. We all have our own conceptions and misconceptions as to why this is so and whether it is merit based and similarly with our view of the likely implications of equality in numbers but not necessarily equality in the fulfillment of all duties expected of a Fellow of the College engaged in active practice?

We could put forward the thought that male trainees in our specialty are rapidly becoming a minority group within the College and, as with other minority groups within the community at large, that they should have the right not to feel constrained to comment.

However, in times gone by, males, particularly our Fellows, have risen to the occasion in defending the rights of women to receive expert, empathetic and non-discriminatory care and similarly in encouraging and training women wishing to enter the specialty of O&G.

Male trainees and Fellows, we believe, now await similar efforts from their female and alternative gender colleagues to extoll the virtues and advantages of having an equal number of males with whom to work for the betterment of women's health in a similar impassioned manner.

Where is their champion?

Of course, the politically incorrect answer is 'to grow up and be a man' just as women were forced to endure, or have we, as a society and as a College, matured sufficiently that this attitude is now an anachronism and we can address the impending gender imbalance by logical and reasoned debate with mutual respect?

Reference
1. N Mackee. A new generation. *Med J Aust.* 2012;197(5). Available from: www.mja.com.au/journal/2012/197/5/new-generation.

Notice of Deceased Fellows

The College was saddened to learn of the death of the following RANZCOG Fellows:

- Dr Ronald Rutherford Elvidge, NZ, 30 March 2019
- Dr Kenneth Ivor Digwood, WA, 30 March 2019
- Dr Murray William Elliott, Qld, 4 May 2019
- Dr Paul William Robinson, NZ, 30 May 2019
- Dr Geoffrey James Bishop, Vic, 1 June 2019
- Dr Keith Gordon Cockburn, Qld, 6 July 2019

The College wishes to advise retraction of correspondence from Dr Phil Watters (Letter to the Editor, *O&G Magazine*, Vol 21 No 1, Autumn 2019). The views expressed by Dr Watters do not reflect the views of the College and represent his opinion alone. We would like to remind readers that the statements and opinions expressed in articles, letters and advertisements in *O&G Magazine* are those of the authors and, unless specifically stated, are not necessarily the views of RANZCOG.

Bush & Beach: highlights

The RANZCOG 2019 Queensland/New South Wales/ Provincial Fellows Regional Scientific Meeting was held from 6–9 June on the Gold Coast, Queensland.

More than 200 Fellows, Diplomates, trainees, midwives and medical students came together to participate in the two-day scientific program, three breakfast sessions and seven pre-conference workshops. The pre-conference workshops included the first DRANZCOG Training Supervisor Workshop, as well as a Perineal Repair Workshop and Diplomates Day.

The RSM brought together O&G specialists from the 'Bush and Beach' to focus on recent advances in obstetrics and gynaecology, including understanding pelvic pain, induction of labour, antenatal corticosteroids and many more. The three social functions allowed for delegates to relax and unwind while enjoying the beautiful food and scenery of the Sheraton Grand Mirage Resort, Gold Coast.

The next RANZCOG Provincial Fellows Meeting will be held at the Darwin Convention Centre, Northern Territory, 15–18 April 2020. Save the Date!

Prof Judith Goh facilitating the Perineal Repair Workshop.

RANZCOG Bush & Beach 2019 QUEENSLAND/NEW SOUTH WALES/PROVINCIAL FELLOWS REGIONAL SCIENTIFIC MEETING

Vice President, Dr Ben Bopp, awarding Dr David Watson the RANZCOG Conspicuous Service Medal.

Dr Kimberley Sleeman, Mrs Mandy Pettigrew, A/Prof Ian Pettigrew, Dr Ronald Vaughan and Mrs Janice Vaughan.

Queen's Birthday Honours

RANZCOG would like to congratulate the following members and Friend of the College Collections for being awarded Queen's Birthday Honours for their significant service to the community.

Medal of the Order of Australia (OAM) in the General division

Dr Quang Phu Ho (Fellow)

For service to medicine in the field of obstetrics and gynaecology

Dr Ho settled in Australia in 1981 after fleeing Vietnam as a refugee. Today, he consults with up to 50 patients per week at his Bankstown clinic, works at an IVF clinic and has been a senior lecturer at South Western Sydney Clinical School since 2014.

Member of the Order of Australia (AM) in the General division

A/Prof Ruth McNair (Diplomate)

For significant service to medicine, and as an advocate for the LGBTIQ community.

A/Prof McNair is Chair of the Gay and Lesbian Foundation of Australia.

Companion of the Order of Australia (AC) in the General division

Prof Ruth Frances Bishop AO (Friend of the College Collections)

For eminent service to global child health through the development of improved vaccines for paediatric gastroenteritis, and to medical research.

Ms Bishop's work led to the discovery of rotavirus and the development of a world-first vaccination against it.