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From the President

Dr Vijay Roach
President

This issue of *O&G Magazine* addresses an important aspect of social, cultural and clinical life in Australia and New Zealand. Members of the LGBTI community have experienced a long history of marginalisation and discrimination, often to the detriment of their physical and mental healthcare. While the College acknowledges a diversity of opinion in the community and among our members on many issues, on one thing we are united: RANZCOG believes that every person, independent of their sexual orientation, has the right to high-quality medical care. In 2017, the RANZCOG Board issued a statement on same-sex marriage which read, in part '... the Board affirms its support for marriage equality and calls upon the Australian Parliament to ensure equal opportunity for lesbian, gay, bisexual, transgender and intersex (LGBTI) Australians in same-sex relationships and their families ...' I was proud to be a member of that Board and grateful to then-President Prof Steve Robson for his leadership. In this issue, the *O&G Magazine* editors have assembled a diverse series of articles relevant to the care of the LGBTI community. It is compelling reading and relevant to everyone's practice.

This is my first opportunity to address the College community in *O&G Magazine*. I want to start by acknowledging Immediate-Past President Prof Steve Robson and thanking him for his stewardship of the College. During his tenure, Steve navigated complex issues, such as out-of-pocket costs, vaginal mesh and the increasing pressure on private practice. He convened the National Women's Health Summit 2018, bringing together leaders, clinicians, consumers and politicians to discuss a broad range of issues relevant to Australian women's health. Steve demonstrated extraordinary commitment to the College, despite a significant clinical load in Canberra and a young family. He will continue in many roles, including Chair of the Engagement Committee and Chair of the Local Organising Committee for the International Federation of Gynecology and Obstetrics (FIGO), Sydney, 2021.

My nomination for President of the College generated responses ranging from 'Good on you' to 'That's brave!' Since starting training in 1991, the College has been a constant in my personal and professional life. I cherish the relationships formed with College staff, other Councillors, trainees and the wider Fellowship. I am a rusted-on RANZCOG Fellow. I am proud of my profession and our service to women and the community. I take heed that our College represents two countries, working together with common goals and mutual respect.

Leadership of the College provides the opportunity to build upon the progress and achievements of previous presidents, boards and councils in education, public relations, setting and improving standards, and establishing the College as the voice for women and their families in Australia and New Zealand. There is rarely a need for radical change, but leaders must be prepared to challenge existing paradigms, both internal and external. While leaders need to be confident, this should always be underpinned by humility.

RANZCOG has a place in a contemporary world. Navigating change is difficult and often confronting. We need to address internal issues of an ageing College House, development of a more effective governance structure and, critically, genuine, sustained engagement of our members. Representation of women in senior roles in the College is discordant with the number of members and changing this paradigm will be a key priority. We will continue to negotiate the difficult issues of

vaginal mesh and other devices; private insurance rebates; declining private practice opportunities; the impending burden (or, maybe, opportunity) of revalidation; regulation of fees; and the overall reduction in surgical procedures, both for trainees and consultants. In obstetrics, arguably the greatest risk lies with new genetic screening tests, as clinical and ethical practice plays catch up with commercial accessibility.

We also need to engage effectively with external stakeholders, including government and allied practitioners, especially midwives, the National Association of Specialist Obstetricians and Gynaecologists (NASOG), the Australasian Gynaecological Endoscopy and Surgery Society (AGES) and the Urogynaecological Society of Australasia (UGSA). RANZCOG must retain its commitment to Aboriginal, Torres Strait Islander and Maori people and those in the Pacific. There are also opportunities beyond our shores. We should build on the strong, established relationships with the UK, Canada and the US, while exploring new horizons in Asia and Europe.

In this issue of *O&G Magazine*, Sarah van der Wal's story articulates beautifully that love underpins so much of the human experience. She also raises the important issue of 'othering', a burden for those who sit outside established social norms. There was a time when gender, race, colour, religion or sexuality precluded a person from professions, social engagement, relationships and parenting. I want to be part of a different community, one that not only respects diversity, but values and embraces it.

Whatever my role, I want my College to be compassionate, representative and inclusive. RANZCOG is your College. Let's foster a sense of belonging and meaning for all of our members. The Board and Councillors are your elected representatives. It is our responsibility to work with College staff to deliver services to the membership and we want to hear from you.

I am honoured to commence my role as President of RANZCOG. I look forward to the next three years, to meeting you and working with you. Let's approach the next Council together, with purpose and determination, cementing the reputation of RANZCOG as synonymous with excellence in women's health in Australia and New Zealand.

From the CEO

Alana Killen
CEO

At the recent Graduation Ceremony held at the 2018 RANZCOG Annual Scientific Meeting (ASM) in Adelaide, I was honoured to address the newly qualified Fellows of RANZCOG and to express my hope that their relationship with the College would continue throughout their careers. As a trainee, the relationship with the College is a mandatory one; sometimes frustrating, often stressful and, for some, considered just a 'means to an end'. It is understandable that many trainees may see the College as a faceless behemoth that cares only about deadlines, forms and assessments, and cares little about the person. While relationships with individuals such as supervisors, consultants and ITP coordinators are generally positive, interactions with the College can sometimes be bureaucratic and mired in rules and regulations.

Over the past three years, we have worked hard to overcome some of these perceptions in order to show a more empathetic face to trainees. Establishment of the Training Support Unit, Respectful Workplaces workshops, online resources and the confidential counselling service are initiatives that aim to help trainees (and supervisors) navigate the challenging road to Fellowship. We have been grateful for the positive enthusiasm with which trainees and supervisors have embraced these new services and look forward to providing even greater support in the future.

Social media

The past three years have seen RANZCOG keenly engage with social media, which has led to greater awareness of the College and provided increased opportunities to participate in health policy debate and advocacy activities. The reach of social media is quite remarkable and, like any powerful tool, must be used advisably and with caution. One poorly considered post on Facebook or hastily tapped tweet has the potential to cause long-term reputational damage. Fortunately, our staff are experienced and trained in the use of media and understand the importance of due diligence in the use of social media. For those of you who are yet to engage with the College's social media presence, I would encourage you to look at our LinkedIn, Facebook and Twitter profiles. These are sources of current updates and provide access to timely and useful information.

Amalgamation

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists was formed on 23 October 1998, with the amalgamation of the Royal Australian College of Obstetricians and Gynaecologists and the Royal New Zealand College of Obstetricians and Gynaecologists. To celebrate and acknowledge the 20th anniversary of this significant occasion, the College held an open house for all College members to celebrate this historic moment on the 15 November 2018. At the time of writing, this event was still in planning, so I am anticipating a wonderful evening with the chance for many acquaintances to be renewed.

While Australia and New Zealand share many similarities, there are also differences that make

the respective needs, interests and challenges for our members working in both countries quite unique. From a cultural perspective, the relationship and acknowledgement of our First Nations population is quite different. The models of care, regulation and legislation all need to be considered when determining policy, statements, guidelines and training requirements. RANZCOG is fortunate to enjoy a collaborative and collegiate relationship between the two countries, so we take this opportunity to acknowledge and recognise this relationship and the contribution of the many individuals who have worked hard to achieve this.

Reconciliation Action Plan

At the 2018 ASM, the College was proud to launch the RANZCOG 'Innovate' Reconciliation Action Plan. The plan aims to improve Aboriginal and Torres Strait Islander women's health by setting measurable goals, timelines and responsibilities and provides a framework for the achievement of these goals. The plan is the result of many months of work in consultation with the Aboriginal and Torres Strait Islander Women's Health Committee. The four key focus areas of the plan are:

- Building relationships through communication and advocacy
- Nurturing respect through education programs for College members and staff
- Enhancing employment and business opportunities for Aboriginal and Torres Strait Islanders
- Ensuring accountability by tracking process and reporting.

The College website (ranzcog.edu.au/ATSI-Womens-Health) provides further information for those who wish to learn more about work of the Aboriginal and Torres Strait Islander Women's Health Committee.

Māori health

The RANZCOG Board recently endorsed the pilot of a cultural competence course that is being facilitated by the Māori/Indigenous Health Institute (MIHI) in New Zealand. The course, Utilising the Hui Process/Meihana Model in Clinical Practice, includes both face-to-face and online components and the feedback from this pilot will help inform the 2019 program. It is anticipated that this course will become a mandatory element for all New Zealand trainees and will assist the College to honour its responsibility to provide FRANZCOG trainees in New Zealand with training in culturally safe care. The He Hono Wāhine subcommittee have provided significant input and have been strong advocates for the introduction of this course. It has been very well received by participants and we look forward to its ongoing integration into the FRANZCOG training program in New Zealand.

Conclusion

I would like to thank the staff and all members of the College who have provided me with support, advice and friendship over the past three years. I have enjoyed my time at the College and learned much from those with whom I have worked. I wish the College every success into the future and look forward to following RANZCOG's progress with interest and with gratitude for the opportunities this organisation has afforded me.

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

Dr Fiona Brownfoot
MBBS, FRANZCOG, PhD

Dr Fiona Brownfoot is an O&G in public and private practice, a senior lecturer at the University of Melbourne, a PhD, a RANZCOG training supervisor and a clinical scientist. She is a mother, a runner, an avid traveller, a national and international speaker, and a strong advocate for scientific research as the foundation for clinical practice.

Dr Brownfoot's interest in O&G was sparked through her interactions with Prof Gus Dekker and Prof Caroline Crowther in medical school at the University of Adelaide. Mentor relationships were formed and a passion for O&G and research was ignited.

During her residency, Dr Brownfoot witnessed the limited medical treatments often available for obstetric conditions. With this awareness, her interest in therapeutics for obstetric disease drew her to a laboratory-based PhD.

Dr Brownfoot was awarded her PhD in 2017, where she identified two potential treatments for preeclampsia, characterised these in laboratory studies and progressed them to clinical trial. Following her PhD, she was awarded a National Health and Medical Research Council (NHMRC) Early Career Fellowship (2018–2022) at the Mercy Hospital for Women, University of Melbourne. Dr Brownfoot is a Mercy Perinatal Research Fellow and is in the Translational Obstetrics Group led by Prof Stephen Tong at the University of Melbourne. She has more than 30 publications to her name in the last five years. Dr Brownfoot has earned six national and seven international awards for her work. She has been awarded A$350,000 in grants.

What's new in your professional journey?
Through my PhD, I identified and explored the exciting possibility of two new medical treatments for preeclampsia. Using a pipeline of laboratory assays, I was able to show that metformin and sulfasalazine reversed key placental and cardiovascular features of preeclampsia. We have now taken both medications to clinical trial, exploring their effect in treating preeclampsia by way of a randomised controlled trial led by Dr Cathy Cluver in South Africa and a pharmacokinetics study at the Mercy Hospital for Women.

Following the completion of my PhD, I accepted a senior lecturer post at the University of Melbourne and I am now developing new research streams. It is extremely exciting to be able to use the laboratory as a playground to explore possible medical treatments to improve clinical outcomes.

A new research stream for me is medical device development and I am enjoying immersing myself in this. I am in the process of developing an obstetric biomedical engineering laboratory within the Translational Obstetric Group. It is exciting to collaborate and unite multidisciplinary fields for one common goal: to improve maternal and child health.

What have been the highlights of your career?
There is no greater exhilaration than the moment you realise you have discovered something the world has never seen before! Seeing the idea develop across laboratory assays and extend into clinical trial makes all of the hard work worthwhile.

As a result of my research focus, I have had the opportunity to attend many international conferences, meeting some of the most incredible

minds in our field. I was selected to undertake a course at the Marine Biological Laboratory, the birthplace of reproductive medicine, in Woods Hole, Massachusetts in the US. I met many of the world's most influential scientists in women's healthcare.

Furthermore, I have had the opportunity to collaborate with inspiring and influential people in our field locally, including Prof Sue Walker, A/Prof Joanne Said and Dr Stefan Kane.

How did you decide what pathway to take for your O&G career?
I feel very lucky to work in the area I love, straddling my passion for both clinical practice and molecular science. This is the result of my mentors, including clinicians Prof Stephen Tong, Prof Sue Walker and Prof Michael Permezel and scientists Dr Tu'uhevaha Kaitu'u-Lino and Dr Natalie Hannan. I also chose this career path as a result of my patients and a desire to explore new treatments for their obstetric conditions.

What role has RANZCOG played in your career?
I am very grateful that the College supported my interest in research through the opportunity to complete a PhD during my training years (facilitated with working at reduced hours and supported time off the training program). The College further supported me through the Arthur Wilson Memorial Scholarship, contributing $60,000 towards my laboratory work.

What are the current challenges for RANZCOG?
I think the challenges for RANZCOG relating to research lie in the plethora of results coming out of the literature and keeping members informed as to best practice.

What have been the biggest challenges in your career and how have you overcome them?
Perhaps the biggest challenge has been finding balance between the research and clinical aspects of my career and my home life. For me, clinical work and research absolutely complement each other, and developing and translating concepts are dependant on having an in-depth understanding of both.


Dr Fiona Brownfoot.

However, independently, research and clinical work can be all-consuming, let alone when you are trying to combine both career paths. To overcome this, it is important to constantly re-evaluate your focus and set achievable goals. Surrounding yourself with like-minded people and mentors is invaluable.

Do you see yourself as a leader?
No, not really. I am simply privileged to be working in a relatively unique area, in a field I love.

Do you see yourself as a feminist?
Yes, I do. I am an advocate for women. It is extremely sad that there is an under-representation of women in leadership positions.

How do you prioritise family and professional life?
I find it extremely difficult. It is important to have a great network of people around you. It definitely

takes a village to raise a child, especially when you are working in research and clinical settings.

What advice would you give to a new trainee?
Find the area you are passionate about and go for it. Align yourself with like-minded people and you can achieve whatever you put your mind to.

Have you seen workplace culture change during your career?
I am very fortunate to be part of the Mercy Hospital for Women family. Friendships at work really enhance the clinical and research environment. Working in a family-friendly environment with an option to working part-time has been key.

What three words best describe your life?
Enthusiastic, passionate and driven; all for women's healthcare!

Are you willing to be contacted for career advice or mentoring?
I am very happy to speak with trainees about a career as a clinician scientist and discuss the possibility of embarking on a PhD.

Developing therapeutics for preeclampsia

Our field has been attempting to find a treatment for preeclampsia for centuries. From headdress to amulets in ancient times, and bloodletting and leeches in the medieval era, a medical solution still eludes us today. Recent advances in our understanding of the pathogenesis of preeclampsia have opened a new therapeutic era for this disorder of pregnancy. With the discovery that elevated placental anti-angiogenic molecules sFlt-1 and sENG cause preeclampsia, accompanied by a reduction in the angiogenic molecules placental growth factor (PlGF) and vascular endothelial growth factor (VEGF), we now have a molecular drug target.

Excitingly, we have now identified two well-known medications, metformin and sulfasalazine (both safe in pregnancy), that mitigate key features of preeclampsia. Using a pipeline of laboratory assays, we found that both metformin and sulfasalazine reduced placental secretion of sFlt-1 and sENG, and sulfasalazine upregulated PlGF and VEGF. Both medications also mitigated key markers of endothelial dysfunction and corrected vasodilation of whole omental vessels. It appears that both medications are, interestingly, exerting their effect by blocking the mitochondrial electron transport chain or epidermal growth factor pathways. Metformin and sulfasalazine are both extremely promising candidate therapeutics for preeclampsia. We are now progressing this investigation to clinical trial to determine whether they can, in fact, prevent or treat this devastating disease.

Guest editorial

Prof Steve Robson
FRANZCOG

In September 2017, in the lead-up to the postal vote on marriage equality in Australia, the RANZCOG Board released a statement in support of the initiative.[1] The statement was controversial and some College members perceived it in political terms, prompting requests for RANZCOG to cease 'taking sides in any public political or policy debate which does not have any direct bearing on its members', as one colleague pointed out to me.

Marriage equality is now enshrined in law in Australia, as it was in New Zealand several years ago. From my perspective, the issue was never about politics, but about the adverse health effects of discrimination.

As the Australian Government's National Mental Health Commission put it, 'discrimination of any kind, based on race, gender identity, relationship status, age, political opinion, disability or sexuality is detrimental to mental health'.[2]

Discrimination is unhealthy; there are potential adverse health consequences of our society's treatment of disadvantaged groups.[3] There exist clearly documented and significant disparities in access to, and receipt of, healthcare among transgender and gender non-conforming populations. Anything that limits the availability of appropriate and competent care, or fosters differential access to inclusive healthcare, perpetuates these disparities and can lead to significant morbidity and mortality.[4]

The Australian Human Rights Commission (AHRC) reports that, 'due to a lack of comprehensive, publicly available data, it is difficult to estimate the total LGBTQIA population in Australia. Australians of diverse sexual orientation, sex or gender identity may account for up to 11 per cent of the Australian population'.[5] This is a very large number of Australians and means that many of our patients and colleagues will identify as LGBTQIA.

While many gay, lesbian, bi, trans and intersex Australians and New Zealanders cope with systemic discrimination well, being subject to stigmatisation and discrimination is associated with a greater

likelihood of depression, anxiety and emotional distress.[6] People who do not conventionally 'fit the mould' of being male or female, commonly, are 'subjected to ridicule, intimidation and even physical abuse'.[5]

The AHRC points out some important concerns: more than one-third of LGBTQIA Australians hide their sexuality or gender identity at work, at social events and when accessing services. In particular, young people are most likely to hide their sexuality or gender identity. The data also reveal that almost two-thirds of LGBTQIA young people report experiencing verbal, or even physical, homophobic abuse, including cyberbullying, graffiti, social exclusion and humiliation. Perhaps, unsurprisingly then, gay, lesbian, bisexual and transgender people are three times more likely to experience depression compared to the broader population. An Australian study reported that almost one in two young transgender Australians had attempted suicide.[7]

We all recognise that adolescents face many challenges in their transition to adulthood. Young adult LGBTQIA people face not only the typical challenges, but additional challenges related to the social stigma of their sexual orientation. For some, this stigma can induce psychosocial stress, leading to increased health risk behaviours and poorer health outcomes, such as substance use, eating disorders, suicidality, risky sexual behaviours, exposure to violence, victimisation and homelessness.[8] Although many older LGBTQIA people are well, both physically and mentally, they face increased risks of certain health issues compared with the general population.[9] These troubling statistics make LGBTQIA issues core College business, not matters of politics. We have an obligation to treat the LGBTQIA community in the same way that we call out the discrimination and racism that discourages young Aboriginal, Torres Strait Islander and Māori women from seeking antenatal care in pregnancy. In this issue of *O&G Magazine*, the editors have brought together a group of experts to shine light on the health of LGBTQIA Australians and New Zealanders. Remember that light is made up of all the colours of the rainbow.

Myself and the team at *O&G Magazine* would like to thank my friend and former work colleague, Dr Sarah van der Wal, for the enormous effort she has put into editing the LGBTQIA articles.

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Fertility options for gender and sexually diverse people

Dr Bronwyn Devine
MBBS, FRANZCOG, MRMed
Postgrad Cert in Public (Sexual) Health

In Australia, couples and individuals have the right to choose whether or not to reproduce. During the lead up to the marriage equality referendum of 2017, debate about the abilities and rights of LGBTI people to create families divided our nation. It is important to be aware, however, that two years earlier, the United Nations Human Rights Committee asked the Australian Government to comply with anti-discrimination laws by removing barriers to accessing assisted reproductive technologies (ART) for people of diverse sexuality and gender and for single people wishing to parent children on their own. Most states and territories in Australia have lifted their exemptions, but in some jurisdictions it is still permissible for ART providers to withhold treatment to patients based on their sexuality or relationship status.

There are multiple options for LGBTI people wishing to start or expand a family. Many choose to do so without seeking the assistance of a fertility clinic and options such as co-parenting, at home insemination, adoption and long-term foster care are well known and widely used. The costs and mandatory requirements, including counselling, as well as a perception of stigmatisation when receiving care through a clinic, are a deterrent for some people. There are websites and blogs within the online donor community that connect gamete donors and surrogates to those seeking their services. While these appear to offer a simple and relatively inexpensive alternative to clinic treatment, there can be risks involved. Donors may have had minimal or no screening for infectious or genetic diseases and no prior fertility testing. In addition, there may be no legal recourse for intended parents when a donor or surrogate decides, post hoc, to apply for parental rights, even if an agreement had been made to absolve the donor of parental responsibility.

In view of these issues, more couples and singles choose to attend a fertility clinic for treatment. There is now a strong focus among professionals within the fertility sector to improve services and standards of care for gender and sexually diverse patients. Over the last few years, at regional and national scientific and professional meetings, lectures and seminars on fertility options for transgender, gender diverse people and rainbow families are more common, reflecting worldwide trends in reproductive healthcare.

A significant barrier to clinic-based care is cost. For those opting to use de-identified donor sperm to conceive, price per vial of frozen quarantined sperm ranges from A$500 for a local donor to $1000 for a donor from the US. Australian clinics may prefer the availability of both local and international sperm as it brings a greater choice for patients. Donors whose gametes are utilised in Australia are limited in their donation by the 'five family rule', which means only five families, including the donor's own family, can be created using their gametes. In Australia, it is illegal to pay tissue donors of any type so incentives to donate anonymously are generally low. For this reason, choice is often quite limited for de-identified local donor sperm and having access to a broad range of compatible international donors (those complying with the 'five family rule') is desirable.

Medicare rebates for treatment cycles do not apply until a diagnosis of medical infertility is made. For a lesbian woman attempting intrauterine insemination (IUI), this usually means three unsuccessful cycles must be completed before she is eligible to claim a rebate and then only on subsequent treatment cycles. For those requiring surrogacy to conceive a pregnancy, there are no Medicare rebates for any of the treatment costs. Fertility preservation for people who plan to undergo medical and/or surgical gender-affirming treatment is claimable through Medicare, but freezing costs are not, and these are generally around A$800–$1000 per year.

Intrauterine insemination versus IVF

Patients seeking donor sperm to conceive often prefer to start with a less invasive approach and request IUI in the first instance. This is often motivated by a belief that pregnancy will be easily achieved in an otherwise fertile individual once sperm is available, by a desire to avoid over-medicalisation, and by financial considerations. In someone with a healthy reproductive tract and patent tubes, IUI can be a valid initial treatment option, but overall, live birth rates are lower with IUI than with IVF (12 per cent versus 32 per cent for a single cycle).[1,2] Once the patient becomes eligible to claim Medicare, the difference in out-of-pocket costs between IUI and IVF falls significantly. Many patients will opt to move to IVF at this time, though for some, the appeal of lower intervention with IUI means they will persevere with this approach.

Reciprocal IVF

Some women in lesbian relationships and couples with one or both parties identifying as transgender male choose to have oocytes collected from one partner fertilised with donor sperm, with the resultant embryos transferred, one at a time, to the uterus of the other partner. Given that this occurs within the context of a de-facto or married relationship, it is not surrogacy and not subject to the same legal and counselling requirements of a surrogacy arrangement. Embryos created with different combinations of gametes may not be transferred together, though this is often requested. Apart from the uncertainty of genetic parentage that arises in a subsequent conception, double embryo transfer is not recommended in most instances because of the increased risks associated with multiple pregnancy.

Options for gender diverse people

For transgender and gender diverse people, there are additional considerations related to the fertility-limiting effects of both medical and surgical approaches to transitioning. Not all gender diverse individuals choose to have surgery or take feminising or masculinising hormones. For those who wish to do so, however, the World Professional Association for Transgender Health (WPATH) in 2012[3] has recommended they 'make decisions concerning fertility before starting'. This can mean that adolescents who are considering GnRH agonist treatment ('puberty blockers') may be referred to fertility clinics to discuss freezing oocytes or sperm. For many, this is an overwhelming decision to make when there are multiple other biological and psychosocial challenges taking priority over possible future reproduction. Cost is also a consideration as not all gender diverse young people have family or financial support through their transition.[4]

Once cross-sex hormonal treatment has started, fertility preservation options may diminish. Oestrogen therapy can be associated with irreversible atrophy of seminiferous tubules, but exposure of ovaries to masculinising doses of testosterone does not prevent successful controlled ovarian stimulation and ovulation after testosterone is ceased in the short term. This has enabled a number of trans men to undergo IVF and carry successful pregnancies. Testosterone therapy does not always induce anovulation, however, and spontaneous pregnancies have also been reported in trans men.[5]

Other reproductive options for gender diverse couples and singles depend on what is available and what is required to achieve a successful pregnancy. Use of cryopreserved gametes and/or sperm donation, oocyte donation and surrogacy are available in most states of Australia, though patients are allowed to travel interstate to access ART if necessary.

Options for gay men

Over the years, many gay men have travelled overseas to undertake surrogacy arrangements, often in a commercial setting, but recent laws restricting international surrogacy access have made this more difficult. Nevertheless, some 400 Australian couples engage surrogacy services internationally each year. Most gay men opt for treatment in the US or Canada. Australians are no longer able to travel to Nepal, Cambodia, Thailand or India to do surrogacy.[6]

Apart from WA, all states permit gay couples to undertake altruistic surrogacy in Australia. Most elect to use an oocyte donor and a surrogate separately, in an arrangement known as gestational surrogacy. Very few clinics allow traditional surrogacy, where the surrogate's own oocytes are used to create the embryo. There is anecdotal evidence that non-relinquishment will be more likely in cases of traditional surrogacy.[6]

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Rainbow IVF

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For us, it all began with a Tinder-like database of men offering their genetic credentials like an Ikea catalogue. My partner and I had always intended to have a family together. We were lucky enough to find ourselves in the position of being financially stable and also be in a country where it is possible. Like many women in our position, the first and most difficult decision was how to find a donor.

The choice of known donor versus anonymous donor seems to be the most controversial topic when discussing rainbow IVF. We initially wanted to enlist the help of a good friend who was completely on board with being an uncle-like presence in our children's lives (he still is), while also being conveniently in America, making it difficult for him to interfere in day-to-day parenting. Unfortunately, he was also inconveniently in America, and working for Walmart, which meant he wasn't allowed consecutive weeks of leave to come and help a poor lesbian couple conceive. Unable to go with our first choice, my partner and I decided that we'd prefer an anonymous donor with open access at age 18. Australian law does not allow for non-contactable donors to be used. Many states have very strict laws that restrict donor access (Victoria will only allow donors that have been personally screened by the IVF clinic, leading to a very small pool of anonymous donors). For couples that don't have an ideal candidate for a known donor, or don't wish to involve a third party in their conception, this can limit their access to donors and choice. I know of more than one couple who have chosen to have IVF in another state for this very reason.

At the time we were planning our family, we were in Canberra, which was one of the few jurisdictions in Australia that allows access to foreign donor sperm and only through a single clinic (some NSW and QLD clinics also have access to foreign sperm banks). Conveniently, this was the clinic where our chosen IVF specialist worked. This is how my partner and I, sitting in bed at 9pm one night, found ourselves short-listing men on the strangest of criteria. I was particularly keen on choosing a good-looking gentleman (we were using him for his genes after all), and then refused several candidates on the basis that their favourite book was unreadable. My partner was more keen on their genetic provenance and height. In the end, both of us found the same donor as our top choice. He has now supplied us with two very beautiful children and we couldn't be more grateful to him.

The process of starting IVF was very simple yet surreal. We were in the unique position that our IVF specialist was also a close friend, which made the journey incredibly smooth. Much of the surrealism came in the form of legal requirements that made little sense to us, but were mandatory. While many couples find the mandatory counselling regarding using donor gametes useful, to us it felt very targeted towards heterosexual couples using donor sperm. Nevertheless, our clinic was wonderfully supportive.

Following the birth of our first son in 2014, we decided that I too would undergo a cycle of IVF, with my partner as the gestational carrier. The privilege of having two uteruses was not lost on us. It was rather surprising, however, that within the bounds of a committed relationship where we already had a child together, I was required to legally donate my embryo to my partner so she could carry it. It was another example of, yet again, how the law could be very slightly out of step with the reality of situations. Frankly, it was disconcerting, not the least when my partner looked at my donation form and asked the IVF clinic if they had anyone better (she was kidding, I hope).

On the whole, our first two experiences with IVF were wonderful, inclusive and well supported. By the time we had decided to have a second child (sadly, my embryos were lousy quality due to endometriosis), we were living in Victoria. We had hoped to transfer our embryos down to the local IVF clinic and proceed with implantation here.

It was at this point that I realised our experience of inclusion may have been due to the ACT's relatively open laws. Victoria, on the other hand, refused to allow our embryos into the state unless the IVF clinic had personally contacted the donor and counselled him. The very well-established clinic in the US obviously was not about to give up his details. It seemed a little ridiculous to counsel a man who had donated for many years and had at least three children across the world from his donations, including one already in my family. Rather than fight an expensive battle, we agreed it would be easier to travel to Canberra for embryo transfer.

Our second son was born earlier this year, with the same donor and mother as his brother. Our next shock came when his birth certificate registration was temporarily rejected. We were required to add a letter from his clinic stating that he was a child from donor gametes, that we were a couple and my partner was not a single woman. We found the unexpected letter rather jarring, having had to do no such thing the first time. Our clinic, once again wonderful, came through with a letter with no issues and we now have a birth certificate for bub number two.

Overall, our journey through IVF was very simple, but I have the luxury and privilege of being an O&G and of having made the journey with colleagues and friends. Having reached out across the wider community, the same stories do pop up continually as issues: partners being asked to provide blood samples due to legal requirements, while having no genetic link to the child; counselling targeting the use of IVF in relationships and how it can affect the relationship, especially using donor gametes, as though it were unexpected (I can assure you that no same-sex couple expects NOT to have to use a donor gamete to conceive); couples having to take a single offer of a donor with no choice, due to local laws; or needing to travel long distances to access services.

It is this 'othering' of our family-building process that tends to cause the most distress, the most angst. Having no flexibility in a system to adapt to different family blends and structures is what harms the most. In most of the IVF journeys I've heard about, a lot of these experiences of 'othering' happen beyond the IVF clinic. Same-sex couples using assisted reproductive technology (ART) are no longer a rarity and most clinics have experience. It is often the structures that precede and then proceed from there that throw up the most obstacles. GPs who refuse to refer same-sex couples for ART due to religious beliefs are more common than you would think. Referring to the female non-gestational partner as 'the husband' may seem harmless to many, and possibly even humorous to some, yet when juxtaposed against the myriad of struggles a same-sex couple has experienced simply to conceive, it is often heart-achingly insensitive. Hospital birthing classes that constantly refer to 'blokes' and infer that the gentle quiet love of the conception should be present in the birthing room are not only 'othering' all couples that use ART, but also those that may have conceived in the back seat of a Holden. I have been asked, more times than I can possibly count, how my sons were conceived and which donor we used and why. If you stop to consider those questions, they are intensely personal, and yet people will ask them with sincerity and curiosity.

It is this 'othering' that offends and distresses. It is the implication that one or two people, coming together to conceive a family in love, are different to any other family. I do understand that the laws are in place to protect children born of donor gametes, something I wholeheartedly support. There is definitely space for those laws to be a little more inclusive and a little less punitive in some states of Australia.

As a community, and as a profession, we too can make a difference to all of our patients, when we embrace inclusivity. Make no assumptions and you will make fewer mistakes. If you strive to give your rainbow couples the same pathway to family that we had, then you will be adding to a growing group of very happy people, who do talk to each other and make referral suggestions. In the end, making families is what ART is all about and families come in all shapes and sizes.

Gender dysphoria

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Recently, there has been increasing visibility, and enhanced social acceptance, of people whose gender identity differs from the sex assigned to them at birth.[1,2,3] The enhanced recognition extends beyond the general community. Many terms are used to describe these individuals, including transgender (trans), gender non-conforming (GNC) and gender diverse. For readability, this article will utilise the term 'trans' as an umbrella term. In 2013 (updated November 2015), the Australian Attorney General's Department[4] indicated that the Australian Government recognises that individuals may identify and be recognised within the community as a gender other than their natally assigned sex, or as a gender which is not exclusively male or female. Such a response from the government has led some to nominate Australia as the most accepting nation to the transgender community in the world.[5]

While being trans is now largely viewed as part of the natural spectrum of human diversity,[1] it is frequently accompanied by gender dysphoria (GD), which is characterised by the distress that arises from the incongruence between a person's gender identity and their sex assigned at birth.[6] It is important to address the stress, anxiety and depression that often coexists with GD.[1,7,8,9]

GD is one reason trans individuals may be at risk of negative consequences, however, they are also at risk because of disproportionate levels of discrimination, social exclusion, bullying, physical assault and even homicide.[9,10] In the face of these difficulties, it is not surprising that almost 80 per cent have engaged in self-harm and nearly half have attempted suicide,[1,9,10] with trans individuals' mental wellbeing and physical health being markedly worse than other LGBTI populations and the general population.[10] What may be unexpected is the level of resilience GD individuals display.[10,11] Importantly, research indicates poorer health is not inherent to being trans, but is caused by stigma, social exclusion, discrimination, bullying and rejection by friends and family.[9]

Along with acknowledgment that not all individuals feel their gender identity fits in the binary category assigned at birth, there has been some recognition of the complexity of issues facing gender diverse people and a greater appreciation of their unique circumstances. An appreciation of the heterogeneity of this group underlines the need to be aware of many intersecting variables that may impact them. Recognising a model of care that has diversity at its starting point has been suggested.[12] Despite this, there exists a substantial lack of understanding in the general community and within health professions about transgender issues.[1,7,13,14] In order to illustrate the complexities and what might enhance service provision, some issues are explored below.

The trans population in Australia

It is difficult to estimate the size of the transgender population in Australia, as there had been no population-based studies that asked about gender identity until the 2016 census. In the 2016 Australian Census of Population and Housing, 1260 people (5.4 per 100,000) gave an intentional and valid sex and/or gender diverse response. However, this is not considered to be an accurate or representative count, due to limitations associated with collecting sensitive information, limitations of the special procedures required to report sex other than male or female, and the lack of willingness or opportunity to report as sex and/or gender diverse. It should be noted that the 2016 sex and/or gender diverse sample did not form a homogenous group. More than one-third (35 per cent) simply ticked 'other, not further defined', while 35 per cent of gender diverse people indicated they were non-binary or another gender. A further 26 per cent reported they were trans male, trans female or transgender. Very few people (3.2 per cent) indicated they were intersex (born with a combination of male and female biological characteristics). A pilot test provided further evidence that the 2016 census underestimated the Australian transgender population, revealing a much higher rate of sex/gender diverse people (257 per 1,000,000). In addition, there were particular challenges in the 2016 census, as it was the first time an online form was utilised. Thus, we currently do not have a clear idea of the size of the Australian transgender population.

Examining other indications of prevalence, The Diagnostic and Statistical Manual of Mental Disorders, Sixth Edition (DSM-6), estimates between one in 7000 and one in 20,000 people assigned male at birth, and between one in 33,000 and one in 50,000 people assigned female at birth seek gender affirmation surgery. This is again likely to be an underestimation, as most do not access surgery. The Gender Dysphoria Clinic in Melbourne reports that only one-third of trans individuals have surgery as part of their transition.[15] While The Royal Children's Hospital Gender Service reports that one per cent of children and adolescents experience gender identity issues, not all will continue to experience persistent issues into adulthood. In the New Zealand adolescent health survey,[16] it was found that 1.2 per cent of young people reported GD.

Treatment: talking and transitioning

Diagnosis and treatment for GD are crucial, as people with GD have higher rates of mental health conditions than the general community.[1] It is estimated that 71 per cent of people with GD will

have some other mental health diagnosis during their lifetime. Importantly, treatment of GD decreases the incidence of other mental health conditions.[6,17]

The objective of treatment is not to change how the person feels about their gender. Instead, it is important to manage or resolve the distress that may come with GD and support the individual if they feel they wish to make changes to align their external self with their internal gendered self. The first step is to talk to a psychologist or psychiatrist who will be part of any treatment for GD. Beyond therapy with a mental health professional, individuals may wish to transition to their preferred gender. There is no correct way to transition. It must be guided by each individual the degree to which, and the speed at which, they make any changes.

Social transitioning

This is the process by which a person changes their gender expression to better match their gender identity and to make others aware of their desired gender. Social transitioning does not need to be an all-or-nothing approach. Some people will want to transition in all social contexts, while others may do so only in situations where they feel safe. Social transitioning may refer to a number of changes, potentially including:

- Use of a different name and pronouns
- Surface transformations of one's physical appearance (for example, dressing in the preferred style, adopting a different haircut, hair removal, growing facial and body hair)
- Use of a bathroom that matches the person's desired gender.

Social transitioning may also involve behaviours such as breast-binding or genital-tucking. Health professionals need to guide patients on safe practices in breast-binding, including using safe equipment and the importance of 'off' days.[18] There is no research available regarding the safety of penis-tucking other than anecdotal reports indicating the importance of using easily removable medical tape that does not cause skin irritations. Importantly, evidence suggests that trans children who have socially transitioned demonstrate rates of depression, anxiety and self-worth comparable to their cisgender peers (those whose birth gender matches their assigned gender).[19]

Medical transitioning

For many trans people, making social changes will not be sufficient and they will wish to change their physical sex characteristics via hormonal intervention and/or surgery to more closely align their physical characteristics with their gender identity. As with social transitioning, people may vary considerably in this domain.

Medical transitioning is affected by the pubertal stage the individual is at when they decide to transition. If individuals are pre-pubertal or before Tanner Stage 2, they may wish to commence pubertal blockers. Post-puberty, people may wish to commence hormone treatment and/or surgery. For Australian adults, the pathway towards physical transitioning follows the standards set by the World Professional Association for Transgender Health (WPATH).[14] As indicated by McNair: '... a person has a psychiatric assessment, usually with a psychiatrist or a clinical psychologist, to do a gender assessment and to confirm that they have gender dysphoria ... once they have a letter of confirmation, the patient can start hormone therapy. They can access surgery at any time after they've had their gender dysphoria confirmed, apart from genital reassignment; they need to have been on hormones for 12 months before they do that.'[20]

A multidisciplinary approach

Trans individuals are likely to present to health services with a wide range of clinical and support needs. Thus, it is not surprising that the optimal model of care for trans patients involves a coordinated multidisciplinary team.[1,5,21] Depending on the age of the individual, this may include clinicians with expertise in child and adolescent psychiatry, paediatrics, adolescent medicine, paediatric endocrinology, clinical psychology, gynaecology, andrology, fertility services, speech therapy, general practice and nursing. In addition to the complexity of a multidisciplinary team, clinicians have indicated they experience pressure from clients who are certain of their need for treatment and are concerned about the speed of the changes. It is important that clinicians work with patients to manage expectations about progress rates. Clinicians also need to be aware that some trans individuals obtain hormones from non-medical sources, which may affect outcomes. International professionals working in the field have also indicated they feel isolated, as this area of medicine is viewed negatively by medical professionals and society.[16]

Co-morbidity

The co-morbidity between GD and a number of psychological conditions, such as depression (74.6 per cent), anxiety (72.2 per cent), post-traumatic stress disorder (23.1 per cent), personality disorder (20.1 per cent) and psychosis (16.2 per cent) are well recognised.[1] What is not as well-known are the high rates of co-morbidity between GD and autism[22,23,24,25] and eating disorders.[26,27,28] Clinical guidelines on autism have been published to assist medical professionals.[22] For eating disorders and disordered weight management behaviours, addressing GD can assist and should be tackled first.[26,27,28] Autism and eating disorders are unlikely to be the only conditions that are co-morbid with GD. Health professionals should be aware that individuals with GD may have other conditions, just as with the general population.

General healthcare

Trans people tend to use health services regularly. However, there is a paucity of appropriate services and trans report experiencing both discrimination and exclusion from the health sector. Trans people's healthcare experiences were explored and it was concluded that the experiences were determined by the effects of cisgenderism, therefore, healthcare staff's apparent responses to participants' natally assigned sex, regardless of their current gender identity.[29]

Overall, people assigned male gender at birth had more positive experiences than those assigned female gender at birth. It was also found that those who had surgery had more positive mental health, as did those who were parents, were older and were in relationships. It should be noted that the study was not longitudinal, thus, directionality cannot be assumed. Sadly, high levels of discrimination were noted. The occurrences were not uniform, but dependent on natally assigned sex.

Not surprisingly, the study found that positive healthcare experiences were marked by caring, knowledgeable and responsive engagements. Negative experiences were marked by having to educate the health professional, feeling pathologised, gate-keeping and the use of inappropriate or misgendering language. The first and last points, in particular, were causes of considerable distress. Overall, negative responses were in relation to interactions with staff rather than treatments, indicating this can be improved by enhancing workforce capacity.

Fortunately, experiences with physical health professionals (including GPs, speech pathologists, sex health clinicians and pharmacists) were positive, with speech pathologists receiving the highest rating. However, all were rated as showing some discrimination. People assigned male at birth had more positive experiences of surgery and post-surgery care than those assigned female at birth, primarily due to less availability and satisfaction with phalloplasty in Australia. In contrast, respondents indicated very positive experiences of surgery in Thailand, while the surgery options within Australia were almost uniformly depicted as negative, onerous, involving gate-keeping and insufficient public health cover.

Other health issues

Other physical factors may impact trans patients. They are twice as likely to have used an illicit substance in the last six months and twice as likely to smoke as the general population.[30] Also, international evidence suggests that the incidence of HIV in the trans population is 49 times higher than for the general population.[9]

Other health issues appear specifically linked to GD. For trans women, PSA tests for detecting prostate cancer are often falsely low due to hormonal treatments. Trans women who have had removal of testes should be advised to take steps to prevent osteoporosis. Impacts on cardiac disease should also be considered if taking oestrogen. For trans men, those who have not undergone breast removal have been found to underutilise mammograms, together with pap smears and monitoring for uterine and ovarian cancer. Trans men may need to be reminded to screen for these cancers. They should also be advised to consider bone density screening.

Reproductive issues

Pregnancy among transgender men is increasingly common.[31,32,33,34] In Australia, 54 people who identified as men gave birth in 2014, according to Medicare, and it has been reported that more than 50 gave birth in 2017.[35] In 2018, 25 trans men's experiences of parenthood and gestational pregnancy were examined.[32] It was reported that participants initially described parenthood as alienating and complex, with exclusion, isolation and loneliness as predominant features of the gestational pregnancies. Overall, pregnancy was positioned as a problematic but 'functional sacrifice'. In addition, dysphoria associated with withdrawing from testosterone and the growing fecund body were significantly troubling. In particular, changes to the chest were of significant concern. The findings reinforce the importance of inclusive and specialised health services to support trans men through pregnancy. In 2018, a law and policy review[36] exploring differences between the Australian states in matters of trans pregnancy was published, indicating that there are no laws preventing trans men from reproducing. However, it has also been found that there is a lack of knowledge among medical practitioners at every level and a need for best-practice guidelines.

Conclusion

As GD can affect children, adolescents and adults, a developmentally appropriate approach is required.[37] To achieve this, there have been consistent calls from the trans community for services which are non-judgemental, safe and supportive, using staff who have been trained in the relevant issues.[38] In response, the following principles for support have been put forth[1] for children and adolescents, but apply equally to those of any age.

Individualised care

Recognise that trans have a unique clinical presentation. Some trans will want to socially transition, others will want to medically transition, both in varying degrees. Interventions need to be tailored for, and driven by, the individual. For any medical transition, consent must be provided.

Language

Use terms (especially pronouns) that the individual suggests and, if in doubt, ask.

Avoid causing harm

This is important when considering options for medical and/or surgical intervention. This includes withholding treatment and using practices that lack efficacy (such as conversion therapies).

Consider sociocultural factors

It is important to consider additional cultural or religious beliefs and values that may be at odds with a gender-affirming approach.

Legal and administration

Be aware of legal and administrative aspects that may act as a barrier. In Australia, some laws vary by state (for example, laws to change birth certificates), while federal laws impact other areas (such as passports and Medicare). Currently, there is no legislation to prevent people with GD transitioning or reproducing.

Finance

There is a high cost of medical treatment attributed to gendered access to some PBS medication. There is also a lack of public-funded surgery and the need for trans adolescents to receive authorisation from the Family Court of Australia before being able to access some hormone treatments and all surgery.

Workforce capacity and integration

Clinicians have been generally found to have poor knowledge about trans and gender diverse healthcare and wellbeing, as well as holding binary assumptions regarding sex and gender identity. Education is required to enhance workforce capacity. Inadequate health service coordination and integration results in poorly identified pathways, which make it difficult for trans people to access the healthcare services they require.

The complexity of working with trans individuals demands a sensitive and flexible approach. Decisions about treatment must be individualised, taking into consideration biological, psychological and social costs, with values and belief systems respectfully considered, and a complete analysis of the complex risk-benefit scenarios undertaken before treatment.

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Gender dysphoria: a paediatric perspective

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Gender dysphoria (GD) is a term that is becoming more familiar in our everyday language. You've likely heard it in the media, come across it on a referral letter, or perhaps even cared for a patient with this diagnosis. Many of us in the medical community may initially feel uncomfortable with this particular diagnosis, simply due to our lack of experience and background knowledge in the area. Some of us may be concerned about the appropriate terminology to use or the correct guidelines, or even how gender, general medicine and psychiatry all interact in this space. Working in paediatrics and, more recently, in adolescent medicine, I've been fortunate to learn more about this diagnosis. I hope that this article can pass along a few basic tenets that will be useful in your practice caring for adolescents diagnosed with GD.

A good place to begin is with an understanding of some gender terminology. Gender identity is a person's innate sense of being male, female or, for some, a blend of both or neither. Gender expression is how individuals show their identity to others (through multiple ways, such as haircuts, clothing and expressions). Gender incongruence is when an individual's gender identity differs from their sexual anatomy at birth. GD refers to the distress noted by an individual due to their gender incongruence. Finally, transgender is an overarching term used to describe those individuals with gender incongruence.

From a diagnostic standpoint, the term GD has replaced the previous term, gender identity disorder (GID). The new term acknowledges that gender non-conformity is not in itself a mental disorder, but rather the potential distress associated with it, if clinically significant. In the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-V), there are set criteria which need to be filled in order to meet the diagnosis (children need to fulfil six criteria and adults two). A patient must display these features for greater than six months, have significant distress or interference with function, and display consistent, persistent and insistent gender incongruence.[1] With children, this tends to present as a preference towards toys, games, role playing and dislike of anatomy. Adults generally present with a strong desire to exist as another gender, to have other sex characteristics and to have societal reciprocation of their gender.

The prevalence of GD in adults assigned male at birth is estimated to be between one in 7000 and one in 20,000, and for those assigned female at birth, between one in 30,000 to one in 50,000. There are no strong epidemiological studies for children and adolescents, but numbers suggest that the ratio in childhood of referrals for those assigned male at birth versus referrals for those assigned female at birth is 3:1, while in adolescence the ratio is 1:1.[1] The overall number of referrals to paediatric gender clinics for assessment is increasing as well. The Royal Children's Hospital (RCH) in Melbourne reviewed their referrals from 2003 to 2016 and noted they had a 200-fold increase in referrals to their gender service in 13 years (European and US centres have also reported similar increases).

Good models of care and strong management are required for adolescents with GD, as they have a significantly higher rate of mental health issues than their peers. Studies from the US have found rates of attempted suicide and suicidal thoughts in transgender teens at roughly twice that of their age-matched peers. Fortunately, there are good national and international documents to assist with best practice for the transgender community. Internationally, there are three main documents, including Endocrine Treatment of Gender-Dysphoric/ Gender-Incongruent Persons: An Endocrine Society Clinical Practice Guideline,[2] the World Professional Association for Transgender Health Standards of Care 2012[3] and the American College of Obstetricians and Gynecologists Committee Opinion 2011.[4] Within Australia, we have Australian Standards of Care and Treatment Guidelines for Trans and Gender Diverse Children and Adolescents 2017.[5]

The general treatment model within these documents suggests an assessment followed by a three-stage treatment pathway. The assessment is performed by a multidisciplinary team, then the patient may progress to puberty blockers (stage one), cross-sex hormones (stage two) and gender reassignment surgery (stage three). These stages have age requirements, legal requirements and regular medical and psychological follow up to ensure safety.

There is no medical or surgical treatment provided to children who have GD prior to puberty. For those children with gender non-conforming behaviour, the current recommendation is for affirmative therapy that encourages the parent to support the child in private and in public with their gender identity. Once the child is at, or nearing, adolescence, they may be assessed in a multidisciplinary gender clinic. In order to capture the population assigned female at birth who enter puberty earlier than those assigned male at birth, gender clinics will generally begin to see children at around the age of nine. If a child meets the diagnosis of GD following the McKenzie Method of Mechanical Diagnosis and Therapy (MDT) assessment and they are just about to enter, or are in the early stages of, puberty, they may qualify for puberty suppression medication. The medication is a GnRH analogue and prevents the adolescent from experiencing the distressing body changes that would be about to occur during this time. Puberty recommences if the medication is ceased.

Previously, there was a legal requirement for a court order before being able to commence cross-sex hormones at age 16. This requirement was removed in early 2018. It will likely change the model of care in some adolescent units, as they will need to determine how this affects the hospital, medical staff and patients from a governance, legal, ethical and logistical standpoint. For those individuals transitioning from male to female, the Royal Children's Hospital (RCH) in Melbourne suggests that stage two therapy be oestradiol valerate (Progynova). Initially, this may be overlapped with puberty-blocking medication and then, later, with the puberty-blocking medication ceased, an anti-androgen medication such as spironolactone may be added, thereby necessitating lower doses of administered oestrogen.

For people assigned female at birth transitioning to male, they will start with testosterone enanthate injections weekly, as this induces virilisation quicker, but they may later switch to gel once this has been established. Depending on the choice of the individual, a Mirena may be used for contraception. During the early phase of stage two treatment, individuals are monitored every three months with an examination and blood test to check for complications. Stage three surgery generally occurs over the age of 18 and may be performed provided the individual has considerable 'real life experience' living in the gender they have transitioned to. For those medical professionals in the field of obstetrics and gynaecology, their role in caring for the transgendered individual would mainly involve management of menstrual suppression, contraception, fertility options and hysterectomy or bilateral salpingectomy procedures.

Prior to the commencement of puberty-blocking hormones or cross-sex hormones, the patient should be counselled on fertility preservation. Practices in this area come from the oncofertility field and can be expensive, distressing and experimental. Due to the level of maturity of the adolescent, their parents often assist in the decision or make a proxy decision. RCH looked at the uptake of fertility preservation with their cohort and found that 37 per cent (19 of 51) of people assigned male at birth underwent preservation, while zero per cent (0 of 36) of those assigned female at birth underwent fertility preservation.

The course of GD in children has shown that the majority will not remain gender dysphoric after puberty. The rates vary, but around 80 per cent of children will desist by the time they reach puberty. However, evidence of more extreme gender non-conforming behaviour in childhood is associated with persistence of GD into late adolescence and adulthood.[6] Within the adolescent framework, the main question has been to determine if puberty-blocking medication and psychological support has been beneficial with regards to the mental illness. A 2015 study by Costa has shown a statistically significant improvement in psychosocial functioning over a 12-month period in a cohort of 201 adolescents with GD, who underwent a combination of puberty-blocking medication and psychological support.[7] Another study by De Vries in 2014, that followed 55 transgendered adolescents through puberty-blocking medication, cross-sex hormones and later gender reassignment surgery, found that the symptoms of GD were alleviated and psychosocial functioning was improved.[8] Also in the literature is a meta-analysis, which included 23 studies with 1833 transgendered individuals. The study identified that approximately 80 per cent of those who underwent hormone treatment showed improvement in their GD symptoms, quality of life and psychological symptoms.[9]

There are questions asked if enough evidence is available to support such a significant intervention in adolescents. When searching for literature on the subject, it is notable that there are not a large number of studies and the ones which have been completed generally have small numbers of subjects. A PubMed search using the phrase 'gender dysphoria and adolescent' comes up with 311 results, while the phrases 'anxiety and adolescent' and 'depression and adolescent' have 41,467 and 59,538 results respectively. Long-term data is lacking and more research is required in this area, but current evidence suggests the benefit of a multidisciplinary approach is improving mental health outcomes.

In summary, the main points to take away are:

- Numbers of transgender-identifying youth presenting to gender clinics are increasing
- The transgender population has a higher prevalence of mental health disorders than age-matched peers
- Assessment is recommended via a multidisciplinary service
- There is a three-stage treatment process depending on puberty, readiness, ability to consent and personal/medical professional choice
- Patients need monitoring and screening of their physical and mental health status
- Current research suggests an improvement in mental health with treatment.

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Fertility preservation in the transgender child and adolescent

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There has been a sharp increase in the visibility and acceptance of transgender and gender diverse (TGD) individuals in Australia and, with that, an increased attendance at health services for assistance, particularly among TGD children (prepubertal) and adolescents. Of Australian adolescents, 1.2 per cent identify as transgender and this prevalence is likely to increase.[1]

Subsequently, services have been established throughout health networks that require the development of guidelines to direct provision of these services for TGD individuals.[2] Gender-affirming treatment is a multidisciplinary practice. After evaluation, education and diagnosis, treatment may include mental healthcare, hormone therapy and/or surgical therapy.

TGD children and adolescents will often commence social transitioning long before they seek gender-affirming hormone treatment or surgery. Australian and international guidelines[2,3] make the strong recommendation that counselling on the potential loss of fertility as a result of suppression of puberty with GnRH agonist therapy (stage 1 treatment) and gender-affirming hormone therapy (stage 2) is an essential criterion for accessing treatment. The loss of fertility due to surgical transition (stage 3) must also be addressed. It is now the standard of care to offer all TGD children, adolescents and their families the opportunity to discuss the impact of treatment on future fertility and the options for preserving fertility.

Impact of treatment on fertility

The first stage of treatment is puberty suppression and is indicated when adolescents with gender dysphoria experience significant distress with the onset or progression of pubertal development. This is generally done using GnRH agonists. These agonists work by downregulating the GnRH receptor on the pituitary gland and reducing the release of gonadotrophins, therefore impairing spermatogenesis and oocyte maturation. This is considered reversible in both instances, although testicular activity takes longer to recover than ovarian function.

Spermatogenesis can be accomplished by spontaneous gonadotrophin recovery after cessation of GnRH agonists, or by gonadotrophin treatment, and will probably be associated with physical manifestations of testosterone. There are no data published concerning the time required for sufficient spermatogenesis to collect enough sperm for later fertility.[3] The only comparative population are those being treated for precocious puberty where spermarche is noted 0.7–3 years after cessation of GnRH agonists.[4] In men with gonadotrophin deficiency (Kallmann syndrome), sperm are noted in seminal fluid after 6–12 months of gonadotrophin treatment, however, it is likely they will not achieve the recognised normative range.[5] Commencement of GnRH agonist treatment in children may affect testicular volume, spermatogonial proliferation, Sertoli cell numbers and the number and morphology of Leydig cells, possibly hindering the potential of that tissue to develop optimal quality or quantity of sperm at a later date.[6]

Equally, there are no published studies on ovarian activation following cessation of GnRH agonists in TGD individuals. Girls treated for precocious puberty with GnRH agonists have been observed long term, but none of these studies reported on the long-term adverse effects of pubertal suppression on ovarian function after treatment cessation, nor response to ovulation induction following prolonged suppression.[7,8]

Adolescents will eventually move to gender-affirming hormones, or 'cross-sex hormones', oestrogen or testosterone, that they will continue taking for the rest of their lives. This will induce the onset of secondary sexual characteristics of the desired gender. There is no good evidence to provide objective recommendations as to when these hormones should be introduced[2] and this tends to be individualised. Gender-affirming hormones are considered to be only partially reversible.

For transgender females (male to female), many different regimes have been established. Often, an anti-androgen, cyproterone acetate, is used followed by oestrogen therapy.[6] Studies are not in agreement about the effect of these hormones on testicular

structure and function, with some studies suggesting complete involution of spermatogenesis and Leydig cell appearance. Other studies demonstrate unchanged Leydig cell abundance and qualitatively complete spermatogenesis, but functionally inactive tissues. Restoration of spermatogenesis after cessation of prolonged oestrogen treatment has not been studied, however, it is suggested that the endocrine process can be reverted to a male pattern in just a few weeks, whereas the spermatogenic involution will persist for a much longer time.

For transgender males (female to male), the effect of prolonged treatment with exogenous testosterone on ovarian function is uncertain. The time frame for resumption of ovulation and menses after cessation of testosterone is unclear and some studies have reported irreversible amenorrhea.[9] There are reports of an increased incidence of polycystic ovaries, though this is not confirmed by all studies.[3] Pregnancies using autologous (patient's own) oocytes have also been reported in transgender males following cessation of androgen treatment.[9] While studies do suggest minimal obstetric impact, there are no studies examining the transgenerational effects of previous testosterone usage in the offspring.

Fertility preservation in the transgender male

Fertility preservation in the adolescent transgender male can be achieved with oocyte cryopreservation (egg freezing). This is a proven technique routinely used in other populations such as oncofertility. It is achieved by controlled ovarian hyperstimulation of the transgender male with recombinant gonadotrophins and surgical collection of oocytes. The oocytes can then be fertilised at a later date via donor sperm or a partner who can provide sperm. The transgender male can carry the pregnancy themselves or use a surrogate. Research has conclusively proven that cryopreserved oocytes perform as well as those in a 'fresh' collection and can be stored for many years without deterioration.

For prepubertal transgender males, ovarian tissue preservation is the only option. This is where part of the ovarian tissue is removed surgically and, using similar techniques as for oocyte cryopreservation, the tissue is frozen. Despite its global usage, this technique is considered experimental,[10] with births from ovarian tissue preservation limited to specialised centres, and very few births reported from prepubertal cryopreserved tissue.

Fertility preservation in the transgender female

For adolescent transgender females, fertility preservation can be achieved through retrieving and cryopreserving sperm. Retrieval of sperm can be achieved through masturbation, vibratory stimulation or surgically (testicular biopsy) in those unable to achieve erection and ejaculation. Sperm can later be used in assisted reproduction technology (ART) with a donor egg and a woman who acts as a surrogate, or via ART with a partner who is able to produce oocytes and carry a pregnancy.

For prepubertal transgender females, testicular tissue preservation has been suggested as an option, however, this is highly experimental and has not been proven safe or efficacious outside of an animal model. Some centres in Australia currently offer testicular tissue preservation under the banner of 'novel technologies', citing that these tissues are unlikely to be required for 10–20 years and that research and technology will be significantly advanced in that time, potentiating safe use of these tissues for future fertility.

There are limited studies examining transgender people's desire to become parents, particularly with their own genetic eggs or sperm. It is suggested that about half of transgender people without children would like to have them in the future. Reports suggest the process of fertility preservation is perceived traumatic to TGD individuals, with 'sperm' and 'eggs' seen as engendering and that loss of fertility is rarely seen as a reason to delay transitioning. It is also interesting to note that, although there is low uptake of fertility preservation among TGD children and adolescents, the perception is one of improved awareness and competence in informed decision-making. Significantly more research is required into optimal timing of counselling, fertility desires and potential regret, as well as the barriers (physical, social and psychological) to successful fertility preservation for TGD individuals.

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Intersex: variations in sex characteristics

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Many health professionals are unsure what the term intersex means; it can be a confusing term for those who are not familiar with it. Intersex refers to variations in the development of sex characteristics that do not fit the typical norms of male or female. There may be a variation in the chromosomes, gonads or reproductive anatomy of the individual, and results in a blend of 'typical male' and 'typical female' characteristics.[1] Understandably, this covers a diverse spectrum of variations and accounts for up to one to two per cent of the population.[2]

Medical texts refer to intersex variations as disorders or differences of sex development (DSD). While these terms are still commonly used within medical literature and the medical community, they have been challenged recently by intersex advocates as 'othering' and pathologising, with associated negative connotations.[3] In response, some clinicians have rephrased DSD to use the term 'diverse sex development'.

In addition, the term 'intersex' is distinct from the terms 'transgender' or 'gender diverse'. Transgender people have an identity that is different from that of their assigned gender. To be transgender, there does not need to be any underlying variation in development of sex characteristics in the body. While some individuals who are intersex may have a gender identity different to their assigned gender, others may not.

History of nomenclature

Over time, the terminology used to describe intersex variations has changed and evolved. Western medicine tends to favour the use of labels and descriptors. Many years ago, the medical terminology used for people with intersex variations included 'true hermaphrodite', 'pseudo hermaphrodite', 'testicular feminisation' and 'sex reversal'. In an attempt to update terminology, the 'Chicago consensus statement on the management of intersex disorders' was published in 2006.[1] The statement, produced by a large group of professionals working in the field, rewrote the terminology with the aim of using more scientifically descriptive and less pejorative medical terms. Terminology included the 'DSD', as well as descriptive names such as 'complete androgen insensitivity syndrome'. These are the terms now widely used in medical practice, medical literature and research.

Appropriate language

The terminology a person with variations of sex characteristics chooses to use is entirely individual and there is no 'one size fits all'. Many intersex individuals do not prescribe to the phrase 'DSD', preferring the term 'intersex'. However, other individuals may not use the term 'intersex' and prefer something different, such as their specific medical diagnosis. As health professionals, we must be aware of the sensitive nature of these terms and seek to use affirming language preferred by the individual concerned.

The reproductive developmental pathway

Until six weeks of development (eight weeks gestation), growth is the same for all embryos. This includes a bipotential gonad and the presence of both Müllerian and Wolffian ducts. The undifferentiated gonad typically develops into either a testis or an ovary, and the phenotypic sex develops depending on what hormones are produced by the gonad (Figure 1).

In the typical male pathway, presence of the SRY gene, along with a complex interplay of other genes (for example, SOX9), leads to the development of the testes as the gonad. Anti-Müllerian hormone (AMH) produced by the testes causes regression of the Müllerian ducts. Production of testosterone promotes development of the Wolffian ducts to the internal male reproductive structures. Testosterone is peripherally converted to dihydrotestosterone (DHT) via the 5 alpha-reductase enzyme, and results in virilisation of the external genitalia, to give the appearance of 'typical male'.

In the typical female pathway, the absence of the SRY gene, along with the active upregulation of other genes (for example, WNT4), promotes the development of the ovary as the gonad. Lack of AMH leads to the development of the Müllerian ducts to the internal female reproductive tract. Lack of locally produced testosterone leads to regression of the Wolffian ducts. Finally, lack of androgen exposure results in 'typical female' external genitalia (clitoris, urethra, lower vagina and labia) developing.

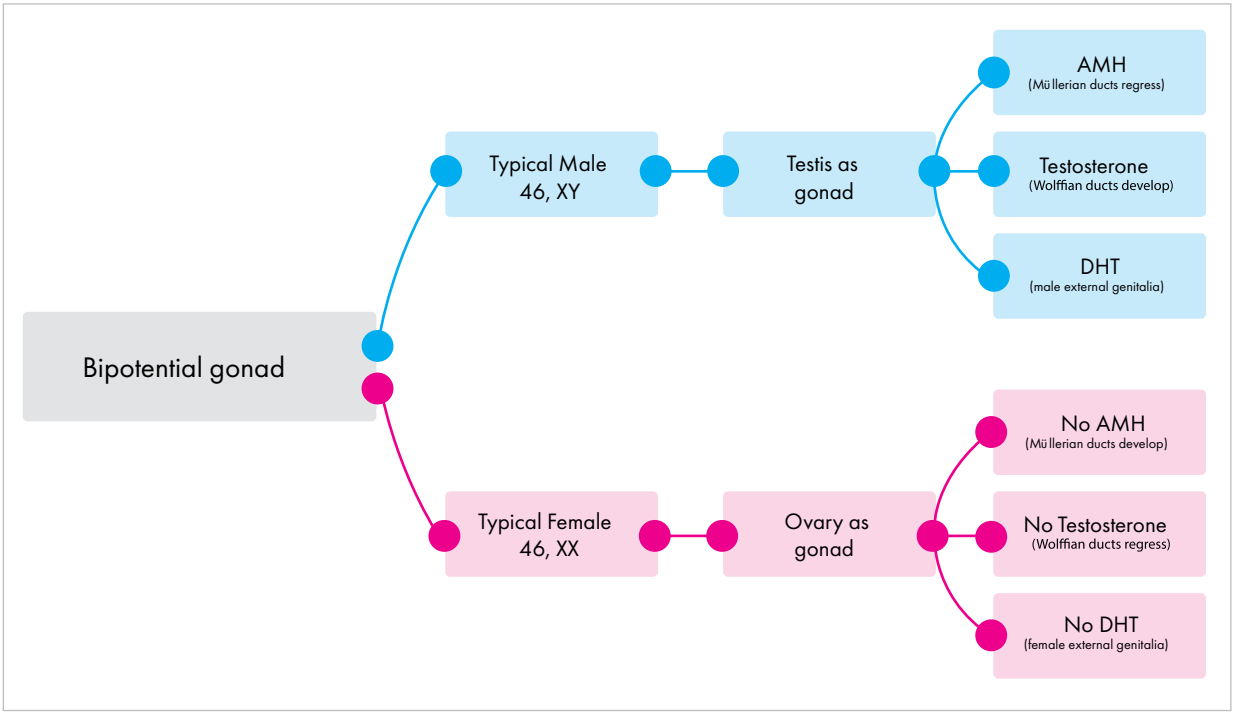

Figure 1. Summary of the typical development of the male and female reproductive systems.

Variations in sex characteristics

Variations to the 'typical male' and 'typical female' pathway can occur at any level of development. As intersex variations cover a wide range of situations, it is impossible to describe them all here. Below outlines the developmental pathway for three more common examples of intersex variations.

Congenital adrenal hyperplasia

Congenital adrenal hyperplasia (CAH) occurs when the body has a deficiency in a specific enzyme required for converting hormones along the steroid hormone pathway. The most common enzyme deficiency in CAH is 21-hydroxylase, which is deficient in 90 per cent of cases. A lack of cortisol, due to the enzyme deficiency, leads to a compensatory hyperplasia of the adrenal gland, resulting in increased androgen production. In those with 46,XY chromosomes (and testes as gonads), increased androgen exposure does not alter the development of the reproductive organs from the 'typical male' pathway. For an individual with 46,XX chromosomes (and ovaries as gonads), increased levels of testosterone mean the development of the external genitalia occurs along a spectrum, ranging from 'typical female' to 'typical male' development. In these instances, CAH may be identified at birth with atypical genitalia (also referred to in medical literature as ambiguous genitalia). Late onset CAH, due to milder cases of enzyme deficiency, usually present later in childhood or in adolescence with precocious puberty or signs of hyperandrogenism.

Complete androgen insensitivity syndrome

Among the 46,XY intersex variations, one of the most common is complete androgen insensitivity syndrome (AIS). In people with AIS, the gonads are testes and produce hormones as per the 'typical male' pathway. However, the androgen receptors within the body are not able to respond to circulating androgens, thus, the androgens cannot influence development of the reproductive anatomy as it typically would. AMH produced by the testes still results in regression of the Müllerian ducts and the individual therefore has external female phenotype and male internal gonads (testes). At puberty, increasing levels of testosterone converts peripherally to oestrogen, resulting in female development of secondary sexual characteristics. Due to regression of the Müllerian ducts, there is no uterus or upper vagina, and individuals commonly present with primary amenorrhoea at puberty.

46,XY pure gonadal dysgenesis (Swyer syndrome)

Unlike in CAH or AIS, the gonad in Swyer syndrome does not develop into a testis or ovary; instead, a dysgenetic gonad develops. The gonad does not produce hormones or gametes. In the developing embryo, the lack of AMH and testosterone production leads down the 'typical female' pathway for internal and external development. The lack of hormone production from the gonad results in the absence of the onset of puberty.

Healthcare for people with intersex variations

The Australian Human Rights Commission is conducting a research project on 'how best to protect the human rights of people born with variations in sex characteristics in the context of medical interventions', which is still ongoing at the time of writing this article.[4]

Historically, healthcare for individuals with intersex variations was paternalistic and often surrounded by secrecy. Non-disclosure of the variation occurred and surgical and medical treatments were not always fully explained. This is no longer acceptable practice. Full disclosure of information and openness with patients and parents is considered vital.

Early (often in infancy) 'normalising' genital surgery for atypical genitalia has been the traditional practice

of some medical professionals and still occurs in many centres today. This is a controversial topic and intersex advocates have been vocal in expressing their concern regarding non-medically necessary early surgery. In some parts of the world, there has been a move to delay surgery until the individual is old enough to be involved in the decision-making process.[5] Promoters of early surgery believe that creating a more 'normal' genital appearance may promote parental bonding and reduce psychological distress for the child. Concerns regarding early surgery include potential alteration or damage to adult sexual function, with no good evidence that surgery improves long-term psychological outcomes.[6] Irreversible cosmetic genital surgery may also restrict future choices for the small, but increasing, numbers of children with intersex variations choosing to reassign gender in later life.

People with intersex variations, and their parents or carers, may require or seek medical care for a number of reasons. This may include urgent situations such as salt-wasting crisis in a newborn with CAH. This risk must be rapidly identified and treated (with replacement steroids) to prevent death. Other clinical considerations for health professionals include: management of malignancy risk from the gonad; discussion about hormone replacement therapy; prevention of osteoporosis; fertility options; addressing concerns regarding sexual health or function; and offering appropriate psychological support and transitional care from paediatric to adult services. Holistic individualised care should be provided by health professionals with expertise in caring for people with variations of sex characteristics. Autonomy of the individual (including the child and future adult) should be respected, with ongoing support offered to optimise quality of life and wellbeing.

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What do intersex people need from doctors?

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Intersex people are born with sex characteristics that do not fit medical norms for female or male bodies.[1] The intersex population is extremely diverse, with more than 40 relevant genetic traits known, including genital, gonadal, hormonal and chromosomal variations. Intersex traits are innate, so they can be identified at any age, including at birth or in early childhood, during puberty or when trying to conceive a child. Prenatal testing can also identify many relevant traits. People with variations of sex characteristics use many different words to describe our bodies. These include the word intersex, but also diagnostic labels and, rarely outside medical settings, the stigmatising term 'disorders of sex development'.

When diagnosed early, people born with intersex variations in Australia are routinely subject to medical interventions without personal informed consent, typically in infancy, childhood or adolescence. The intent is often to 'normalise' individuals' identities and tackle stigma, but there is no evidence that these goals are achievable through surgical and other medical interventions.[2,3] The intersex movement has challenged these interventions for more than two decades.[4,5]

In 2013, following advocacy by intersex and disability advocates, a Senate committee inquiry into the involuntary or coerced sterilisation of both populations recommended the deferral of such medical interventions until individuals can determine whether or not they wish to undergo treatment. The inquiry established that there was no clinical consensus regarding the treatment of intersex people. It also found arguments that surgery addresses the stigmatisation of intersex people are circular.[6] The inquiry report has not been implemented.

The following year, the Australian Medical Association (AMA) concurred that normalising cosmetic genital surgery should be avoided until children are able to 'fully participate in decision-making'.[7] State and territory governments have made similar statements. For example, in 2012, the Queensland government stated that research 'and investigation now advises against any irreversible or long-term procedures' unless they present a 'serious risk' to health.[8]

Unfortunately, such interventions persist. Despite a lack of transparency regarding historical and current practices, much anecdotal evidence regarding current practices in Australia is available to national intersex organisations. That lack of transparency means that intersex human rights defenders typically encounter a disbelief that such practices could still continue here, but Family Court cases provide incontrovertible evidence that they do.

The Family Court of Australia has adjudicated in multiple relevant cases. In 2016, the Family Court adjudicated the case of five-year-old Carla in Queensland, determining that parents could authorise her sterilisation. Evidence on cancer risks was not supported by the cited documentation, nor the International Classification of Diseases 11th Revision (ICD-11). The decision relied upon gender stereotypes, including that Carla wore Minnie Mouse underwear, wore her hair in long blond braids and had a Barbie bedspread.[2,3,9] The case also revealed that, in 2014, Carla had already had a clitorectomy and labioplasty that, in the words of the judge, had 'enhanced the appearance of her female genitalia'. Justice Forrest argued that early surgery would prevent her from harms associated with understanding her body.

Last year, a different Family Court case revealed that Kaitlin, an adolescent raised male, but who always identified as a girl, was prescribed testosterone to commence puberty. Unable to produce sex hormones herself, she became non-compliant when she understood the effects of testosterone. The court prescribed oestrogen, but made no statements on the inappropriateness of the original sex hormone prescription.[2,3]

It is likely that practices around Australia vary, but also that they depend very much on the disposition and beliefs of individual physicians that lead multidisciplinary teams.

Intersex organisations also encounter confusion about what it is that we want to change about medical practices and healthcare. Some of this confusion arises from assumptions that to be LGBTI means to be old enough to have agency to affirm a sexual or gender identity. This is not true of Carla, for example. All available data suggests that most intersex people grow up to identify with sex assigned at birth (often described as cisgender), while very many of us are heterosexual. The word intersex bears the brunt of public misconceptions, including associations with being queer or transgender, but fundamental concerns about how bodies are regulated affect all intersex people irrespective of the words we use.

It is important to recognise that the possibility of incorrect gender assignment is not the only issue we face, and may be unlikely. However, early genital surgeries are associated with 'particular concern' for later sexual function and sensation[2,3] and medical interventions are also often heteronormative, that is, like in Carla's case, they are intended to produce future women and men capable of penetrative heterosexual intercourse.

The current social and medical environment presents a challenging contradiction. Medicine constructs intersex bodies as either female or male (and 'disordered'), while law and society construct intersex identities as neither female nor male. Medicalisation is posed as a solution to discrimination and 'othering', while legal and social 'othering' of intersex people as a third sex is posed as a solution to medicalisation.[2,3] This conflict arises from fundamentally different ideas, not about the nature of intersex variations, but about their meaning and how to name and treat them. Neither medical nor socio-legal models allow for individual self-determination. Neither is based on strong evidence. Both cause harm.

While often forgotten in an undue focus on our genitals and gonads as children, many of us have health issues as adults. These can be innate, but sometimes they are the consequences of early medical interventions. Gonadectomies result in a life-long need for hormone replacement and early medical interventions can result in trauma and avoidance of healthcare.[10] However, the experience of many intersex adults in accessing healthcare is also frequently poor, with a need to educate clinicians about our own bodies and health needs, and tackle assumptions about our identities. Many of us lack good quality information on our health needs or the body parts we have, and some of us need sensitive attention to issues relating to fertility and trauma.

Last year, many of us from several different organisations in Australia and New Zealand came together to discuss our concerns and prepare a shared set of demands. Those demands don't just seek to end the practices evident in recent court decisions, they recognise our health issues and seek to improve our care.

The Darlington Statement sets out those demands.[11] In this statement, we call for the criminal prohibition of deferrable medical interventions associated with human rights-affirming oversight of relevant medical interventions and standards of care. We call for improved transition pathways between paediatric and adult services, and access to redress and reparative treatments. We also call for resourcing for affirmative, intersex-led peer support and systemic advocacy. These demands are not so radical in the context of statements by a Senate committee and the AMA.

The Darlington Statement also recognises our diversity as a population and identifies attempts to classify intersex people as a third sex or gender as harmful. As with race and religion, we question the inclusion of sex or markers on identification documents. While they remain required, we propose access to non-binary and alternative gender markers for any individuals who choose them and who can consent. This is perhaps more radical, but sex and gender markers are already sometimes poor indicators of medical needs.

These demands express simple concerns with transparency, accountability and respect. Current medical practices give rise to serious concerns and they need to change to bring them into line with human rights norms that Australia is obliged to meet.[1] Many of us lack trust in healthcare providers, particularly people with a history of unwanted interventions and medical display. All of us hope to find practitioners who are willing to listen and be gentle when we need healthcare. Please consider reaching out to us if you are interested in taking referrals, or if you are involved in developing or updating educational resources or curricula.

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Hormonal treatment of the transgender adult

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The condition of gender dysphoria (GD) is one of self-diagnosis, but ratified by a mental health professional experienced in matters of gender fluidity. Transition treatment is followed by maintenance treatment, perhaps after removal of the testes. The testes are powerful engines of hormone production, much more so than the ovaries. There is the need to employ testosterone blockade in addition to the feminising oestrogens; this all in contrast to the simpler treatment of trans men.

In the treatment of the trans woman, there is the need to employ testosterone blockade in addition to the feminising oestrogens; this all in contrast to the simpler treatment of trans men. There is little comparison between oestrogen replacement in menopausal hormone therapy and transitional oestrogen. In using oestrogen for gender transition, it should be understood that the therapist is trying to effect a feminising change as opposed to replacement. I generally like to escalate the dose gradually, doubling the dose every three weeks, until I reach an arbitrary maximum. I usually prescribe oestradiol valerate (Progynova) in an initial dose of 2mg daily up to a maximum of 8mg at three-week intervals. At the three-month stage, I estimate levels to ensure what we are achieving objectively. Other oral oestrogens may be used, but ethinyloestradiol, although very cheap as an oral contraceptive and powerful, is best avoided in terms of the increased thrombotic risk.[1] In fact, I see all oral preparations as having increased risk and so, at the six-month stage, when initial oestrogenisation and the testosterone blockade have been completed, I offer an oestrogen implant with which I may include 2–4mg of Progynova as a top-up, for a while at least. Not all practitioners are comfortable with implant therapy, but it works well in my practice at 50mg given every 5–6 months. The cheaper, but less potent, mode d'emploi is that of transdermal oestrogen.

Some patients like to access their own preparations from the internet. Progynon injections were popular, but have been discontinued in this country at least; in any event, the absorption curve of this injectable oestrogen is short and sharp and the irregular absorption is adverse. Some older women and those who are attempting partial transition may choose transdermal preparations, such as the patch (Estradot/Climara) or gels (Sandrena), that are readily available on the PBS. These may be used in 'at risk' patients (previous deep vein thrombosis, pulmonary embolism, or at risk for these) or in those who are simply older.

Feminising oestrogen is one side of the therapeutic approach, with the other side being suppression of testosterone by blockers, or in the vernacular, 'T blockers'. In contrast to the function of ovaries producing oestrogen, the power of the testes to produce testosterone is extraordinary. While administered oestrogen may to some extent be effective, it will not achieve the required full suppression in conventional doses. There is some advantage in using tablet oestrogen, which is why I may continue oral together with implant therapy. Oral oestrogen exerts the so-called 'first pass effect', that is, direct stimulation of sex hormone-binding globulin within the liver. This decreases the concentration of free testosterone available to continue its masculinising effects. Strangely, not many endocrinologists seem to support or recognise the importance of this and it may be recognised in the PBS authority criteria for androgen scripts, which is a source of continuing frustration.

Oral oestrogen in excessive doses must be regarded as potentially thrombogenic and this should be clearly understood before commencing transition. It becomes quite difficult when a thrombosis or, even worse, a pulmonary embolus eventuates, to decide what hormone regime to choose. This can be one situation where premature castration can assist. Oral oestrogen may provoke gall bladder problems due to the increase in biliary viscosity. Other troublesome side effects, such as nausea and headache, are best managed by returning the dose to a minimum and then escalating gently.

The effectiveness of the combined medication is best judged on the criteria of breast soreness and development, together with suppression of penile erectile capacity; the desirability of this is reduced for those seeking 'partial reassignment'. It is important to clarify that breast development takes time (think of a pubertal girl achieving development over a period of years). A degree of mood variability is to be expected (real girls do cry). After gender affirmation surgery, there is no need to continue T blockers, although some may continue a small dose to maintain suppression of facial hair growth. At this time, the dose of oestrogen may be reduced to a maintenance dose as in hormone replacement. Other T blockers, such as bicalutamide, can be used, but this is usually in conjunction with a gonadotrophic agonist for prostate cancer. Gonadotrophic agonists are used in the younger patient below the age of 18. Finasteride is a 5α-reductase inhibitor preventing the reduction of testosterone to the far more powerful

dihydrotestosterone, mainly in the treatment of prostate cancer and the prevention of scalp hair loss in men. Blood testing of hormone levels may be desirable at intervals or when problems arise. It is appropriate to change doses and preparations one at a time so that apparent side effects can be accurately attributed. The choice generally lies between Aldactone (spironolactone or 'spiro') and Androcur (cyproterone acetate). Spiro is cheap, but as a diuretic and hypotensive it can have undesirable side effects. Androcur is powerful and may reduce testosterone to a zero status, resulting in a loss of energy and mood upset often misdiagnosed as a depressive state (pseudodepression); this medication requires an authority script using a 'streamliner' number. I will usually start with a 100mg dose and then reduce to a more comfortable dose, while maintaining good suppression. Some patients seek a script for progesterone, perhaps to attempt a fuller mimic of the natural female cycle and to encourage breast development. This medication upsets moods needlessly and stimulates breast soreness, but not development.

At times, I will check blood tests for hormone screening, liver function, lipid profile and even glucose tolerance, as the insulin-sensitising effect of testosterone is lost. I am less certain of the need for prolactin estimation and screening mammography; a prostate-specific antigen can be done, but these tests should be symptom-led. I always do a bone density estimation, as bone density is hormone-dependent.

The treatment for trans men, in contrast, is much simpler, as there is no need to suppress ovarian function since this falls victim to the onslaught of the powerful administered testosterone. Initially, injectable testosterone, such as Primoteston (testosterone enanthate), is given in a 250mg dose every three weeks. This can be self-injected into the anterior thigh. While many will continue this indefinitely, as it is cheap, it doesn't require an authority script and remains largely under the control of the individual. It does suffer the inconvenience of a short burst of the hormone rather than the smoothly maintained level of Reandron (testosterone undecanoate), given in a dose of 1000mg at an interval of 6–10 weeks as a deep injection into the buttock; prescription of Reandron requires an authority script if sought on the PBS. A recent sadness is that the PBS, after advice from andrologists and on the basis that cis men are using too much of the hormone, have made authority scripts far more problematic. It is important ensure a gender change is recorded with Medicare when the grounds for authority can be declared as being absence of testes, but still with certification from the appropriate specialist. Truly, life was not made to be easy.

One criterion of success is that menstruation is entirely suppressed. Any breakthrough bleeding raises the suspicion of inadequate dosage or the possibility of uterine pathology. Breast sensitivity is abolished and that makes breast-binding less uncomfortable. The emergence of beard growth is to be expected and the voice pitch becomes roughened before descending into a deeper male pitch. Side effects include an increase in haematocrit, although the risk of thrombotic events from this is less certain.[2] There is a need to check liver function from time to time, as testosterone is potentially hepatotoxic. Oral testosterone (methyl testosterone) is to be avoided, as it is toxic enough to run the rare risk of primary hepatoma. Skin acne may be a problem best treated by a low-level continuous antibiotic, such as tetracycline or doxycycline. The injection sites may be sore for some days. It is important to exclude peanut allergy, as the carrier oils may be distantly related to peanut oil.

Administered testosterone should not be relied upon for effective contraception. If the individual is engaging in penile intercourse, barrier contraception or the use of a Mirena should be encouraged. Cessation of the hormone will permit a return of fertility within months. There is little need to store eggs in advance of transition, in contrast to the situation for trans women, who may elect to store some sperm as 'straws'.

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Surgery for transgender individuals

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As part of gender transitioning, some trans people will choose to have surgery. It is not a requirement for social transition; however, in some jurisdictions, it is a requirement for legal transition. Apart from legal requirements, surgery may be performed for gender affirmation, to allow desired sexual interactions, to allow standing urination, and/or to reduce stigma when being given personal care in an aged-care setting.

There are a limited number of surgeons in Australia who perform gender-affirming surgery, especially masculinising and feminising genitoplasty. Trans people may choose to travel overseas for their surgery. At the present time, most of the surgery in Australia is performed in the private sector. Surgical teams are often multi-disciplinary and may involve plastic surgeons, urologists, colorectal surgeons and gynaecologists. It is important that the whole healthcare team is well-versed in transgender care to avoid misgendering patients and the resultant distress.

For simplicity, in this article I have used the terms trans men and trans women, however, I acknowledge that some people will identify as gender diverse or non-binary. I have also used the terms neovagina and neophallus, as this is intended for a surgical audience, when I am aware that many trans people will use the terms vagina and penis for the same structures.

The World Professional Association for Transgender Health (WPATH) Standards of Care document sets out pre-operative requirements for gender-affirming surgery. This includes appropriate psychiatric or physiological assessment prior to surgery. These guidelines have been written to support and protect both doctors and patients. It would be usual practice in Australia to ensure the conditions described in this document are met prior to any gender-affirming surgical procedure.

It is important to acknowledge that discussion around fertility preservation must take place in pre-operative counselling. Fertility preservation techniques such as gamete freezing are well established.

Bottom surgery

Bottom surgery refers to internal and external reproductive organs and genitals. The internal reproductive organ surgery required by some trans men is well within the remit of a general gynaecologist and fairly self-explanatory. It includes hysterectomy with or without salpingoopherectomy. These procedures may be performed for gender-affirming reasons or for any of the typical gynaecological indications. The usual routes of surgery are all possible, however, vaginal surgery is less common given this population may opt not to carry children, or to have elective caesarean births and, thus, vaginal hysterectomy may not be possible. An abdominal hysterectomy through a small Pfannenstiel incision may be preferred by some trans men to avoid the vaginal component of surgery altogether. Laparoscopic hysterectomy is often the preferred technique, however, gynaecologists must be aware that placement of vaginal instruments may be difficult due to testosterone use and subsequent atrophy. Careful assessment and discussion pre-operatively is important. Often, trans men will benefit from the addition of topical vaginal oestrogen for six to eight weeks pre-operatively. Vaginectomy may be performed as an independent procedure, however, it is usually done at the same time as masculinising genitoplasty, as some of the redundant tissue may be used for urethral lengthening.

There are two main options for masculinising genitoplasty; metoidioplasty and phalloplasty. Metoidioplasty is a simple one-stage procedure with a lower complication risk, although urinary fistulas may occur. It involves releasing the chordee (suspensory ligaments of the clitoris) and advancing the urethra to the tip of the phallus. Metoidioplasty gives more masculine-appearing genitals and the ability to stand to urinate. It is often done in combination with vaginectomy, but does not require it, so the vagina may remain patent. Phalloplasty is a much more complex multi-stage procedure and requires multiple surgeons from different disciplines, generally, plastics, urology and sometimes gynaecology. Post-phalloplasty, a trans man will have a more typically sized phallus, with the ability to sexually penetrate their partner/s and stand to urinate. The aim is for a neophallus that is sensate, achieves erection (often through an implanted erection device) and has good cosmetic appearance. Phalloplasty is performed via generation of a flap from either the abdomen, latimus dorsi, anterior lateral thigh or, the commonly preferred technique, radial forearm. Complications are common and generally involve the urethral component or the donor site. Urethral complications can be difficult to treat and include fistulae, stricture and stone formation.

Trans women may elect to have vaginoplasty, labioplasty or a simple orchidectomy, which was, and is, performed for trans women to adhere to transphobic and archaic legal requirements in some

jurisdictions, requiring sterilising surgery in order to legally transition. Alternatively, some trans women find anti-androgen medication problematic and will elect for an orchidectomy to remove the need for anti-androgens.

Labioplasty alone is often requested by trans women who do not desire a vagina for penetration, but would like a more feminine external genital appearance. Often, these women are older and planning a transition to supported living and have concerns about how they may be perceived when receiving personal care. Labioplasty generally produces very convincing external female genitalia with a vaginal dimple. The clitoris is often fashioned from the glans penis and clitoral sensitivity and orgasm are possible post-labioplasty.

Vaginoplasty involves the creation of a neovagina and female-appearing external genitalia, including a sensate clitoris, and removal of the testes. Neovaginal creation is commonly performed via penile or scrotal tissue inversion and, alternatively, may be done using a section of sigmoid colon or by bringing down peritoneal lining to the introitus. The inversion technique is the most common and generally has a low complication rate, the most common being granulation tissue formation and stenosi, either at the introitus or higher up the neovagina. Rectovaginal fistulae are also possible.

Hair growth within in the neovagina may be an issue and it is preferable for trans women to have permanent hair removal pre-operatively if hair-bearing skin is to be used. Dilation is required post-operatively and trans women who wish to have a patent vagina must continue with either regular dilation or penetrative sexual activity. Douching is required to remove skin cell debris. Some trans women find they benefit from the addition of probiotics, topical oestrogen and/or acidifying gels or pessaries to reduce troublesome discharge.

Neovaginas formed from colon are more prone to complications, which can include: prolapse; introital stenosis; adhesion formation or other complications from the abdominal component of the surgery; mucositis; discharge and/or odour; and the possibility of carcinoma. Using peritoneal lining is less common, with the main concern being total vaginal length, which seems to be less with this technique.

More and more young trans people are using puberty blockers to avoid a natal puberty and the resultant distress. However, an unintended result of this is that less genital tissue will be available for future procedures. This is likely to lead to development of new techniques, including the possibility of using a combination of the genital inversion technique, with the addition of peritoneal lining, to increase total vaginal length. Overall, vaginoplasty is a well-tolerated procedure with a fairly low complication rate and postoperative sexual function satisfaction scores comparable to cis females.

Top surgery (chest or breast)

Chest reduction surgery (mastectomy) is a common procedure for trans men. The recovery can be painful, however, the cosmesis is generally very good. Surgical management of nipples can be via grafting, 3D tattoos or reconstruction. Larger nipples tend not to graft as successfully, as there is a greater tissue bulk and some areola can be lost, leading to a less visually pleasing nipple-to-areola ratio. In this situation, 3D tattoos or nipple reconstruction may lead to better cosmesis.

Some trans women will be dissatisfied with their spontaneous breast development and will seek augmentation surgery. This is similar in principle to cis female breast augmentation, however, there are a few issues the plastic or cosmetic surgeon will need to take into account. In trans women, the sternum and inter-nipple distances tend to be wider and the breasts located lower on the chest. It is best to time the surgery for after the plateau in breast growth. Postoperative physiotherapy should be considered to optimise recovery.

Other surgery (face and voice)

For some time now, facial feminising and masculinising surgery has been used by cis people who are dissatisfied with their facial features. Recently, more trans people have been accessing this surgery. Masculinising surgery aims to increase the squaring of the jaw and prominence of the forehead and eyebrow ridge. It is done with a combination of non-surgical and surgical fillers. Surgically, silicone and bone matrix fillers tend to be used. Facial feminising surgery aims for the opposite effect. Nose and lip enhancement may also be performed. A large number of these procedures now use non-surgical cosmetic techniques. Surgery involving bone, such as reduction in frontal bossing, can be quite invasive and have a significant recovery time. However, procedures such as lip-fillers can be done in a lunch break!

Most voice interventions for trans people occur via hormonal therapy (testosterone) and/or voice training by a speech therapist. Some trans women will have voice feminisation surgery, the aim being to increase pitch and, over time, reduce breathiness. This surgery requires significant pre- and postoperative speech therapy and a prolonged period of voice rest, so it is only appropriate for people who are motivated and able to adhere to the prehabilitation and rehabilitation. Trans women may choose this surgery because of inadequate results from voice training, the significant cognitive load that conscious control of voice takes, to reduce voice strain and daily maintenance, and to avoid being 'betrayed' by a male voice, typically when startled or making non-verbal vocalisations such as laughing or coughing. There are a number of open and endoscopic techniques for this surgery and it is performed by an ear, nose and throat (ENT) surgeon in conjunction with a speech therapist for prehabilitation and rehabilitation. Tracheal appearance can be altered by tracheal shave for Adam's apple reduction or tracheal augmentation with rib cartilage transplant.

Conclusion

There are many available options for gender-affirming surgery. Appropriate pre-operative preparation, including a discussion about realistic expectations and risk of complications, will allow transgender individuals to make informed decisions and maximise positive long-term outcomes.

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LGBTQIA gynaecological screening

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Current cervical cancer guidelines clearly state that screening should be offered to all people with a cervix over the age of 25 who have ever been sexually active; however, the LGBTQIA community have consistently been, and remain, under-represented in screening and over-represented in cancer statistics.

Sexual or gender minority status is not routinely collected in official morbidity and mortality data sources, so there are no published data on cervical cancer incidence and mortality among gender and sexually diverse people. Various studies suggest the prevalence of cervical cancer may be slightly higher in lesbian and bisexual women than in heterosexual women, however, there is no consensus and study populations vary considerably.

Reported rates of cervical cancer screening are variable among lesbian and bisexual women. Hyde found the overall screening rate was lower for lesbian and bisexual women than the general population in Western Australia,[1] but an earlier sample of lesbians in Australia found similar screening rates to the general population.[2] The 2016 Sydney Women and Sexual Health (SWASH) survey showed women who had never had sex with a man were 2.5 times more likely to have never been screened, compared to those who had ever had sex with a man.[3]

Reasons for this under-servicing include: misinformation about perceived risk among both patients and clinicians; the impact of discrimination and negative experiences of healthcare on people who need screening; and overall lower utilisation of sexual and reproductive health services by LGBTQIA people. Barriers to screening are even higher for transgender patients than for cisgender lesbian and bisexual women.[4]

A 2016 survey of LGBTQIA people with a cervix by PapScreen Victoria found that 23 per cent had never had a Pap test; 28 per cent said 'I don't think I need one'; and 20 per cent were concerned about homophobia and transphobia.[5]

Gaps in the knowledge of clinicians is explained, in part, by a lack of training and the paucity of appropriate, population-based data. However, clinicians' personal beliefs about sexual or gender orientation may also be pathologising and form a major barrier to patient disclosure within consultations.[6] Cervical screening is more common in women who have disclosed their sexual orientation to their clinician than those who have not.[7]

Human papillomavirus transmission and risk

The presence of cervical dysplasia in lesbian women who have never had sex with men has been documented since the early 1980s.[8] An Australian study found no difference in the prevalence of abnormal cervical cytology and cervical intraepithelial neoplasia between women who had sex with women and controls, including women with no history of male partners.[9]

The Australian National Cervical Screening Program acknowledged the need to encourage lesbians to have cervical cancer screening in 1995, and the 'Lesbians Need Pap Smears Too' campaign was launched in Victoria the following year. However, a Western Australian study showed that lesbian and bisexual women continued to encounter healthcare workers who believed screening to be unnecessary for them.[1]

Human papillomavirus (HPV) transmission occurs through contact with infected genital skin, mucous membranes, bodily fluids and skin-to-skin contact with the genitals or anus of an infected person. Therefore, sexual activities between women, that may include genital rubbing, digital penetration or sharing devices, are risks for HPV infection and cervical cancer. In addition, women who have sex with other women are rarely motivated to use barrier protection.[2,10]

While evidence for transmission of HPV between female sex partners clearly exists, clinicians must also understand that a significant number of women who have sex with women (WSW) have also had sex with men, and many continue to do so.[10] This is especially true of older women who are much more likely to 'come out' later in life. The median number of lifetime male sexual partners may also be significantly greater for WSW than controls.[9]

Co-factors in HPV infection

Several co-factors are known to increase the risk of persistent HPV infection and lesbian and bisexual women may experience higher rates of these, especially higher body mass index scores, alcohol intake and smoking history.[11] Bacterial vaginosis (BV) rates are higher in lesbian and bisexual women, and BV is known to increase risk of other STIs.[9]

Uptake of HPV vaccine

It stands to reason that, if lesbian and bisexual women are an under-served group at risk for HPV infection, their uptake of the HPV vaccine may also be lower than the general population, especially voluntary uptake among older cohorts prior to routine vaccination in Australian schools. Australian data suggests significant demographic variation in HPV vaccination uptake, but it is not specific to LGBTQIA people.[12] The 2016 SWASH survey found that over half (57 per cent) of young women aged under 27 years (who would have had access to free vaccination) had received at least one dose, but only 29 per cent reported completing three doses. This reported coverage is much lower than that for surveys of the general population, where over 50 per cent of eligible women believed they had the full three doses.[3]

Cervical screening for trans men and intersex people

Intersex people are born with physical or biological sex characteristics that are more diverse than stereotypical definitions for male or female bodies. While there are many underlying anatomical and physiological causes of intersex conditions, the clinician needs to understand that the intersex person who presents to them may need cervical screening, prostate examinations or mammograms; some people may need a combination of these.

The Darlington Statement[13] states that 'national screening programs and computerised systems must recognise the needs of people born with intersex variations.' The clinician must be prepared to screen the organs that are present to reduce cancer risk. The same applies to the needs of transgender people.

There are many transition pathways for female to male transgender people. Some will choose only to alter their gender presentation. Others will choose a medical transition using masculinising hormones and others will choose surgical interventions, but genital reconstructive surgery is less common among trans men than in people transitioning from male to female. Many trans men will have intact female reproductive organs and external genitalia that may or may not be affected by exogenous hormones. Apart from cervical screening, they may also need advice on controlling vaginal bleeding and contraception.

The incidence of cervical cancer in trans men is unknown. Cervical screening should continue according to standard guidelines if a total hysterectomy has not been done. However, collecting cervical samples by traditional methods may be difficult, as vaginal examination is often unacceptable if there is dysphoria about natal genitalia and vaginal penetration may never have occurred. Testosterone may cause atrophic vaginal changes and cervical samples have higher rates of unsatisfactory cytology.[4] The introduction of HPV testing as the primary screening tool offers benefits to transgender men, especially the potential for self-collection of specimens.[14]

The Australian and New Zealand Professional Association for Transgender Health (ANZPATH) offers training in the care of transgender patients. Clinics, such as the AIDS Council of NSW (ACON) Check OUT Clinic in Sydney, or Thorne Harbour Health Equinox Gender Diverse Health Service in Melbourne, now provide free, culturally appropriate services to anyone with a cervix.

Encouraging disclosure

LGBTQIA people frequently report negative healthcare experiences, which leads many people to conclude it is better not to disclose their sexuality or gender identity. However, disclosure improves the patient-clinician relationship and has been shown to have a positive impact on the health of LGBTQIA people. Positive disclosure results in greater patient satisfaction and an increased likelihood of accepting routine screening.[4]

In order to ensure all patients have access to appropriate screening, clinicians need to create a safe therapeutic environment that encourages disclosure. While facilitating disclosure should ideally be a shared responsibility between patient and doctor, in reality, the power lies in the hands of the clinician.

While a large proportion of LGBTQIA people have positive healthcare experiences, many feel their clinicians are uncomfortable, prejudiced or overtly condescending after disclosure of their sexual orientation. Many people fear that disclosure may lead to mistreatment or denial of care. It is not uncommon for transgender people to report being denied care because of their transgender status.[6] Non-disclosure for fear of discrimination also leads people to conceal other important clinical issues, such as depression, sexual abuse, abnormal vaginal bleeding and intimate partner abuse.[8]

A systematic review of the healthcare experiences of Australian women who identified as LGB found that major concerns included:

- Assumptions of heterosexuality
- Communication barriers (for example, provider discomfort)
- Poor provider knowledge
- Lack of LGB-specific resources and referral networks.[15]

For people who are transgender or intersex, access to clinicians who are knowledgeable about their specific health issues is one of the most reported barriers to care.

McNair and colleagues[15] found the majority of LGB women preferred to be asked about their sexual orientation by their doctor, but almost all of the doctors preferred to be told. Many doctors believed non-disclosure created an optimal patient-doctor relationship, through 'colour-blindness' or 'treating everyone the same', but very few of the women shared this view. This attitude demonstrates not only a lack of understanding by doctors of the barriers to care experienced by LGBTQIA patients, but also denies patients the opportunity of having their specific health needs addressed.

Clinicians need to be vigilant about identifying people who are not up to date on cervical cancer screening or who have not followed up after an abnormal screening result. Simple ways of facilitating disclosure and creating a supportive environment include:

- Positive acknowledgement when a patient discloses
- Using gender-neutral language and asking screening questions that do not discriminate against any individual or group
- Incorporating routine questions about sexuality and gender identity and asking all patients, regardless of sexual preferences or identity.

For example, 'Do you have a partner? Is your partner male or female?' or 'What are your preferred pronouns?'

- Not making assumptions about gender identity, sexuality or sexual preferences. There is significant diversity in sexual preference and behaviours among the LGBTQIA community. Gender identity does not define one's sexual orientation
- Providing resources and referral options that are LGBTQIA-friendly, including displaying LGBTQIA symbols and health promotion materials, having inclusive intake documentation, and non-discrimination policies for all staff.

Conclusion

Improving health outcomes for LGBTQIA people is a simple combination of good medical practice and patient-centred care: find out who the person in front of you is and treat them with respect, sensitivity and humility. Don't make assumptions, commit to learning what you need to know and don't be afraid to ask questions.

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Resources

Service accreditation (The Rainbow Tick): www.glhv.org.au/LGBTIQ-inclusive-practice.

ANZPATH Trans, gender diverse and non-binary (tgdnb) online training module: www.anzpath.org/education/.

Wavelength, a free open access medical education resource on lesbian, gay, bisexual, transgender, intersex and queer (LGBTIQ) health: www.wavelengthmeded.org/.

Takatāpui

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Whānau a Kai, Ngāti Oneone, Te Aitanga a Mahaki, Rongowhakaata, Ngāi Tāmanuhiri
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Takatāpui is an ancient Māori term from the traditions of the Indigenous people of Aotearoa New Zealand. It means 'intimate companion of the same sex'. Since the early 1980s, this term has been embraced as an identity by Māori with diverse gender identities, sexualities and sex characteristics, including whakawahine, tangata ira tane,[1] lesbian, gay, bisexual, trans, intersex and queer. Takatāpui emphasises Māori cultural and spiritual identity as equal to, or more important than, gender identity, sexuality or having diverse sex characteristics.[2]

A lack of population data on gender identity or sexual orientation limits the resources and funding necessary to identify and address those issues specific to takatāpui and, even more specifically, to takatāpui who identify as women. In its absence, we are collecting our own data and extrapolating from those findings.[3] The term 'woman' in relation to takatāpui identity is wonderfully complex. An inclusive definition would denote all woman-identified takatāpui who may be cis-gendered (assigned female at birth), trans, trans feminine or intersex. Others who were assigned female at birth may identify as trans men, gender diverse or intersex. For this purpose, I will use the term 'female-bodied' to denote people who would require health services related to obstetrics and gynaecology. These people could be cisgendered women, trans men, intersex or gender diverse people.

Te Whare Tapa Whā health model

As takatāpui is a Māori identity, I use the holistic Te Whare Tapa Whā health model.[4] It identifies four interlocking taha (sides or dimensions) to the whare (meeting house) of Māori health and wellbeing: taha wairua, taha hinengaro, taha tinana and taha whānau.

Taha wairua

Wairua refers to the spiritual dimension; the relationship with deities or higher beings, ancestors and the land; our interconnectedness with all things in the universe. For those who are woman-identified and female-bodied, it infers a direct relationship with Papatūānuku, our Mother Earth.

Our conviction of who we are comes from wairua; that drive to identify and find expression for our true selves regardless of the gender we were assigned at birth. It is wairua that drives us to make changes to our physical selves to align with our spiritual awareness. I believe that trans, intersex and the gender diverse are modern day versions of tipua; spiritual and magical creatures who could change gender and form. However, the binary world in which we live reserves particular prejudice for those who dare to subvert its arbitrary boundaries. The wellbeing of takatāpui is severely compromised when their wairua is trampled on through discrimination, rejection and institutionalised heterosexism.

Taha hinengaro

Taha hinengaro refers to the psychological dimension; emotional and mental health. Māori already suffer from the historical trauma and institutionalised racism brought to us by colonisation. Discrimination against takatāpui because of their sexual orientation, gender identity or expression, or sex characteristics, as well as the associated stigma, isolation and secrecy, are likely to cause chronic stress.[5]

Discrimination, isolation and fear of rejection from whānau (family) takes a toll on the mental health of takatāpui, but especially on those who are young. Same and both-sex attracted young people are four times more likely to experience significant depressive symptoms and five times more likely to have attempted suicide in the previous 12 months.[6] Trans young people are four times more likely (41 per cent) to experience significant depressive symptoms and five times more likely to have attempted suicide in the previous 12 months.[7]

Rainbow communities struggle to access mental health and addiction services. Where services are available, in some cases, they are unhelpful or unsafe, due to inadequate staff training, inappropriate policy settings, exclusionary environments or lack of appropriate referral pathways.[8]

Taha tinana

Taha tinana refers to the physical dimension; the body itself. Takatāpui share the common Māori experience of growing up variously with violence, sexual abuse, neglect and alcoholism. They are also likely to suffer bullying and violence in other parts of their life because of their diverse genders, sexualities or sex characteristics. That increases the likelihood of the harmful use of alcohol and drugs, or physical and sexual violence.[9]

Trans, intersex and gender diverse people face significant barriers in accessing gender-affirming healthcare, which may include counselling, hormone therapy or surgery.[10] Transphobic discrimination routinely reduces people to their genitalia. In an already intimate and vulnerable situation, there may be additional discomfort because their physical self does not align with their own identity, or match the health practitioner's expectations.

The assault on the bodily integrity of many intersex people starts at birth and some intersex variations may not become apparent until a person is trying to conceive. Ethical, medical and human rights concerns have been raised[11] about medical and

surgical practices on intersex infants and children, when they are too young to provide informed consent. The need to repeal these so-called 'genital normalising' practices is urgent. The work of the Intersex Roundtable has led to establishing a national intersex clinical network through the Paediatric Society of New Zealand. This world-first network will collect accurate population data and produce medical guidelines for ensuring the bodily integrity of intersex children.

Intersex adults tackle comparable barriers to those who are trans or gender diverse when trying to access general medical care or surgical support. Activists and largely unfunded non-governmental organisations continue to provide guidelines, support and advice to agencies.

Being Māori, takatāpui who are female-bodied share higher rates of cervical cancer. In a 2012 study, Māori females had a registration rate twice that of non-Māori females (RR 2.06, CI 1.64–2.58), and the mortality rate for Māori females was about 2.5 times that of non-Māori females (RR 2.57, CI 1.70–3.90).[12] Recent studies have also shown that gynaecological recommendations often do not include clinical considerations specific to trans patients. This increases risk of HPV and other sexually transmitted infections, creates barriers to care and limits recommendations for cervical cancer screening and other appropriate sexual and reproductive health services.[13]

Taha whānau

Taha whānau refers to the family dimension. Ideally, the family home is where children grow up safe and loved, learn a sense of belonging and gain skills in building connections and relationships. Where dysfunction, strained relationships and abuse already exists, anything that threatens the 'normality' of home life could be traumatic, as in the case of someone identifying as takatāpui.[14]

As we grow older, we have more options for creating our own whānau and support. Not so for our young people. The fear of rejection is daunting, so it often takes a while for takatāpui youth to raise the courage to tell their whānau. They may experience guilt, embarrassment, isolation, fear, depression, anger and hopelessness. When takatāpui youth disclose their diverse sexuality or wish to transition from the gender they were assigned at birth, some whānau may experience shock, embarrassment, denial, a justified fear for their safety, feelings of conflict, and a particular grief that someone wants to transition. Each case will be different and whānau need support to go through that journey with their takatāpui members.

Moving on

In Aotearoa New Zealand, and throughout the world, great progress has been made through the efforts of LGBTQIA activists and our allies. However, we are still paying the price of having diverse genders, sexualities and sex characteristics with our health, our livelihoods and our lives. If you are wondering how you could make a difference, here are some thoughts:

- For many Indigenous people, migrants, refugees and others, their culture and spirituality may be as (or more) important than their gender, sexuality or sex characteristics.
- Respect the identity, pronouns and body of the person presenting to you without judgment. You may be the first health professional to do so.
- Spirituality is often intertwined with, and guides, takatāpui identity. That strong sense of self is fundamental to improving health and wellbeing. Consider how welcoming your space is to all of those who are female-bodied and the range of spiritual beliefs they may hold.
- Mental health issues affecting takatāpui are not because of their diverse genders, sexualities or sex characteristics, but rather the discrimination they face because of it. Aim to provide a safe service that recognises and includes LGBTQIA issues and expertise in your policy, training and professional development.
- Access guidelines on supporting parents with intersex babies before you need them. You may be the only ally the family has.
- Whānau is critical to takatāpui health and wellbeing. Depending on where a whānau may be on their journey to acceptance, always ensure you gain the voice of young people, who may be silenced by them.
- If you are not already connected to LGBTQIA communities, contact some health advocates and introduce yourself to them.

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Tekwabi Giz National LGBTI Health Alliance

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Painting the landscapes of two worlds brings together journeys of individual survival and cultural resilience. The world of cultural pride and deep ancestral song lines passed down from our old people, generation after generation. Then there is the world that you (the reader) know as diversity. Sexuality, gender identity and self-exploration; connecting ways of belonging, knowing and being comfortable and proud in our skin to travel through community, strong in spirit and proud of our identity. The language with which we describe ourselves is core to this meeting of worlds. It is our connector and our divider. It is impossible for anyone who does not live this journey to hold onto the complexities that it brings. We are always the educators. People are keen to read and learn, to implement change where they can within agreements and budget. However, our ability to look after our mob in the ways that we know work do prevent suicide, do prevent self-harm, do understand that multi-generational histories are absolutely gutted. This means that good intent has the ability to cause more harm than good.

In my experience, I have connected with many Aboriginal and Torres Strait Islander LGBTIQ+ Sistergirl and Brotherboy (SB) individuals, painting landscapes of their journeys, grappling in complex generational layers of trauma, rejection, social marginalisation, sexual, physical and mental abuse, inequalities and isolation. Our experiences and voices are fundamental in all processes and solutions that aim to promote and address LGBTIQ+ health.

One of the reasons I wanted to be a part of the foundation of IndigiLez Leadership and Support Group was to create a culturally safe space for Aboriginal, Torres Strait Islander and Australian South Sea Islander lesbians, same sex-attracted and bisexual women. For women coming out of remote and regional towns in hope of settling into the broader LGBTI community, they are greeted with inequality, exclusion and racist stereotypes. Many of us women have endured these experiences in both the broader LGBTI community and within our own communities. Many of us black lesbians have survived these behaviours, but it doesn't mean we were never affected by the behaviours.

Rainbow Dreaming Retreats, an IndigiLez initiative, offer cultural ways to care for each other, to listen and reflect together, to yarn about experiences and share learnings of our journeys as black lesbians. We built our collective strengths in the face of isolation and exclusion and we empowered self-determination and hope in women's lives. At heart, my passion is always to influence and guide cultural care pathways for our mob, pathways that value solid leadership lined with authentic abundances of love and healing. Rainbow Dreaming Retreats connect cultural activities with group therapy; a divine recognition of culture, family and community as protective factors in social and emotional wellbeing, addressing both the issue and the causes.

While travelling through the LGBTI communities, I recognised the gap in social and emotional wellbeing frameworks for the Aboriginal and Torres Strait Islander LGBTIQ+SB mob; the identity gaps that deconstruct our cultural right to determine solid futures in addressing wellness spiritually, physically, mentally and socially. It was during this time I connected with a collective of support groups and people from across Australia, doing the amazing unseen through advocacy and work in their local communities for our mob. Over time, we developed a network of sharing of knowledge and localised community work in sexual health promotion, mental health and wellbeing pathways, and suicide prevention, keeping our mob connected to culture with a sense of belonging.

'Tekwabi' is from the Tiwi Islands and 'Giz' is from the Torres Strait. Tekwabi Giz means 'all of us connected'. It is a national collective of Aboriginal and Torres Strait Islander people with a passion for change and local-based knowledge of initiatives that address health, wellness and social support. Tekwabi Giz places cultural safety as paramount in wellness and at the forefront of social and emotional wellbeing. There is always pride and a sense of togetherness in localised approaches to increasing visibility of leadership, programs and projects that close the gap in health. This is what makes a solid national collective; many voices, one mob sharing the 'We, Us and Together' approach; an unselfish display of family and community cultural learnings.

The Rainbow Dreaming Retreats were the first experience for me to feel accepted and loved, regardless of my identity as a black lesbian. All of us women yarning together, crying together and laughing together, sharing our values and morals from our respective families. We become connected to a broader system of sisterhood and extended family. We shared journeys of survival of some of the most traumatic generational history. Nights around the fire and group therapy activities were not tokenistic, but rather a giving away of heart ache and pain, an accepting of the warmth of love and inclusion inside the IndigiLez group of women. Rainbow Dreaming Retreats embrace both our sexual and cultural identity through our cultural lens, being real about addressing the gap in service access and inclusion for Aboriginal and Torres Strait Islander lesbian, same sex-attracted and bisexual women.

I realised the importance of projects like the 2 Spirits Program in Queensland, which offers a connection to culture through integrating sexual health promotion, social acceptance and an awareness for Aboriginal and Torres Strait Islander LGBTIQ+SB people and their respective communities. This program displays leadership and shared learnings, identifying the importance of local and regional issues affecting the social and emotional wellbeing of LGBTIQ+SB people. Although funded for sexual health promotion, 2 Spirits responds to broader impacts on social and emotional wellbeing. The program increases continuation of cultural identity, shared cultural values and increased self-esteem through a safe and secure space.

Learning how to talk about Indigenous queer social and emotional wellbeing has been a constant conversation. It is a reminder that a commitment to building cultural capacity in Indigenous LGBTIQ+ projects draws focus on community needs, developing self-determination through local leadership and autonomy. Non-Indigenous LGBTI organisations have the opportunity to learn and support growth of cultural systems that address core impacts of homophobia, transphobia, racism, discrimination and isolation. For us mob, there is no selective focus to addressing wellness. We embrace holistic collaborative measures that create healthy benefits for all of community, 'Strong Healthy Mob, Strong Healthy Communities'.

Belonging to culture, country and community inspires togetherness and cultural resilience. In our lived experiences, these values are protective factors. With many LGBTI frameworks around, we are still to see one that aims to guide LGBTI community and stakeholders in addressing Aboriginal and Torres Strait Islander LGBTIQ+SB historical and intergenerational trauma. The wider LGBTI community need to ask themselves if their frameworks are whole-heartedly closing the gap on the disadvantages we experience in health and wellbeing. Is there a commitment to implementing cultural protective and healing factors into the work we do across the country? Social and emotional wellbeing care pathways are needed for Aboriginal and Torres Strait Islander LGBTIQ+SB people.

There is still work to do in developing culturally appropriate co-design and enshrining the leadership, capacity and capability of localised indigenous LGBTI support groups and networks at a grass roots level. It is vital to support the localised Indigenous LGBTIQ+SB community in leading the work, to ensure access to health in a way that builds the capacity of elders, stakeholders, and community-run and government organisations, to nurture visibility, progression and inclusion of Indigenous LGBTIQ+SB people. Cultural safety enhances social and emotional wellbeing. It connects our sense of belonging, a comfortable recognition of cultural values and protocols respected, in turn, creating strong spiritual and mental sources of happiness and stability. I am proud of the LGBTIQ+SB mob that keep the fire alight in the fight for equality and recognition. We strive to help make our mob the best possible version of themselves that they can be; strong in spirit, strong in mind, accepted, loved, proud of their identity and comfortable in their skin.

Glass closets and the hidden curriculum of medical school

Amy Coopes
Medical student
Journalist

I've never seen myself in the medical curriculum. Over the years, we've parsed hundreds of medical conditions, thousands of hypothetical patients, but I've never caught a glimpse of myself as anything other than a statistic.

I am the one in five same-sex-attracted Australians who have contemplated taking their lives, one in three who have self-harmed and been diagnosed or treated for depression.[1] We learn these statistics because they matter and because they are true. However, we are so much more than dehumanised stereotypes trotted out around tired tropes of mental health, sex, drugs and HIV.

LGBTI content gets very little attention in medical school; an average of 0–5 hours in preclinical years, mostly in the form of lectures with a focus on sexual history-taking or differences between sexual behaviour and identity.[2,3] Teaching on gender is sparser still. Often, this content is not taught by, or in consultation with, gay, bi, lesbian, trans or non-binary, or intersex people. It is tokenistic, overly pathologising or reductive, and can be delivered in a way that makes sex and gender diverse students feel exposed, embarrassed, ashamed and marginalised.

While some examples may be overtly problematic (classroom debates around the ethics of same-sex couples having access to Medicare-funded IVF treatments, dressing male clinical simulation mannequins in lingerie for a laugh), often, it's the more subtle slights or acts of erasure that serve to underscore medicine's tacit endorsement of the status quo, 'a hidden curriculum of heteronormativity repeatedly positioning some sexualities as normal, natural and obvious, while others (are) quietly excluded'.[4]

Most medical students can recall a few classes, mostly directed at LGBTQI-specific issues, overwhelmingly as part of sexual development and mental health modules, or teaching about HIV, domestic violence and substance abuse. Inclusion of an incidentally same-sex couple or queer/non-cis/questioning person in problem-based learning is exceptionally rare, contributing to an implicit bias among graduating doctors that equates sex and gender diversity with 'otherness', and alienates students who identify as different.

'It is often taught from a deficit perspective, what is wrong with LGBTI people. Often, gay men's health is purely framed around an HIV positive case; on lesbian health there is usually nothing,' says Dr Ruth McNair, a leading Australian and international academic in LGBTQI health. 'LGBT students and doctors report feeling out of place in the dominant culture of medicine, not able to speak out about poor patient care for fear of impacts on their careers. It remains a highly conservative profession.'

Fear around discrimination keeps LGBTQI patients in the closet (an estimated one in five people will withhold their sexuality from a regular GP).[5] This is mirrored among sex and gender diverse medical students, where research suggests one in three will conceal their identity, particularly from faculty and clinical staff.[6]

This is unsurprising, when 75 per cent of non-heterosexual medical students report experiencing or witnessing adverse treatment during their training[7] in a rigidly hierarchical, relentlessly competitive environment that discourages dissent or complaint.

'They make it seem orthogonal to the medical experience,' says one University of Melbourne medical student of her sexuality. 'I don't explicitly out myself to consultants or team members ... when doctors make The Gays seem like some "other" group of patients.'

Another medical student from Deakin University describes feeling like an outsider in a world resolutely oblivious to privilege and identity politics. 'Being the sole "out" queer woman in a cohort of very heterosexual individuals is alienating. You don't realise how much tension you carry around every day just keeping your experiences to yourself.'

The association between many medical schools and Catholic hospitals poses particular difficulties for LGBTQI students, who may feel uncomfortable, or even unsafe, being open about their identity. Trans students experience misgendering, even deadnaming, while one Catholic university has banned medical students from forming a queer group.

'As a queer woman on placement at a Catholic hospital, it's very difficult to feel comfortable identifying myself. Outside of the hospital

environment, I am very "out and proud", and most of my medical student peers are supportive of me, but even wearing a rainbow pin or lanyard around the hospital feels like a risk,' one student says.

It is often left to sex and gender diverse students to advocate for inclusion, improvements to the curriculum and to educate their peers, something that takes an enormous personal toll.

We are asked to 'come out', again and again, to account for and explain our most intimately-held parts, to defend and justify our difference, to expose ourselves to voyeuristic curiosity, well-meaning sympathy, dismissive eye-rolling, even hostility. I have cried in hospital bathrooms and quiet corners of labs after a thoughtless or overtly homophobic remark; some days I just can't face it again.

'The onus should no longer be on queer medical students themselves to provide education for their peers, organise lectures, advocate for patients and for changes in the curriculum, and support each other,' says Lauren Taylor, national coordinator of the Australian Medical Students' Association (AMSA) Queer Project. 'There needs to be a unified commitment, from the top down, that LGBTIQ health is an important part of the medical curriculum that should be standardised and assessed, and that queer medical students need to be supported.'

AMSA, in 2016, formally called on the Australian Medical Council (AMA) to incorporate cultural competence and respectful care of LGBTQI communities into its accreditation standards for medical schools, and for this to be made a core objective for graduates.[8]

For now, such matters are left to the discretion of individual universities, according to Helen Craig, CEO of Medical Deans Australia and New Zealand, the peak body representing medical schools across the two countries. 'The approach taken by each medical school to incorporating issues such as LGBTQI health varies depending on how the school structures their medical program, curricula and clinical placements,' Craig says.

Students who receive inadequate training are less confident seeing LGBTQI patients and lack basic skills around terminology, gender-affirming care and finding population-specific resources.[9] They are more likely to hold negative, stigmatising views and it is the patient who suffers.

Beyond the formative years of medical school, few specialty colleges place an emphasis on LGBTQI health within their training programs, the Royal Australian College of General Practitioners[10] being a notable exception. Angela Magarry, CEO of the Council of Presidents of Medical Colleges, says this is a matter for individual specialties.

Last year's marriage equality debate may have been something of a watershed moment, with an unprecedented number of colleges and institutions coming out in support, including a vocal campaign from the AMA.[11]

Though there is no active push for changes to training at present, AMA federal councillor and outgoing RANZCOG president Prof Steve Robson says '... it is quite possible that this issue could move forward again in due course ... the AMA strongly supports diversity in the medical workforce and, indeed, all workforces and the community. We are utterly opposed to any form of discrimination'. For Dr Ruth McNair, there is a 'long way to go'.

Discrimination is about so much more than explicit displays of bullying and harassment. It takes root in the silences of omission and assumption, and flourishes in spaces left by the unspoken and unseen.

If we are to shift the statistics, we must look to the stories beyond. After all, 'medicine is a social science', said Virchow, and 'as the science of human beings, has the obligation to point out problems and attempt their theoretical solution.'

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Australia's queer history

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In a sense, colonial Australia was founded on homophobia. When Captain Arthur Phillip stepped ashore at Camp Cove, at the entrance to Sydney Harbour, on 26 January 1788, he would hardly have envisaged the type of diverse society that was to grow out of the convict settlement he was about to found and govern. It is certain that Phillip, generally regarded as a product of the European Enlightment, could not have forseen that such a society would comprise recognised communities of gay men and lesbians. After all, the concepts of homosexuality and 'the homosexual' were not to be conceived for another 81 years and gay liberation lay a further 100 years beyond that.

Phillip, of course, shared the prejudices of his time in his attitude towards men whom he thought of as 'sodomites'. (I imagine that women as people with sexual feelings, let alone as lesbians, would have been beyond his imagination.) Hence, on 28 February 1787, he wrote to the Colonial Secretary, Lord Sydney, in London that, in the new colony:

'... there are two crimes that would merit death; murder and sodomy. For either of these crimes I would wish to confine the criminal till an opportunity offered of delivering him as a prisoner to the natives of New Zealand and let them eat him. The dread of this will operate much stronger than the fear of death.' [1]

There were at least four executions in New South Wales up to 1836, the year after the UK abandoned the death penalty for this crime, and possibly another six executions in Tasmania. Indeed, the last white man executed for sodomy in the British Empire was Hendrick Witnalder in Hobart in February 1863.[2]

In 1727, even before British settlement, two sailors found guilty of sodomy on the Dutch ship Zeewijk, that had foundered on what is now known as Gun Island off Geraldton in Western Australia, were sentenced to death and exiled to separate smaller islands without food or water. As Edward Duyker states in his book, The Dutch in Australia, 'Death must have been slow and full of torment.'[3]

Women were more fortunate, being anonymous in law, but still, some were subject to punishment in the Female Factories of Hobart and Sydney for 'illicit' sexual activity.

How has all of this been written out of our history? It is not until the late 19th century that we have evidence of the rise of a nascent male homosexual subculture, particularly in Sydney. On 24 April 1895, The Scorpion, a scandal sheet, when reporting on the Oscar Wilde trials in London also carried an article on The Oscar Wildes of Sydney.[4] Among its claims were that:

'... the state of things in London as regards this horrible vice is also the condition of affairs in Sydney. It is idle for people to shut their eyes to this fact. It has been planted here by the English exiles. The men who escaped the Cleveland-street prosecution found shelter in Australia, and there are many of them at present in Sydney.'

The 'Cleveland-street prosecution' is a reference to a celebrated raid on a London homosexual brothel in 1889. The article goes on to claim that:

'... many of the leading hotels and billiard saloons are haunted by these characters, whose presence is advertised by effeminate style of speech, and the adoption of the names of celebrated actresses.'

More importantly, the article continues:

'... a haunt is said to exist in Bourke-street, Surry Hills and that part of College-street from Boomerang-street to Park-street is a parade for them.

Although we know of arrests in Hyde Park from the 1870s, this is the first evidence of a beat and one that continued to operate into the 1960s. If this were so of Sydney, then it was also of Melbourne, the second city of the Empire and the largest on the Australian continent. In smaller cities, such as Adelaide, it is only in the period between the wars that we have solid evidence of similar groups.

The inter-war period also saw the first evidence of urban lesbian subculture in Sydney and Melbourne. The devastating effect of the war and the loss of so many men meant that women-only social groups, particularly sporting groups, weren't frowned upon. It wasn't readily noticed that some consisted only of lesbians. In smaller cities, the women and men often mixed socially.

Women weren't subject to the draconian strictures of the law. Even if no longer a capital offence, the crime of sodomy was given harsh sentence. Following the lead of the UK, which saw the crime of 'indecent assault' in 1885, (the crime which Oscar Wilde was convicted of), the Australian colonies, over a period of time, followed suit. No longer did authorities have to prove penetration to obtain a conviction. The new offence led to an increase in convictions. Later in the 20th century, a further offence of 'soliciting for immoral purposes' was added that saw a further rise in conviction rates across the country.

The period after the Second World War saw an emphasis on conformity in all aspects of society. Women, for example, liberated by jobs undertaken during the war, were forced back into the home to undertake the role of domestic servants. Any sense of sexual liberation was harshly resisted. This applied particularly to homosexual men.

In the words of historian Garry Wotherspoon, homosexual men were 'naughty, sick and sinful', and with regard to the latter, generally remain so.

Police had the role of enforcing said conformity, particularly in NSW. In 1958, the Police Commissioner Colin Delaney, a devout Catholic with security service connections and a homophobic obsession, claimed that 'homosexuality was Australia's greatest menace'.[5] Hardly a balanced perspective, one could conclude. The police force took its cue from the Commissioner and the post-war period saw a crack down on homosexuals, with police even acting as agents provocateur at recognised beats. The 'camp' community, as homosexual men came to self-identify, referred to them as 'pretty policemen' or 'lily law'.

It is in the post-war period, particularly by the mid-1960s, that we can truly talk about 'a community'. By then, there were social clubs such as the Pollynesians, which still functions, the Boomerangs, and others. There were recognised pubs in King's Cross, such as The Rex and the Quarter Deck bar at the Hilton Hotel, and a wine bar in Bondi Junction. Then, in 1969, Ivy's Birdcage opened in Taylor Square and that marks the beginning of Oxford Street as Sydney's gay 'Golden Mile', as other venues opened during the 1970s.

However, in society at large, the stereotype of homosexual men as high-pitched, limp-wristed queens persisted.

It is the medical profession that first heralded a change in society's attitude. Psychiatrists in the 1950s and 60s came to see homosexual men as subject to illness and in need of help. A more humane attitude developed, but it was misguided. Some doctors assisted in judicial torture (aversion therapy, even lobotomies, particularly on lesbians), sometimes at the behest of the courts when convicted people were given the option of an attempted 'cure' rather than incarceration.

By 1973, the medical profession began to shift its attitude, assisted by the declaration of the Royal Australian and New Zealand College of Psychiatrists that homosexuality was no longer a mental illness, the first such body in the world to do so. The Americans followed suit in 1974.

By then, another phenomenon had risen in Australian society; gay liberation. The Homosexual Law Reform Society of the Australian Capital Territory was set up in Canberra for some months in 1969; however, while homosexual people were members, the spokespeople were heterosexual. Similarly, the Australian Lesbian Movement, which was established in early 1970 as a chapter of the Daughters of Bilitis, was a closed support group for lesbians in Melbourne with a non-lesbian woman as its spokesperson. There were no real publicly identified homosexuals (though people in the arts and theatrical professions were whispered about or sniggered at).

It was, therefore, something of a shock to most Australians to read in The Australian newspaper of 10 September 1970 of the formation of an organisation, Campaign Against Moral Persecution Incorporated (CAMP Inc), dedicated to removing the stigma that society attached to homosexuality. The name was deliberately chosen to give an Australian flavour to the organisation, as 'camp' was a word of self-description within the homosexual community while 'gay' was not. Even more surprising was the openness and bravery of CAMP Inc's founders, John Ware and Christabel Poll, in agreeing to be interviewed and photographed for a feature article, again in The Australian, on 19 September 1970. In John Ware's own words, 'the media went mad'.

John and Chris had begun a movement in Australia that is still with us. Not that John and Chris foresaw these outcomes. Indeed, their own aims were quite modest. John had come out of academic psychiatry where, as a student, he had difficulties reconciling the established medical view of homosexuality as an illness with the reality of his own life. (He was happily settled with a lover, as was Christabel.) They both looked to the formation of a small group that would be knowledgeable about current thinking on homosexuality and be able to respond publicly, putting forward an informed gay viewpoint.

The announcement of the formation of CAMP Inc also brought an unexpected response. It was the extraordinary amount of correspondence the group began to receive that gave the founders some inkling that what they had started might be bigger than they had imagined.

On 6 February 1971, the first public gathering of homosexual men and women took place in a small church hall in Balmain, then the heart of Sydney's counter-culture. Chris and John were confirmed, more by default than anything else, as convenors and spokespeople and CAMP Inc was properly launched. By the end of February, other branches of CAMP had formed in Brisbane and Melbourne (where it was known as Society 5), as well as on the campus of the University of Sydney. By the end of the year, branches had been established in all capital cities and on most campuses. CAMP Inc became known as CAMP NSW.

Each of the organisations was like an umbrella group. Most activity was carried out in the various subgroups concerned with law reform, married gays, religion and social activities. Eventually, counselling was also added to the list of activities.

Each of the organisations was quietly reformist rather than revolutionary. Quite early on in Sydney, John Ware stated that it would be years before we saw the first homosexual demonstration in Australia. However, he was wrong. On 8 October 1971, some 70 people demonstrated outside the Sydney headquarters of the Liberal Party in support of the pre-selection of Tom Hughes, then Federal Attorney-General. He was facing a right-wing challenge from well-known homophobe, Jim Cameron, following comments Hughes had made in favour of homosexual law reform. The demonstration was bright and cheerful and marked an important milestone in the history of gay liberation. CAMP Inc proclaimed that 'October was the month when we came of age, politically.'

Some younger more radical members of CAMP NSW disagreed. They had become dissatisfied with the 'reformist' approach of the organisation and, in July 1971, formed themselves into a gay liberation cell within CAMP. The more radical politics and ideas of the Gay Liberation Front in the United

States had already begun to come to Australia. An uneasy relationship began to grow between this cell and CAMP NSW. Its outspoken radicalism and counter-cultural outlook were alienating to the general membership of CAMP. In January, Sydney Gay Liberation (SGL) declared itself a separate organisation. Thus began the political diversity of the gay movement in Australia. By March 1972, a Gay Liberation Front had been formed in Melbourne and gay liberation groups were established on campuses and in other state capitals. Relations between CAMP and Gay Liberation remained strained for the next couple of years.

The early years of gay liberation in Australia were enthusiastic, energetic and spectacular, at least for the participants and, one suspects, a bewildering spectacle for the population and the media. Yet, with the formation of CAMP Inc in 1970, gay liberation in its broadest sense had been permanently placed on the social agenda, not to be removed. 'Coming out' became not only a personal statement but a political one as well. The commitment which the activities of those years engendered in many of the participants ensured their involvement, often in their own small way, in the life of the gay and lesbian communities even to today.

The story of gay liberation in Australia from 1970 onwards is a spectacular one. In the course of 50 years, homosexuals have come from being pilloried to plighting our troth. It is a wonderful Australian good news story that should be celebrated nationwide.

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Reproductive carrier screening

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Antenatal screening for chromosome disorders is an established part of reproductive care in Australia. Although the combined risk of chromosome abnormalities rises markedly with maternal age (Figure 1), younger mothers have more babies than older mothers, and the overall outcome is that the majority of pregnancies with a chromosome disorder occur in mothers under 35 years of age. For this reason, screening for chromosome disorders in pregnancy should be offered to mothers, irrespective of maternal age.

The great majority of these chromosome disorders are new abnormalities that have occurred after conception. These are not inherited disorders and genetic testing of the parents would provide little indication of the risk of a chromosome abnormality. For this reason, screening for chromosome disorders in pregnancy should be offered to all mothers, irrespective of family history.

Universal antenatal screening for recessive genetic disorders

Chromosome disorders are not the only type of genetic condition that can affect the developing fetus. Many serious childhood disorders are due to recessive mutations that have been inherited from parents, with the parents being unaffected by these mutations. A parent who is a carrier of a recessive mutation on an autosome, that is, chromosomes 1-22, has one normal and one abnormal copy of a gene, and will not usually be affected by the abnormal gene. Everyone is a carrier for one or more recessive disorders; this is of no immediate consequence and there is usually no family history of the disorder.

The situation changes if both parents are carriers of mutations in the same autosomal gene. The chance of their child inheriting the abnormal gene from each parent, and so developing an autosomal recessive disorder, is 25 per cent. The situation is similar for a woman with a recessive mutation on one of her X-chromosomes: each of her sons is at 50 per cent risk of inheriting the abnormal gene and being affected, and half of her daughters will be carriers. Overall, the risk of a woman who is an X-linked carrier having an affected child is approximately 25 per cent.

The risk of a recessive disorder does not vary with maternal age and, although the mutations are inherited, there is usually no family history to provide a clue of this risk. For mothers under 30 years of age, the risk of having a child with any one of just three common disorders (cystic fibrosis, spinal muscular atrophy or fragile X syndrome) is greater than the risk of having a child with one of the autosomal trisomies, Turner syndrome (45,X) or Klinefelter syndrome (47,XXY) (Figure 1).

This presents an opportunity to move beyond antenatal screening for chromosome disorders, and to begin tackling the risk of recessive disorders. While screening for recessive disorders raises some issues that are very different from screening for chromosome abnormalities, there are two crucial points at which the principle is the same:

- Reproductive carrier screening should be offered to all mothers, irrespective of age and family history. This is reflected in the recent RANZCOG Statement on prenatal screening for genetic conditions (see Box 1).
- A woman is free to accept or decline carrier screening, and is free to use or ignore the information provided by the test. The goal of antenatal screening, whether it be for chromosome or recessive disorders, is to allow the patient to make her own informed choices.

Clinical features of cystic fibrosis, spinal muscular atrophy and fragile X syndrome

Approximately six per cent of people are carriers of one or more of these conditions and 0.6 per cent (one in 160 couples) are at 25 per cent risk of having an affected child. A summary of these disorders is shown in Figure 2. The three conditions carry serious consequences for the affected child, whether that be in terms of life-long respiratory compromise, limited lifespan or intellectual disability. In general, those shown to be carriers of these disorders are unaffected, with the key proviso that carriers of the fragile X mutation can develop ovarian failure or

Box 1. RANZCOG Statement, July 2018.

Prenatal screening and diagnostic testing for fetal chromosomal and genetic conditions

Recommendation 15
Information on carrier screening for the more common genetic conditions that affect children (e.g. cystic fibrosis, spinal muscular atrophy, fragile X syndrome) should be offered to all women planning a pregnancy or in the first trimester of pregnancy.

a neurodegenerative disorder in adult life. Those who are not identified as carriers may still be at risk, albeit very low risk, of being carriers due to an undetected mutation.

Managing reproductive carrier screening

Testing for mutations in the parents presents both an opportunity and a challenge. There is an opportunity to test prior to pregnancy. This is by far the best time for the test to be done, as it gives the couple time to review the result and make informed reproductive choices. A couple who is shown to be at 25 per cent risk of having an affected child can consider the use of donor egg or sperm (as appropriate), pre-implantation genetic diagnosis or prenatal diagnosis, or they may simply accept the risk that has now been clarified.

The challenge is that many women do not seek medical advice until they are pregnant. Pregnancy provides a convenient trigger to raise the matter of carrier screening, but it leaves little time for considered reflection of the results and the pre-conception options are no longer available. A couple who is shown to be at high risk of having an affected child can, within a limited time frame, consider prenatal diagnosis, or they may simply accept the risk that has now been clarified.

General practitioners are best placed to identify women who may be planning a pregnancy and to raise the possibility of reproductive carrier screening. Obstetricians may be able to raise the issue with women within the first trimester, recognising that the window of opportunity to clarify carrier status of the partner and arrange prenatal testing is closing rapidly. However, obstetricians are uniquely well placed to raise the issue postnatally, offering the couple the opportunity for carrier screening prior to their next pregnancy. Reproductive carrier screening need only be done once, but there is no need for it to be restricted to a couple's first pregnancy.

Carrier screening can be done sequentially or simultaneously. Sequential testing refers to testing the woman first, and only testing her reproductive partner if she is identified as a carrier of an autosomal recessive disorder. This has the advantage of being cheaper (on average), but slows the process because the partner must be recalled for testing. This may not be a major issue if the couple are having pre-pregnancy testing.

Simultaneous testing involves both partners at the same time. This has the advantage of speed, but it is a more expensive process. This may be acceptable for couples who want a prompt result, for example, for those who are already pregnant.

Reproductive carrier screening does not replace long-established recommendations, such as taking a family history and reviewing a blood count for evidence of thalassaemia carrier status. If there is a family history of a genetic disorder, the couple should be referred for genetic counselling and tested specifically for that disorder, as the key mutation may not be detected by a screening program.

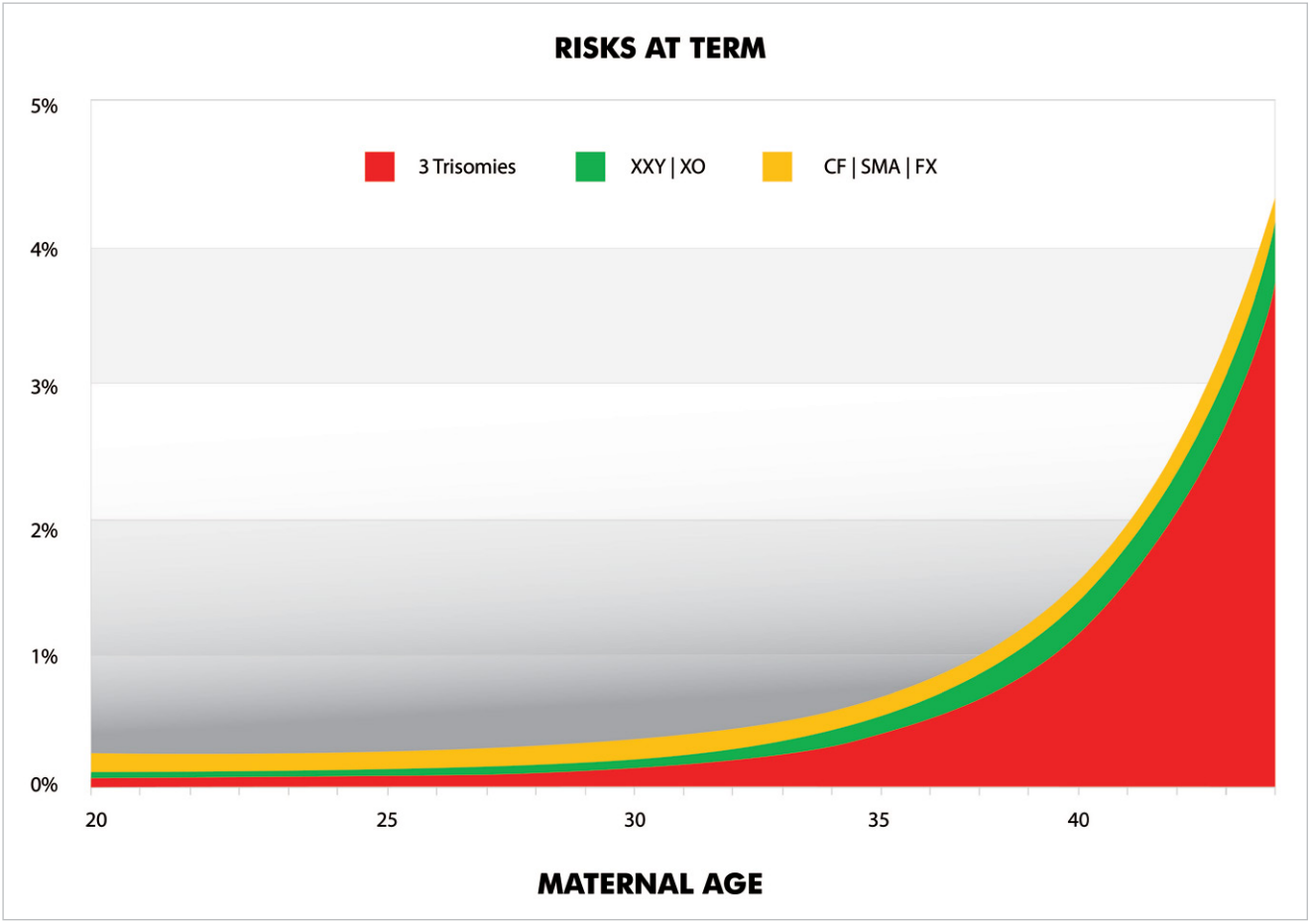

Figure 1. Risks of different genetic disorders at term.

Genetic counselling

Some providers offer free genetic counselling for couples identified as being at high risk of having an affected child. Services can also be accessed through public and private providers nationally (www.hgsa.org.au/asgc/find-a-genetic-counsellor and www.sonicgenetics.com.au/counsellingservices, respectively).

Expanded reproductive carrier screening

There are hundreds of inherited autosomal and X-linked recessive disorders that present in infancy and early childhood. These disorders are individually rare, but together, they are more common than the combined impact of chromosome disorders and the three common disorders already mentioned. Until recently, the only way of identifying carriers of rare recessive disorders was in hindsight, after diagnosing a recessive disorder in their affected children. This has now changed. It is possible to screen a couple for recessive mutations in hundreds of autosomal and X-linked genes. This screening test is called expanded carrier screening. The performance of different expanded carrier screening panels varies, with up to 70 per cent of individuals being identified as carriers, and up to three per cent of couples being shown to be at high risk of having an affected child.

The cost of reproductive carrier screening

The cost of a three-gene panel screening for cystic fibrosis, spinal muscular atrophy and fragile X syndrome is A$350–400 per person. There is no Medicare rebate. However, there are exceptions (and restrictions) for people with a documented family history of a specific mutation causing cystic fibrosis or the fragile X syndrome.

The cost of expanded carrier screening ranges from a few hundred dollars to more than $1000. This cost is not rebated by Medicare. The Australian Federal Government is currently funding a trial of expanded carrier screening, Mackenzie's Mission, to determine the cost and benefit of providing this screening as a national funded program.

Conclusion

It is accepted practice that every woman is offered screening for chromosome disorders in pregnancy, irrespective of age and family history. Every couple should also be offered reproductive carrier screening for recessive disorders, irrespective of age and family history. For younger mothers, the risk of their child having a recessive disorder is greater than the risk of a chromosome disorder. Offering reproductive carrier screening simply represents good medical practice.

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Conflict of interest

Prof Suthers is an employee of Sonic Healthcare, who provide reproductive carrier screening tests for the three common disorders and an expanded screen for over 300 disorders.

	CYSTIC FIBROSIS	SPINAL MUSCULAR ATROPHY	FRAGILE X SYNDROME
AFFECTED CHILD	Autosomal recessive Lung disease Pancreatic insufficiency Treatment, but no cure Affects ~1:2500 children	Autosomal recessive Progressive weakness If severe, respiratory failure Treatment, but no cure Affects ~1:5000 children	X-linked Intellectual disability in both females (mild) and males (worse) Interventions, but no cure Affects >1:5000 children
PARENT SHOWN TO BE A CARRIER	1:25 Caucasians are carriers Carriers are unaffected	1:35 people are carriers Carriers are unaffected	1:250 women are carriers Complex genetics: • Male carriers with normal IQ • Female carriers with low IQ • Premature menopause • Late-onset tremor/ataxia
PARENT NOT SHOWN TO BE A CARRIER	~90% of mutations found Small residual risk of being a carrier **Other disorders not excluded**	~95% of mutations found Small residual risk of being a carrier **Other disorders not excluded**	~99% of mutations found Small residual risk of being a carrier **Other disorders not excluded**

Figure 2. Summary of clinical and genetic features of three common recessive disorders.

Renewal of the National Cervical Screening Program

Dr Louise Farrell
FRANZCOG

On 1 December 2017, the Australian National Cervical Screening Program (NSCP) moved to primary screening, with human papillomavirus (HPV) screened at five-yearly intervals for women aged 25–74 years.

Other changes in the NSCP include:

- **Standardised screening reports**
  Results are sorted into one of three categories. All cervical screening test (CST) reports are colour-coded: green for low-risk and a repeat test in five years; orange for intermediate-risk, with recommendation to repeat the test in 12 months; and red for higher-risk, where the woman should go to colposcopy.
- **Self-collection service**
  The NCSP offers the potential for self-collection for under-screened and never-screened women. Some laboratories have been accredited by the Therapeutic Goods Administration (TGA) and the National Association of Testing Authorities (NATA) to provide this service. Check with your laboratory service on availability.
- **National Cancer Screening Register**
  A National Cancer Screening Register (NCSR) is now live and operational. The register will create a national record for each Australian participating in cervical screening. To access the register to check on your patients' screening history, or to update their personal details, please call 1800 627 701.
- **Colposcopy reporting to the register**
  Colposcopists are now required to notify prescribed cervical screening information to the Chief Medical Officer within 14 days of each colposcopic episode. You can order forms from: www.cancerscreening.gov.au/cervicalforms.

These changes mark an enormous shift in the NCSP for Australia, and one that is expected to result in higher detection rates, with longer screening intervals and better outcomes for women. In combination with the HPV vaccination program, we expect that the rate of cervical cancer will fall to extremely low levels in Australia.

All information about the updated program is available in a comprehensive 300-page guideline on a Wiki platform.[1] This resource provides background information on all of the topics, as well as discussion and evidence behind the recommendations. These guidelines can be easily accessed and contain 156 recommendations. See Table 1 for an overview.

Table 1. Cancer Guidelines Wiki overview of recommendations[1]

Evidence-based recommendation
Formulated based on a systematic review of quality evidence and graded according to a National Health and Medical Research Council-approved method
Medical Services Advisory Committee (MSAC) evidence-based recommendation
Formulated after a systematic review of the evidence, indicating supporting references from 2014 review (MSAC)
NCSP recommendation
Based on NCSP policy
Consensus-based recommendation
Formulated using a consensus process when a systematic review was undertaken and insufficient quality evidence was found on which to base a recommendation
Practice point recommendation
A recommendation on a subject that is outside the scope of the search strategy for the systematic review, based on expert opinion and formulated by a consensus process.

The Australian Department of Health and the Cancer Council have produced many other resources, such as a short-form of the guidelines, with recommendations only. They have also produced FAQ sheets on many topics related to the new guidelines.

There was a breakfast session on NSCP Renewal at the 2018 RANZCOG Annual Scientific Meeting (ASM) in Adelaide. We identified some common misunderstandings in the management of women with abnormal results and those from specific populations from the scenarios presented to the audience responder session.

Discordant results

It is recognised that all tests requiring human interpretation are subject to a variation in that interpretation. This applies to pathology, as in other fields. There are a few circumstances where pathological review is very worthwhile:

- Adenocarcinoma in situ is difficult to diagnose cytologically, colposcopically and histologically
- A woman with a cytological prediction of high-grade squamous intraepithelial lesion (HSIL) may have a normal colposcopy.

The value of pathological review is acknowledged by a new item number for cytological review. Some

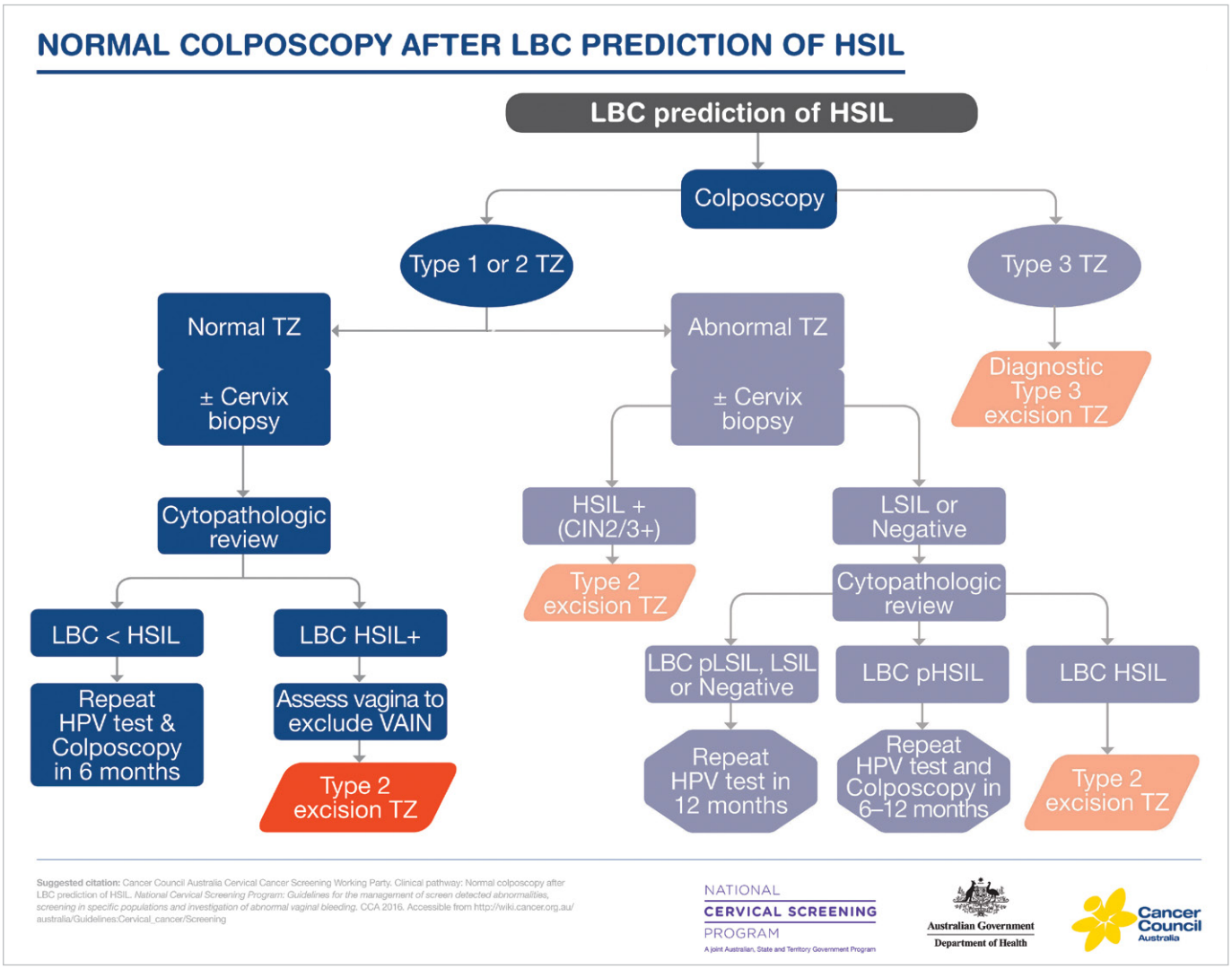

Figure 1. Normal colposcopy after LBC prediction of HSIL.

fortunate doctors have access to multidisciplinary review meetings. These are to be encouraged. It was disappointing that many of the attendees at the ASM breakfast workshop did not appear to have access to such review meetings.

If cytological review confirms the presence of definite HSIL, then it is highly likely disease is present, but it may be in the vagina, and this should be carefully examined.

Specific populations

Immuno-deficient women

This appeared to be an area of confusion in responses to scenario questions at the breakfast workshop. The new guidelines state that evidence for the safety of lengthening the screening interval in these women is unclear and, in line with other international recommendations, recommend that women be screened at a three-yearly interval. Co-testing is not recommended, as the evidence suggests it offers little additional benefit compared with HPV testing alone.

Pregnancy

There was good understanding among workshop participants that pregnant women who are due or overdue for screening should be offered it as part of routine antenatal care. The choice of tool for collection of a cervical screening specimen is the broom-type brush. Abnormalities of the CST should be referred for colposcopy as per the guidelines.

The aim of colposcopy in pregnancy is to exclude invasive disease. Cervical biopsy in pregnancy is usually not necessary, provided an experienced colposcopist is confident there is no invasive disease present. Colposcopy in pregnancy can be challenging and should be undertaken by a colposcopist experienced in assessing women during pregnancy. Definitive treatment of suspected high-grade disease, except invasive disease, may be safely deferred until after pregnancy.

Under-screened and never-screened women

It is reported that 80 per cent of cervical cancer in Australia occurs in under-screened or never-screened women. Self-collection of HPV test samples has been suggested as a strategy to overcome the barriers that some women experience. All women who have been sexually active should be screened.

Self-collection is available for women who decline conventional screening and meet the following criteria:

- Have never participated in the NCSP and are 30 years of age or older

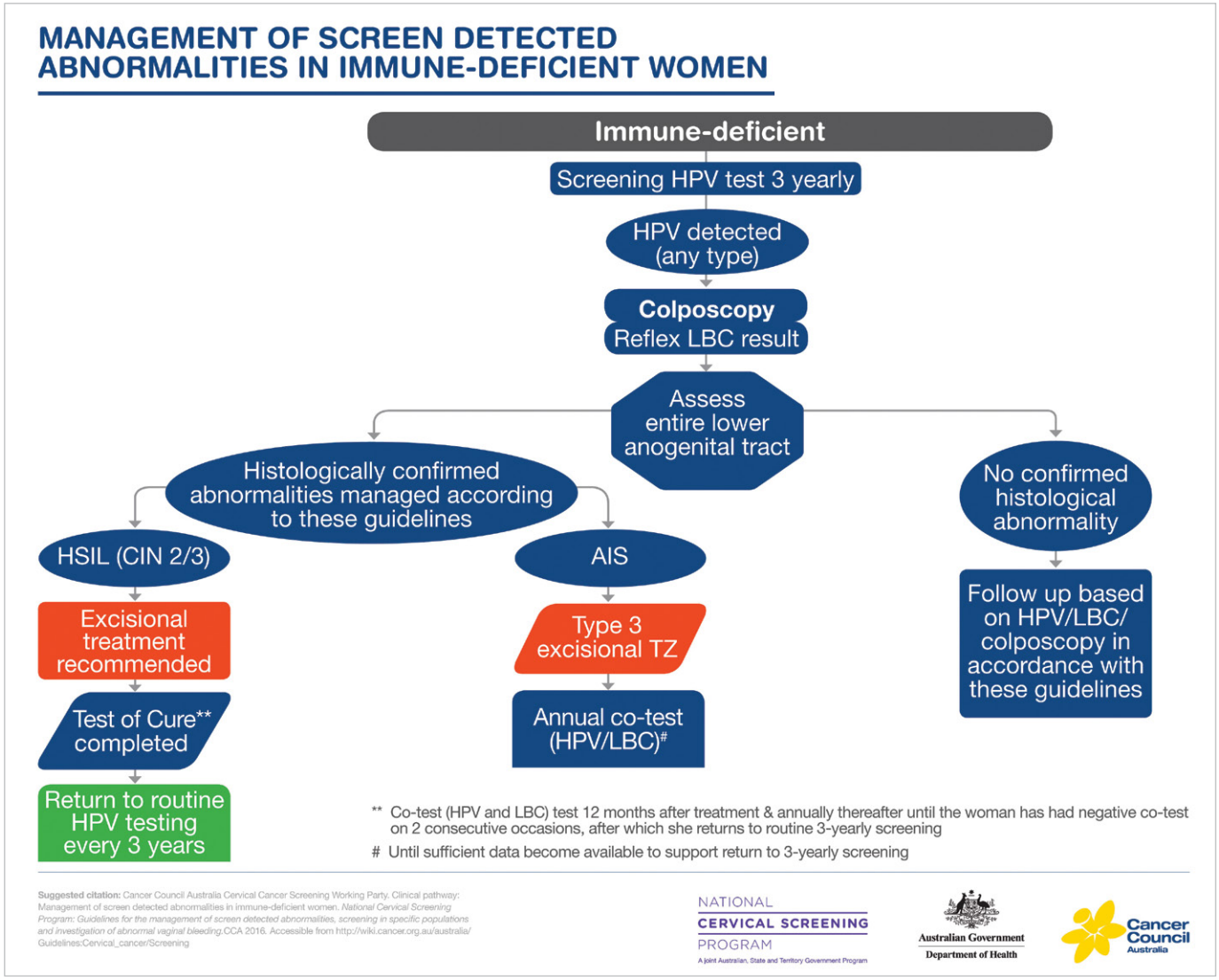

Figure 2. Management of screen-detected abnormalities in immune-deficient women.

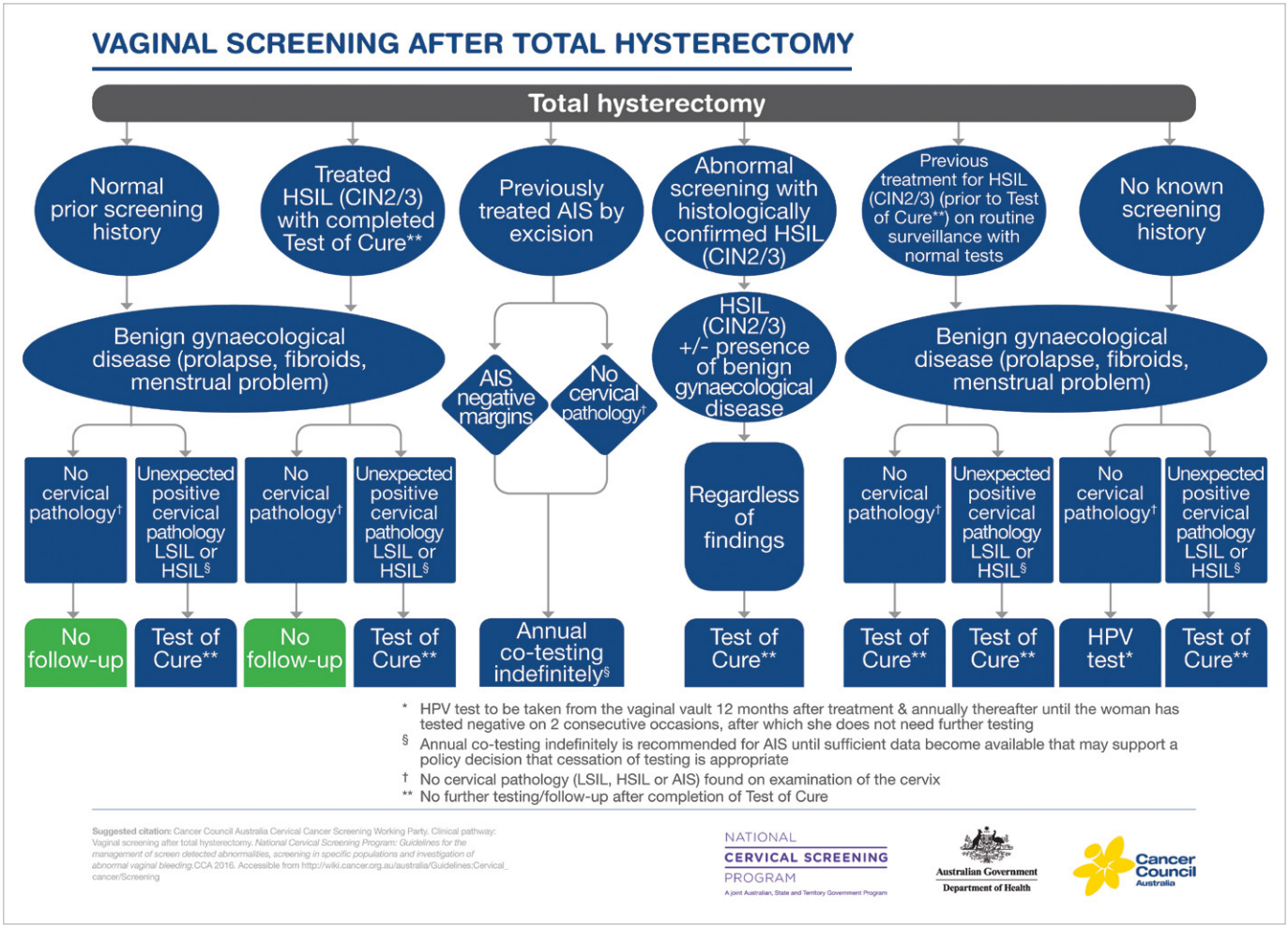

Figure 3. Vaginal screening after total hysterectomy.

- Are overdue for cervical screening by two years or longer and are 30 years of age or over.

Self-collection is not recommended for women who are:

- Symptomatic
- Pregnant
- Diethylstilbestrol (DES)-exposed
- Previously had a hysterectomy with a history of HSIL.

Initially, there was concern that self-collection may not be as sensitive as clinician-collected samples. More recent evidence, such as the Arbyn Meta-analysis,[2] suggests that when using only polymerase chain reaction (PCR) techniques for the detection of HPV DNA, the sensitivity of detecting it in a self-collected sample is equivalent to a clinician-collected sample. A self-collection working group has recently been formed to look at all the evidence and to ensure the implementation of this policy reaches those most at risk of cervical cancer, who have previously not complied with conventional screening guidelines. There is much evidence of the acceptability of this method of screening to women.[3]

Post-hysterectomy

The flow chart for screening after hysterectomy (Figure 3) is very complex in order to incorporate the large numbers of different situations.

If a woman has no history of HSIL and has had negative cytology prior to hysterectomy, with no abnormality in the histology of the cervix in the hysterectomy specimen, then she requires no screening.

For a woman who has a past history of treatment for HSIL and who has completed the test of cure, the advice is the same, provided there is no unexpected abnormality in hysterectomy specimen.

All other women require testing as per the flow chart. Despite the extensive nature of the guidelines, there are always areas that are not entirely clear or new evidence that suggests there should be changes. It must be remembered that these are only guidelines. There may be situations where it seems clinically appropriate to vary the advice of these guidelines. The advantage of the Wiki platform is that the guidelines can be amended as further evidence and technological developments come to light.

Email questions or feedback about the Renewed NCSP to: cancerscreening@health.gov.au.

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The Pacific Island Cervical Cancer Screening Initiative

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Meri is a 42-year-old woman with six children. Her youngest is two years old. She has presented to the emergency department with ongoing per vaginal (PV) bleeding and a syncopal episode. She lives in a small village in the interior of her island and she and her husband are farmers. She has never had a Pap smear.

They live a two-hour walk from the nearest health centre and Meri doesn't have a car. The local bus costs $2, but she doesn't really have the money and the bleeding hasn't been too bad. She has noticed, recently, that she has become increasingly breathless and dizzy, and the bleeding has been getting heavier. Today she was in the garden and fainted. One of the villagers with a truck drove her to the health centre. She has been transferred to our hospital with a haemoglobin of 55.

Meri gets admitted under gynaecology and sent to our ward. Speculum examination shows an irregular-looking mass almost reaching the introitus. It is fixed and large. She has advanced cervical cancer and it is inoperable.

Meri is given a blood transfusion, but there is nothing that can be done about her bleeding. She is told to go home and eat lots of meat and vegetables. Her two-year-old and four-year-old are climbing over her bed when she is told this by a member of our team.

Meri's story is not unusual. It is the same heartbreaking story I have heard many times during my visits to the Pacific. Sometimes, like in Fiji, the women are able to have chemotherapy, but in many places this is not available. Sometimes palliative care is available, but mostly it is not. Sometimes blood is readily available, but sometimes it is not. The majority of the women who present with cervical cancer are young and have small children. Those of us who have had the opportunity to look after these women feel absolutely hopeless.

I went to an island in northern Vanuatu with a team a few years ago, sent by an NGO to perform cervical screening. The response was enthusiastic: 100 women presented for a pelvic exam and Pap smear. Unfortunately, we didn't have a cytopathologist as part of our team and the Pap smears were brought back to Australia to be reported. It took a couple of months for me to receive all of the results and I made recommendations for follow up for each woman to the NGO.

When I asked how the women were going to be followed up, I was assured that women with high-grade

Nicola Fitzgerald with one of her patients.

changes would be referred to a larger hospital on another island for colposcopy. I later learned that the boat to the other island costs $40 each way. There was no gynaecologist at the hospital at the time, in any case.

It became obvious that there was no practical way these women were ever going to receive treatment for their abnormal Pap smears. These Islander families are predominantly farmers, with minimal access to large sums of money. They can't afford to go to the other island on the boat. Re-establishing contact with the women is difficult and many of them do not have a mobile phone. There must be a better way. This was the start of the Pacific Island Cervical Cancer Screening Initiative (PICCSI).

Cervical cancer is common in under-resourced countries and is responsible for up to 12 per cent of all cancers in women in these regions. Cervical cancer accounts for less than one per cent of all cancers in women in more developed countries.[1] The majority of countries in the Asia-Pacific region, including Fiji, are classified as low and middle income (LMIC). In this region, there is a great disparity in preventive and screening efforts for cervical cancer, with most areas having no, or suboptimal, programs, resulting in high morbidity and mortality rates.[2,3] At this stage, there is no national cervical cancer screening program in Fiji and screening is performed opportunistically. It has been reported that this results in less than 10 per cent of women in the target population being screened.[4]

Screening efforts in Pacific countries often have very slow turn around time for results. This can result in a low rate of follow up and treatment. There are multiple reasons for this, including a small medical workforce, difficulty in women accessing primary care and poor attendance for follow up. In a study previously performed by one of our team, the rate of women in Suva, Fiji, attending follow up for abnormal cytology on Pap smear was two out of 13.[5]

Development of cervical cancer is strongly associated with human papillomavirus (HPV) infection.[1] HPV testing has the potential to revolutionise cervical dysplasia screening in low and middle-income countries. The skill-level required for clinicians performing tests and receiving results is minimal and the technology exists to obtain results at point-of-care. HPV testing is very accurate, with low false-negative and false-positive rates. Current screening methods in the region use either cytology or visual inspection with acetic acid (VIA). Cytology requires a skilled clinician to report the findings, which can take a long time in low-resource countries. VIA has a high false-negative rate, meaning many women with high-grade disease are missed. In a study performed in Papua New Guinea comparing point-of-care HPV testing to VIA, 92 per cent of women with high-grade disease were appropriately identified using HPV testing, compared with 47 per cent using VIA. The false-positive rates were 13 per cent and 17 per cent respectively.[6]

HPV testing at point-of-care may not currently be cost-effective. The test kits cost A$22 per woman and the machine performing the testing costs many thousands of dollars. For some Pacific countries, this is simply not manageable on a population level.

The most cost-effective way of preventing cervical cancer in low-resource settings is through HPV vaccination of pre-adolescent girls.[1] However, only a couple of Pacific countries have incorporated this into their national vaccination program. In 2008, a HPV vaccine campaign was commenced in Fiji, with free vaccines for school girls aged nine to 12 in selected schools.[7] While rolling out the HPV vaccine in Fiji will have a significant impact on the younger generation, in the next few years, the bulk of the disease will remain in middle-aged women, who will still require cervical cancer screening and treatment.[8]

PICCSI volunteers Emily Chambers, Faith Reilly, Alexandra Roddy Mitchell and Annie Rose.

PICCSI volunteer James Montgomery with patients at Namaka Reproductive Health Centre in Nadi.

PICCSI has been developed by myself and a group of other volunteers in Australia and Fiji. Our aim is to screen women in the Pacific for HPV infection and provide point-of-care treatment for cervical dysplasia in their communities and on the same day.

It was about 12 months in development, but the pilot study of PICCSI started in August 2018 in the Western Division of Fiji. We went to five subdivisional hospitals and health centres, and performed a point-of-care test for 14 high-risk HPV strains on 316 eligible women aged between 30 and 50. Results were available on the day and took approximately one hour in the machine. Women testing positive for a high-risk HPV strain were offered a colposcopy and a large loop excision of the transformation zone (LLETZ) procedure under local anaesthetic if required. Twenty-five doctors, nurses, midwives and administration staff kindly volunteered their time and expertise to take part in the project.

PICCSI also had a research component. Together with the Australian Department of Foreign Affairs and Trade, Lautoka Hospital Department of Obstetrics and Gynaecology, the Fiji Ministry of Health, the Kirby Institute at the University of New South Wales, Viseisei Sai Health Centre and Victorian Cytology Services, we collected data on:

- The prevalence of HPV and cervical dysplasia in the Western Division of Fiji
- The number of women requiring treatment who receive it
- The acceptability of the protocol to the women.

Our aim was to minimise the number of women who required treatment, but did not receive it. I am very happy to say that there were no women lost to follow up during the PICCSI Pilot Project.

Out of 316 women tested, 21 were positive for HPV, with 56 being the most common strain. All women testing positive underwent a colposcopy and all eligible women received treatment on the day. Twelve LLETZ procedures were performed. Overall, the women found the program acceptable (95 per cent) and thought it would benefit Fijian women. We have had no adverse outcomes reported from treatment.

A united effort is required long-term in the Pacific region to develop a low-cost, effective and acceptable cervical cancer screening program that is available to all women. RANZCOG, together with the Pacific Society for Reproductive Health, is very supportive of such an initiative and there are many passionate clinicians who are working together to achieve this.

In the meantime, PICCSI would like to continue screening women in their communities for HPV. Next stop, northern Vanuatu!

The PICCSI Project is a not-for-profit program and is supported in Australia by the charity HealthServe. PICCSI appreciates all donations, especially monetary (www.givenow.com.au/PICCSI), as well as time and equipment. See our website (piccsi.org) for further information.

PICCSI would like to thank the Australian Department of Foreign Affairs and Trade, Victorian Cytology Services, Hologic, Viseisei Sai Health Centre, the Kirby Institute and Fiji Ministry of Health for their generous donations and assistance so far.

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HPV testing, cervical screening and male circumcision

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Most readers will know that human papillomavirus (HPV) testing replaced the Pap smear on 1 December 2017, but few will be aware that, like HPV vaccination, the HPV test had an Australian origin.

The HPV test was invented by Dr Brian Nightingale and myself in the 1980s. We then patented it with the priority date of 26 February 1987. Our test involved the first application of a gene mutation detection technique – the polymerase chain reaction – to viral detection. Roche recognised our international priority position and covered the University of Sydney's patenting costs in exchange for an option on the technology.

Patents only last 20 years. As a result, our patent expired a decade ago. Nevertheless, I continued to press the case for HPV testing because of its superiority over the antiquated Pap smear. With business associates, I helped launch the company TamPap in Australia in 2007. This involved women collecting their own sample using a tampon and mailing it to a laboratory for HPV testing. With Dr Christian Jessen (known for TV shows 'Embarrassing Bodies' and 'Dr Christian Will See You Now'), we launched TamPap in the UK in 2009. To this day, I continue to assist Australian industry in the roll-out of a self-sampling at home approach, as this modality is a valuable adjunct to clinic-based screening for underscreened women.

It has been a long road, but I am thrilled that, after early resistance, the Australian Government has finally embraced HPV testing. It will more accurately inform women whether they are infected with the virus that is almost always the cause of cervical cancer. As a result, more women will be spared the prospect of getting cervical cancer, a devastating disease that can strike women at a critical time in their child-rearing life.

The Government's plan involves women visiting their doctor, who will take a sample in the same way as for a Pap smear and send it off to a lab for HPV testing. Women who are currently underscreened will be encouraged to self-sample. This may include Aboriginal and Torres Strait Islander women in remote regions lacking medical services and women in religious minority groups who find sampling by a doctor unacceptable. At the same time, several private labs are making various kits available whereby a woman can collect her own sample and mail it to the lab for testing. I have been helping with this endeavour.

Cervical screening was a new direction for me. While I am a molecular biologist, my research has always focused on unravelling the cause of the major killer disease, hypertension, for which I have been fortunate enough to receive major international awards for my research and was made a member of the Order of Australia in this year's Queen's Birthday Honours. When I entered the HPV field, I quickly became aware of the general cervical cancer field and risk factors for this devastating cancer.

HPV is a sexually transmitted infection (STI). It has long been recognised that women with uncircumcised male partners are at much higher risk of cervical cancer. In 1989, a large study in Nairobi, Kenya, linked heterosexual HIV infection in men to lack of circumcision. By chance, I was attending a hypertension conference in Nairobi at the time. During a safari after the conference, our tour group came upon some Maasai boys dressed in dark ceremonial robes, white face paint and a head dress of white feathers. I asked the tour guide about the significance of the razor blade each boy was wearing as a pendant around their neck. He said it was the instrument used for their circumcision. I learned that many tribes perform circumcision of boys during their coming-of-age rituals. That was significant because an enormous body of research has discovered that tribes that circumcise boys have much lower HIV prevalence. Almost two decades later, three large randomised clinical trials confirmed the strong protective effect of circumcision against heterosexual HIV infection by men, as well as HPV and other STIs.

It intrigued me that male circumcision had these kinds of benefits to men and women. I shared this news with my academic colleagues. It wasn't long before I was asked by a medical graduate, who was undertaking a PhD in my department, to give a seminar on circumcision for STI prevention to a

group of doctors. My knowledge at the time was rudimentary, so I had to do an extensive literature review in preparation for my talk. The talk went well. So much so that they asked me to write it up for publication in their newsletter. I then decided to put the information up as a website. That site (www.circinfo.net) has grown enormously over the years, as have my contributions to medical literature on the topic of male circumcision. I now have 100 academic publications on the topic.

The enormous benefits of infant male circumcision have resulted in it being recommended by the American Academy of Pediatrics in its latest policy statement in 2012 and by the Centers for Disease Control and Prevention in the US. In Australia, I was present at a meeting in 2010 at the National Centre in HIV Epidemiology and Clinical Research (now the Kirby Institute) which led to the formation of the Circumcision Academy of Australia (www.circumcisionaustralia.org). The Academy published an affirmative policy statement on male circumcision in 2012 (see website). The Royal Australasian College of Physicians (RACP) has lagged behind in developing an evidence-based infant male circumcision policy, but hopefully that will change soon. If this is based on the current strong medical scientific evidence, the RACP will likely recommend newborn male circumcision as a very low-risk intervention for protection against urinary tract infections, physical problems, penile inflammatory conditions, various STIs, thrush, inferior hygiene, penile cancer and prostate cancer in men, and reduction in STIs and cervical cancer in women.

Together, HPV testing and an upsurge in male circumcision in Australia will help further reduce cervical cancer. Vaccination of girls and boys early in high school will also make a major contribution to a reduction in HPV. It should, however, be recognised that neither of these strategies alone will be 100 per cent effective. All strategies need to be put in place if effectiveness of cervical cancer reduction programs is to be maximised.

Patent

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Chronic vaginal discharge

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The complaint of chronic abnormal vaginal discharge (VD) is a frequent presentation to gynaecologists and women's health GPs. Many women worry about whether VD is normal and variations typically provoke concerns about STIs, cancer, self-image and sexual confidence. It is important to know what is normal, what is abnormal, and how to make an accurate diagnosis that will lead to correct advice.

The vulval epithelium extends to the hymen. Inflammatory conditions of the vaginal introitus, for example psoriasis, produce desquamation and oedema fluid. This can be mistaken for heavy vaginal discharge.

There are many conditions that affect the vulva and the vagina that can cause an abnormal VD. Although infection is usually considered first, virtually any inflammatory condition may be implicated.

Normal vaginal discharge

Normal VD is a mixture of vaginal wall transudate, cervical mucus, sweat and vulval and vaginal skin squames. This means that VD may be modified by not only vaginal, but also vulval factors.

Normal VD during the menstrual years is clear to white or light yellow in colour. It is cyclical: minimal post-menstrually, very clear and stretchy at mid-cycle and then becoming progressively thicker until the onset of the next period. It is not associated with vulval soreness or itch.

Premenarchal girls have very little VD. After the menopause, VD volume gradually reduces along with falling oestrogen levels and becomes more yellow in colour. Pregnancy makes physiological VD heavier. The combined oral contraceptive pill results in loss of the stretchy appearance of mid-cycle ovulatory VD, but otherwise does not substantially change the nature of VD.

VD is highly variable from woman to woman. It can be very light to very heavy. The age of menarche will effect the age at which adult VD commences. This means that the woman whose periods started at age 17 will have the mentality of an adult by the time her normal VD begins. She may be more likely to be concerned that her physiological VD is abnormal than a woman whose menarche was at age 12.

Characteristics of abnormal vaginal discharge

The following is a list of possible abnormalities of VD:

- Abnormal colour; brown, green, blood-stained (a green VD prior to puberty can be normal)
- Abnormal consistency; thicker, more watery
- Loss of cyclical pattern
- Abnormal smell
- Association with other symptoms; itch, soreness, dyspareunia.

Causes of chronic abnormal vaginal discharge

Causes of abnormal VD are listed in Table 1. Table 2 lists those most likely to be seen in Australian metropolitan practice. Infections are the most common, especially in general practice. These are well recognised and very adequately dealt with elsewhere. The rest of this article discusses the less well-recognised non-infective causes of VD.

Personal hygiene practices

It is important to ask women about their personal habits regarding cleaning, hair removal and deodorising. Some of these habits may trigger or promote abnormal discharge by causing an irritant contact dermatitis. Unless these practices are identified and eliminated, treating the original problem will then be ineffective, with resulting confusion for the clinician and disappointment for the patient.

Enquiry about personal practices can be difficult if the patient is embarrassed. Even when the clinician is able to identify these habits, many patients cannot accept that these might be causing or exacerbating their abnormal discharge.

The use of pads for urinary or faecal incontinence can also cause or exacerbate an abnormal discharge. Some women have allergic contact dermatitis reactions to some brands of pads and this possibility should be investigated. An attempt should be made to reduce the use of pads whenever possible, for example when the patient is at home. Any therapy that might reduce incontinence should of course be implemented.

Chronic vulvovaginal candidiasis

Patients with acute and recurrent vulvo-vaginal candidiasis are, by definition, normal in between episodes. In contrast, patients with chronic vulvovaginal candidiasis (CVVC) have a continuously symptomatic vulvo-vaginitis that is worst pre-menstrually and improves during the period. CVVC is thought to represent a vaginal mucosal hypersensitivity reaction to the candida organism rather than a chronic infection and this means that vaginal culture may not always be positive. The following validated criteria are used to make the diagnosis.[1]

Table 1. Causes of abnormal VD.

Infective
STI: • Trichomoniasis • Gonorrhoea • Chlamydia (less commonly).
Non-STI: • Bacterial vaginosis • Candidiasis: acute, recurrent, chronic.
Inflammatory
• Foreign bodies • Copper IUDs • Hair/threads and other foreign bodies • Tampons • Surgical mesh.
Non-infective vaginitis: • Contact: irritant; allergic, including douching/ cleaning/feminine hygiene products; type 1 hypersensitivity reactions • Post-op granulation tissue • Desquamative inflammatory vaginitis • Lichen planus • Fixed drug eruption • Oestrogen hypersensitivity vaginitis • Crohn's disease • Immunobullous diseases • Graft-versus-host disease • Fistulae.
Vulvitis: • Inflammatory, especially psoriasis • Irritant contact dermatitis.
Neoplastic
• Cervical polyps • Non-infective cervicitis • Endometrial, cervical or vaginal cancers • Fistulae (malignant, non-malignant, surgical).

Diagnostic: One major + five minor criteria
Presumptive: One major + three to four minor criteria

Major criterion:

- Chronic non-erosive, non-specific vulvovaginitis.

Minor criteria:

- Positive vaginal swab either on presentation or in the past
- Soreness
- Cyclicity
- Dyspareunia
- Previous response to antifungal therapy even if incomplete
- Exacerbation with antibiotics
- Swelling
- Discharge.

Continuous daily treatment with fluconazole 50–100mg for three to six months is usually effective. However, these women are at risk of relapse, especially with the use of antibiotics, and often need ongoing suppressive therapy.

Desquamative inflammatory vaginitis

Desquamative inflammatory vaginitis (DIV) is a non-infective vulvovaginitis with the typical clinical appearance of erythematous glazed and/or petechial patches on the mucosal surface of the labia minora. It is possibly the same entity as Zoon vulvitis and Plasma Cell vulvitis.

Like lichen planus, with which it is often confused, DIV involves the vagina and mucosal surface of the labia minora. However, unlike lichen planus, it does not extend to involve the vulval skin or the oral mucosa and does not produce scarring. The aetiology is not certain, but is possibly a disturbance of normal vaginal homeostasis, leading to a reduction in lactobacilli and commensal overgrowth. There is often a trigger, for example, diarrhoea, antibiotic use or pelvic surgery.[2]

DIV usually presents with soreness, dyspareunia and VD. The examination shows erythematous patches within the introitus and speculum examination may also show patchy vaginitis. Vaginal culture is negative for pathogens. (Group B streptococcus is often cultured, but may not be clinically relevant in this context.) Rapid improvement occurs with a four-week course of low-dose clindamycin vaginal cream every night. About 50 per cent of women are then cured, but others experience recurrent episodes.

Vulval psoriasis

Psoriasis is not uncommon on the vulva.[3] It causes accelerated skin turnover and the resulting squames mix with physiological VD, making it heavy and often malodorous. On external hair-bearing vulval skin, psoriasis is usually easy to recognise. However, when it effects the modified mucous membrane of the labia minora and vaginal introitus, clinical recognition is more difficult, and the resulting itch and soreness can be mistakenly thought to be vaginal.

Psoriasis often also involves perianal and natal cleft skin, and this can help to make the diagnosis, as can a personal or family history of psoriasis. Correctly identifying psoriasis apart from dermatitis is important, as psoriasis is usually a very long-term

condition that cannot be cured (unlike many types of dermatitis) and must be managed to give the patient the best chance of a good quality of life.

We recommend a regimen consisting of six weeks of:

- Methylprednisolone fatty ointment applied at night
- Two per cent LPC (coal tar solution) in emulsifying ointment applied in the morning.

Thereafter, topical corticosteroid is ceased and LPC is applied morning and night as maintenance therapy. Topical corticosteroid is used to manage flare ups, which are expected in any chronic skin disease. Refer to a dermatologist in cases that are not straightforward.

Contact vaginitis and vulvitis

History-taking in cases of suspected contact vulvovaginitis can be difficult, firstly because the patient does not always make the association between the use of a certain product and her abnormal VD, but also because of her reluctance to admit to what she has been using. Furthermore, it is not always a product which has caused the vaginitis or vulvitis. Many women over-clean their vulval and vaginal skin, and this either causes or exacerbates the problem.

Clothes are an important cause of vulval dermatitis, particularly lycra, tight jeans and other occlusive garments.

Patients who suffer from hyperhidrosis may develop maceration of the skin, leading to dermatitis, and this coupled with heavy sweating can be mistaken for abnormal VD.

Lichen planus

Even though this is a rare cause of VD, it is important to identify lichen planus because of the devastating scarring that occurs if it is left untreated. Patients typically present with heavy VD and pain, especially with intercourse. On the vulva, lichen planus usually involves the modified mucous membranes and the vaginal mucosa. Although the typical appearance is an erythematous rash with erosions, they are often very subtle and easily missed. Biopsy is frequently unhelpful. Most cases require ultra-potent topical corticosteroids and/or systemic immunosuppressants for adequate control.[4] We recommend referral to a specialist if the diagnosis is suspected.

Table 2. Causes of abnormal VD by incidence.

Common
• Infective causes • Inflammatory vulvitis • Contact vaginitis.
Uncommon
• Desquamative inflammatory vaginitis • Foreign bodies • Non-infective cervicitis.
Rare
• Fixed drug eruption • Lichen planus • Oestrogen hypersensitivity vaginitis.
Very rare
• Immunobullous disease • Crohn's disease • Graft-versus-host disease.

Perceptual issues

Every women's health practitioner will be familiar with the (often young) woman who presents with the complaint of chronic heavy VD, but with no other abnormal symptoms, and with an entirely normal examination and negative testing for infection. Such patients are often concerned about malodour as well, but admit that no one else is aware of this. Very likely, the patient has become convinced that she is abnormal via either internet sources or sexual partners. There are others who have obsessive-compulsive tendencies that make them focus on their VD.

The patient will usually have begun to wear pantyliners, often 24 hours per day, and may be using a variety of feminine hygiene products. She is often distressed and keen for the heavy VD to be 'fixed'. A diagnosis of normality is usually not reassuring, because her concern is for the discharge to be reduced regardless of whether it is normal or not.

This can be a very difficult consultation. Patient pressure to try more treatments should be resisted and, instead, advice about managing the discharge should be given. This involves explanation of the concept of a 'range' of normal discharge and moving towards an acceptance of this situation. It also involves recommending a reduction or elimination of the use of pantyliners and feminine hygiene products. Changing underwear during the day instead of wearing pantyliners can help and reducing reliance on occlusive clothing is recommended.

Conclusion

Abnormal VD is often assumed to be infective. However, there are a number of common and uncommon non-infective vulval and vaginal conditions that must be considered in order to help our patients.

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Ondansetron use in the first trimester and risk of fetal malformations

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FRANZCOG

Nausea and vomiting can often occur in the first trimester of pregnancy, with up to 15 per cent of women requiring antiemetic medication and one per cent requiring inpatient management and multiple medications. As this coincides with the period of fetal organogenesis, it is important that medications used in the first trimester are not teratogenic.

Ondansetron, a 5-HT_3 receptor antagonist, is indicated for post-operative, chemotherapy-induced and radiation-induced nausea and vomiting. It has also been shown to be at least as effective as other antiemetics in treating nausea and vomiting in pregnancy, and highly efficacious in treating hyperemesis gravidarum.[1] Early studies suggested that ondansetron does not increase the risk of fetal abnormality, however, recent data has been more conflicting. This article aims to review the available literature with regards to the safety and/or potential risks of ondansetron in pregnancy.

A small prospective cohort study was first published in 2004 by researchers in Canada and Australia.[2] Women who called a phone pregnancy counselling service in the first trimester of pregnancy and were taking ondansetron at the time of the call were enrolled. Comparison groups included women taking other antiemetics and women taking no anti-nausea medication at all. The study found no statistically significant differences among the groups in the incidence of major malformations, although the authors acknowledged that the study was underpowered, with only about 170 women in each group.

A Swedish cohort was published in 2005[3] using data from the Swedish Medical Birth Register from 1995 to 2002. Women reporting the use of any antiemetics were compared with all women who gave birth during the study period. Only 65 women in this cohort used ondansetron in the first trimester and those fetuses exposed were not found to have an increased incidence of major malformations. However, this study was also underpowered to detect any significant difference in the risk of fetal malformations with the use of ondansetron.

Anderka et al published a case-controlled study in 2012, looking at the use of antiemetics to treat nausea and vomiting in pregnancy and the risk of selected birth defects.[4] This study used data from the US National Birth Defects Prevention Study (1997–2004). Analysis was limited to four common non-cardiac birth defect categories. Mothers of babies were interviewed about nausea and vomiting in pregnancy and the use of prescription medications, of which up to 75 different medications were used. There was a positive association between the use of ondansetron and cleft palate, with an adjusted odds ratio (OR) of 2.37 (95% CI 1.18–4.76), although the numbers exposed were small.

Pasternak et al published results from a large cohort using data from the Danish Medical Birth Registry (2004–2011), matched with data from the Danish National Prescription Registry, to identify women who had filled prescriptions for ondansetron in the first trimester.[5] There were 608,385 pregnancies included, of whom 1233 women had been exposed to ondansetron in the first trimester. These women were matched in a 1:4 ratio with unexposed pregnant women. There were no significant differences in major malformations between exposed (2.9 per cent) and unexposed groups (2.9 per cent). There were no cases of cleft palate in the group exposed to ondansetron. The authors concluded that ondansetron was not associated with an increased risk of major congenital anomalies when used for treatment of nausea and vomiting in pregnancy.

Andersen et al looked at data from the same Danish national registries, but across a wider time frame (1997–2010), to assess the teratogenic effects of ondansetron exposure.[6] Of 897,018 births, 1248 women took ondansetron. This study found 58 (4.7 per cent) major congenital malformations in the exposed group, compared with 31,357 (3.5 per cent) in the unexposed group, with an OR of 1.3 (95% CI 1.0–1.7). An increased prevalence of cardiac defects accounted for most of these malformations, with an OR of 2.0 (95% CI 1.3–3.1).

Although there was a considerable time overlap between the two Danish cohorts, there were only an additional 15 women exposed to ondansetron in the larger cohort, possibly reflecting the infrequent prescribing of ondansetron for nausea and vomiting in pregnancy in the earlier years. However, in spite of the very few additional exposures, the second cohort reported significantly more major congenital malformations; 58 (4.7%) versus 36 (2.9%) in the exposed group, and 31,357 (3.5%) versus 141 (2.9%) in the unexposed group. It is difficult to ascertain the reason behind the reported differences, especially

given that the larger cohort study did not publish its methodology in detail.

In 2014, Colvin et al published results from a cohort of 96,968 women who gave birth from 2002 to 2005 in Western Australia.[7] Of these women, 211 babies were exposed to ondansetron in the first trimester. They found no significantly increased risk of major birth defects with first trimester exposure, 4.9 per cent versus 4.1 per cent (OR 1.2; 95% CI 0.6–2.2). They did report a significantly increased risk of obstructive renal defects, however, the absolute number of these cases was less than five.

In the same year, a Swedish cohort was published, using data from the Swedish Medical Birth Register combined with the Swedish Register of Prescribed Drugs.[8] This study identified 1349 infants born to women who had taken ondansetron in early pregnancy from 1998 to 2012 (with a total of 1.5 million births). No statistically significant increased risk for major malformations was found, however, there was a statistically significant increased risk for cardiovascular defects (OR 1.62; 95% CI 1.02-2.14). Most of these cardiac defects were septal defects. The study concluded that the teratogenic risk with ondansetron is low, but an increased risk of a cardiac septal defect is likely.

In all of these studies, the overall number of women using ondansetron in the first trimester of pregnancy was comparatively low, limiting the power of these studies to detect significant differences in any individual fetal congenital malformations. Cohort studies are also subject to bias, which may include systematic, recall or reporting biases, depending on the methodology used.

A systematic review was published in 2016[9] that summarised the above conflicting trials. Taking into account the results from the three largest cohorts that showed no overall increase in birth defects, including the two studies demonstrating a small increase in risk of cardiac defects specifically, the author suggested that ondansetron should be reserved for women with nausea and vomiting of pregnancy, whose symptoms have not been adequately controlled by other methods.

RANZCOG does not currently have a published guideline on management of nausea and vomiting of pregnancy, nor on hyperemesis gravidarum. The Royal College of Obstetricians and Gynaecologists Green-Top Guideline states that while available evidence indicates that ondansetron is safe and effective, due to limited data, it should be used as second-line therapy.[10] The American College of Obstetricians and Gynecologists recommends discussing available data with patients and weighing the risks and benefits of ondansetron use on a case-by-case basis in women at less than 10 weeks' gestation.[11]

In summary, nausea and vomiting of pregnancy and hyperemesis gravidarum are common and potentially debilitating conditions for women during pregnancy. While ondansetron is commonly used and is very effective in management of nausea and vomiting outside of pregnancy, the paucity of data on teratogenicity limits its use in pregnancy, especially in the first trimester. More studies are needed in this area to guide clinicians in using ondansetron in women who do not respond to standard antiemetics.

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Case report

A bloody choriocarcinoma

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Gestational trophoblastic disease (GTD) is a group of placental disorders derived from a pregnancy[1] consisting of abnormal proliferation of trophoblastic tissue of the placenta. GTD covers benign partial and complete hydatidiform mole, invasive mole, gestational choriocarcinoma, placental site trophoblastic tumour, and epithelioid trophoblastic tumour.[2] Gestational trophoblastic neoplasia (GTN) is GTD with the requirement of chemotherapy and/or excisional treatment due to persistence of human chorionic gonadotropin (hCG) or presence of metastases.[1] Choriocarcinoma is the most common GTN and often follows a molar pregnancy.[1]

Case

A 38-year-old Tongan woman presented at six weeks gestation with a two-day history of vaginal bleeding.

In 2012, she had a complete molar pregnancy followed by persistent disease and was treated with six months of methotrexate and actinomycin-D chemotherapy, after which she was lost to follow-up.

The initial b-hCG was 293,770 IU/L and increased to 459,459 IU/L nine days later. Both pelvic ultrasounds reported an empty gestational sac. Two weeks after the initial presentation, the patient experienced heavy bleeding. A repeat ultrasound reported a hypoechoic structure posterior to the endometrium, measuring 11mm by 16mm without vascularity; b-hCG was 512,000 IU/L. A dilation and curettage was performed the following day. A week after the procedure, she represented with vomiting, abdominal cramping, mild vaginal bleeding and biochemical thyrotoxicosis. The b-hCG had risen to 634,318 IU/L. The histology showed small foci of atypical avascular trophoblastic proliferation consistent with GTD. The differential diagnosis was recurrent or persistent GTD. The CT of chest, abdomen and pelvis (Figures 1 and 2) reported an enlarged uterus and multiple nodules in all lobes of both lungs consistent with lung metastases. She was diagnosed with stage three choriocarcinoma.

The patient was commenced on cisplatin and etoposide by medical oncology and was discharged with a plan for two further cycles of toposide and cisplatin as an outpatient, followed by EMA/CO (etoposide, methotrexate, actinomycin D, cyclophosphamide, vincristine) until two consecutive negative b-hCG readings.

She represented three days later with heavy vaginal bleeding. On examination, the uterus was palpable at the umbilicus. She was fluid resuscitated and

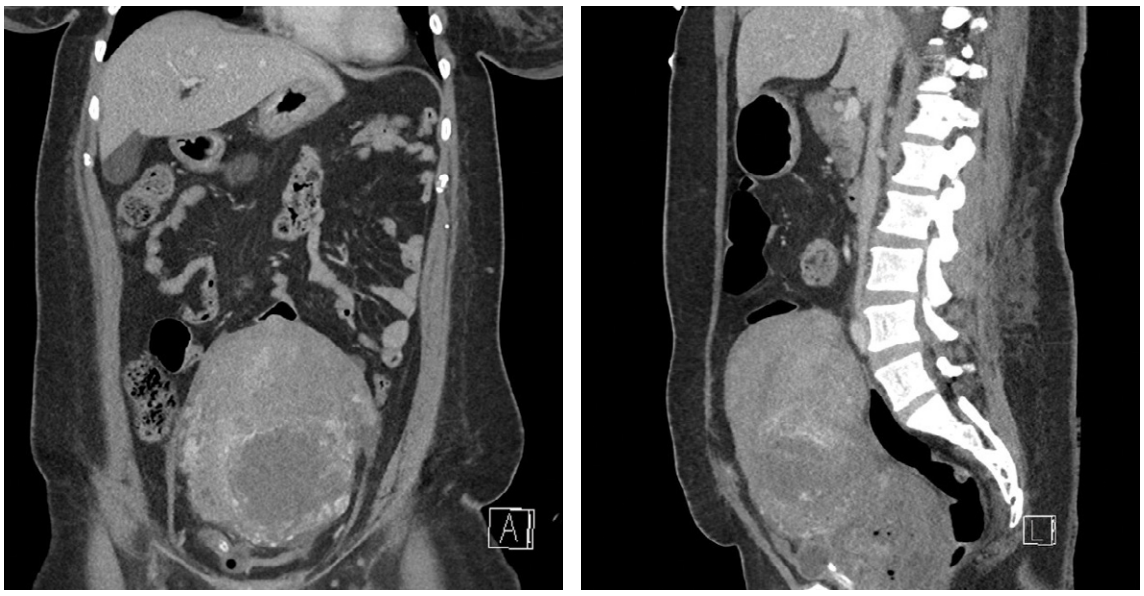

Image courtesy of Liverpool Hospital Radiology

Figure 1. CT of abdomen and pelvis, coronal (left) and sagittal (right). A markedly enlarged uterus extends up to the level of the umbilicus, measuring 15 x 11 x 17cm in diameter, with heterogeneously enhancing walls and fluid in the endometrial canal.

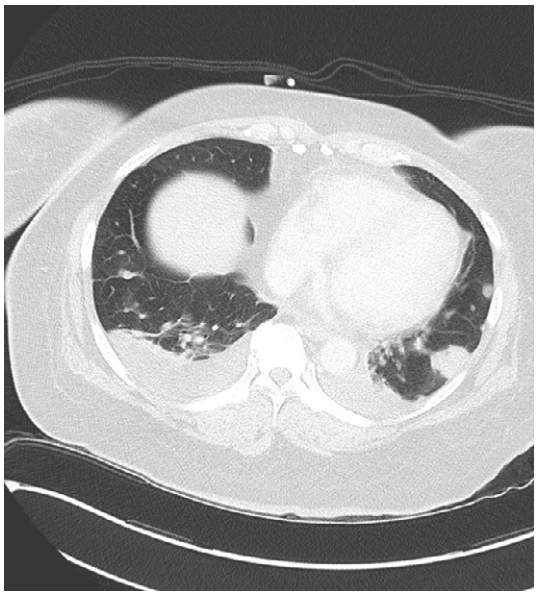

Image courtesy of Liverpool Hospital Radiology.

Figure 2. CT of chest. Multiple nodules are scattered throughout the lung affecting both lungs and all lobes, consistent with lung metastases, with a halo of ground-glass change around the nodules which may be secondary to haemorrhage.

received two packed red cell transfusions, syntocinon infusion, tranexamic acid and norethisterone tablets. She continued to bleed and was admitted to ICU for stabilisation. Interventional radiology (IR) attempted uterine artery embolisation (UAE). During the UAE, the patient began to cough and desaturate; the procedure was abandoned due to concerns that the presence of uterine arteriovenous malformation (AVM) led to lung emboli of the embozene particles. It is hypothesised that the AVM may be the cause of the choriocarcinoma pulmonary metastases.

One day post-IR procedure, the patient again had significant vaginal haemorrhage (more than 1200ml) and was taken to theatre for an emergency midline laparotomy and total hysterectomy (Figure 3), bilateral salpingectomy and right oophorectomy (the left ovary was not found). She was found to have a bleeding anterior vaginal wall metastasis. A vaginal pack was placed at the completion of the operation. On day one, her vaginal pack was removed as it was malodorous, which was followed by rapid vaginal blood loss of 2000ml and a haemoglobin drop to 69. The vagina was promptly repacked, with packing vigilantly changed every two days for the next two weeks. She received a total of 16 units of packed red cells, one pack of platelets and four packs of fresh frozen plasma during this admission. Her status improved with time. She received inpatient etoposide and cisplatin and was discharged. The patient has been well on EMA-CO chemotherapy. Her weekly b-hCG has been trending down well, with the most recent b-hCG being undetectable.

Table 1. FIGO staging for GTN.[6]

FIGO Stage	Description
I	Gestational trophoblastic tumours strictly confined to the uterine corpus
II	Gestational trophoblastic tumours extending to the adnexae or to the vagina, but limited to the genital structures
III	Gestational trophoblastic tumours extending to the lungs, with or without genital tract involvement
IV	All other metastatic sites.

Discussion

Choriocarcinoma is common, forming 90 per cent of GTN. It most often follows a molar pregnancy in 25–50 per cent of cases; but can also occur within 12 months of a non-molar pregnancy in 25 per cent of cases, or after a term pregnancy in 25–50 per cent of remaining cases.[1]

The incidence is difficult to report due to its low frequency and locational and ethnic variation, being more common among people of Asian backgrounds.[1] The risk of malignant transformation of a molar pregnancy to GTN is 0.5–4 per cent after a partial mole and 15–25 per cent after a complete mole, as with our patient.[1]

Choriocarcinoma is the most aggressive type of GTN.[2] They produce high levels of b-hCG[2] and metastasise haematogenously to the lung, liver, kidneys, bowels and brain.[3]

Women with GTD may present with a large uterus for dates, pelvic pain, vaginal bleeding and hyperemesis gravidarum.[3] Rarely, they will present with thyrotoxicosis, early onset severe preeclampsia and abdominal distension due to theca lutein cysts.[2,3] There may be symptoms relating to the site of metastasis, including respiratory failure, neurological dysfunction, epigastric pain and jaundice from liver metastasis, nephrotic syndrome, and vaginal bleeding from vaginal metastases.[4]

Initial investigations include a quantitative b-hCG, thyroid function test, liver function test, coagulation profile, a group and screen, a urinary function test and a pelvic ultrasound. Chest imaging will assess for pulmonary metastasis.

Table 2. FIGO/WHO scoring system.[6]

FIGO/WHO risk factor scoring with FIGO staging	0	1	2	4
Age	<40	>40	–	–
Antecedent pregnancy	mole	abortion	term	
Interval from index pregnancy (months)	<4	4–6	7–12	>12
Pretreatment hCG mIU/mL	$<10^3$	$>10^3$–10^4	$>10^4$–10^5	$>10^5$
Largest tumour size including uterus (cm)	–	3–4	≥5	–
Site of metatases including uterus	lung	spleen, kidney	gastrointestinal tract	brain, liver
Number of metatases identified	–	1–4	5–8	>8
Previous failed chemotherapy	–	–	single drug	two or more drugs

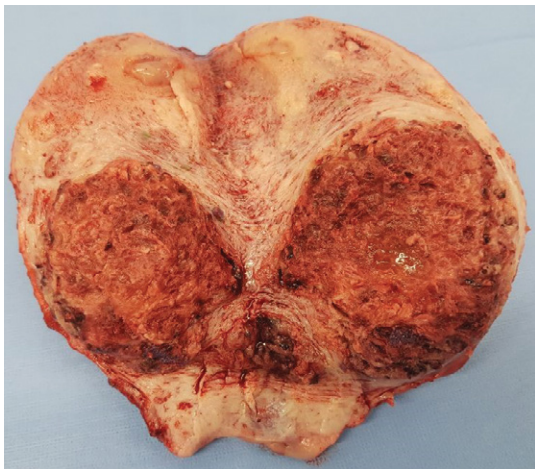

Figure 3. Uterus with myometrial invasion.

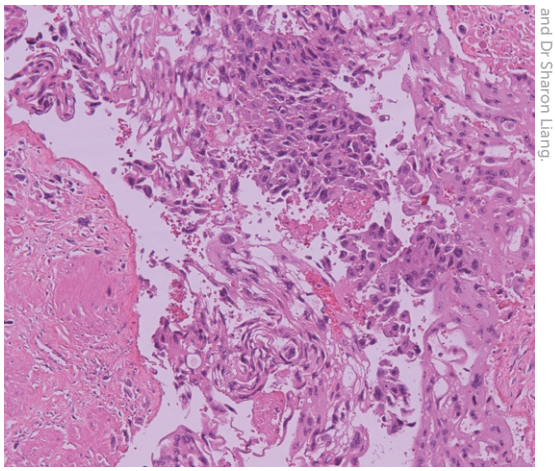

Image courtesy of Liverpool Hospital Anatomical Pathology and Dr Sharon Liang.

Figure 4. The uterus with attached cervix weighed 1168g and measured 17cm in largest diameter. The choriocarcinoma tumour is composed of diffusely infiltrative sheets and nodules of trimorphic intermediate trophoblasts and cytotrophoblasts rimmed by multinucleated syncytiotrophoblasts with extensive haemorrhage and necrosis. Pleomorphism and mitotic activity is seen. The tumour involves more than 50 per cent of the myometrium and extends into the lower uterine segment and cervix. There is lymphovascular invasion. [H&E stain].

Histopathology from uterine curettage under ultrasound guidance is essential to obtain tissue diagnosis.

Follow up with serial b-hCG is a requirement for diagnosis of post-molar GTN.[3] The RANZCOG criteria for diagnosis of GTN after a molar pregnancy is: a rise of more than nine per cent across three consecutive weekly values over a period of two weeks; a plateau or fall of less than **ten per cent** across four weekly measurements over a period of three weeks; or persistently elevated b-hCG levels at six months.[1] GTN may also be diagnosed on histopathology.[1] These patients need a metastatic work-up consisting of a gynaecology oncology tumour board review, blood investigations as previously listed, and imaging of the chest, abdomen and pelvis. Brain imaging is required if there are neurological deficits or pulmonary metastases, or upon diagnosis of choriocarcinoma.[4]

Treatment of GTN is usually by chemotherapy.[3] The International Federation of Gynecology and Obstetrics (FIGO) staging system (Table 1)[6] and FIGO/WHO prognostic scoring system (Table 2)[6] determine the best chemotherapy treatment regimen.[5] A risk score of six or less is classified as low risk of resistance to single agent chemotherapy and is treated with methotrexate or actinomycin-D, while a score above six is considered high risk of resistance to monotherapy, requiring combination chemotherapy and possibly radiotherapy.[5] The complete remission rate is 85 per cent and the five-year overall survival rate is 75–90 per cent.[3]

Fifty per cent of patients with high-risk metastatic GTN will require surgery to resect chemotherapy-resistant disease or to control complications such as bleeding.[3] In circumstances where patients have completed their family, hysterectomy is recommended to reduce need for chemotherapy.[5]

Weekly hCG is required during chemotherapy until remission, defined as three consecutive weekly negative b-hCG.[7] Following remission, two further consolidation therapy cycles are administered to prevent relapse.[7] Post-treatment surveillance is carried out with monthly hCG until one year of normal hCG levels.[7] It is prudent that the patient is on contraception during this time.

B-hCG should be sent six weeks following the completion of any future pregnancies regardless of the outcome of that pregnancy.[1] Women should also undergo an early and mid-trimester ultrasound to confirm normal gestation, as there is a 5–10 per cent recurrence risk.[1]

It is important to record these patients on the GTD registry in Queensland, South Australia and Victoria.[1] Registry on GTD should be established in all states.

Conclusion

Vigilant hCG monitoring is essential after molar pregnancy for early detection of post-molar GTN such as choriocarcinoma. Fortunately, choriocarcinoma is chemo-sensitive, allowing for good treatment response, as was seen in our patient's rapidly dropping hCG levels.

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Subpoenaed medical records: what should practitioners do?

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Medical practitioners are often requested to release their patient's medical records to courts under subpoenas. However, some medical organisations have concerns that subpoenas issued for improper purposes have the potential to stigmatise vulnerable people and damage patient-practitioner relationships.

What is a subpoena?

A subpoena is a court order issued to a person at the request of a party in a court proceeding. A party may seek a subpoena as a way to obtain relevant information for use as evidence in a court matter. Subpoenas can be issued to compel a person to give evidence in court, produce documents to the court, or both. A subpoena requires a person to provide the court with documents by a specified date and time. Importantly, these documents are provided to the court and not to the party who requested that they be produced.

What does a practitioner need to provide?

If a practitioner has been issued with a subpoena for production of documents, the schedule to the subpoena will outline the specific documents that need to be provided to the court. Medical practitioners are often requested to produce a patient's clinical notes, test results, reports and referrals.

Confidentiality and patient consent

The obligation to maintain patient confidentiality is overridden when the law compels the disclosure of a patient's medical record. If a practitioner receives a subpoena to produce the whole or a part of a patient's medical record, it is advisable that the patient be informed promptly of the disclosure where appropriate. However, patient consent is not required when producing medical records under a subpoena. Even if a patient does not consent to the disclosure, a practitioner who is issued with a subpoena must provide the requested documents to the court. Failure to do so may result in contempt of court. The onus is on the patient to take action to oppose the subpoena and prevent the information being released.

Can a medical practitioner object to a subpoena?

If a medical practitioner believes that the whole or a part of a patient's medical record should not be disclosed because it contains clinically sensitive information, or for some other reason, they can make an objection to the court. Practitioners will need to write to the court specifying the ground under which the objection is made (grounds include irrelevance, abuse of process, oppression or privilege). Subpoenas will not be valid if they amount to a mere 'fishing expedition'. This means that subpoenas cannot be issued to obtain documents that fall outside the scope of the issues in the proceeding. Patients whose medical records have been produced to the court can also object to their inspection under the same grounds.

If a patient's medical record contains sensitive information that may impact their mental health if released, a practitioner may request that the court use their discretion to limit access to those records. In forwarding information to the court, doctors can, in a covering letter, identify the sensitive material and suggest that the court consider how, when and to whom the information is provided.

Objections should be made by the patient before the day specified for the production of the material in the subpoena. Where an objection is made, a judge will conduct a hearing to determine whether the material should be produced. Practitioners wanting to object to the content of a subpoena should seek legal advice or guidance from their indemnity insurer.

In any case, subpoenaed material should be produced to the court and the material objected to should be placed in a separate sealed envelope with a covering letter asking for the objection to be considered by the court before allowing inspection.

Position of peak medical bodies

Medical organisations have voiced their concerns about the potential for patient confidentiality to be undermined in the context of subpoenas. Concerns have been expressed in submissions to the Australian Law Reform Commission's review of the family law system. There are reports that medical records can be improperly sought in custody disputes in order to damage the relationship between the children and one parent. It has also been emphasised that effective psychiatric treatment requires patients to trust their practitioner. When medical records containing highly sensitive information are produced in court, this can re-traumatise vulnerable patients and irrevocably damage the patient-practitioner relationship.

The Australian Medical Association makes their position clear in their guideline, Ethical Guidelines for Doctors on Disclosing Medical Records to Third Parties, that the public benefit of disclosing a patient's medical record must outweigh the risk that, because of such a disclosure, a patient may not seek medical attention or falsify information given to practitioners in future.

Things to remember

Subpoenas are legal documents issued by courts that require a person to attend court and give evidence or provide documents. A patient's right to confidentiality is overridden when medical records are requested under a subpoena. Practitioners must comply with subpoenas and seek advice in the event they wish to make an objection to the court.

Failure to comply with a subpoena can result in contempt of court. If in doubt, consult your medical defence organisation or legal advisor.

For more information, please contact Michael Gorton.

Training Support Unit

RANZCOG recognises that trainees may experience periods of professional and personal difficulty, and that coping with the demands of a busy profession, developing skills, building knowledge as well as balancing family and personal commitments can be challenging. The College also recognises the importance of supporting training supervisors as they work to ensure trainees have vital training and learning opportunities; are taken through new procedures and given adequate time to develop their skills under supervision.

RANZCOG is committed to supporting trainees and training supervisors and has established the Training Support Unit. This is a safe, professional and impartial service for Trainees and Training Supervisors to contact and be guided and supported along the most effective response pathway.

Trainees are encouraged to contact Ms Paula Fernandez, Senior Coordinator, Trainee Liaison in times of stress, anxiety or poor health. Supervisors are encouraged to contact Ms Alana Gilbee, Senior Coordinator, Supervisor Liaison if they are concerned about a trainee they are supervising.

The TSU also manages trainee training complaints in a fair and responsive manner.

For further information visit:
www.ranzcog.edu.au/Training/TSU
or contact the **Training Support Unit**:
Email: traineeliaison@ranzcog.edu.au or trainingsupervisorliaison@ranzcog.edu.au
Phone Paula: +61 3 9412 2918 or **Alana:** +61 3 9412 2933

Q&A

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

Q What is the role of a menstrual cup?

Dr Astrid Budden
FRANZCOG

A

In future, the reply to your menstrual history question 'How often do you change your pad or tampon?' might increasingly be 'I actually use a menstrual cup!'

What is a menstrual cup?

Menstrual cups are flexible, reusable cups, usually made of rubber or silicone, that are worn intravaginally to collect menstrual flow. Interest in their use is increasing, largely because of public desire for more environmentally friendly menstrual products.

Is it a new invention?

The first commercially available menstrual cup, similar to the ones on the market today, was patented in 1937 by American actress Leona Chalmers and made out of latex rubber. This was only four years after the tampon was patented.

What are the benefits of a cup?

Menstrual cups are lower cost and environmentally sustainable. The average user of menstrual products throws away 125–150kg of tampons, pads and applicators in their lifetime. The plastic waste ends up in landfill or, even worse, in seas, rivers and on beaches. In their 2016 beach clean-up, the Marine Conservation Society found 20 tampons and sanitary items per 100 metres of shoreline in the UK. Two billion menstrual products are flushed down the toilet a year and are responsible for 75 per cent of all cases of blocked drains. The time it takes for a tampon or pad to degrade in landfill is centuries longer than the lifespan of the individual who used it. Some sanitary pads contain up to four plastic bags worth of plastic.

The cup costs around NZ$40 and has a lifespan of up to 10 years. A woman may use 240 tampons a year, which adds up to $9120 over a lifetime. Menstrual poverty is an issue in Australia and New Zealand, with some girls missing school as their families cannot afford menstrual products. In NZ, there have been some discussions about whether removing GST from menstrual products would reduce this problem. A NZ menstrual cup company has already donated 4000 cups to needy communities in NZ since August 2017.

How acceptable are menstrual cups to women?

A Canadian multicentre randomised controlled trial comparing tampons with menstrual cups, published in 2011, found that cups were a satisfactory alternative to tampons and have the potential to be a sustainable solution to menstrual management,

Image property of MyCup NZ©

A set of menstrual cups in varying sizes.

with moderate cost savings. Overall satisfaction on a seven-point Likert scale was higher for the cup group than for the tampon group. Approximately 91 per cent of women in the cup group said they would continue to use it and recommend it to others.[1] A South African randomised cross-over trial, published in 2015, compared the acceptability and performance of cups to tampons and sanitary pads in a low-income setting. In comparison to pads and tampons (usual product used), cups were rated significantly better for comfort, quality, menstrual blood collection, appearance and preference. Both of these comparative outcome measures, along with likelihood of continued use, recommending the product, and future purchase, increased for the menstrual cup over time.[2]

Is a cup difficult to insert?

A major barrier to menstrual cup acceptance is the requirement that it be manipulated into and out of the vaginal vault, necessitating contact with genital tissues and menstrual fluid. A US study found that a simple illustrated instruction sheet allowed 99 per cent of study participants to insert the cup without assistance in the first practice session. Instruction sheets can be tailored to the needs and concerns of diverse populations.[3]

Do cups increase early IUD expulsion rates?

A retrospective survey of 930 women using an IUD in Canada showed that there was no evidence of higher IUD expulsion rates in cup or tampon users compared to women using pads.[4]

Toxic shock syndrome

Both intravaginal devices appear to be risk factors for the development of menstrual toxic shock syndrome (TSS) and precautions should be advised. A recently published French in-vitro study (April 2018) showed a slight increase of staphylococcus aureus growth and toxin production with menstrual cups, due to the introduction of a higher volume of air than that occurring with tampons in their in-vitro system.[5] Use of a small-sized cup should be advised to limit this effect. Additionally, staphylococcus aureus forms a compact biofilm on contact with the cup, which is resistant to washing with water. The current advice is to empty the cup every four to eight hours and rinse it with water. The authors of this study found that rinsing alone would not eliminate the bacteria and suggested investing in a second cup so that cups can be sterilised between uses. Commercial recommendations prior to this study were that cups should be sterilised at the end of the period. There are a lot of unanswered questions as this was just an in-vitro study. Further research is needed to clarify how often and how the cups should be cleaned to reduce TSS.

Conclusion

Menstrual cups are an effective alternative to tampons and other sanitary products. Sanitary pads and tampons have been in the market for many years, owing to their popularity and functionality. However, menstrual cups provide increased advantages over tampons and other sanitary products.

I think there is a lot of truth in this quote: 'The menstrual cup is a great innovation that makes for so-so business; the tampon is a so-so innovation that makes for great business.'

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ANZJOG

From the editor's desk

Prof Caroline de Costa
FRANZCOG
Editor-in-Chief
ANZJOG

I am happy to report that the virtual issue of *ANZJOG* devoted to Aboriginal, Torres Strait Islander and Māori women's health is now freely accessible on the *ANZJOG* website. I urge you to spread this information as widely as possible. There are two excellent editorials; one from Marilyn Clarke and Kiarna Brown on the health of Aboriginal and Torres Strait Islander women, the second from Leigh Duncan on the health of Māori women. I am most grateful to our publisher, Wiley, for their work on this issue and for making it freely available. Wiley has also made available a series of relevant articles previously published in *ANZJOG*.

The October issue of *ANZJOG* is now out. Ian Symonds, in his Invited Editorial, gives an excellent overview of the new national curriculum in obstetrics and gynaecology and discusses related issues, including the scarcity of clinical experience and the role of simulation in teaching.[1] There are two reviews: the first, by Blandthorn et al,[2] deals with prescription opioid use in pregnancy; the second, by O'Donovan et al,[3] is on mother-to-child transmission of HIV in Australia and other high-income countries.

Two original research articles in obstetrics are concerned with daily, but important, situations in birth suites: water immersion for birth[4] and the routine use of large bore cannulas for labouring women,[5] both coming up with some interesting findings. Equally relevant are the two articles on surveillance of caesarean section wound infection (Scheck et al)[6] and re-admission for this indication (El-Achi et al).[7]

An original research article in sexual and reproductive health, by Vallely et al,[8] looks at visual inspection of the cervix following application of acetic acid and the association with HPV and other infections. This study comes from Papua New Guinea and will not only be of interest to readers in the Pacific, but also to Australian Fellows and trainees doing short-term placements in the region.

In our Short Communications section, Cheng et al answer the question: medical students and midwives – how do they view each other?[9] Lusink and colleagues look at factors predicting successful medical management of miscarriage.[10]

Coming up in the December issue in our Current Controversies in Obstetrics and Gynaecology series: does planned vaginal birth require informed consent? There are two evidence-based, lively papers examining each side of this argument.

I am always glad to welcome new reviewers for *ANZJOG*. Our 12 Associate Editors and two Assistant Editors cover the whole range of subspecialties within our discipline, as well as generalist obstetrics and gynaecology. Each editor sends papers of interest to at least two reviewers, meaning we need a total of around 500 reviews each year. We value the opinions of clinicians as highly as those of academics, so if you are interested, do not hesitate to contact anzjog@ranzcog.edu.au.

I would like to extend warm thanks to Val McDonald for taking on the task of coordinator for *ANZJOG* in the latter half of this year. Val, who previously worked at College House, has come (temporarily!) out of happy retirement to help with the journal. I am most grateful for her assistance.

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The Royal Australian and New Zealand College of Obstetricians and Gynaecologists

Excellence in Women's Health

ANZJOG

ANZJOG virtual issue available online

In conjunction with the RANZCOG Aboriginal and Torres Strait Islander Women's Health Meeting held in Adelaide, Saturday 15 to Sunday 16 September 2018, ANZJOG together with Wiley has published a virtual special issue devoted to Aboriginal, Torres Strait Islander and Māori women's health. Edited by Dr Marilyn Clarke, Chair of the Indigenous Women's Health Committee, and Dr Leigh Duncan, Chair of He Hono Wāhine, this issue features recent articles from ANZJOG and is open access.

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WOMEN'S HEALTH

Journal Club

Had time to read the latest journals? Catch up on some recent research by reading these mini-reviews by Dr Brett Daniels.

Contraceptive use and ovarian cancer

It has been known for some time that there is a link between the use of the combined oral contraceptive pill and a reduced risk of ovarian cancer. The authors of this 2018 study argue that many of the earlier studies did not include large numbers of women using more recent contraceptives, such as long-acting progestogen-only methods, newer progestogens in oral combined pills such as drosperinone, gestodene and cyproterone, and alternative routes of administration such as the vaginal ring. As many women are now using these newer methods, it is important that data be available.[1]

This was a prospective nationwide cohort study conducted in Denmark between 1995 and 2014. The study, which is part of the Danish Sex Hormone Register Study, linked data from Danish women aged 15–49 between 1995 and 2014, with women excluded if they had emigrated, had cancer, had deep vein thrombosis, or were treated for

infertility before entering the study. Data linked from the Danish government included prescriptions for hormonal contraceptives, cancer diagnoses, hospital admissions and surgeries, and birth statistics. The study included data from over 1.8 million women.

More than 20 million person-years of data were available. There were 1249 ovarian cancers recorded, with 771 cancers in the women who had never used hormonal contraceptives (with an exposure of 13 million person-years), and 478 cancers in the group of women who had used hormonal contraception (with an exposure of 8 million person-years). Compared with women who had never used hormonal contraception, reduced risks of ovarian cancer were observed with current or recent use (RR=0.58; 95% CI 0.49 to 0.68) and former use of any hormonal contraception (RR=0.77; CI 0.66 to 0.91), respectively. Relative risks among current or recent users decreased with increasing duration (from RR=0.82; CI 0.59 to 1.12 with less than one years' use to RR=0.26; CI 0.16 to 0.43 with more than 10 years' use; P<0.001 for trend). There was no reduced risk of ovarian cancer associated with the use of progesterone-only contraceptives.[1]

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Labour versus expectant management of low-risk women: the ARRIVE trial

Publication of the results of the Randomized Trial of Induction Versus Expectant Management (ARRIVE) study in August 2018 has been one of the most discussed obstetric papers in recent years. ARRIVE was a randomised controlled trial of induction versus expectant management of pregnancies in low-risk nulliparous women at term.[1] This large multi-centre American trial was conducted from March 2014 to August 2017. The trial approached 22,533 eligible women at between 38 and 39 weeks gestation in their first pregnancy, of which 6106 (27 per cent) provided informed consent and underwent randomisation to either be induced at 39 weeks (between 39+0 and 39+4 days), or await labour until at least 40+5 days' gestation and no longer than 42+2 days. The primary composite neonatal outcome comprising perinatal death (respiratory support within 72 hours of birth, Apgar score of three or less at five minutes, hypoxic-ischemic encephalopathy, seizure, infection, meconium aspiration syndrome, birth trauma, intracranial or subgaleal haemorrhage, or neonatal hypotension requiring vasopressor support) did not differ significantly between the induction (4.3%) and expectant management group (5.4%; RR=0.80; 95% CI 0.64 to 1.00). There was a significantly lower caesarean section rate in the induction group compared to the expectant management group (18.6% vs 22.2%; RR=0.84; 95% CI 0.76 to 0.93), as well as a lower rate of hypertensive disorders in pregnancy in the induction group (9.1% vs 14.1%; RR=0.64; 95% CI 0.56 to 0.74). Women in the induction group spent longer in the delivery suite compared to woman in the expectant management group, and reported a higher median score on the Labour Agentry Scale, indicating a perceived higher degree of control during labour.[1]

The authors' concluding paragraph was: 'In summary, we found that elective labour induction at 39 weeks of gestation did not result in a greater frequency of perinatal adverse outcomes than expectant management and resulted in fewer instances of caesarean delivery. These results suggest that policies aimed at the avoidance of elective labour induction among low-risk nulliparous women at 39 weeks of gestation are unlikely to reduce the rate of caesarean delivery on a population level; the trial provides information that can be incorporated into discussions that rely on principles of shared decision-making.'[1]

Publication of this study has stimulated considerable debate within the obstetric community, with a relatively measured and practical approach being advocated by the American College of Obstetricians and Gynecologists in a recent practice advisory guideline: 'Based on the findings demonstrated in this trial, it is reasonable for obstetricians and healthcare facilities to offer elective induction of labour to low-risk nulliparous women at 39 weeks gestation. However, consideration for enactment of this elective induction of labour intervention should not only take into account the trial findings, but that this recommendation may be conditional upon the values and preferences of the pregnant woman, the resources available (including personnel), and the setting in which the intervention will be implemented. A collaborative discussion with shared decision-making should take place with the pregnant woman.'[2]

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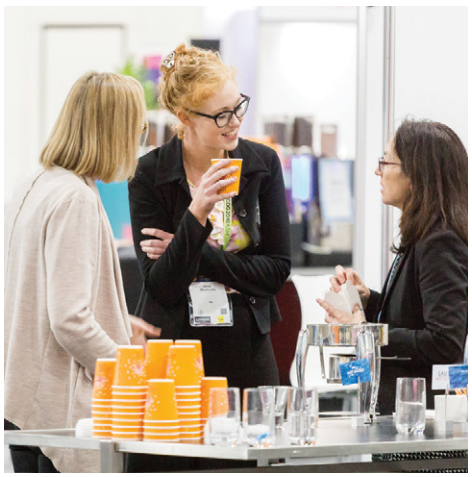
Notice of Deceased Fellows

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

Dr Geoffrey Jackel, 31 May 2018
Dr Brian Neill, 28 June 2018
Peter (John) Birks, 23 August 2018

RANZCOG 2018

ANNUAL SCIENTIFIC MEETING | Shifting Sands | Exploring the boundaries of specialisation



Conference Wrap

RANZCOG congratulates our new Fellows

Oct 2017 to Oct 2018

Dr Emma Allanson
Dr Akwasi Amoako
Dr Christopher Arthur
Dr Masih Ashrafy
Dr Hamdy Azab Abdelrahman
Dr Rajni Bansal
Dr Alexandra Bonner
Dr Kira Brent
Dr Frida Carswell
Dr Sarah Cash
Dr David Chettle
Dr Jeremy Chin
Dr Lena Clinckett
Dr Lara Colbourne
Dr Jodi Croft
Dr Adele Crowley
Dr Albert De Decker
Dr Karena de Souza
Dr Sapna Dilgir
Dr Xiaoman Ding
Dr Angela Dunford
Dr Sascha Edelstein
Dr Natalie Elphinstone
Dr Amy Feng
Dr Kristy Fennessy
Dr Rosalie Fergusson
Dr Sarah Fitzgibbon
Dr Jinny Yuting Foo
Dr Premjit Gill
Dr Bridget Gilsenan
Dr Malcolm Godfrey
Dr Deepa Gopinath
Dr Ruth Grace
Dr Clive Green
Dr Yousri Hana
Dr Lisa Harris
Dr Nadja Hillwig
Dr Caroline Hoggenmueller-Bukhari
Dr Kedar Humnabadkar
Dr Ghazala Irshad
Dr Padma Jatoth
Dr Kanewala Jayasekara
Dr Toral Kamdar
Dr Lauren Kite
Dr Joanna Knight
Dr Pui Ru Koh
Dr Madhu Kolli
Dr Mikhaila Lazanyi
Dr Anusha Lazzari
Dr Anthea Lindquist
Dr Basil Lyngdoh
Dr Joy Marriott
Dr Rachael McConnell
Dr Kirsten McSweeny
Dr Joan Melendez Munoz
Dr Jerome Melon
Dr Hayley Messenger
Dr Sujana Molakatalla
Dr Kristen Moloney
Dr Tavaziva Mudzamiri
Dr Dora Ng
Dr Payam Nikpoor
Dr Rachael Nugent
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Dr Radha Pandian
Dr Ujwala Parashar
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Dr Cheryl Phua
Dr Sarah Pixton
Dr Hayley-Fleur Plummer
Dr Carolin Poon
Dr Danielle Quittner
Dr Roni Ratner
Dr Samantha Rothwell
Dr Sheyamalan Satchithanantham
Dr Scott Shemer
Dr Karen Sheng
Dr Matthew Stinson
Dr Sacha Strockyj
Dr Lauren Tapper
Dr Sanyogita Tara
Dr Matthew Thyer
Dr Justin Tucker
Dr Maree Wallwork
Dr Heather Waterfall
Dr Clare Whitehead
Dr Alice Whittaker
Dr Summer Williams
Dr Kieren Wilson
Dr Nooraishah Yasin
Dr Meggan Zsemlye