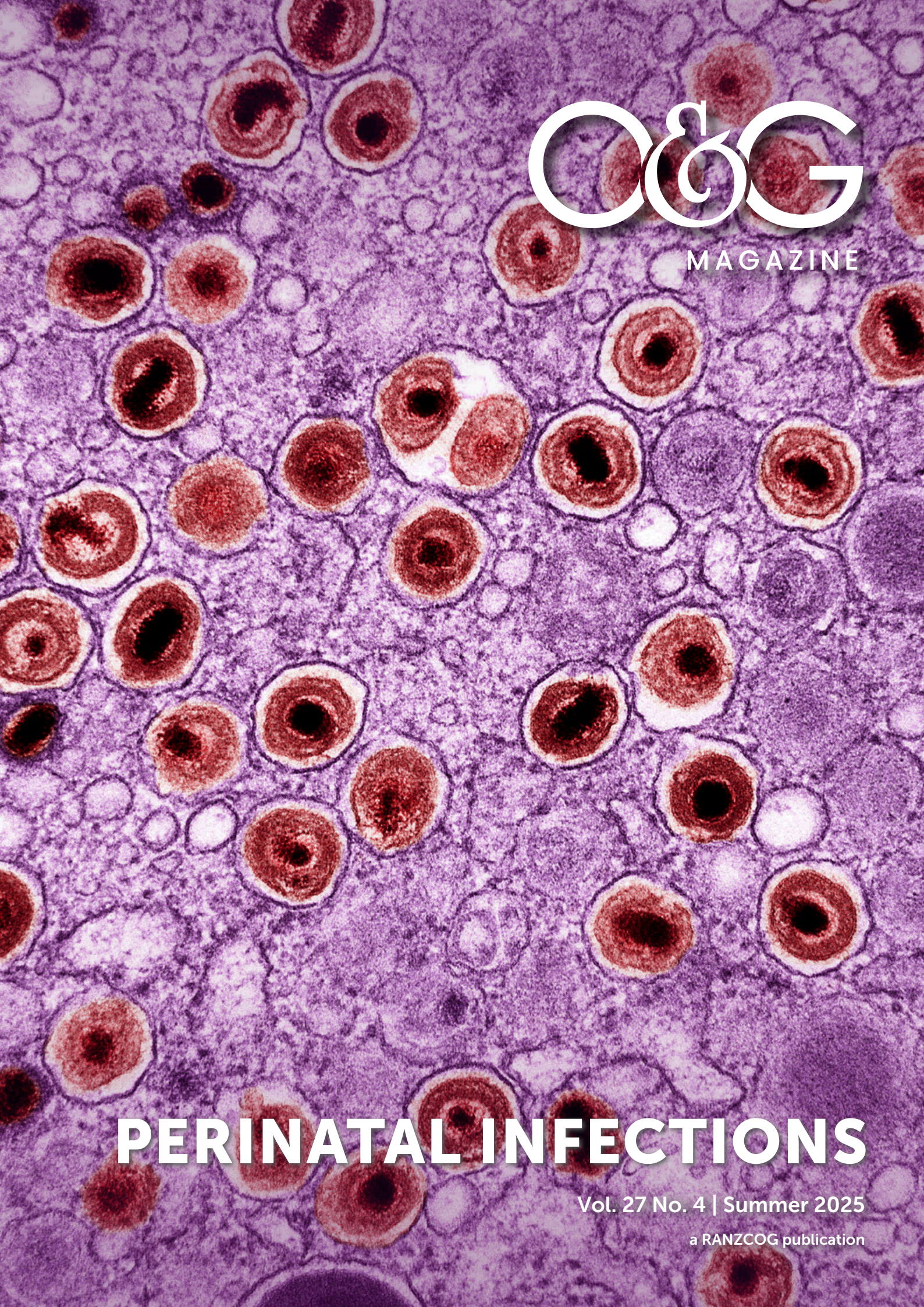

O&G MAGAZINE

PERINATAL INFECTIONS

Vol. 27 No. 4 | Summer 2025

a RANZCOG publication

O&G MAGAZINE

Vol. 27 No. 4 Summer 2025

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Correction: A printing error occurred with the Besins Utrogestan advertisement on the back cover of the September 2025 issue of *O&G Magazine*. Minnis Journals and the College regret this error. The correct advertisement appears on the back cover of this issue Vol. 27 (4) Summer 2025.

RANZCOG acknowledges and pays respect to the Traditional Custodians of the lands, waters and communities across Australia, on which our members live and work, and to their Elders, past, present and future. RANZCOG recognises the special status of Māori as tangata whenua in Aotearoa New Zealand and is committed to meeting its obligations as Te Tiriti o Waitangi partners.

From the President

Dr Nisha Khot
MD, FRCOG, FRANZCOG, AFRACMA, RANZCOG President

I am delighted to present this edition of *O&G Magazine*, the first published in my presidency. This year saw a change in the timing of handover of presidency to coincide with the Annual Scientific Meeting. The Annual General Meeting was held at the ASM again this year. I want to extend my thanks to the ASM Organising Committee for an engaging and thought-provoking scientific program.

It is an honour to have this opportunity to serve the RANZCOG membership and the profession as President. I am extremely grateful to Dr Gillian Gibson and the RANZCOG Board and Council for their hard work during the 13th Council term. I look forward to working with the 14th Board, Council, and you, the membership, over the next two years. This is a challenging time for all medical colleges with regulation changes with regards to training, accreditation, CPD, and assessment of SIMGs, amongst others. The old adage of 'United we stand, divided we fall' has never been more relevant. My priority as President is to ensure RANZCOG is an organisation ready for the future. One of the key roles of the College is that of advocacy. In order to do this, it is important that the College establishes relationships with federal and state governments, focuses on member priorities, and engages in workforce sustainability through robust training and assessments as well as supporting life-long learning. This report highlights the different ways in which the College advocates for its members, trainees, and for women's health more broadly.

Building and Re-establishing Relationships with the Australian Federal and State Governments

RANZCOG was able to make progress on re-establishing key connections and building new relationships with the federal government over the winter and spring. Women's health has a new minister in the Honourable Rebecca White MP, the newly elected MP for Lyons in Tasmania and the Assistant Minister for Health and Aged Care, Assistant Minister for Women, and Assistant Minister for Indigenous Health.

College leadership met with the Assistant Minister in Canberra in late August and have continued to liaise with her office on issues central to women's health through the spring. The College was honoured to have the Assistant Minister participate in our roundtable in November that focused on developing solutions to the crisis in private obstetrics.

The College continues to advocate directly to the Australian Department of Health, Disability and Ageing through relevant Medicare Benefits Scheme divisions, meeting regularly with staff to raise issues of concern to members, and in the domain of obstetrics and gynaecology. Recent discussions have addressed the perceived inequity in billing practices when comparing some MBS items for obstetricians and midwives. The Department has also indicated that there will be further work carried out during this term of government on issues supporting medical specialist needs. The College remains in contact with the Department about what this outline of work entails.

At the state and territory level, RANZCOG has recently signed a Statement of Intent with the Western Australia Department of Health. The Statement is designed to formally agree on areas of collaboration between the College and the Department to improve health service delivery, models of care, and training in WA. The College is pursuing similar agreements with other states and territories.

Private Practice – Focused on Solutions

The College held a follow-up roundtable meeting on 17 November to dig into solutions to the crisis facing private obstetrics in Australia. This roundtable brought together clinicians and health professionals working privately in O&G to develop practical solutions to the problems pressing on private practice. The College's report on the outcomes of this roundtable, *Collaborating for Women's Choice: Sustainability for Private Maternity*, is available on the RANZCOG website. This report forms the basis for advocating to government, carrying these solutions forward to be applied in practice in 2026 and beyond.

Concurrently, the College has continued to work with government on the issue of private practice through available forums, such as by joining the Maternity Working Group, Innovative Models of Care Subgroup of the Private Health CEO Forum, which is a body that has been established to advise the Minister for Health, Disability and Ageing, the Honourable Mark Butler MP, on the crisis in private health.

Private practice is an equally pressing issue in Aotearoa New Zealand, where a specific private practice obstetrics and gynaecology committee has been created.

Workforce

The Obstetrics and Gynaecology Education and Training (OGET) program has recently expanded its reach by establishing three new hubs in Wagga Wagga (NSW), Newcastle (NSW), and Burnie and Launceston (Tas), bringing the total number of regional health service OGET hubs from nine to twelve.

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This expansion has significantly enhanced access to onsite, localised education, and skills maintenance at more than 60 peripheral regional, rural and remote health services across Australia. The program continues to effectively support a wide range of health professionals, including GPs, registrars, anaesthetists, midwives, nurses, and others, strengthening clinical capability and workforce sustainability across Australia.

The College is continuing to pursue opportunities to extend OGET program funding. At the time of writing, discussions with various jurisdictions are progressing well.

The College has been party to several discussions around workforce planning and continues to press for sustainable action on the part of governments in both countries. The College met with the National Maternity Workforce Strategy (NMWS) staff team in August, which provided an opportunity to discuss common points of concern into the NMWS, such as speeding up training in gynaecology surgery; the declines in GPO numbers and risks incurred from that decline; how rural workforce recruitment and retention can be supported; and how private closures are also impacting on workforce numbers. The College expects to be included in consultations on a draft paper being developed by the NMWS' Strategic Advisory Group, with a public survey expected soon, to be followed by detailed consultations. The College was able to advance similar points in direct discussions with the Australian Department of Health, Disability and Ageing's Health Workforce Division Health Resourcing Group.

In Aotearoa New Zealand the College has continued to be active in advocating for workforce issues, particularly around surgical training and access to training opportunities, with increasing outsourcing of surgery to private hospitals. The College also supported Te Whatu Ora to establish a technical advisory group that will study access issues for gynaecology with the remit to suggest ways to make access more consistent across Aotearoa New Zealand. The College is continuing to advocate for this to evolve into a gynaecology national clinical network, which will provide clinical leadership and inevitably need to bring in considerations of sustainable workforce supply.

Sexual and Reproductive Health

Sadly, the perpetual effort to undermine abortion services through legislation rolled along this spring, again in South Australia. Much like in spring 2024, the introduction and debate over a private member's bill to limit access to abortion at later gestations drew significant focus to the state. The College came out strongly against the bill proposed by Ben Hood MLC in 2024 and did so again against the bill proposed this year by Sarah Game MLC.

The College appreciates that individual members will have their own personal views on abortion, but RANZCOG's position on this remains unequivocal: abortion is essential healthcare.

A decision to terminate a pregnancy is deeply personal and complex. These decisions must remain between the woman and her healthcare provider and not be subject to the whims of political intervention. Current legislation in South Australia – and indeed, in all States and Territories – already have well-defined parameters guiding the provision of abortion services. Amendments like Mr Hood's and Ms Game's only further erode women's autonomy over their bodies and the freedom to make decisions about their own healthcare. The College spoke out strongly against Ms Game's bill and will do so again whenever and wherever warranted when access to women's health services come under political threat.

To the contrary, RANZCOG was pleased to support MSI Australia and its associated pharmaceutical company MS Health in its application to the Therapeutic Goods Administration to vary the indications of MS-2 Step. Currently, MS-2 Step is approved for use in medical abortions up to nine weeks (63 days) gestation, which is not in line with best practice or with RANZCOG's own guidelines on abortion care, which calls for use of the MS-2 Step formula up to ten weeks (70 days). MS Health's application to the TGA also seeks to extend the indication of MS-2 Step for use in management of miscarriage, which the College also supports.

The College has been active in supporting the Australian Institute of Health and Welfare's new project to develop a Sexual and Reproductive Healthcare Monitoring Framework and Data Strategy. Sexual and reproductive health data at national level in Australia is a gap that has needed filling for some time, which this project recognises. The College contributed to focused stakeholder discussions at the launch of the strategy earlier this year and is continuing to consult with the AIHW as it develops it's work program over the next couple of years.

Advancing Women's Health: Looking Towards 2026

The priorities described here provide a roadmap for action in 2026; all are complex topic areas which are sure to remain high on the College's agenda. At the federal level, the opportunity to advance priorities without the interruption of a federal election, and a strong foundation laid with a second term government is positive. State elections in South Australia and Victoria provide room to continue to push for members' priorities in both states. In Aotearoa New Zealand the 2026 general election will provide the opportunity to advocate for women's health priorities.

Finally, the College is humbled to have delivered an apology to Māori trainees and Fellows who experienced unsafe, racist, and inequitable treatment during their training. It is fitting that this apology was during the period in which RANZCOG was led by an Aotearoa New Zealand Fellow, Immediate Past-President, Dr Gillian Gibson. The College is looking at ways to research and take appropriate steps in response to similar experiences in Australia (possibly alongside other Colleges).

This is the last issue of *O&G Magazine* for 2025. I would like to take this opportunity to thank all RANZCOG members and trainees who will be working over the summer, providing essential healthcare services across Australia and Aotearoa New Zealand. I also want to thank Ms Vase Jovanoska, Chief Executive Officer, and the RANZCOG Executive Leadership Team and staff for their dedication to the vision and mission of our College. I hope you will all have some downtime with family and friends to rest and recover over the summer holidays.

RANZCOG Historical Collection: Dickinson and Belskie's *Birth Atlas*

Greg Hunter
Archivist and Historical Collections Administrator, RANZCOG

Visitors to the 1939 World's Fair in New York were in for a treat. Billed as an exhibition of the *World of Tomorrow*, the fair stretched over more than 1200 acres, and included giant sculptures, a futuristic cityscape, the world's first synthetic voice synthesiser, the first fluorescent light and fixture, and *Elektro the Moto-Man* - a seven-foot-tall walking, talking, smoking and singing robot.[1]

Amongst this array of spectacles was an exhibit entitled *The First Year of Life*. The "brainchild" of Brooklyn obstetrician and gynaecologist, Robert Latou Dickinson, the exhibit was a series of two dozen sculptures (known as the *Birth Series*) which showed "a neatly progressing narrative of pregnancy, ordered from conception through birth."[2] As they passed by each sculpture, visitors to the exhibit were offered pamphlets by an attendant which described each stage of fetal development.[2] The sculptures were a collaboration between Dickinson and Scottish sculptor Abram Belskie. Dickinson prepared sketches and designs that were then modelled by Belskie.

Dickinson and Belskie

Born in 1861, Dickinson was fascinated by the inner workings of the human body from an early age. At the age of ten, he suffered a canoeing accident where he received a horrible gash across his abdomen, after which "with remarkable calm, he swam ashore with one hand, holding his intestines in place with the other."[3] The village doctor, crippled with arthritis, was unable to complete the required sutures and instead instructed the local shoemaker on the process.[3] Dickinson was "enthralled" by the doctor's confidence, and a passion for medicine was born.[2]

By the time of the 1939 World's Fair, Dickinson was 78 and had enjoyed a long and successful career in obstetrics and gynaecology. A talented artist, Dickinson used drawing throughout his career as a physician, "complementing each case history with sketches of his patients' sexual anatomy in which he noted the size, colour, and shape of their genitalia."[4] His methods were, however, not without controversy, as with the advent of photography he also made use of "a well-positioned camera secretly hidden in a flowerpot in his office" to capture images for his clinical notes.[4]

Whereas Dickinson's interest in obstetrics and gynaecology was deep and lifelong, the younger Belskie was from a different world. Born in 1907, and raised in Glasgow, Belskie was taken aback on his first encounter with Dickinson and his work. Looking beyond the door of Dickinson's office, Belskie's "first impulse was to get the heck out of there... They were painting something to do with genitalia."[4] Fortunately, however, the two men hit it off, and what began with the *Birth Series* ended up being a collaboration which produced "over one hundred additional medical teaching models in the decade that followed."[4]

The World's Fair

Stephanie Gorton notes that the *Birth Series* exhibition at the 1939 World's Fair "was the first time, outside the realm of medical education or a sideshow cabinet of curiosities, that crowds of people had had a way to envision together what a human fetus might actually look like—and it was a sensation."[2]

Fig. 1. King George VI and Queen Elizabeth greet visitors at the 1939 World's Fair in New York City. Source: FDR Presidential Library & Museum. Licensed under CC BY 2.0

Fig. 3-5. The Birth Atlas, 2nd edition, 1943. Frank Forster Library collection. Photos: Greg Hunter.

According to Rose Holz, the exhibit "attracted long lines from ten in the morning to ten at night," and was so successful that "it prompted more than a few complaints from fair organisers and fellow exhibitors," claiming that the exhibit "prevented people from visiting other booths."[4] Such was the demand that a second set of sculptures was produced to help get through the queues.

Following the World's Fair, demand for the *Birth Series* only increased. Additional copies of the sculptures were made, with medical, public health institutions, and museums all desiring them, as well as commercial companies and even department stores. Creation and transport of the models was, however, expensive and somewhat difficult, and not all who wanted the models were able to obtain them. The solution to this problem was to "reproduce them in a variety of cheaper and more transportable forms."[4] The most successful of these reproductions was the *Birth Atlas.*

The Birth Atlas

The Maternity Center Association (MCA) (the original commissioners of the *First Year of Life* exhibit) decided to produce a publication called the *Birth Atlas*, a book which "depicted the entire *Birth Series* using photography and line plate drawings."[3] The *Birth Atlas* was a huge success. Indeed, as Rose Holz notes, it was "more popular than the sculptures themselves," going "through six editions (with many reprints of each) from 1940 through the1960s."[3]

The RANZCOG Frank Forster Library holds a copy of the second edition of the *Birth Atlas*, printed in New York in 1943. This copy of the *Birth Atlas* was donated to the College by St George's Hospital, Kew, forming part of a group of items collected on the hospital's final day of providing obstetric services in November 1998. Measuring 45cm wide by 56.5cm high, the tattered black cover of the atlas contains 16 large scale, "life size" black and white plates. Each plate is given a brief caption, detailing the stage of fetal development depicted. One image in the atlas compares the nourishment of a plant to the nourishment of a baby in the womb, in an attempt to draw a comparison with something the audience was more familiar with. Beautifully detailed, the plates provide a fascinating insight into the models that captivated a curious New York public over 80 years ago.

The College is also fortunate to hold a series of six enlarged prints taken from this edition of the *Birth Atlas*. These prints were part of a subsequent donation to the College by St George's Hospital in 1999, having previously been used in the hospital's antenatal clinic. At the time of writing, these prints take pride of place on the wall on Level 4 of Djeembana College Place. Members and trainees are invited to visit the College to view these fascinating insights into obstetrics history.

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Dr Sebastian Leathersich, 2023 Scholarship Recipient

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Volunteering at the National Referral Hospital in Honiara, Solomon Islands - a Challenging but Worthwhile O&G Training Experience

Dr Siobhan Langford
Obstetrics and Gynaecology, Advanced Trainee Registrar

As a senior obstetrics and gynaecology registrar, I recently completed a six-month volunteer assignment at the National Referral Hospital (NRH) in Honiara, capital of the Solomon Islands, as part of the Australian Volunteers Program. This program is an Australian Government-funded initiative that supports global volunteering and locally-led change.

Only a three-hour flight from Brisbane and one of our nearest neighbors, Solomon Islands is a low-income country, and a world away from the comforts and lifestyle of inner-city Melbourne that I am used to. Solomon Islands has significant geographical, economical, and logistical barriers that impact the provision of healthcare to women and newborn babies, leading to high maternal and perinatal mortality rates.

Dr Siobhan Langford with the O&G team at National Referral Hospital, Honiara, Solomon Islands. Photo credit: Siobhan Langford

Arriving in Honiara with my family, I was greeted by the Australian Volunteers Program in-country team who helped us settle in. The incredible team of O&G doctors and midwives working at NRH also welcomed me. They are some of the most resilient people I have ever met, working with challenging conditions, including shortages of blood and oxytocin, difficulties accessing theatre, and falling ill with endemic diseases such as malaria and dengue themselves. During my assignment, I worked in the antenatal ward, labour ward, and gynaecology ward providing clinical supervision and support to local registrars and interns. I also worked with the consultants to help develop their Obstetric Clinical Guidelines, which will be finalised and introduced into practice by the end of 2025. Teaching bedside ultrasound and caesarean section surgical skills to the registrars was also very enjoyable and rewarding, as were the numerous research opportunities I had during my assignment.

I would encourage any other senior trainee that has an interest in global obstetric care to consider a placement such as this during their training.

During my time volunteering at NRH, I learnt the true resilience and strength of women – both patients and colleagues. Learning how to manage complex medical, obstetrics, and gynaecology problems in a resource-limited setting was a steep learning curve for me and will be of significant benefit to me in my future clinical practice. While living and working in Honiara was challenging personally and professionally, the impacts and benefits of my assignment have made it worthwhile. Gaining an understanding of how obstetric care is delivered in such a setting as NRH gave me an incredible perspective upon returning to work in Melbourne. The ready access to resources, expertise of other specialists, and availability of medicines, blood products, and theatre have highlighted how truly fortunate we are in Australia. I would encourage any other senior trainee that has an interest in global obstetric care to consider a placement such as this during their training. It was wonderful working with and learning from the members of the NRH O&G team, and they were equally happy to learn from my experiences training in Australia. I am so appreciative to the team for allowing me to become part of their O&G family. Tagio Tumas!

In addition to the support from the Australian Volunteers Program for her assignment, Dr Siobhan Langford also received the Miriam O'Connor Travelling Scholarship from the RANZCOG Women's Health Foundation.

Talking O+G

a RANZCOG podcast

Talking O&G is RANZCOG's new podcast unpacking the latest research and clinical guidance in obstetrics and gynaecology.

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Updates from our Research and Policy Team

Prof Cindy Farquhar
RANZCOG Dean of Research & Policy,
MB ChB, MD, FRCOG, FRANZCOG, CREI,
MPH, MNZM, PMMRC

Acknowledging the theme of this issue, the current RANZCOG clinical guidance statements and guidelines that help inform the topic of perinatal infections include:

- Management of Hepatitis C in pregnancy (C-Obs 51)
- Maternal Group B Streptococcus in pregnancy: screening and management (C-Obs 19)
- Prevention of congenital cytomegalovirus (CMV) infection (C-Obs 64)

RANZCOG also endorses the:

- Australasian Society for Infectious Diseases (ASID) Management of Perinatal Infections (2022)

It has been a busy year for Research and Policy, with the publication of five key new and updated clinical guidelines. These are:

- Miscarriage, Recurrent Miscarriage and Ectopic Pregnancy (C-Gyn 38)
- Australian Living Evidence Guideline: Endometriosis
- Vasa Praevia (C-Obs 47)
- Birth After Caesarean (C-Obs 38)
- Intrapartum Fetal Surveillance (C-Obs 1)

Professor Cindy Farquhar, Dean of Research and Policy, and her team of international researchers from Waipapa Taumata Rau, University of Auckland, (UoA) and the RANZCOG Research and Policy Team (RaPT).

This year, Research and Policy have also broadened our scope of work to guideline implementation, including commencing work on the update of RANZCOG's portfolio of Patient Information Pamphlets.

Research and Policy, along with the Women's Health Committee, would like to thank all Guideline Development Group Chairs and members for their valued work and contributions. All new guidelines and updated patient resources can be accessed on the College website.

The RaP and UoA teams at a workshop held in April in Djeembana, Melbourne - building collaboration and knowledge sharing.

Looking Ahead to 2026

Research and Policy have an exciting program of work planned for 2026, including but not limited to:

- Publication of a new evidence-based RANZCOG guideline on Menopause.
- Publication of a new evidence-based Robotic Assisted Surgery in Gynaecology guideline.
- Development of new and updated clinical guidance on:
  - Management of complications of the second stage of labour: assisted vaginal birth, shoulder dystocia & obstetric anal sphincter injury.
  - Abnormal uterine bleeding.
  - Induction of labour.

Get Involved in 2026

Opportunities to participate in guideline development and provide feedback on draft work are advertised in *Connect* – please keep an eye out throughout 2026.

Thank you to College members for your support and engagement with Research and Policy in 2025!

Contact Us

To connect with RANZCOG Research and Policy, or to provide feedback about guidelines or Patient Information Pamphlets, please contact: womenshealth@ranzcog.edu.au

Staying Safe This Summer: Reducing Pregnancy Risks from Extreme Heat and Bushfires

Dr Ying Gu
MBBS, BMedSci, FRANZCOG,
COGU, DDU (O&G)

Dr Marnie Slonim
MBBS (Hons) FRANZCOG

Dr Grant Silbert
MD, BA, DipLang Co-chair Medical Education
Committee, Doctors for the Environment Australia

As the impacts of climate change intensify, we are already seeing its effects on the health of our patients and their communities. Throughout most of Australia and Aotearoa New Zealand our summers are becoming hotter and our bushfire seasons longer and more intense. These extreme weather events are also major public health threats and cause significant morbidity and mortality.[1] The recently released National Climate Risk Assessment estimates that in parts of Australia, heat related mortality will increase by 450% at the current trajectory of 3°C of global warming.[2] It is important to note that a heatwave is relative to the average temperatures specific to a place at that time of the year, so health effects can occur at lower temperatures earlier in the season or in places where the average temperatures are lower. Both heat stress and bushfire exposure can adversely impact pregnancy and reproductive outcomes and negatively impact mental health. Furthermore, the health impacts on pregnant people can affect the health and wellbeing of future generations.[3,9]

Extreme Heat: What Are the Risks?

Pregnancy-related physiological changes confer increased susceptibility of pregnant people to extreme heat. Multiple mechanisms have been proposed and likely act in concert to mediate adverse pregnancy outcomes. Possible mechanisms include increased metabolic rate, decreased surface area to mass ratio, dehydration-related release of prostaglandins and oxytocin, and altered placental perfusion. Women in lower-socioeconomic groups, rural populations, Indigenous communities, ethnic minorities, as well as mothers at extremes of age or with chronic conditions like diabetes or depression, are more likely to be impacted.[4]

Preterm Birth

A recent systematic review and meta-analysis published in the *British Medical Journal* found that the likelihood of preterm birth increased by 5% per 1°C increase in temperature, and by 16% during heatwaves.[4] Most studies reported dose-response associations, where rates of preterm birth rose progressively with increasing temperatures and longer durations of heat exposure. Exposure timing and lag windows varied between studies, with increased preterm birth risk associated with exposure during the month of conception right through to the final week of pregnancy.[4]

Stillbirth

Heat and stillbirth also display a dose-response relationship with stillbirth risk increasing by 5% per 1°C increase in temperature. Of note, these studies were conducted in high income countries.[4] A Brisbane study found heatwave exposure in all months of pregnancy was associated with increased stillbirth, while a Western Australian study found the final weeks of gestation to be the highest risk exposure period.[5,6]

Subfertility

There has been limited human-specific research into the effects of heat on fertility.[7,8] In a single centre cohort study of 631 women who attended a fertility centre at an academic US hospital, a small but statistically significant reduction in antral follicle count of 1.6% was associated with every 1°C increase in average maximum temperature during the 90 days prior to ovarian reserve testing.[8]

Mental Health

There is clear evidence of increased mental health related emergency department presentations and hospital admissions in hotter weather, in addition to an increased incidence of physical and sexual assault and domestic violence.[9] Pregnancy combined with severe mental illness increases the risk for psychiatric emergencies during hot weather.[9]

Bushfires: What Are the Risks?

Climate change is increasing bushfire frequency and severity across large parts of Australia due to increases in extreme heat, drought, and storms.[2,3] Recent megafires linked to climate change include the 'Black Summer Fires' (2019-2020) and Victoria's 'Black Saturday Fires' (2009). These fires caused significant loss of life, in addition to devastating health, social, economic, and environmental impacts.[2,13] Air pollutants such as fine particulate matter ($PM_{2.5}$) from bushfire smoke have been associated with adverse pregnancy and fertility outcomes, affecting nearby and down-wind populations.

Preterm Birth

An Australian cohort study found small but significant increases in preterm birth and decreases in birth weight following the 2009 Black Saturday bushfires compared to women living in unaffected areas.[10] A larger epidemiological study from California, USA, examined more than 3 million births, finding that 3.7% excess preterm births can be attributed to wildfire smoke in 2007-2012, and up to 6% excess preterm births in high smoke years.[11]

Subfertility

Particulate matter ($PM_{2.5}$) has also been shown to be associated with impaired sperm and oocyte quality, reducing fertility by 2% for every increase in 10 units of concentration in the air. [12] The impact can be significant when levels of $PM_{2.5}$ in Melbourne were recorded above 300 $\mu g/m^3$ during the Black Summer bushfires, well above the Australian National Air Quality Standard ('very poor' air quality >50 $\mu g/m^3$).[13]

Mental Health

Communities affected by the Victorian Black Saturday bushfires had increased rates of post-traumatic stress disorder, depression, and alcohol misuse 3-4 years after the event.[14] Despite limited research, there is evidence to suggest that gender-based violence increased significantly in communities affected by the Black Saturday fires, which is consistent with studies conducted in the aftermath of climate-related disaster events in New Zealand and internationally.[15]

What Can We Do?

1. Inform patients to avoid heat stress on hot days e.g., stay hydrated, stay indoors, exercise inside or during cool parts of the day, access cooled public spaces like libraries and community centres.
2. Educate patients on the symptoms of heat stress and ensure they know when to seek medical attention.
3. Advise patients to check air quality alerts (IQAir, www.iqair.com/au/australia) and access the RANZCOG Air Pollution & Pregnancy Patient Information Pamphlet (available online) which contains recommendations to reduce exposure.
4. Educate patients and other care providers e.g., GPs, midwives on how extreme weather can exacerbate comorbidities.
5. Embed sustainable healthcare practices within our clinical practice, hospitals, and healthcare services to reduce greenhouse gas emissions e.g., switching to renewable electricity, avoiding investigations that do not alter clinical management, choosing reuseable medical equipment over single use where possible.

As obstetricians and gynaecologists, we have the unique opportunity to interact with families at some of life's most pivotal moments. It is our responsibility to educate and protect women's health by minimising the impacts of climate change and advocating for evidence-based climate action from government and institutions.

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LEADERS IN FOCUS

Dr Fleur Muirhead
MBBS (Hons), ARANZCOG (Adv.P)

This feature sees Dr Fleur Muirhead in conversation with women's health leaders in a broad range of leadership positions. We hope you find this an interesting and inspiring read.

Dr Samantha Scherman
FRANZCOG

Introducing Dr Samantha Scherman

Dr Samantha Scherman is a senior O&G consultant at Cairns Hospital in Far North Queensland. Her current role includes the provision of obstetric and gynaecology services, teaching and supervision of junior medical staff, and outreach clinics to rural and remote communities, including Thursday Island, Mareeba, and Innisfail Hospitals. Dr Scherman previously served as Head of Department at Cairns Hospital O&G Department before stepping back into a more clinical role in 2024.

Can you share what inspired you to pursue a career in obstetrics and gynaecology, and what led you to settle in Cairns?

I knew I was destined to become an obstetrician/gynaecologist (O&G) when I passed my O&G subject at medical school with flying colours. I enjoyed many different terms that I did as a resident, but O&G was the only specialty that I could see myself doing for the rest of my career.

I was allocated to Cairns as a fourth-year registrar for my rural rotation as part of the Queensland ITP. I was excited to come to Cairns, as I had previously lived in Weipa on the Cape York Peninsula for three years whilst at school. I ended up doing both my fourth and fifth years of training at the Cairns Base Hospital, I really enjoyed the work — and living in Cairns . When I was offered a staff specialist position during my final year of training, I accepted immediately, and have been working here ever since.

Cairns Hospital is a fantastic place to work. Many of the staff are like my second family. Everyone I work with has a genuine desire to better the outcomes for the patients that they care for. And Cairns is a great place to live – beautiful beaches (though obviously with the caveat of the creatures that can sting and eat you that live in the water!), rainforests and waterfalls nearby, the stunning Great Barrier Reef, and quality restaurants and entertainment venues.

What are the key achievements you're proud of and some of the challenges faced as a regional head of department?

The biggest challenge when I first stepped into the Head of Department role was learning how to lead whilst on the job. I remember my first day as Director, I sat at my desk wondering exactly what I was supposed to be doing! I'm pleased to see that RANZCOG now offers leadership training for trainees and new Fellows who are interested in leadership roles.

Another significant challenge was learning how to be a source of advice, information, and sometimes conciliation for the rural birthing sites for which Cairns is the referral centre. It was sometimes a balance — recognising the skills of the rural generalist obstetricians running those units, while also knowing when and how to advise on care when needed.

My proudest achievement as Director was fostering a collaborative, team based, culture within the Cairns unit alongside my senior midwifery colleagues. I'm proud of the strong, respectful relationships that exist between our midwifery and medical staff, among the consultant team, and our registrars, PHOs, and residents within the unit.

As anyone working in O&G knows, it can be a stressful working space at times, and it is often the team around you that gets you through the tough times.

One of the most rewarding aspects of working in a unit that trains rural generalists is seeing how many of them choose to stay in the region. I'm continually impressed by how skilled these doctors are across so many areas of medicine — not just O&G.

You undertake outreach clinics across FNQ and the Torres Strait. What role do these clinics play in improving outcomes and equity for women, and what are the unique needs and strengths of these rural and remote communities you work in?

The outreach O&G service from the Cairns unit has been running for over 30 years and has expanded over that time. We now visit five sites within the Cairns and Hinterland Hospital and Health Service (CHHHS) and seven sites in the Cape and Torres regions. To be honest, I believe the service benefits not only the women in those communities, but also our staff.

We prioritise continuity of care, with the same two to three consultants typically responsible for attending Far North Regional Obstetric and Gynaecological Services in each community. Each consultant is accompanied by either a registrar or a PHO, which gives junior doctors valuable insight into the resourcing and staffing issues that many of these units face.

Care close to home is critically important for most women and their families — particularly in settings where we are not talking about a one to two-hour drive away, but a one to two-hour or more flight away from a higher-level referral centre. Travelling away from their communities to see a specialist in Cairns can cause significant stress and anxiety for many women, which can be multifactorial.

I certainly believe that if we did not travel to their communities, many women would not seek or receive specialist care at all.

I recall stories from when Professor Michael Humphrey, then Director of O&G at Cairns, first established the Far North Regional Obstetric and Gynaecological Service. He was seeing women with severely advanced gynaecological conditions, cancers in particular, because they had been unable, for a variety of reasons, to travel from their communities to see a specialist O&G. Thankfully, we have come a long way since then.

What are the advantages and challenges of training and mentoring registrars, junior doctors, and medical students in a regional setting like Cairns?

I believe that it's a real advantage for any unit to be training registrars and PHOs. The beginning of each hospital year is always an exciting time. New registrars bring fresh ideas and ways of "getting things done" from the hospitals they have previously worked at, that as a unit are new to us. Over the years, we've incorporated suggestions from both current and past registrars into how the unit runs.

It is very important that a public teaching hospital provides a collaborative and supportive learning environment. I particularly enjoy teaching registrars operative skills they may not have had exposure to in their previous hospitals. For instance, since we don't have a resident urogynaecologist in Cairns — the closest one being in Townsville, a four-hour drive away — we perform much of the straightforward vaginal prolapse surgery ourselves. In a tertiary/metropolitan hospital, many of these cases would typically be referred directly to the urogynaecology unit.

As we don't have on-site subspecialist urogynaecology, gynae oncology, or maternal-fetal medicine units, registrars are not able to complete those particular subspecialty terms in the unit, however we can provide a very good grounding in generalist O&G. Our trainees gain experience in managing medical conditions in pregnancy that may be less commonly encountered in more metropolitan centres, such as rheumatic heart disease.

We have a longstanding commitment to training rural generalist obstetricians — a part of the job I find particularly rewarding. As I mentioned earlier, many of the rural GPOs who train with us stay in the region. That continuity means communication between our "spoke" units and the Cairns base remains strong. It's always a pleasure to reconnect with our former GPO trainees during outreach visits at Far North Regional Obstetric and Gynaecological Service sites.

What would you say to metropolitan-based O&Gs who are considering or hesitant about working in a regional centre?

I have never regretted the decision to build my career in a regional centre. While a smaller centre is not for everyone, if you enjoy working as an integral part of a smaller team, the more "generalist" aspects of O&G practice, and being part of outreach clinics and liaising with referring "spoke" units, you should definitely consider regional practice as a fulfilling and valuable career path.

What's something that people might be surprised to learn about you?

My Mum is English and worked as a bicycle midwife in a port city in England (yes — just like on the TV show!). My Dad is Canadian, and I was born in a German nun-run hospital in South Korea. A long story — one I am happy to share face-to-face anytime, but probably a bit too lengthy to commit to paper here!

Looking ahead, what are your hopes for the future of regional obstetrics and gynaecology in Queensland and beyond?

Speaking from a regional, rural, and remote perspective, addressing workforce shortages is extremely important, both now and into the future. Initiatives such as the FRANZCOG Rural Obstetrics & Gynaecology Specialists (FROGS) training program can facilitate pathways to regional practice for registrars who have always wanted to settle in a regional or rural area, and may even inspire some trainees who hadn't previously considered it to explore this career path.

The long-term sustainability of rural maternity units depends heavily on solving the workforce challenges facing rural GPOs. Rural GPOs — alongside their midwifery colleagues — form the backbone of rural and remote general healthcare and maternity care. If we are serious about preventing the ongoing closure of rural maternity units, we must address the workforce shortages that the rural GPO cohort faces.

Another growing concern is the ongoing closure of private hospital maternity units in Queensland and across the rest of Australia. In Cairns, closure of the private hospital maternity unit has left women in Cairns with no choice as to where they wish to birth. Although I have never practised in the private obstetric sector, I strongly support a woman's right to choose which model of care she feels is right for her and her family. It is deeply unfortunate that women in Cairns and in other communities where private services have been withdrawn no longer have that choice.

Editorial

Dr Talat Uppal
FRANZCOG, FAAQHC, FACHSM, DDU

Why Perinatal Infections Still Matter

Pregnancy is often described as a time of glow and anticipation. Yet for many women and their clinicians it can be a period of heightened vigilance, where exposure to the smallest microbe can alter the course of the pregnancy. Some infections that are mild in the general population can be devastating in the perinatal period. Their subtlety is what makes them dangerous: a sore throat that turns septic, a rash that signals varicella, or a silent chlamydia infection that costs a baby's first breath.

In this issue, we revisit the microbes we thought we'd conquered, and the ones we too easily overlook. A case of fulminant Group A Streptococcal sepsis on day seven postpartum reminds us how "mild" symptoms can progress to multi-organ failure and toxic shock.

There are articles covering common viral threats, including Varicella-zoster, influenza, COVID-19, parvo virus 19, and cytomegalovirus, highlighting prevention, case management, and patient education.

Chronic infections like hepatitis B and C remain quietly prevalent, often demanding ongoing care post-partum. Perinatal management of vaginal thrush or bacterial vaginosis is included in this edition.

As medicine advances, so must our research, understanding, and management of these invisible foes. They may be small, but in the perinatal world, they still hold enormous power.

Thrush in Pregnancy

Ma Camilla De Dios
MD

A/Prof Ajay Vatsayan
MD, FRANZCOG

Vulvovaginal candidiasis (VVC), or thrush, is among the most common vaginal infections in pregnancy. Approximately 75% of women will be affected at least once in their lives, and rates notably climb during pregnancy.[3,4] This creates significant management challenges for obstetricians and midwives. This review evaluates current Australian evidence and practice guidelines for diagnosing and managing thrush in pregnancy.

Epidemiology and Microbiology

Candida species colonise the vagina in at least 20% of women, rising to about 30% during pregnancy.[6] Most symptomatic cases result from the overgrowth of Candida albicans, although non-albicans species, such as C. glabrata or C. krusei, account for 10–20% of infections.[1,2] Thrush becomes more frequent in pregnancy due to physiological changes that promote candidal overgrowth. Infection may develop spontaneously or after disruption of the normal vaginal flora, commonly following antibiotics or increased oestrogen, as seen in pregnancy.

Pathophysiology in Pregnancy

Multiple factors increase the risk of thrush in pregnancy, most notably the hyperoestrogenic environment. High oestrogen levels raise vaginal glycogen, providing nutrients for fungi.[5,6] Oestrogen also induces Candida's shift from harmless yeast to invasive hyphae, heightening its virulence.[6]

Pregnancy triggers changes in cell-mediated immunity, especially impacting T-helper cell responses.[6] While these shifts are essential for feto-maternal tolerance, they inadvertently foster conditions that allow opportunistic infections, such as candidiasis.

Candida does not occur in a non-oestrogenised vaginal environment. This explains why VVC is rare in prepubertal girls or postmenopausal women not on oestrogen therapy.[2] Most cases of candidiasis are due to overgrowth of endogenous yeast rather than sexual transmission, although transmission can occur occasionally.[1,2]

Risk Factors

In addition to pregnancy-specific factors, several other risk factors heighten VVC susceptibility in pregnant women.

Antibiotic Use: Recent or ongoing antibiotic therapy disrupts the protective lactobacillus-dominated vaginal microbiome, allowing Candida overgrowth.[1,2]

Diabetes Mellitus: Both pre-existing and gestational diabetes significantly increase VVC risk. Hyperglycemia provides an improved substrate for fungal growth and may impair local immune responses.[3,4,6]

Immunosuppression: HIV infection or other causes of immunocompromised states increase susceptibility to symptomatic infection.[1,2]

High-Dose Hormonal Therapy: Use of higher-dose combined oral contraceptive pills or menopausal hormone therapy (important for pre-pregnancy counseling).[3]

Clinical Presentation

The most common symptom of thrush is itching or burning around the vulva. Other possible signs include:[3,4]

- Thick, white, or creamy vaginal discharge (often resembling cottage cheese).[2,3]
- Vaginal soreness.[2]
- Superficial dyspareunia.[2]
- Vulvar dysuria (external burning sensation during urination).[2,10]
- Vulvar erythema and edema.[2]
- Vulvar fissures and superficial erosions in severe cases.[2]

The discharge often appears white and curd-like but may be yellow or green with marked inflammation.[2] Notably, VVC can be asymptomatic; colonisation without symptoms requires no treatment. Recognise that no symptom uniquely identifies VVC, which may be mistaken for conditions such as herpes, bacterial vaginosis, or dermatitis.[3,4,10]

Diagnostic Considerations

Clinical Diagnosis

Most cases of uncomplicated VVC during pregnancy can be diagnosed clinically based on typical symptoms and examination findings. Vaginal pH measurement, when performed, usually shows a pH below 4.5, supporting the diagnosis.[2] The presence of normal lactobacilli is generally maintained in VVC, unlike bacterial vaginosis.

Laboratory Investigation

Laboratory confirmation is advised in the following situations:[1,2]

- Diagnostic uncertainty.
- Recurrent infections (defined as four or more episodes in 12 months).[1]
- Treatment failure.
- Suspected non-albicans species.

Microscopy can support diagnosis by showing budding yeasts, with or without pseudohyphae. Lactobacilli and a polymorphic inflammatory infiltrate are often present.[2] If microscopy is negative but symptoms suggest candidiasis, culture should follow. This step is needed for species identification when non-albicans species are suspected.[1,2] Microscopy and culture can produce false negatives after recent antifungal use and should be repeated if symptoms continue.[1,2] Importantly, yeasts are part of the normal vaginal flora, and culture positivity without symptoms does not require treatment.

Implications for Pregnancy Outcomes

The association between VVC and adverse pregnancy outcomes remains unclear. While infection can cause significant maternal discomfort and distress, no evidence links vaginal thrush in pregnancy to fetal harm.[5]

Some evidence indicates possible links with preterm birth, although large systematic reviews have shown inconsistent results.[9,12] The suggested mechanism involves chronic vaginal inflammation leading to prostaglandin release, which then causes cervical ripening and uterine contractions.[6] However, causality has not been definitively proven.

Neonatal Considerations

Vertical transmission during vaginal delivery can lead to neonatal oral thrush or nappy candidiasis. Although these conditions are usually benign and treatable, premature infants may occasionally develop more severe invasive infections. Studies have looked at the presence of Candida on neonatal skin after delivery, but the clinical importance of such colonisation is still unclear.[5]

Congenital cutaneous candidiasis, although rare, is a more serious form of intrauterine infection, especially affecting preterm infants.[6] However, this condition is uncommon and typically associated with specific risk factors, such as prolonged rupture of membranes and the use of intrauterine devices.

Management in Pregnancy

General Principles

Pregnant women with thrush should see their doctor before beginning any treatment. Management must weigh maternal symptom relief against fetal safety, with treatment choices significantly differing from those in non-pregnant populations.[3,4]

Topical Antifungal Therapy

First-line treatment: Use topical imidazoles instead of nystatin whenever possible for symptomatic thrush during pregnancy.[5]

Recommended regimens include:[1,2]

- Clotrimazole: Vaginal cream or pessary for three to six nights, or 500mg pessary as a single dose.
- Miconazole: Vaginal cream or pessary for six nights.

Pregnant women should receive a seven-day treatment course, as this cures over 90% of infections. Four-day courses cure just over half and courses longer than a week offer no added benefits.[5]

Vulval Symptoms: Applying topical 1% hydrocortisone cream (with or without a topical antifungal) may help relieve severe vulvitis symptoms. Treating only the vulva is insufficient because of the vaginal reservoir; therefore, both areas should be treated at the same time.[1,2]

Important Considerations: All intravaginal treatments can weaken latex condoms. Patients should be advised accordingly, with treatment ideally applied after intercourse.[1,2]

Oral Antifungal Therapy

Critical Contraindication: Oral fluconazole should not be used during pregnancy.[1,4] Although it is highly effective in non-pregnant women, fluconazole poses potential risks to the developing fetus, especially with first-trimester exposure.

Epidemiological studies have identified a connection between oral fluconazole use during pregnancy and increased risks of spontaneous abortion, congenital anomalies including heart defects, and other structural abnormalities.[6,10]

Australian guidelines consistently recommend against the use of oral azole antifungals during pregnancy.[1,4]

Asymptomatic Colonisation

There is no evidence to suggest that asymptomatic women need treatment.[5] Routine screening and treatment of asymptomatic candidal colonisation are not recommended in Australian practice.[1,12] Treatment should be reserved for symptomatic infections that cause maternal discomfort.

Recurrent Candidiasis in Pregnancy

Recurrent candidiasis during pregnancy poses specific management challenges. Women should be evaluated for:[1,2]

- Glycaemic control (including screening for gestational diabetes if not already done).
- Other immunosuppressive conditions.
- Adherence to previous treatment regimens.
- Potential presence of non-albicans species.

For confirmed recurrent VVC in pregnancy, longer courses of topical antifungal therapy are recommended.[5] Oral suppressive therapy, which is commonly used in non-pregnant women, is contraindicated during pregnancy.[1,4]

Non-Albicans VVC

Non-albicans species are less responsive to azole antifungals and may show resistance. Most non-albicans infections are caused by Candida glabrata.[2] These species cause less inflammation than Candida albicans and may sometimes be asymptomatic.[2]

Standard topical azole antifungal treatments may be effective if administered for a longer duration during pregnancy, typically two weeks. Alternative options used outside of pregnancy (such as boric acid or amphotericin) require specialist consultation to assess safety during pregnancy.[2]

Self-Care Measures and Prevention

Australian guidelines emphasise the importance of self-management strategies:[1,3,4]

Hygiene and Lifestyle Measures:

- Avoid local irritants, including soap, bath oil, body wash, bubble bath, and vaginal hygiene products.[1,3]
- Wipe from front to back after toileting to prevent spread of Candida from the anus.[4]
- Wear loose-fitting, breathable cotton underwear.[3]
- Avoid tight synthetic clothing.[5]
- Use simple emollients as soap substitutes.[3]
- Maintain good glycaemic control if diabetic.[3]

Products to Avoid:

- Perfumed products.[1,3]
- Vaginal douching.[1,3]
- Spermicides.[1]
- Vaginal lubricants (oil-based products can damage latex condoms).[1]

Excessive washing and the use of bubble baths or perfumed soaps can harm the natural protective flora of the vagina and should be avoided.[5] Applying topical 1% hydrocortisone cream may help relieve vulval symptoms.[1,2]

Role of Probiotics

The evidence supporting the use of probiotics for preventing or treating VVC during pregnancy remains limited. Currently, there is no evidence that specific diets or probiotics affect recurrence rates according to Australian guidelines.[1] While some international studies show potential benefits, routine probiotic use is not recommended in Australian obstetric practice for VVC prevention or treatment.[1]

Partner Treatment

There is no evidence that treating sexual partners reduces recurrence of VVC.[1,4] Partners do not usually require treatment unless they are symptomatic. Post-coital penile hypersensitivity to vaginal Candida colonisation is possible and may respond to partner treatment in specific cases, but routine partner treatment is not recommended.[1]

When to Refer

Most cases of VVC during pregnancy can be handled in primary care or by the obstetric team. Consider referring to a specialist with expertise in vulval medicine if:[2]

- Symptoms persist despite adequate treatment.
- Diagnosis remains uncertain.
- Recurrent infections (four or more episodes within 12 months) are poorly controlled.
- Other possible causes, such as dermatitis, lichen sclerosus, herpes simplex, or vulvodynia, should be ruled out.
- Infections caused by non-albicans species may require specialist management.

Special Considerations

First Trimester: Topical imidazole therapy is preferred, with longer courses (seven days) recommended.[5] Oral fluconazole should be strictly avoided.[1,4,10]

Second and Third Trimesters: Continue with topical therapy. There is no evidence that asymptomatic colonisation requires treatment, even in late pregnancy.[5,12]

Breastfeeding: Women who are breastfeeding should consult their doctor before starting treatment, as some considerations differ from pregnancy management.[3,4]

Patient Counselling Points

When counselling pregnant women with thrush, clinicians should emphasise:[3,4,5]

- The infection is very common and does not harm the unborn baby.
- Symptoms can be effectively treated with topical antifungals.
- Longer treatment courses (seven days) are necessary during pregnancy compared to non-pregnant women.
- Oral medications used outside pregnancy are not safe for use during pregnancy.
- Asymptomatic colonisation does not require treatment.
- Preventive measures can help reduce the risk of recurrence.
- Symptoms should improve within a few days of starting treatment.
- If symptoms continue after completing treatment, a medical review is recommended.

Practice Points

Key recommendations for Australian obstetric practice:

- Topical imidazoles are the first-line treatment for symptomatic VVC in pregnancy.[1,2,5]
- Seven-day courses are more effective than shorter regimens during pregnancy.[5]
- Oral fluconazole is contraindicated throughout pregnancy.[1,4,10]
- Asymptomatic colonisation does not require treatment.[1,5,12]
- There is no evidence that VVC harms the fetus.[5]
- Partner treatment is not routinely recommended.[1,4]
- Self-care measures and avoidance of irritants are recommended.[1,3,4]
- Recurrent VVC requires investigation for underlying causes.[1,2]

Conclusion

Vulvovaginal candidiasis is a common and often bothersome condition during pregnancy, affecting up to 30% of pregnant women.[6] Although the infection causes significant discomfort for the mother, evidence consistently shows that it does not harm the fetus.[5] Treatment differs considerably from that in non-pregnant populations, with a seven-day course of topical imidazole therapy being the main approach.[5]

Australian guidelines emphasise that oral fluconazole is absolutely contraindicated during pregnancy due to teratogenic risks.[1,4,10] Clinicians should focus on effective symptom relief with topical therapy, educate patients on self-care measures, and reassure them about fetal safety. Asymptomatic colonisation does not require treatment, and routine screening is not advised.[1,5,12]

For the small proportion of women with recurrent VVC during pregnancy, investigation of underlying causes such as gestational diabetes is necessary, with management involving longer courses of topical treatment under specialist supervision.[1,2] By following evidence-based management aligned with current Australian guidelines, clinicians can effectively manage this common pregnancy complication while ensuring maternal comfort and fetal safety.

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My Lived Experience with CMV

Jordan Lambropoulos
CMV Mum and Advocate

It took just three letters and three days for my world as I knew it to change. CMV. I'd learnt about it briefly during a short stint studying midwifery. I knew the risk and followed the precautions. Yet, at just three days old, my twin daughters were diagnosed with congenital cytomegalovirus – contracted in the first trimester of my pregnancy. I recall sitting in the nursery wondering, "If an infection shortened to just three letters could wreak such havoc on my world, how could it be that barely three individuals in my life knew what it was?"

In that moment, I understood that antenatal education was necessary for more than prevention. It was crucial for early detection and intervention.

My knowledge of CMV came from a year and a half of midwifery study four years prior and was limited to not changing nappies, not sharing drinks with toddlers – the standard precautions doctors recommended to prevent a primary infection during pregnancy. In May 2023, I underwent a stem cell transplant for a refractory autoimmune disease. As part of my pre-transplant work-up and post-transplant monitoring, I was screened monthly for infections such as cytomegalovirus and Epstein-Barr virus, which could reactivate while my immune system was weakened.

During my pregnancy, CMV did not cross my mind in the way it might for an expecting parent who works in childcare. It did, however, encourage me to remain cautious to the point of avoiding children altogether.

Due to antenatal depression, the majority of my pregnancy was spent at home, with very little contact or interaction with others – let alone sharing drinks with children or changing nappies. So when my daughters received their diagnosis, I was confused, because I was well informed and had been so cautious.

At 33 weeks gestation, both of my twins were experiencing intrauterine growth restriction (IUGR), and we were subsequently having regular Doppler scans. By chance, an ultrasound technician picked up enlarged ventricles in one of my babies' brains, and I was sent for a fetal MRI. That proved unsuccessful, but an appointment with the maternal fetal medicine specialist revealed that I had been exposed to CMV at some point – just not recently. I remember feeling lightheaded and defensive because I *knew* I was CMV negative. I insisted they look at my previous screenings. They found results from a couple of months prior to pregnancy showing I was CMV negative, indicating it was likely I had contracted a primary infection during pregnancy.

We were still not convinced that both girls had contracted congenital CMV, as the abnormalities on the scan appeared isolated, but I was adamant I wanted them tested at birth. The doctors suggested repeating their cranial ultrasound at birth too. Had I not known my CMV status was negative prior to pregnancy, I firmly believe my daughters may not have been tested until they became symptomatic.

My twin girls were delivered at 33+6 and presented quite typically for the first few days. Their cranial ultrasounds in the nursery, however, showed calcifications, cysts, a Grade 1 IVH, and mild ventriculomegaly. One of my daughters also developed low platelets and required a transfusion at three days of age. Later that night, the doctor delivered the news that my heart already knew – both girls had congenital cytomegalovirus, and their brains were significantly impacted. I remember bursting into tears when the impact of the virus was explained to me. Knowing that the virus had passed from *my* bloodstream to my daughters emotionally destroyed me in that moment. I tried so hard to pinpoint where I went wrong and what I could have done differently, but my mindset very quickly shifted into gratitude that both girls were tested so soon. This meant they were given the chance to start a six-month course of antivirals and potentially minimise further damage.

Our experience with early detection feels bittersweet, as it made it difficult to cherish those first precious moments of motherhood but simultaneously allowed my daughters to access the antiviral medication and early intervention they needed. From that very moment, I stepped into my role as not only a mother of two but a full-time carer and advocate for my daughters.

It was later determined that one of my daughters was born deaf, and both girls had diffuse bilateral polymicrogyria that could potentially lead to seizures and movement disorders. Currently, the full impact of the virus is unknown – but both girls live with spastic cerebral palsy affecting all four limbs and developmental delays. At just two months of age (two weeks corrected gestation), both girls began physical therapy and other early interventions, which have greatly improved their development and will hopefully allow them to reach their individual goals and potential. In our little household of three, we focus on every milestone, every achievement that we might otherwise have taken for granted in another life without CMV. Raising and caring for two children with such complex disabilities was something I had never imagined while pregnant, but it is something we have rapidly adapted to. Chaos has become our new normal.

Through our experience with CMV and advocacy, my daughters and I have connected with other families impacted by CMV – many who had not heard of it during pregnancy and did not have typical risk factors such as working in childcare or having young children at home. One consistent theme we have encountered is not only the lack of awareness and antenatal education, but also the reliance on prevention alone. Many media campaigns are targeted toward prevention during pregnancy, but one area often overlooked is early detection. Prevention is critical, but it is not *protection*.

In my lived experience, had I not been aware of my CMV status prior to pregnancy simply by chance, my daughters may not have been tested so early. If their cranial ultrasound had not been repeated because the doctor knew I had contracted CMV during pregnancy, my daughters may have missed the window of opportunity for antivirals. Without early detection, my daughters may not have accessed early intervention as soon as they did.

Over the last eight months, I have compared our family's experience with CMV to that of others we have met. Learning your child has contracted a devastating infection in utero is heart-wrenching, and from my lived experience, I found myself feeling as though it was my own fault for "failing to prevent it." This is a common theme among CMV parents I have observed, and it is at the heart of my advocacy.

We have met countless families whose children were diagnosed beyond the window for antivirals because they were born asymptomatic, but with a head circumference in the first percentile. Some later failed their newborn hearing screening or experienced developmental delays, only being diagnosed when their newborn blood spot was retested. By this point, hearing may already have declined and the window for neuroplasticity and early intervention narrowed significantly. Stories like these are why advocacy for antenatal education and early detection holds such importance for me.

A lot of the media campaigns I have seen for CMV are often met with backlash online for fearmongering. Often referred to as rare, unlikely, and something expecting parents should not have to concern themselves with. But this is where antenatal education falls short, because prevention is not foolproof. In experiences like mine, where I had not seen or had any contact with children during pregnancy and had taken all of the standard precautions but *still* contracted CMV, education should not cease there. Many CMV parents I have met recall experiencing a terrible cold during pregnancy – which they believe was when they acquired their infection. If antenatal education extended beyond prevention, these parents might have been screened during pregnancy and their child's infection diagnosed at birth rather than months or years later. This is where my lived experience contrasts with many other families – because of early detection.

Fast forward to today, my daughters are the most delightful and happy little girls I have ever met. Sure, life has thrown more than its fair share of challenges their way in just nine months. But they are exactly who they were always meant to be, and exactly where they need to be – two little girls who have taught me more about life in the last month than anyone has in my 27 years. Though I'd like to make life easier for them so they did not have to struggle so much, I would not change them for the world!

HPV in Pregnancy: Safe, Accessible Cervical Screening in the Antenatal Setting

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Cervical cancer remains a major – though declining – public-health concern in Australia. Sustained vaccination and screening efforts have positioned Australia to reach the cervical-cancer elimination threshold (<four cases per 100,000 woman-years) by 2035, leading the world in cervical cancer prevention.[1] In 2023 seven per cent of patients screened were found to have oncogenic Human Papillomavirus (HPV), with exposure to high-risk HPV types 16 and 18 cause over 75 per cent of invasive cancers in Australia, with other oncogenic strains contributing to the remainder.[2]

Antenatal consultations provide a good opportunity to engage patients who may otherwise be under-screened or never-screened.[3] For many, pregnancy represents their first consistent interaction with the health system. Offering cervical screening within antenatal care not only supports individual patients but also contributes to national elimination targets.

The 2024 *Australian Institute of Health report* recorded 835 new histologically confirmed cases of cervical cancer and a 73.1 per cent screening participation rate among women aged 25–74 between 2019 and 2023.[4] While encouraging, these figures underline the need to reach the remaining unscreened population.

Integrating screening into routine pregnancy care can help sustain Australia's progress toward elimination.

Key messages
- Cervical screening during pregnancy is safe.
- Self-collection is a validated, effective option.
- Embedding screening into antenatal pathways improves accessibility and, if required, supports follow-up.

Safety of Cervical Screening in Pregnancy

The Australian Centre for Prevention of Cervical Cancer, Cancer Council Australia, and Cancer Institute NSW confirm that cervical screening is safe at all stages of pregnancy.[3,5,6] The *NCSP Quick Reference Guide (2025 update)* describes pregnancy as "an ideal opportunity to offer screening if due or overdue".[7]

Self-collected vaginal samples have equivalent sensitivity as clinician-collected cervical samples for the detection of HPV and cervical intra-epithelial neoplasia 2+ (CIN 2+)[3,5,7,8]. Both options are suitable in pregnancy and should be offered according to patient preference.

Self-collection offers particular advantages:

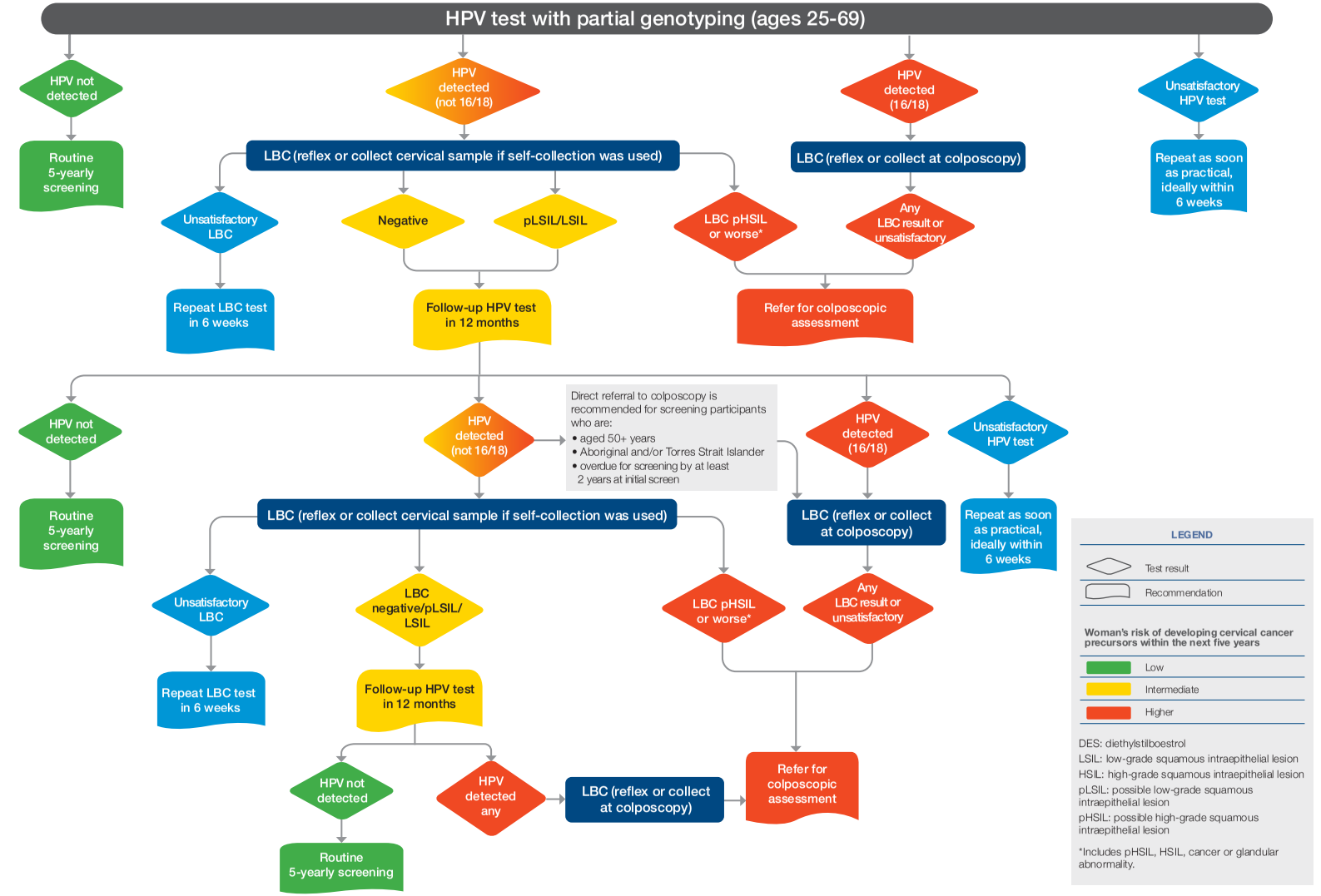
a) Comfort and Acceptability: Avoids speculum use and minor bleeding sometimes associated with taking a sample from a vascular cervix in pregnancy. If a clinician-collected sample is preferred or required, a cervix broom (not an endocervical brush) should be used.[3]
b) Accessibility: Can be performed quickly during a routine antenatal visit, including with clinician assistance if requested (e.g. for someone with disability).

Timely colposcopy is recommended if HPV 16/18 is detected, or HSIL on cytology is detected following an HPV non-16/18 result. HSIL can be detected on either reflex liquid-based cytology (LBC) on a clinician collected sample or at a return visit for an LBC test after self-collection.[3]

Colposcopy is also safe in pregnancy. Its aim is to exclude invasive disease and provide reassurance. Ideally, it is performed by an experienced colposcopist; biopsy or treatment should be reserved for suspected invasion. Most HSIL lesions regress or remain stable during pregnancy.[9,10]

These safeguards confirm that pregnancy is not a reason to defer cervical screening.

ROUTINE CERVICAL SCREENING (AGES 25-69 YEARS)



Suggested citation: Cancer Council Australia Cervical Cancer Screening Working Party. Clinical pathway: Cervical screening pathway. National Cervical Screening Program: Guidelines for the management of screen detected abnormalities, screening in specific populations and investigation of abnormal vaginal bleeding. CCA 2016. Accessible from http://wiki.cancer.org.au/australia/Guidelines:Cervical_cancer/Screening. Updated Dec 2020.

NATIONAL CERVICAL SCREENING PROGRAM
A joint Australian, State and Territory Government Program

Australian Government Department of Health and Aged Care

Cancer Council

Accessing the NCSR Healthcare Provider Portal

General practitioners, specialists, nurses, lab staff, and other authorised delegates (with approval) can access the **National Cancer Screening Register (NCSR)** through the *Healthcare Provider Portal.* Access to the NCSR may also be available through practice management software in your practice.

How to apply:

1. Create or log into PRODA — a verified *Provider Digital Access* account through Services Australia.
2. Once logged in, select the **Healthcare Provider Portal** tile.
3. **Link your provider number** (e.g. Medicare provider number, RIN or STAN) to activate access.
4. Review and accept the Terms and Conditions.
5. For staff without provider numbers (e.g. nurses or administrative staff), the nominated provider can **grant delegate access.**

Tip: The NCSR website includes a short instructional video and detailed step-by-step guide for first-time users.

Reference: National Cancer Screening Register. *Healthcare Provider Portal User Guide.* Available from: https://www.ncsr.gov.au/about-us/how-to-interact-with-the-NCSR/for-healthcare-providers/healthcare-provider-portal/healthcare-provider-portal-user-guide.html

Integrating Screening into Antenatal Pathways

Cervical screening is not yet a formal component of the "early pregnancy bundle" (such as dating ultrasound or first-trimester bloods). Nevertheless, any patient found to be due, overdue, or symptomatic should be offered screening at that appointment, with results checked via the NCSR to avoid inadvertent patient billing.[11]

Early integration — ideally at the first GP antenatal consultation — would allow results to accompany referrals to obstetric services and streamline follow-up. Embedding screening early supports continuity of care, aligns with national elimination goals, and prevents missed opportunities.

Practical Tips

1. Check screening history at booking using the NCSR portal.
2. Offer choice between self- and clinician-collection, explaining the pros and cons.
3. Prepare logistics: ensure appropriate swabs/cervix brooms are available; label samples clearly (including pregnancy status and collection type).
4. Counsel patients: normalise HPV infection and clarify that a positive result signals infection, not cancer.
5. Follow NCSP protocols: manage results per 2025 guideline flowcharts, with colposcopy referral when indicated.

Future Directions and Challenges

- Equity: Antenatal self-collection may especially benefit under-screened groups, including culturally and linguistically diverse patients, Aboriginal and Torres Strait Islander patients, and those in rural or remote areas.[12,14] Aboriginal and Torres Strait Islander women remain nearly twice as likely to develop and three times as likely to die from cervical cancer as non-Indigenous women.[15]
- Provider familiarity: Some clinicians remain hesitant about antenatal screening; continued education and clear guidance are essential.
- System integration: Linking the NCSR with practice-management software would make screening history more visible and opportunistic screening more routine.
- Embedding cervical screening into antenatal care — particularly through self-collection — offers a practical, equity-focused path to elimination.

Conclusion

Cervical screening in pregnancy is safe, effective, and essential for those who are due or overdue. The availability of self-collection provides a comfortable, patient-centered pathway to reach those who might otherwise be missed. Integrating this into antenatal care supports both individual health and Australia's world-leading progress toward cervical-cancer elimination.

In short: Antenatal HPV screening is good medicine, good public health, and a chance not to be missed.

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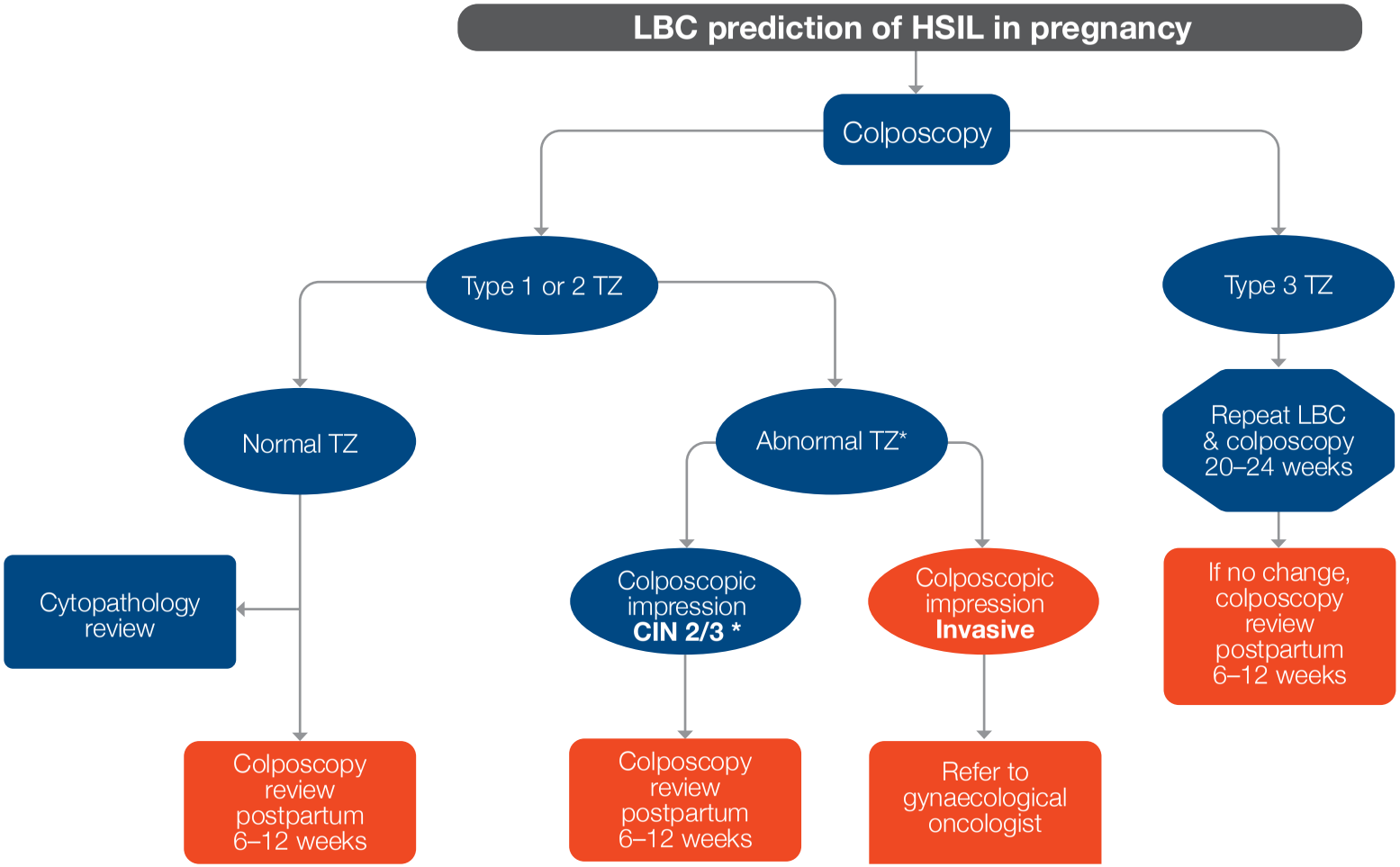
MANAGEMENT OF A LBC PREDICTION OF HSIL IN PREGNANCY



*Biopsy not usually necessary in pregnancy

Suggested citation: Cancer Council Australia Cervical Cancer Screening Working Party. Clinical pathway: Management of a LBC prediction of HSIL in pregnancy. *National Cervical Screening Program: Guidelines for the management of screen detected abnormalities, screening in specific populations and investigation of abnormal vaginal bleeding.* CCA 2024. Accessible from http://wiki.cancer.org.au/australia/Guidelines:Cervical_cancer/Screening

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Caesarean Section Dressings and Wound Healing

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"Treat the WHOLE patient, not just the HOLE in the patient"

– an oft-quoted surgical aphorism that still holds true: caesarean wound outcomes hinge on matching technique and dressing strategy to individual risk.

Caesarean section is the most common major surgery worldwide, with a global rate of 21%, projected to rise to 29% by 2030.[1] Post-caesarean wound morbidity spans surgical site infection (SSI), dehiscence, contact dermatitis, endometritis, seroma, and haematoma, with downstream impacts on breastfeeding, readmission, and cost. Surgical site infections alone cost, on average, $18,814 per case in 2018-19.[2]

Risk factors include maternal factors (obesity, diabetes, immunocompromised conditions), intrapartum factors (emergency surgery, prolonged labour or membrane rupture, chorioamnionitis), and technical choices (skin preparation, suture material, and skin-closure technique) which all modulate outcomes. With 10.7% of global maternal deaths attributed to pregnancy-related infection, International Federation of Obstetrics and Gynaecology (FIGO) have recently released best-practice guidance to reduce post caesarean sepsis.[3]

A practical summary of the literature
Optimising modifiable risks (correcting anaemia where possible, optimising glycaemic control, smoking cessation, managing infection, and meticulous attention to surgical technique and operative time) is therefore the first "dressing decision" before we even reach for an adhesive.[3]

Antibiotic prophylaxis
A large Cochrane review has long demonstrated that prophylactic antibiotics reduce serious maternal sepsis by 70% and wound infection and endometritis by 60% compared with placebo or no prophylaxis. Building on this, FIGO, World Health Organization (WHO), and National Institute for Health and Care Excellence (NICE) now converge on several key principles:

- Timing: A single intravenous dose given 30–60 minutes before skin incision is preferred to maximise maternal protection without compromising neonatal safety. Antimicrobial prophylaxis should be limited to three doses within 24 hours.
- Choice of agent: A first-generation cephalosporin (e.g. cefazolin) or ampicillin as first-line, with clindamycin plus an aminoglycoside for women with true beta-lactam allergy.
- Dose adjustment: Consider higher doses in women with BMI >30 or prolonged surgery (>two hours) and additional doses if there is excessive blood loss, but routine multi-dose regimens are discouraged due to antimicrobial resistance and cost.
- Adjunctive Azithromycin: In women having caesarean during labour or after membrane rupture, adding azithromycin to standard prophylaxis further reduces endometritis and SSI.

Skin Preparation
A 2020 Cochrane review[4] concluded that skin preparation with chlorhexidine gluconate before caesarean section reduces SSI compared with povidone-iodine. Low-certainty evidence suggested chlorhexidine made little or no difference in endometritis.

Routine pre-operative shaving of pubic hair is not recommended, as it does not reduce infection and may increase microtrauma. Clippers or careful trimming may be used when needed for access.

30-60 seconds of vaginal cleansing with an antiseptic solution *(non-alcoholic povidone-iodine or chlorhexidine gluconate)* immediately before caesarean reduces endometritis, irrespective of baseline risk.

Surgical Technique

Updated NICE guidance recommends a Joel Cohen-type approach approximately 3cm above the symphysis pubis with blunt dissection of layers to reduce operative and febrile morbidity overall compared to a Pfannenstiel incision (2013 Cochrane review), however the effect on reducing SSIs specifically remains uncertain. In women with BMI ≥35, a recent RCT did not demonstrate clear SSI benefit of Joel Cohen versus Pfannenstiel.

Intra-abdominal saline irrigation has not been shown to reduce infection.

Operations exceeding one hour with significant blood loss or transfusion carry higher SSI and sepsis risk.

Glove Change

Changing gloves after delivery of the placenta and before closing the abdominal wall is a simple, evidence-based step intervention that reduces SSI. In a meta-analysis of 1,948 women, this practice was associated with a 59% lower risk of wound infection.

Skin Closure

An overview of systematic reviews[5] supports closing subcutaneous fat when ≥2cm to reduce seroma and any wound complications, while differences between scalpel and diathermy or needle type remain uncertain.

Barbed sutures may reduce wound separation versus conventional sutures; evidence is moderate-to-low certainty but reassuring for routine use where surgeon experience supports it.

Absorbable subcuticular skin closure reduces dehiscence compared with staples, with small or uncertain effects on infection, but consistent advantages for lower re-closure and separation rates.

Timing of Dressing Removal

A consistent finding across multiple systematic reviews and randomized controlled trials is that early removal of caesarean wound dressings at 6-24 hours is safe for uncomplicated elective cases and is associated with higher maternal satisfaction with no detriment to wound healing.[6] Most sepsis and severe morbidity occurs after discharge, highlighting the importance of clear post-discharge education. Notably, increased wound healing complications are seen with high BMI, emergency caesarean, preterm premature rupture of membranes, and chorioamnionitis irrespective of when the dressing is removed.[7]

Dressing Type

The 2016 Cochrane overview across primary-intention surgical wounds found no clear SSI reduction with film, hydrocolloid, or silver dressings compared with basic contact dressings; certainty was low to very low.[8] A CS-specific meta-analysis suggests DACC-coated dressings may reduce SSI, whereas silver dressings do not.[9]

The European Wound Management Association (EWMA) document "Birth-related wounds: risk, prevention and management of complications after vaginal and caesarean section birth" identifies that whilst some studies report lower SSI rates following caesarean with a DACC impregnated dressing, the selection of a dressing should be based on clinical judgement in conjunction with local policies, current evidence, and guidelines.[10]

At the time of the EWMA document (2020), there was conflicting evidence related to the effectiveness of NPWT (negative pressure wound therapy) for preventing SSIs.[10] A subsequent 2023 RCT-only meta-analysis in obese women reported no overall effect on composite wound complications, although NPWT did reduce surgical-site infections without increasing blistering.[11] However, trial-sequential analysis did not confirm a full 20% relative reduction, underscoring the need for shared decision-making and local cost-effectiveness considerations.

Overview of Caesarean Wound Dressings

Wound healing progresses through haemostasis (seconds-minutes), inflammation (0-4 days), proliferation (2-24 days), and remodelling (24 days-1 year).[12] Surgical incisions are typically repaired for primary intention as precise tissue apposition accelerates epithelialisation and minimises scarring. When this cascade is derailed by infection, dehiscence, hypoxia, and/or immune dysfunction, healing shifts to secondary intention, with granulation and delayed epithelial cover, precipitating higher infection risk and poorer cosmesis. Fibroproliferative lesions can extend beyond the original wound margins due to dysregulation and excessive, disorganised collagen, leading to persistent, raised, pruritic keloid plaques with high recurrence. Regardless of pathway, postoperative wound care should be targeted to facilitate timely, uncomplicated healing with the best functional and aesthetic result.

Thankfully, we no longer rely on tea leaves, beer, or raw-meat plasters. More than 3000 wound dressings are now available commercially. Wound dressings maintain a moist, thermally stable, low-shear microenvironment that modulates oxygen tension and pH while providing a bacterial barrier and controlled exudate management to support re-epithelialization and orderly tissue repair.[13]

Conclusion

Optimal caesarean wound outcomes rely on risk-stratified, multidisciplinary care. Adjuncts should be selected case by case, with early involvement of a wound CNC for high-risk women or complex wounds. FIGO's guidance reminds us that dressing choice is the final step in a prevention chain: from appropriate indications, risk optimisation, timely antibiotics, and meticulous technique through to early recognition, education, and management of sepsis after birth. Best practice extends beyond the incision.

Table 1. *Summary of Caesarean Wound Dressing Options*

Type	Characteristics/Actions	Indications for Use	Precautions/Contraindications	Wear Time	Cost
Island dressing e.g. Opsite Post-Op Transparent™[18], Opsite Post-Op Visible™[19], Primapore™[20]	Protect new tissue growth[18,19,20] Absorbs low exudate[18,19,20] Waterproof[18,19]	Dry to low-exudating wounds Primary closure wounds	Not suitable for moderate to high exudating wounds Cautious on fragile skin	Up to seven days depending on exudate	Low cost
Hydrocolloid e.g. Comfeel™[21], Osmocol™[22], Duoderm™[23]	Assists with autolytic debridement[21,22,23] Forms a gel when in contact with exudate, protecting newly formed tissue[21,22,23] Does not adhere to wound bed[21,22,23]	Low to moderate exudating wounds Can be used for chronic and acute wounds	Not to be used in infected wounds Maceration can occur due to low absorbency of dressing	Up to seven days depending on exudate	Low cost
Gelling fibre/ Hydrofibre e.g. Aquacel™[24], Liquacel™[25], Exufiber™[26]	Vertical absorption and transfer of exudate to secondary dressing[24,25,26] Dressing becomes gel when wet, allowing for debridement of slough and easy removal[24, 25, 26]	Moderate to high exudating wounds, requires secondary dressing Wounds requiring gentle debridement	Edges of wounds can become macerated due to gelling nature of dressing Not to be used on dry wounds	Up to seven days depending on exudate levels	Medium cost
Foam e.g. Biatain foam™[27], Mepilex border™[28], Allevyn™[29]	Foam core to lock away exudate[27, 28, 29] Can be cut to size[27,29] (excluding Mepilex Border™) Maintains moist wound environment[27, 28, 29] Biatain foam™: 3D technology allowing it to conform closely to wound bed[27]	Low to high levels of exudate Can be used on chronic and acute wounds	Contraindicated in very high exudating wounds	Up to seven days depending on exudate levels	Medium cost
Iodine e.g. Inadine™[30,31], Iodosorb™[32]	Inadine™: Povidone Iodine impregnated low adherent viscose fabric with polyethylene glycol. Broad spectrum antimicrobial effect[30,31] Iodosorb™: micro-beads loaded with 0.9% cadexomer iodine. Absorbs up to 7 times own weight in exudate, breaks down biofilm and helps with debridement[32]	Low to high exudating wounds Can be used on infected wounds	Contraindicated in pregnant and breast-feeding patients, known iodine sensitivity, kidney problems, Duhring's herpetiform dermatitis, thyroid diseases[30,31,32]	Up to three days depending on exudate level – Inadine™ can be changed up to two times daily in highly exudating wounds[31]	Medium to high cost
Silver e.g. Acticoat™[33], Aquacel Ag+ Extra™[34]	Acticoat™: Fast-acting bactericidal within 30 minutes. Nano-crystalline silver[33] Aquacel Ag+ Extra™: Antimicrobial dressing that manages exudate, infection and biofilm[34]	Infected wounds Moderate to high exudate levels	Allergy to silver Can cause a change in skin colour due to silver deposits with Acticoat™[33]	Up to seven days	Medium to high cost
DACC™ e.g. Sorbact®[35]	Sorbact® dressings are bacterial and fungi bindings dressings that can prevent and treat wound infections[35, 36]	Used on acute and chronic wounds Low to high exudate levels	Not to be used on patients with a known hypersensitivity to dialkylcarbamoyl chloride Not to be used in combination with fatty products such as ointments or creams as it may decrease the binding of microorganisms[35,36]	Can be left up to seven days depending on exudate levels	Medium cost
Negative Pressure Wound Therapy e.g. Prevena™[37], PICO™[38]	PICO™: Single use NPWT providing -80mmHg pressure with gentle silicone foam dressing[37] Prevena™: Single use incisional NPWT delivering -125mmHg pressure continuously[38]	PICO™: Used on surgical incisions and hard-to-heal wounds. Low to moderate exudate levels[37] Prevena™: Indicated for incisional wounds NPWT indicated for high-risk surgical wounds to prevent dehiscence and reduce lateral tension[38]	Contraindicated to use over underlying structures such as muscle, tendon, bone, organs or fistulas	Seven to 14 days depending on product used	High cost

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Rising Rates of Congenital Syphilis: Why We Need to Improve Management of Syphilis in Pregnancy

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In 2023, Australia recorded its highest-ever case numbers of both syphilis and congenital syphilis, with 6,566 cases of syphilis and 20 cases of congenital syphilis, tragically resulting in 10 infant deaths. As of 6 August 2025, the trajectory remains concerning, with 3,546 syphilis cases and 11 congenital syphilis cases already reported – four of which have resulted in death.[1,3]

In New Zealand, syphilis cases have surged from 320 in 2016 to 775 in 2024 – a staggering 142% increase. Congenital syphilis cases also rose from one in 2016 to six in 2024.[4] Globally, the United States has seen a dramatic 1,059% increase in congenital syphilis rates between 2012 and 2023, with 105.8 cases per 100,000 live births reported in 2023.[5]

Congenital syphilis is a potentially devastating condition, with mortality rates reaching up to 30%. Survivors may suffer long-term complications including skeletal deformities and permanent neurological deficits.[2]

National Response in Australia

The Australian Government's response is outlined in the *National Strategic Approach for Responding to Rising Rates of Syphilis* (2021), which prioritizes three key areas – most notably, a focus on women of reproductive age and the elimination of congenital syphilis.[3] On 7 August 2025, the Chief Medical Officer declared syphilis a 'Communicable Disease Incident of National Significance.'[1]

Impact of Syphilis in Pregnancy and Congenital Syphilis

Syphilis is caused by the sexually transmitted spirochete *Treponema pallidum*. It may present with painless genital chancres (primary infection) or a rash (secondary infection), but many cases are asymptomatic and classified as early or late latent infections. Alarmingly, up to 50% of infected pregnant women are asymptomatic,[10] underscoring the importance of routine and repeated testing during pregnancy.

Untreated syphilis in pregnancy is associated with serious adverse outcomes: up to 35% rates of premature birth, nearly 30% risk of low birth weight, 66% of newborns requiring neonatal ICU admission, and stillbirth rates of up to 10%.[11]

Vertical transmission can occur at any stage of pregnancy, with the highest risk (up to 70%) during primary, secondary, or early latent infection.[10] Infection acquired later in pregnancy is associated with worse outcomes for both mother and child.

Congenital syphilis is classified as:

- Early congenital syphilis: Appears within the first two years of life, often within the first four months. Symptoms are non-specific and may mimic other infections – anaemia, thrombocytopenia, hepatomegaly, lymphadenopathy, persistent rhinitis, and maculopapular rash.[2,7]
- Late congenital syphilis: Symptoms emerge after two years and may include long-term sequelae such as osteolytic bone lesions, cranial nerve palsies, seizures, visual impairment or blindness, and sensorineural deafness.

Crucially, appropriate treatment of syphilis during pregnancy, completed at least 30 days before delivery, can prevent congenital syphilis.

Updated Guidelines for Syphilis Testing in Pregnancy

In November 2024, Australia updated its national syphilis guidelines to provide clearer direction for managing syphilis in pregnancy.[6] Key recommendations include:

- Routine testing at three points during pregnancy:
  - First antenatal visit
  - 26–28 weeks gestation
  - 36 weeks or at delivery (whichever is earlier)
- High-risk groups – including women under 20, those using illicit substances, or receiving minimal antenatal care – should receive additional and opportunistic testing, with at least one test at delivery.[6,11]

Other significant updates:

- Placental testing: All treated women must have placental tissue sent for histopathology and syphilis PCR, regardless of treatment adequacy.
- Paired serology: Maternal and neonatal serology, including syphilis IgM, should be collected at delivery.
- Partner management: Contact tracing and treatment of all partners is essential to prevent reinfection during pregnancy.

Treatment: Benzathine penicillin remains the only acceptable therapy during pregnancy. In cases of documented penicillin allergy, referral for desensitisation is recommended.

- **Early syphilis (symptomatic or early latent):** Single dose of 2.4 million IU (1.2 million IU IM to each buttock).
- **Late latent syphilis:** Three doses of 2.4 million IU, administered at seven-day intervals.

The definition of appropriate treatment includes:

- Accurate staging of infection
- Correct antibiotic, dose, and frequency
- Four-fold reduction in RPR titre
- Completion of treatment more than 30 days before delivery

If these criteria are not met, the newborn remains at risk for congenital syphilis and should be evaluated in consultation with a specialist paediatrician.

Due to the complexity of syphilis serology and treatment protocols, the guidelines strongly recommend involving specialist services – such as Infectious Diseases or clinicians experienced in syphilis management – for all cases of maternal infection.

Summary

Congenital syphilis is entirely preventable with timely diagnosis and appropriate treatment during pregnancy. Eliminating this condition requires:

- Raising awareness of the changing epidemiology of syphilis in pregnant women and women of reproductive age.
- Disseminating updated guidelines and promoting increased testing during pregnancy and at delivery.
- Developing models of care that engage high-risk women to ensure optimal maternal and neonatal outcomes.

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An Unwelcome Postpartum Guest: Group A Streptococcal Puerperal Sepsis

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In the late evening, a call was received from the emergency department (ED) regarding an unwell postnatal patient. The patient had been triaged presenting with a complaint of severe abdominal pain, as well as pain, tenderness, and swelling in the right arm and was noted to be pale and diaphoretic. She was seven days post vaginal birth. The ED recognised the presentation as potential sepsis. Blood cultures were collected, and fluid resuscitation and antibiotics (piperacillin and tazobactam) were initiated according to local protocols. The on-call sonographer was requested to attend, and the patient referred to obstetrics and gynaecology.

On review by the gynaecology team, the patient was found to be extremely unwell. She was drowsy and struggled to provide a history. Collateral history provided by family members reported multiple days of severe abdominal pain, pain and swelling in the right arm, and a sore throat. She denied excessive vaginal bleeding. On examination she was found to have a fluctuating GCS (rousable to voice), an exquisitely tender abdomen, malodorous vaginal discharge without excessive bleeding, and a swollen, tender right arm. No other localising symptoms were noted. She had an intermittent oxygen requirement with tachypnoea and was hypotensive and tachycardic, despite appropriate fluid resuscitation.

Preliminary investigations revealed raised inflammatory markers (WCC 23.4, CRP 290), acute liver function derangement, an evolving acute kidney injury, and a lactate of 1.1. Pelvic ultrasound showed a 700cc uterus, with no myometrial definition and a 42x23x27mm distended cavity with vascularity concerning for retained products of conception. She continued to test positive for influenza B (she was known to be positive from 35 weeks).

The patient was admitted under Obstetrics and Gynaecology. She was identified as high risk of Group A Streptococcus (GAS) sepsis, and antibiotics were extended to include clindamycin. The septic screen was extended to include repeat lactate, chest x-ray, urine MCS, and upper limb ultrasound. She was transferred to the ward, and ICU review was requested given concern for clinical deterioration.

On review of her pregnancy, the patient was complex with a high-risk pregnancy history. She was 36 years old, G5P2 with risk factors including smoking and marijuana use, a long inter-pregnancy interval, and mental health concerns for which she was known to a perinatal mental health service. Her pregnancy was complicated by admissions for cannabinoid-induced hyperemesis, gestational hypertension developing into pre-eclampsia from 33 weeks (requiring oral labetalol), and influenza B at 35 weeks.

On the background of influenza B, she was admitted for an abnormal CTG at 36+3 and underwent an induction at 36+4 for the same reason. Following an ARM (which revealed thick meconium) she had a precipitous vaginal birth. Active management of third stage led to delivery of placenta after 10 minutes, with a total blood loss of 320ml and a placenta documented as complete/complete. She was afebrile throughout her labour and postpartum admission, and was documented to have expected postpartum pain and bleeding. She remained an inpatient for blood pressure monitoring and was discharged on day three postpartum.

Following her re-presentation one-week postpartum, she was admitted to the obstetrics ward and care was escalated immediately via a MET call for clinical deterioration and hypotension non-responsive to fluid resuscitation. Despite being given two litres of CSL and 500ml 5% albumin, she remained hypotensive and thus was admitted to the ICU requiring vasopressor support. Her clinical progress is detailed below.

Day 1 ICU:

Following stabilisation in the ICU, she was noted to have an intermittent vasopressor requirement, fluctuating delirium and liver derangement, secondary to toxic shock. The patient underwent a suction, dilatation, and curette for source control and under ultrasound guidance, a large volume of malodorous products of conception were removed, later confirmed on histopathology. The procedure was complicated by secondary postpartum haemorrhage (1.2L blood loss), requiring full medical management.

Day 2 ICU:

Preliminary blood culture results revealed a gram-positive cocci, likely group A streptococcus (GAS). The infectious diseases service was consulted, GAS public health notification was made, contact tracing was commenced, and the antibiotic regime was extended to include high dose benzylpenicillin, ceftriaxone, clindamycin, and vancomycin. All of the patient's household contacts were treated with cephalexin and the newborn was reviewed by paediatrics.

Intravenous immunoglobulin (IVIG) was administered, and a cephalic/subclavian deep venous thrombosis of the right arm was identified. Therapeutic clexane was commenced.

Day 3 ICU:

Due to a symptomatic anaemia (Hb 59), the patient was transfused two units PRBCs and given a second dose of IVIG due to limited clinical improvement from sepsis.

Day 4 ICU:

Symptoms concerning for heart failure prompted an echocardiogram which revealed new onset cardiac dysfunction, including mild left ventricular dilatation with moderate global systolic dysfunction. This picture was concerning for potential transfusion-related lung injury, versus septic or postpartum cardiomyopathy. Cardiology was consulted and felt the presentation was in keeping with an acute or chronic insult precipitating decompensation and initiated diuresis. The patient was clinically improving but was understandably suffering from deterioration in mental health due to the burden of her illness preventing her from bonding with her baby. The patient's ability to breastfeed was also limited due to the severity of her illness and support was sought from the hospital's lactation consultant service.

Day 5 ICU:

With clinical improvement, the patient was discharged from the ICU.

The patient had a prolonged stay on a general ward under multidisciplinary team care, including input from medical, infectious disease, haematology, cardiology, and O&G teams. Psychiatry assisted in supporting the patient with the extreme toll this experience took on her mental health. A repeat echocardiogram prior to discharge revealed resolution of the abnormal findings, and cardiology felt this was in keeping with either takotsubo or peripartum cardiomyopathy, with complete resolution. Antibiotics were slowly down-titrated and the patient was eventually discharged two weeks following her initial readmission, with ongoing follow up from the teams detailed above. At a debrief review facilitated by the O&G and ICU departments, the patient expressed how traumatic and distressing this experience was for both herself and her family.

This case highlights the severity of postpartum sepsis and septic shock, and the significant toll that it can take on a patient's physical but also mental wellbeing. Sepsis can be lethal and is recognised as an event which can be "life-changing" and critically impacts the "woman's passage to motherhood, the establishment of breastfeeding and her ongoing connection to her baby."[1] While E.Coli is the most common cause of maternal bacterial infection, the most frequent case of maternal death from sepsis is infection with Group A beta-haemolytic streptococcus (GAS), also known as streptococcus pyogenes, species1 - the notable culprit in this case.

Although considered rare, GAS is described by SOMANZ as a "devastating disease"[2] and a 20-fold increase in incidence is seen in pregnant and postpartum women, compared with non-pregnant women,[3] the reason for which is not clear.[4] It is carried asymptomatically amongst the community and is spread from person to person via contact or droplet,[2] hence the need for contact tracing. The clinical presentation can be extremely varied, and thus a high index of suspicion is required for early diagnosis. However, classically concerning symptoms include a sore throat, diarrhoea, and/or abdominal pain, antenatally or postnatally.[2]

Treatment of suspected sepsis must be aggressive, and rapid recognition, early antimicrobial initiation, and involvement of senior staff remain essential factors to improving outcomes.[2] An interesting practice point in this case was the use of intravenous immunoglobulin (IVIG). IVIG has an immunomodulatory effect and in streptococcal sepsis neutralises the super-antigen effect of exotoxins and inhibits production of tumour necrosis factor and interleukins.[5]

To conclude, this case illustrates the rapid progression and profound morbidity of puerperal sepsis due to GAS. Early recognition, aggressive multidisciplinary management, and supportive care were vital to the patient's survival. Beyond physical sequelae, the psychological impact was significant, underscoring the importance of holistic follow-up in maternal critical illness.

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Congenital CMV Prevention: What Maternity Care Providers Should Know

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Cytomegalovirus in Pregnancy: Why It Matters

Cytomegalovirus (CMV) is a common herpesvirus and the most common cause of congenital infection. In high-income countries, about one in 200 babies are born with CMV,[1] and approximately one in ten of these infants will develop significant long-term health impacts, including sensorineural hearing loss, developmental delay, epilepsy, and cerebral palsy.[2]

CMV Transmission and Risk Factors

CMV is transmitted through direct contact with infected body fluids, such as saliva and urine. If a woman acquires CMV during pregnancy, the virus can cross the placenta, infect the fetus, and cause significant complications including fetal brain damage, hydrops, anaemia, stillbirth, or neonatal death.

Children under three years of age are common sources of infection because they can shed large amounts of virus in their urine and saliva for up to two years after initial infection[3]. People who work with or care for young children (e.g. parents of toddlers, or childcare workers) are at increased risk of infection through direct contact with infected secretions. Healthcare workers who practice universal precautions are not at increased risk of CMV infection.[4]

Primary CMV Infection

Primary CMV infection during pregnancy (i.e. infection in a previously seronegative woman) carries the greatest risk of fetal transmission. The greatest risk of severe fetal/newborn complications is associated with maternal primary infection in the first trimester.[5] (Figure 1)

In Australia, approximately 40% of women of childbearing age are CMV seronegative and therefore susceptible to primary infection during pregnancy. Maternal seroprevalence is most strongly predicted by country of birth: women from high income countries, such as Australia, are more likely to be seronegative.[6]

Non-primary CMV Infection

If a pregnant woman with pre-existing CMV IgG antibodies becomes reinfected with another strain of CMV or has a reactivation of latent CMV, this is called non-primary infection. While the risk of fetal transmission is much lower (1-2%) after maternal non-primary infection, the fetal consequences can be just as severe as after primary infection.[7] Non-primary infection cannot be diagnosed on maternal serology alone and is usually a retrospective diagnosis, after identification of fetal ultrasound abnormalities and confirmatory amniocentesis.

Primary Prevention: Hygiene Education

Despite its public health importance, community awareness of CMV is low, and up to 80% of pregnant women have never heard of CMV.[8] Education on hygiene measures can reduce the risk of CMV acquisition during pregnancy [9] and it is recommended that all pregnant people should receive this advice, regardless of their serological status.[10,11,12] (Figure 2)

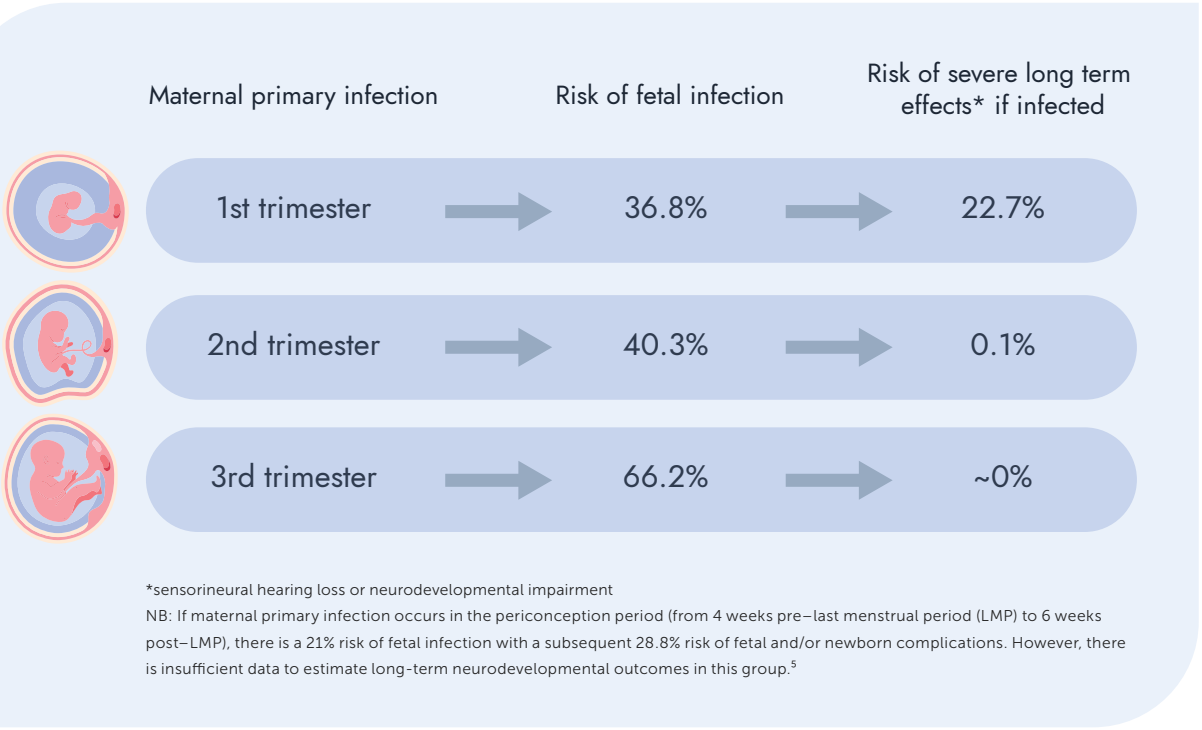

Figure 1. Risk of fetal infection and consequences following maternal primary infection[5]

Information about these hygiene precautions should be provided as early as possible in pregnancy or pre-conception, due to the increased risk of fetal complications resulting from maternal CMV infection in the first trimester.

Numerous studies have shown that pregnant women want to receive CMV prevention information from maternity health professionals, and that this knowledge is empowering and motivating.[8,14] The Cerebral Palsy Alliance has developed a range of information pamphlets and other resources in a variety of languages that are freely available for clinicians and consumers to download or order. This includes a two-minute educational video which has been shown to improve pregnant women's knowledge and intention to practice prevention behaviours.[15]

Targeted Antenatal CMV Serology (CMV IgG) for Those at High Risk of Infection

The recently updated Australian Pregnancy Care Guidelines recommend CMV IgG at the first antenatal visit for all high-risk women (mothers of young children or those who work in childcare).[10,11] CMV education can significantly reduce the risk of primary CMV infection in pregnancy from 7.6% to 1.6% among this high-risk group.[16]

Clinically Indicated CMV Testing (CMV IgG and IgM) for Those with Symptoms

Clinical features suggestive of CMV include flu-like illness, fever, and lymphadenopathy. Laboratory features that can accompany clinical CMV infection include atypical lymphocytosis, thrombocytopenia, elevated transaminases, and haemolytic anaemia.

Pregnant women with the above symptoms should be tested for CMV IgG and IgM, and IgG avidity if both CMV IgG and IgM are positive.[10,11] CMV IgG avidity is important for determining the timing of maternal infection and therefore, fetal risk.

Figure 2. Congenital CMV hygiene recommendation.[13]

A diagnosis of primary CMV is based on seroconversion (appearance of CMV IgG in a woman who was previously IgG negative), or the presence of CMV IgG and IgM antibodies, with low avidity IgG. Low avidity IgG indicates infection within the past three months. High CMV IgG avidity indicates infection more than three months prior. (See table 1)

Prevention of Fetal Infection After Maternal Primary Infection in Early Pregnancy

There is now evidence from randomised and observational studies that maternal treatment with high dose valaciclovir after first trimester primary infection reduces the risk of fetal infection by approximately 70%.[17] The occurrence of all adverse events in pregnant women taking valaciclovir was 3%, including 2% experiencing acute renal failure, which resolved after discontinuation of the drug.[17]

If maternal primary CMV infection is suspected in the first trimester, urgent referral to a specialist perinatal infection service is advised for expert counselling, discussion of antiviral therapy, and multidisciplinary care. [10] Patient resources, such as a pamphlet on CMV in pregnancy developed by Australian experts, can be accessed from the Cerebral Palsy Alliance CMV Resource Hub.

Fetal infection can only be confirmed via amniocentesis (PCR for CMV DNA), typically performed at least eight weeks from the time of presumed infection, and usually after 18-20 weeks gestation. Further information on fetal/infant prognosis after confirmed infection can be obtained via ultrasound and/or fetal MRI.

Psychosocial Support

A suspected diagnosis of CMV infection during pregnancy can have severe and prolonged psychological impacts on parents, regardless of the pregnancy outcome.[18] Qualitative research has highlighted the importance of timely, sensitive and accurate information from supportive health care professionals in minimising distress and confusion for patients.[18] Support groups may also be a useful source of information and peer support for women and families affected by a diagnosis of CMV infection in pregnancy.

Key Roles of the Maternity Care Provider

- For women planning pregnancy or in early pregnancy:
  - Provide routine information on hygiene-based CMV risk-reduction strategies.
  - Arrange serological testing (CMV IgG) for those at increased risk of exposure.
- Recognising the clinical features of CMV infection in pregnant women and initiating appropriate investigations.
- Interpreting CMV serology or sonographic signs of congenital infection and referring to maternal-fetal medicine or perinatal infection diseases specialists as required.
- Supporting shared decision-making regarding testing and treatment.
- Providing psychosocial support to women with suspected CMV infection and referring to CMV resources and support agencies.

Serology			Interpretation of Serology	
IgM	IgG	IgG Avidity	Interpretation	Action*
-	-	N/A	No prior infection	Consider repeating serology in two to three weeks if suspicion of recent infection
+	-	N/A	Possible recent infection OR false positive IgM	Repeat serology in two weeks
+	+	Low	Primary infection within past three months	Seek advice/refer
+	+	Intermediate	Primary infection, timing uncertain (possible recent primary)	Test stored samples if available, seek advice
+	+	High	Past infection (>three months ago) with persistent/false positive IgM OR recent non-primary infection	Depends on clinical scenario, seek advice if unclear
-	+	High	Past infection more than three months ago	Nil

**Share hygiene advice with all pregnant women*

Table 1. *Interpreting CMV serology* [10]

CMV Resources

- Free RANZCOG and RACGP CPD-accredited Perinatal Infections eLearning Module (Congenital CMV and syphilis)
  - RANZCOG Fellows: Access via the College's Acquire platform. https://acquire.ranzcog.edu.au/course/index.php?categoryid=83
  - For GPs: register with Praxhub for this free course. https://in.praxhub.com/unimelb/infections-in-pregnancy
  - For Midwives: Australian College of Midwives has an accredited online module here (accessible to ACM members and non-members). https://www.midwives.org.au/ItemDetail?iProductCode=CCMV&Category=ELEARN

- Cerebral Palsy Alliance CMV Resource Hub
  - Downloadable pamphlets, videos, flyers and posters, including patient information sheets in multiple languages and for First Nations women. You can also order free hard copies of the pamphlets and posters for your office. https://cerebralpalsy.org.au/our-research/research-projects-priorities/cmv/cmv-resource-hub/

- Patient Information on Cytomegalovirus (CMV) Infection During Pregnancy https://cerebralpalsy.org.au/wp-content/uploads/2024/02/CMV-diagnosis-in-pregnancy-info-A4-FINAL.pdf

- Patient Support Options
  - *CMV Australia* (including peer to peer support) CMV.org.au
  - *Through the Unexpected* https://throughtheunexpected.org.au/find/wellbeing-support/
  - *Perinatal Anxiety and Depression Australia (PANDA)* https://panda.org.au

- RANZCOG Statement: *Prevention of congenital cytomegalovirus (CMV) infection* https://ranzcog.edu.au/wp-content/uploads/Prevention-CMV-Infection.pdf

- Australian Pregnancy Care Guidelines
  - See the CMV guidance under the Communicable Diseases section. https://livingevidence.org.au/living-guidelines/leapp/

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AOFOG 2026

Equivolution: Equity and Sustainability in Women's Health

12 –15 October | Sydney | Australia

It is with great pleasure and anticipation that we warmly invite you all to the Asia and Oceania Federation of Obstetrics and Gynaecology Congress 2026 (AOFOG) in Sydney, Australia.

Join us from 12 to 15 October 2026 as we gather to embark on a journey of learning, collaboration, and exploration in the field of obstetrics and gynaecology.

Our specialty stands on the edge of a new era in women's health, with advances in technology, science and innovation. This congress looks to the forefront of care and how we, as healthcare professionals, can embrace innovation and strengthen outcomes for women and families.

The theme, "Equivolution: Equity and Sustainability in Women's Health," will shape the program. We will examine not only environmental sustainability, a pressing challenge for many Pacific neighbours, but also the sustainability of our workforce and communities. Equity in education, leadership and access to services will be explored, with the goal of ensuring that women, girls and all people seeking obstetric and gynaecological care receive fair treatment and equal opportunity in healthcare and beyond.

Designed to spark robust discussion, the program will feature leaders from across the Asia Pacific and around the world. We invite you to explore, connect and be inspired in Sydney 2026.

A/Prof Jared Watts
Chair,
Organising Committee

Prof Boon Lim
Deputy Chair,
Organising Committee

KEY DATES

Early Bird Registrations Open
22 October 2026

Abstract Submissions Open
22 October 2026

Abstract Submissions Close
1 April 2026

AOFOG 2026 Congress
12 - 15 October 2026

SPEAKER HIGHLIGHTS

DR MICHAEL ROBSON
(IRELAND)

Dr Michael Robson, a distinguished medical professional, completed his training and earned his MBBS at St Thomas's Hospital, London, England, in 1982.

With a rich background in Obstetrics and Gynaecology, Dr Robson served as a Consultant at Wycombe General Hospital, England, from 1995 to 2004. During this period, he also held the position of Clinical Director from 1995 to 2001. Following his tenure in England, Dr Robson assumed the role of Master at The National Maternity Hospital in Dublin, Ireland, serving from 2005 to 2011. Currently, he holds the position of Consultant Obstetrician and Gynaecologist at the National Maternity Hospital in Dublin, overseeing a hospital that delivers 8000 babies annually.

Dr Robson's primary focus revolves around the meticulous management of labor and ensuring the safe delivery of both mother and baby. His expertise extends to organisational aspects of the labour ward, encompassing teaching, audit, and research. Dr Robson's publications predominantly centre around the audit of labour and delivery, with a specific research interest in the aetiology of dystocic labour. Notably, Dr Robson serves as the National Clinical Director for the development and implementation of a National Electronic Patient Record for maternity, neonates, and gynaecology in Ireland. His commitment to advancements in healthcare is further evident through the development of an Intrapartum Audit Software Program, aligned with the philosophy and structure of the Ten Group Classification System.

LOCAL SPEAKERS ANNOUNCED

Dr Cecelia O'Brien
Australia

Dr Pelle Kempe
Aotearoa

Dr Sarah Janssens
Australia

A/Prof Scott White
Australia

Dr Michelle Wise
Aotearoa

Dr Oliver Daly
Australia

Prof Sonia Grover
Australia

A/Prof Zoe Bradfield
Australia

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Abstracts for Free Communication (oral), Three Minute Thesis (oral), Static Poster Presentation and **ePoster presentations are open!** Scan the QR code for more information.

PROGRAM HIGHLIGHTS

At a glance

TUESDAY 13 OCTOBER

The first day of the Scientific Program will be full of learning, connection and big-picture thinking.

The program brings insights across the Asia-Pacific on paediatric and adolescent gynaecology, prenatal genetics, simulation training and rural and remote health, as well as exploring different models of care for women's health throughout the region.

Sessions will explore respectful maternity care, the impact of climate change on women's health, persistent pelvic pain as well as LGBTQIA+ health and advances in how ultrasound are changing women's health.

The day's program closeswith discussions on safe and accessible abortion care, AI in women's health and the unique needs of migrant and refugee communities. It will also investigate the timing of birth and multiple pregnancy.

WEDNESDAY 14 OCTOBER

The second day of the Scientific Program will see Keynote Michael Robson setting the tone for the day with "Speaking the Same Language in Labour and Delivery: Using Outcome Data to Drive Global Change."

The momentum continues through the morning with sessions on fetal growth disorders, maintaining skills in low-resource settings, Indigenous women's health, and the question: can cervical cancer be eliminated in low-resource settings?

For the second half of the day, considerations turn to the diagnosis and treatment of endometriosis, induction of labour, prolapse and intrapartum care updates, as well as a focus on health and wellbeing and leadership in the women's healthcare workforce. Vital conversations on reproductive rights and gynaeoncology round off the day.

THURSDAY 15 OCTOBER

The final day of the program is filled with sessions which scrutinise some of the hottest topics in obstetrics and gynaecology: attitudes to birth trauma around the Asia-Pacific, risk reduction and screening as well as maternal morbidity and mortality are all up for discussion.

Sessions also deep dive into research in women's health, menopause and gender-based violence. Urogynaecology in ageing populations is also explored, along with reproductive medicine and challenges found in the labour ward.

Scan to view the full program

WORKSHOP HIGHLIGHTS

USING MATERNITY DATA TO UNDERSTAND AND IMPROVE OUTCOMES

Scan for more information

This full-day interactive workshop brings together representatives from maternity units across AOFOG member nations to work with real-world data and explore practical ways to use standardised outcome measures to improve care.

Facilitators: Dr Michael Robson (Ireland) and Dr Pelle Kempe (Aotearoa New Zealand)
Date: 12 Oct 2026
Time: 08:30 - 17:00
Cost: $550 (inc GST) for local, and $450 (inc GST) for international attendees.

SOCIAL FUNCTIONS

Connect and celebrate with colleagues

WELCOME RECEPTION

A relaxed and informal welcome reception held in the congress exhibition space, offering delegates a chance to connect as AOFOG 2026 begins.

Date: Monday 12 October 2026
Location: The Gallery, ICC
Time: 17:00 – 19:00
Price: Included in full delegate registrations, additional tickets $120

CONGRESS BANQUET

Join us for the AOFOG 2026 Congress Banquet, offering all delegates the chance to connect and dance the night away with colleagues and friends.

Date: Wednesday 14 October 2026
Location: Grand Ballroom, ICC
Time: 19:00 – 22:00
Price: $200 per ticket

PRESIDENT'S NIGHT

This invitation-only dinner offers a distinguished occasion for the AOFOG President to welcome and host esteemed guests.

Date: Tuesday 13 October 2026
Location: Cockle Bay Rooms, ICC
Time: 19:00 – 22:00
Invitation Only

MORE INFORMATION

For more information, including registration details and booking for social functions, please visit the AOFOG 2026 website.

AOFOG

Hepatitis in Pregnancy

Prof Michelle Giles
MBBS, FRACP, PhD

Dr Naomi Whyler
MBChB, FRACP

Viral hepatitis is characterised by liver inflammation, usually caused by the hepatitis viruses A, B, C, D, and E, and less commonly by other viruses such as cytomegalovirus and Epstein-Barr virus. Hepatitis B virus (HBV) and hepatitis C virus (HCV) can cause chronic infection and have implications for perinatal care. This article highlights current recommendations for screening, diagnosis, and management of chronic HBV and HCV in pregnancy.

Chronic Hepatitis B Infection

More than 250 million people have chronic HBV infection worldwide.[1] Many will be asymptomatic but may have fluctuating viral activity with subclinical hepatic inflammation that can cause cumulative damage. Untreated, this can lead to liver cirrhosis in up to 40%, as well as hepatocellular carcinoma and liver failure.[2]

HBV is transmitted through bodily fluids, and acquisition during infancy or childhood leads to chronic infection in approximately 95% of cases,[1] with the remaining 5% spontaneously clearing the virus. Maternal HBV infection is therefore important to diagnose during pregnancy as this provides an opportunity to prevent transmission to the infant, and institute care for the mother to lower the chance of long-term liver complications.

Screening and Diagnosis

In Australia, antenatal testing includes universal testing for HBV using hepatitis B surface antigen (HBsAg). If HBsAg is detected, further investigations are warranted with hepatitis B surface antibody (HBsAb) and hepatitis B core antibody (HBcAb).[3] These results are used to distinguish between those who have chronic infection, those with past cleared infection, and those who are immune from vaccination or have neither been infected nor vaccinated (Table 1).

Management

All antenatal women diagnosed with hepatitis B should be referred for specialist review to guide perinatal management. HBV viral load testing should be performed in every pregnancy, and if over 200,000 IU/mL it is recommended to commence antiviral therapy, usually with tenofovir disoproxil fumarate (TDF) 300mg once daily.[4] This should be started between 24 to 28 weeks gestation and continued postpartum until specialist review.[4] This approach effectively reduces viral load and lowers the risk of perinatal transmission.[2] TDF is safe to use in both pregnancy and breastfeeding mothers.[1,5]

All infants born to mothers with HBV infection, regardless of viral load, should receive a birth dose of HBV vaccination and hepatitis B immunoglobulin, both to be given as soon as possible, and preferably within 12 hours of birth.[4,6] A further three HBV vaccinations should be administered at two, four, and six months of age, and are included in the routine childhood immunisation schedule. Pre-term babies may require booster doses.[6] All infants should have serology performed between 9 to 18 months of age to ensure they are immune, to identify those who may need additional doses of hepatitis B vaccine, or to identify the few who may have contracted HBV perinatally.[4] Partners and other household contacts should also be tested and vaccinated if needed.

HBsAg	HBsAb	HBcAb	What it Means	Recommended Actions
Positive	Negative	Positive	Chronic hepatitis B infection	Refer to specialist for perinatal management
Negative	Positive	Positive	Immune due to past infection	No action required
Negative	Positive	Negative	Immune due to vaccination	No action required
Negative	Negative	Negative	Not immune, not infected: at risk of infection if exposed	Consider maternal vaccination
Negative	Negative	Positive	Isolated core antibody: can represent past cleared infection, occult chronic HBV, or false positive	Test HBV DNA: refer to specialist and treat as chronic HBV infection if viral load is detected

Table 1: *Screening for hepatitis B infection and interpretation of results.*

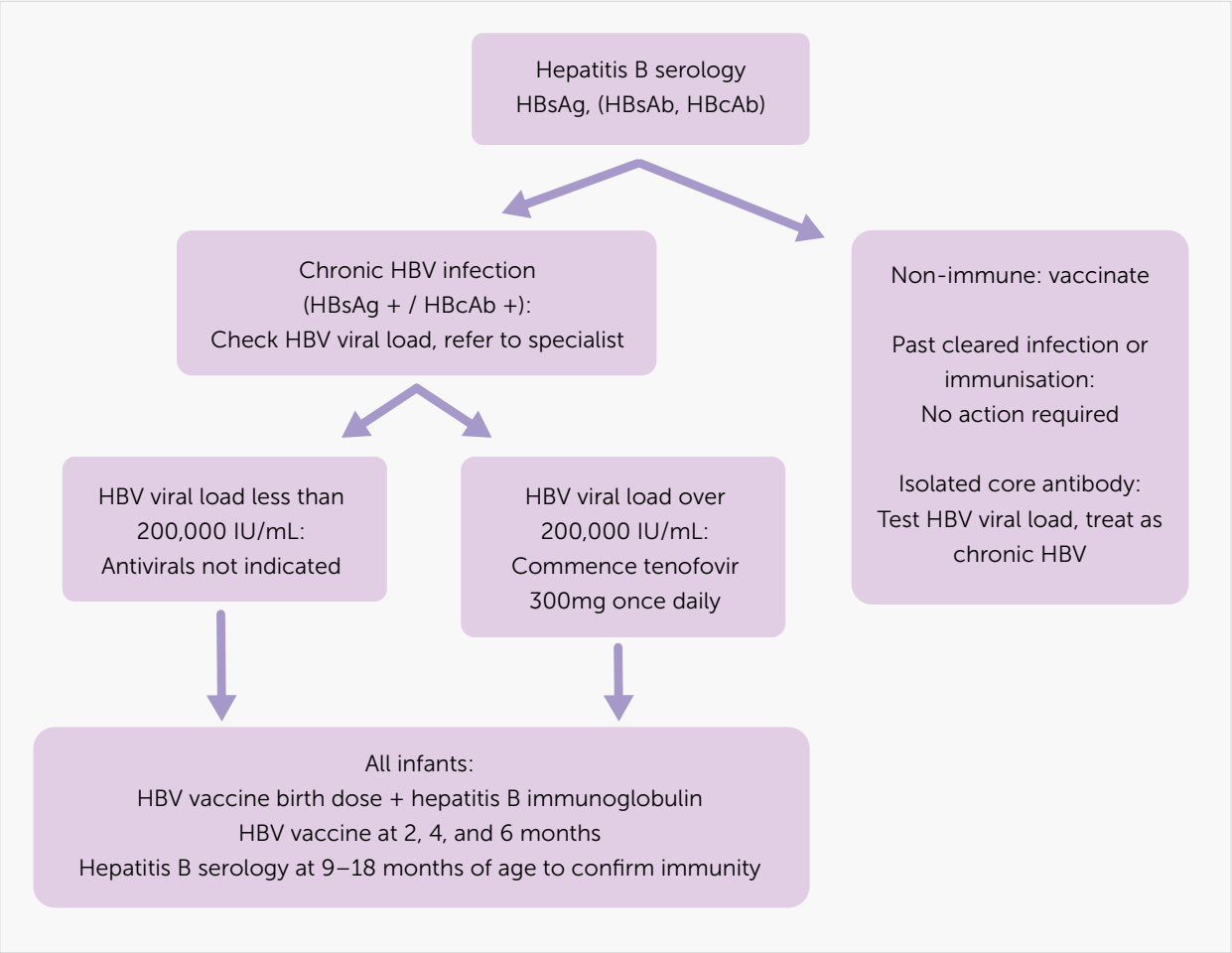

Figure 1: Flowchart for management of chronic hepatitis B infection in pregnancy.

Other Considerations

Having HBV infection should not affect the mode of delivery. Caesarean section does not provide protection against perinatal transmission over vaginal delivery, and decisions should be based on other obstetric factors.[4]

Postpartum, it is safe to breastfeed regardless of viral load, and when taking TDF. Antivirals should be continued for around 12 weeks postpartum with specialist review to guide cessation, as women may have a postpartum hepatitis flare on ceasing antiviral therapy.

All patients should be linked in with a specialist for longer-term monitoring and surveillance for complications.

Hepatitis C Infection

Hepatitis C virus (HCV) is an RNA virus which affects around 71 million people worldwide.[7] It is acquired through exposure to bodily fluids and can be bloodborne or sexually transmitted. It causes both acute and chronic infection, with around 70% of cases leading to chronic infection. Long-term complications include liver fibrosis, cirrhosis and liver cancer, all of which carry higher risk of morbidity and death.[7]

Chronic HCV infection with detectable viraemia is associated with approximately 5% risk of perinatal transmission.[4] Antenatal screening may identify previously undiagnosed cases of chronic HCV infection. Many organisations, including the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG), now recommend universal testing for all pregnant women rather than a risk-based screening approach.[3]

Screening and Diagnosis

Hepatitis C antibody testing is used for screening. For those with a positive HCV antibody, it is important to do a test for viraemia. This can be done using either a quantitative test (viral load) or a qualitative HCV PCR test (reported as detected or not detected).

An undetectable viral load most commonly indicates past cleared HCV infection, previous successful treatment (cure), or low-level viraemia below the level of detection.[4] In these cases, the risk of perinatal transmission is considered negligible.

When HCV is detected, this confirms the diagnosis of current HCV infection and specialist review is recommended to discuss the implications for both mother and infant.

Management

Direct-acting antivirals (DAA) such as sofosbuvir and velpatasvir are effective medications that can cure chronic HCV infection in over 98% of cases, defined as sustained virological remission with continued undetectable viral load at 12 to 24 weeks post-completion of treatment.[6] Safety data on the use of DAA in pregnancy and breastfeeding is still being collected. While current Australian guidelines do not recommend the use of DAA in women who are pregnant or lactating, this may change as emerging data suggests a reasonable safety profile. Until then, women should be offered treatment with DAA once they have completed the pregnancy and breastfeeding; and ideally before any future pregnancies.[4]

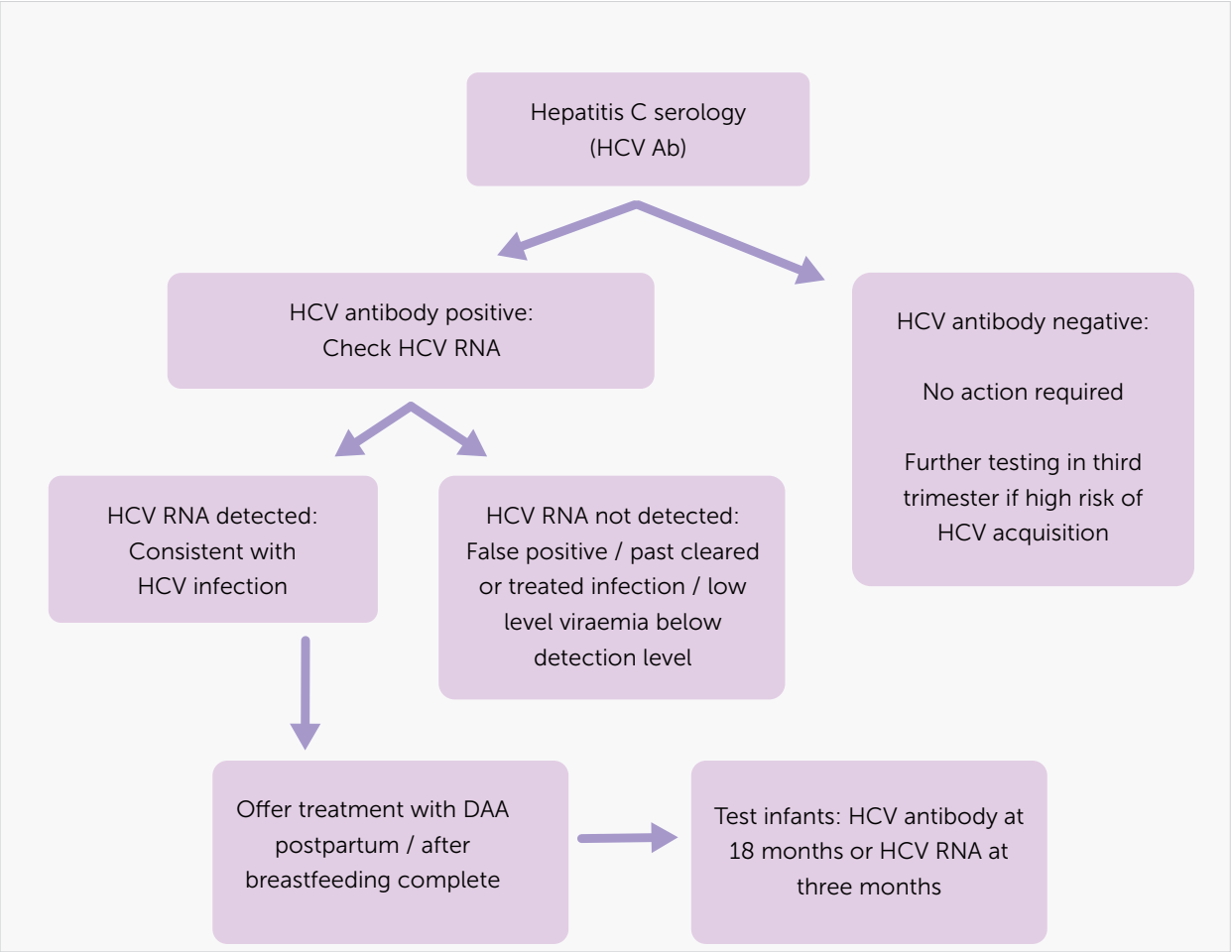

Figure 2: Flowchart of testing and management for Hepatitis C infection.

Women who become pregnant whilst already taking DAA should be offered early specialist review to discuss the risks of continuing treatment versus stopping.[4]

In the setting of HCV infection, there is no evidence to recommend caesarean section over vaginal delivery. Amniocentesis is recommended over chorionic villus sampling, and it is recommended to minimise invasive procedures such as fetal scalp electrodes.[4,7]

Other Considerations

HCV antibodies are not protective against re-infection, and women and their partners should be counselled about ongoing risk of re-infection and offered re-testing if indicated.

Breastfeeding is considered safe. However, if the mother experiences nipple trauma with bleeding, they should be offered early lactation support and advised to express and discard milk from the affected side until it heals.

Infants born to mothers with a detectable HCV RNA test should be followed up with either an HCV RNA test done at three months of age, or a hepatitis C antibody test performed at or after 18 months of age. The HCV RNA test may incur a cost but may reduce the risk of loss to follow up.[4]

Infants with confirmed HCV infection should be referred to a specialist paediatrician, either gastroenterologist or infectious diseases physician, for management.[4,8]

Similarly to hepatitis B, it is important that women with chronic HCV are linked into specialist care postpartum to ensure they receive treatment, and that they are assessed for complications of chronic HCV infection.[4]

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Varicella-zoster Virus in Pregnancy

Dr Jake Halliday
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Background: Why Varicella Still Matters

Varicella-zoster virus (VZV), the cause of chickenpox and shingles, remains a relevant concern in pregnancy despite the success of Australia's national immunisation program. For most clinicians, the disease is now an uncommon presentation. However, for susceptible pregnant women, exposure to VZV can herald significant consequences to both the mother and fetus. Obstetric doctors, midwives, and general practitioners remain at the front line of assessing risk, counselling patients, and providing time-critical prophylaxis. This article reviews Australian epidemiological trends, outlines practical management of exposure, and explains the spectrum of maternal, fetal, and neonatal risks.

Epidemiology and Immunisation in Australia

Australia introduced a universal varicella vaccination program in 2005, initially as a single dose at 18 months of age. This has had a profound effect on disease burden. National surveillance data has shown that in 2023, more than 90% of Australian two-year-olds were fully vaccinated, and hospitalisations due to primary VZV infection have declined dramatically.[1] Breakthrough cases continue to occur, particularly in migrants from regions without routine childhood vaccination.[2] Clinicians also encounter women with uncertain or absent immunity.

The vaccine used in Australia is a live attenuated virus. This makes it highly effective, but means it is contraindicated in pregnancy. As a result, ensuring women are immune before conception remains the most reliable means of protecting against VZV in pregnancy.[1]

Preconception and Antenatal Screening

Preconception screening for varicella immunity is essential. Women uncertain of prior infection should have VZV IgG testing, with non-immune women offered two vaccine doses four to eight weeks apart and advised to avoid pregnancy for 28 days post-vaccination.[1] During pregnancy, early documentation of immunity and vaccination of non-immune household contacts reduce maternal exposure risk.[3]

Defining and Managing Exposure During Pregnancy

When a pregnant woman reports contact with a suspected or confirmed case of chickenpox or shingles, the first step is to define whether the exposure is clinically significant. Significant exposures include household contact, face-to-face contact indoors for 15 minutes or more, or direct exposure to vesicular fluid.[4]

Once exposure is established, prompt clarification of the woman's immune status should be obtained. A reliable history of prior varicella or shingles, or documentation of two doses of vaccine is considered evidence of immunity. If the woman is clearly immune, no intervention is required. However, if she is non-immune or her status is unknown, and results cannot be obtained promptly, then post-exposure prophylaxis should be arranged without delay.[3,4]

Maternal Disease: When Chickenpox Turns Dangerous

Chickenpox in adults is far from benign, and pregnancy amplifies the risks. The physiological changes of pregnancy, particularly the relative immunosuppression and reduced pulmonary reserve, predispose women to severe varicella pneumonitis, the most feared maternal complication.[4] Pneumonitis develops in up to 10–20% of infected pregnant women, often presenting with dry cough, dyspnoea, and hypoxaemia within days of rash onset. Mortality rates can approach 10% in untreated cases, rising with advancing gestation.[5,6]

From an MFM perspective, early recognition and antiviral therapy are life-saving. Intravenous or high-dose oral aciclovir should be initiated ideally within 24 hours of rash appearance, reducing both disease severity and maternal morbidity. Hospital admission is indicated for women

	Management	Action
Pre-conception	Check varicella history or VZV IgG serology	Vaccinate if non-immune
Vaccination	2 doses, 4-8 weeks apart	Avoid pregnancy for 28 days post each dose
First antenatal visit	Record history of infection/vaccination	If uncertain – perform VZV IgG serology
Household contacts	Confirm exposure history	Vaccinate if non-immune

Table 1. Pre-conception and Antenatal Screening

with respiratory compromise, comorbidities (e.g. asthma, smoking, obesity), or those in the second or third trimester, when pulmonary complications are more likely.[4,5]

Beyond maternal risk, active varicella poses a significant infection control challenge. Women are contagious from 48 hours before rash onset until all lesions have crusted, necessitating strict airborne and contact precautions. For tertiary units, ensuring negative-pressure isolation and staff immunity verification is critical to preventing nosocomial spread.[3,4]

Fetal and Neonatal Risks

The fetal and neonatal consequences of VZV infection depend on the gestational age of infection, influencing both prognosis and management.[4,5,7]

While the universal varicella vaccination program has reduced community circulation, varicella remains a potential threat in pregnancy. Clinicians must be adept at recognising significant exposures, rapidly assessing immunity and arranging timely prophylaxis.[3,4] Understanding the fetal and neonatal risks by gestation allows for appropriate counselling and surveillance. Above all, pre-conception vaccination remains the most effective prevention strategy.[1] As with many infections in pregnancy, a proactive approach grounded in clear communication with infectious diseases and neonatology teams ensures optimal outcomes for both a mother and her baby.

Step	Clinical Situation	Recommended Action	Timing
1. Confirm exposure	Assess if exposure is *clinically significant*	Proceed to immunity assessment if significant	Immediate
2. Assess immunity	Reliable history of prior chickenpox/shingles, or documentation of two vaccine doses	No action required if immune	–
3. If non-immune or uncertain	Send urgent VZV IgG serology (if not available promptly, treat as non-immune)	Arrange Zoster Immunoglobulin (ZIG)	Ideally ≤96 hrs (up to 10 days)
4. Consider antivirals ("delayed prophylaxis")	For non-immune women who did not receive ZIG or have risk factors for severe disease	Oral aciclovir or valaciclovir from day 7-14 post-exposure	Day 7-14

Table 2. *Post-Exposure Management in Pregnancy*

Gestational Age	Fetal/Neonatal Risk	Recommended MFM Management
<28 weeks	Risk of *Congenital Varicella Syndrome (CVS)* (~1–2%) — scarring, limb hypoplasia, microphthalmia, cortical atrophy	Detailed morphology ultrasound and serial growth scans; consider fetal MRI if neurological signs; MFM counselling
≥28 weeks	CVS rare; possible FGR or transient ultrasound abnormalities	Routine surveillance; invasive testing (amniocentesis for VZV PCR) only if findings are clinically significant (80-90% sensitivity)
–7 to +2 days of delivery	Severe neonatal varicella due to viraemia before antibody transfer	Urgent neonatology referral; administer ZIG ± IV acyclovir to neonate; avoid maternal–infant separation if possible under isolation protocols

Table 3.*Fetal Risks and MFM Management*

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The Lost ART of Preventing Perinatal HIV Transmission:

Recommendations from the Canadian 2024 HIV in Pregnancy Update Relevant to Australia and Aotearoa New Zealand

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30 years ago, the rate of perinatal transmission of human immunodeficiency virus (HIV) was around 30%. The introduction of anti-retroviral therapy (ART) during pregnancy in the 1990s transformed management reducing perinatal transmission to <1%. Globally, this is under threat, with recent funding cuts to major aid organisations providing HIV care. For Australia and Aotearoa New Zealand where cases are few, but high stakes, the *Society of Obstetricians and Gynaecologists of Canada (SOGC) updated guideline on HIV care in pregnancy* provides important, evidence-based considerations for management that are applicable to our context with many parallels in terms of at-risk groups and available resources.

Why it Matters Locally and What Guidance is Available

Australia and Aotearoa New Zealand record only a handful of HIV-affected pregnancies each year, with no recent documented perinatal transmissions. *The Australasian Society for Infectious Diseases (ASID) guidelines* provide brief treatment algorithms for use in acute scenarios which are drawn from US and British guidelines and provide a useful snapshot of treatment.[1]

The Canadian Society of Obstetricians and Gynaecologists' 2024 guideline provides a comprehensive, evidence-based roadmap.[2] Its recommendations, while tailored to a Canadian context, resonate strongly for Australia and Aotearoa New Zealand, where equity of health care for migrant, First Nations, and remote populations remain central.

Some essential knowledge for pregnancy care providers, key points, and brief controversies drawn from the SOGC and ASID guidance are presented below:

Essential Facts for Clinicians and Public Regarding HIV Care in Pregnancy

1. U=U: Undetectable equals untransmissible. This is true for conception, pregnancy, and intrapartum care, and is important to provide reassurance and reduce stigma for patients.
2. 100% adherence and absorption of combined ART results in undetectable viral loads. Once established on effective ART, patients will maintain undetectable viral loads. Resistance only occurs in the presence of detectable viral loads resulting from lack of adherence or disruption in medication absorption.
3. ART is safe during pre-pregnancy, pregnancy, and post-partum for both mother and baby. This should be reinforced by providers when patients are planning pregnancy, or encounter unplanned pregnancy, to prevent treatment interruption.
4. Vaginal delivery is safe and does not increase the risk of perinatal transmission in the setting of an undetectable viral load and optimal adherence to combined ART.

Key Principles of Care in Pregnancy to Prevent Perinatal Transmission of HIV

Universal Screening

- First trimester HIV testing remains routine, with repeat testing in each trimester for women at high risk (e.g. sero-discordant couples, ongoing injecting drug use, or migration from endemic regions).
- Rapid testing in labour provides a last opportunity to identify infection and initiate emergency prophylaxis for patients not engaged in care.

Antiretroviral Therapy

- Indicated for all pregnant women living with HIV, regardless of CD4 count or viral load.
- Preferred regimens: a dual nucleoside reverse transcriptase inhibitor backbone (tenofovir + l amivudine/emtricitabine) plus an integrase inhibitor (dolutegravir or raltegravir).

- Continue established regimens even if containing older drugs such as efavirenz and nevirapine.
- Manage nausea early and aggressively as this is a major barrier to absorption and adherence, resulting in detectable viral loads with potential for transmission and resistance.
- Drug interactions matter: iron, calcium, and antacids can reduce integrase inhibitor absorption. Dose spacing is essential.

Monitoring
- Viral load every 4-12 weeks with a key check at 36 weeks.
- HIV infection is a risk factor for preterm birth with multifactorial causes, which should be considered when determining fetal monitoring, antenatal care, and delivery planning.
- Obstetric ultrasounds as per routine guidelines in Australia and Aotearoa New Zealand, with third trimester scan for fetal growth.

Delivery Planning
- In all scenarios where vaginal delivery is anticipated, avoid invasive monitoring (scalp electrodes, fetal blood sampling) and minimise duration of rupture of membranes where possible.
- Various thresholds for mode of delivery decisions based on viral load exist. The SOGC guideline suggests the following:
  - Undetectable (<50 copies/mL at term): Vaginal birth is safe; caesarean reserved for obstetric indications.
  - High viral load (≥400 copies/mL or unknown): Planned caesarean at 38 weeks with intrapartum zidovudine.
  - Intermediate (50–399 copies/mL): Case-by-case multidisciplinary planning. IV zidovudine.
- Presentation in labour, known HIV diagnosis not on treatment: Offer caesarean section if not in active labour with intact membranes, commence IV zidovudine, consider rapid start ART with dual NRTI (commonly used in PEP regimens) and an INSTI, such as raltegravir, for rapid viral suppression. Urgent paediatric infectious disease input.

Current Controversies

Does U=U include lactation and breast feeding?

The postpartum period is vulnerable for ART adherence. ASID and SOGC recommend formula feeding but emphasise shared decision-making, supporting exclusive breastfeeding with added maternal monitoring and infant prophylaxis if chosen.

If undetectable with optimal control, is IV zidovudine required in labour?

ASID guidelines suggest if viral load is undetectable with reliable adherence and recent confirmation, IV zidovudine is not required, though the SOGC advises giving it if there is uncertainty or complex risk factors.

Are long acting (depot) antiretroviral treatments safe in pregnancy?

There remains a lack of safety data in pregnancy for these newer medications, but they provide an exciting future treatment and prevention strategy once more information is available.

Global Issues

In 2024 there were 40.8 million people globally living with HIV and 53% were women or girls. 31.6 million were accessing ART and only 84% of pregnant women living with HIV had access to ART to prevent perinatal transmission.[3] Unfortunately, this has recently come under threat, with foreign assistance freezes announced by the US government in January 2025. Approximately 70% of all foreign aid funding for HIV comes from the US government through the President's Emergency Plan for AIDS Relief (PEPFAR) and other United States Agency for International Development (USAID) initiatives. A recent Lancet HIV modelling study estimates the proposed donor cuts by the five major countries responsible for the majority of international HIV funding will result in substantive and potentially abrupt lack of access to effective antiretroviral therapy, which could result in 4.4-10.8 million additional HIV infections by 2030, including up to 880,000 additional infections in children due to the lack of ART for pregnant mothers.[4]

This has highlighted the precarious nature of health systems' dependency on humanitarian aid, and is hoped to drive innovation in non-reliance on foreign aid, but any rapid withdrawal threatens to undo decades of work in preventing perinatal transmission.

Although these immediate impacts will predominantly be felt in sub-Saharan Africa, with immigration/refugee intake, countries such as Canada, Australia and Aotearoa New Zealand will need to be prepared for the consequences of escalating global epidemics on systems that may not have the recency of knowledge in previously managing rare diseases in our populations.

Conclusion

The Canadian SOGC 2024 guideline provides a practical, evidence-based framework for perinatal HIV care. Its lessons are highly relevant for Australia and Aotearoa New Zealand, where rare cases demand precision, equity, and global solidarity.

HIV care in pregnancy is a public health success story—yet one easily undone. To prevent the return of perinatal transmission, we must preserve the lost ART of prevention: universal screening, timely ART, neonatal prophylaxis, and stigma-free, woman-centred care.

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Case of Parvovirus B19-Associated Non-Immune Hydrops Requiring Intra-Uterine Transfusion

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Key points:

1. Early clinical suspicion and rapid diagnosis of parvovirus B19 is critical.
2. Tertiary level follow-up with serial MCA Doppler assessment up to 12 weeks post infection is essential to detect fetal anaemia.
3. Timely intra-uterine transfusion can be lifesaving in cases of parvovirus B19-associated non-immune anaemia and hydrops.
4. Fetal brain MRI in the third trimester may detect subtle changes not seen on fetal neurosonography.

A 32-year-old woman (G2P1) was referred to the Westmead Hospital Maternal-Fetal Medicine Unit (MFM) following an incidental finding of fetal hydrops at 18+5 weeks. Fortnightly transvaginal cervical length surveillance had been instigated following the detection of a cervical length of 25 mm at 16+5 weeks. No other concerns were noted on that ultrasound. At 18+5 weeks, ultrasound revealed fetal hydrops including generalised anasarca, ascites, pericardial effusion, placentomegaly, and a moderately elevated middle cerebral artery peak systolic velocity (MCA PSV, 33.3 cm/s, 1.39 MoM). On questioning, the patient reported a flu-like illness four weeks earlier. She was Rhesus positive with no relevant medical or surgical history. Non-invasive prenatal testing was low risk for the common aneuploidies.

Following counselling, amniocentesis was performed, and samples were sent for cytogenetics, DNA storage, and urgent PCR testing for cytomegalovirus (CMV), toxoplasmosis, syphilis, and parvovirus B19. Maternal serology was also obtained to assess for recent infection.

A follow-up scan at 19+0 weeks showed progression of fetal anaemia, with the MCA PSV rising to 46.3 cm/s (1.90 MoM). The patient was counselled for intrauterine transfusion (IUT). Transfusion was briefly delayed pending confirmation of rapid PCR for parvovirus. Chromosomal microarray later returned with no evidence of chromosomal copy number variants, and maternal serology was positive for both parvovirus IgG and IgM.

IUT was performed in two stages due to severe hydrops. A small-volume "snack" transfusion of 10 mL was administered at 19+0 weeks, reducing the MCA PSV to 33 cm/s (1.36 MoM). The patient was followed up closely with a scan every 2 days (19+1 to 19+6 weeks). MCA PSV values remained between 33–41 cm/s (1.36-1.69 MoM). Ascites, scalp oedema, and pericardial effusion persisted, but ventricular function remained preserved. A second IUT was performed at 20+0 weeks (pre-procedure MCA PSV 46 cm/s, 1.89 MoM; fetal Hb 21.7 g/L). A 20 mL transfusion reduced the MCA PSV to 25 cm/s (1.0 MoM). Serial ultrasounds documented gradual improvement. Generalised oedema had resolved by 21+6 weeks, with ascites steadily decreasing. Continued improvement was seen in two to three weekly ultrasounds, with complete resolution of ascites at 33+1 weeks and appropriate fetal growth throughout. A fetal brain MRI at 31 weeks showed subtle parieto-occipital white matter signal loss. The patient was subsequently seen by a paediatric neurologist, who considered the findings reassuring and unlikely to result in adverse neonatal outcome. Follow-up was arranged, with the option of postnatal review and repeat MRI if concerns arose. At 38+2 weeks, the patient delivered vaginally after spontaneous rupture of membranes. The neonate was well at birth (Apgars 9, 9, 9; birthweight 2.6 kg), with no evidence of anaemia (day 1 Hb 193 g/L). Both mother and baby were discharged home the following day for ongoing midwifery in the home care.

Parvovirus B19 infection, also known as fifth disease or "slapped cheek", is a common, self-limiting childhood illness caused by a single-stranded DNA virus transmitted through respiratory droplets and hand-to-mouth contact. In adults, infection is usually mild or asymptomatic, though flu-like symptoms, rash and symmetric peripheral arthropathy may occur. Approximately 40% of Australian women are non-immune.[1] If acquired during pregnancy, there is a 50% risk of vertical transmission, which can, in rare cases, lead to severe fetal anaemia and life-threatening hydrops .[1] The virus targets erythroid precursor cells in the liver, suppressing erythropoiesis and inducing apoptosis. There is currently no intervention to prevent fetal infection, nor is there a role for routine screening in pregnancy, making it crucial to remain vigilant and ensure timely diagnosis.

In suspected cases, maternal serology for IgG and IgM antibodies should be performed, with consideration for repeat testing in two to four weeks after possible exposure in susceptible women. Urgent referral must be made to a tertiary care MFM centre if infection is suspected. Serial ultrasound for 12 weeks from time of probable exposure is crucial.[1] Amniocentesis in asymptomatic intrauterine fetal infection is not recommended, however, in cases of unexplained fetal hydrops or anaemia where amniocentesis is performed, the sample can be sent for parvovirus PCR, as in this case. Other rare causes of fetal anaemia and hydrops to consider include CMV, toxoplasmosis, coxsackie virus, and syphilis infections.[2] We emphasise the importance of early communication with the local health laboratory to understand processing times and potentially expedite results.

The greatest risk of parvovirus B19 to the fetus is prior to 20 weeks gestation, where there is a 10% excess risk of pregnancy loss, and 3% risk of hydrops between 9-20 weeks gestation.[2] Hydrops carries a high risk of intrauterine death. Spontaneous resolution occurs in 32% of non-hydropic fetuses, but in only 5% of hydropic cases.[1] When hydrops or severe fetal anaemia (MCA PSV value >1.5 MoM) is present, IUT substantially reduces the risk of fetal death and markedly improves prognosis.[3] However, large-volume transfusion in severely anaemic fetuses <24 weeks may worsen outcomes due to parvovirus-induced myocarditis and reduced cardiac reserve.[2,4] The Society for Maternal-Fetal Medicine (SMFM) recommend a stepwise approach, whereby an initial partial transfusion is followed by a second IUT within 48 hours to achieve a near-normal fetal haematocrit, with a third procedure scheduled seven to ten days later if required.[2] In this case, close follow-up in our MFM unit with serial ultrasounds every two days confirmed good fetal tolerance (including ventricular function) following the first IUT, with the second transfusion performed after seven days.

There is a paucity of data on the long-term neurodevelopmental outcomes of children born after IUT for fetal anaemia due to parvovirus B19 infection. A recent MRI study suggested higher rates of abnormal fetal neuroimaging findings at 28-32 weeks, including cerebellar hypoplasia and intracranial haemorrhage, however the long-term significance of these findings remains unclear.[5] MRI may detect subtle brain abnormalities, or white matter changes that may not be apparent on ultrasound, which can aid parental counselling and early neonatal management.[7] Data from the LOTUS study,[6] which evaluated the long-term neurodevelopmental outcomes in 291 children aged 2-17 years of age who had undergone IUT for haemolytic disease of the newborn, found that the overall incidence of neurodevelopmental impairment was low (4.8%). However, those with severe hydrops were at higher risk, as it was independently associated with neurodevelopmental impairment.[6] Severe fetal anaemia and hydrops may contribute to cerebral injury either through ischaemic events, or haemodynamic changes in cerebral blood flow during IUT,[8] but further studies are required to clarify these associations.

We report a case of congenital parvovirus B19 infection that illustrates how early referral, monitoring, and timely intervention can lead to excellent outcomes. With the recent surges of parvovirus B19 cases across Europe and the USA in 2023–2024,[9] we stress the importance of heightened awareness and antenatal education in Australia. Additionally, our case underscores the importance of fetal brain MRI and neurological follow up.

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STIs in Pregnancy (Chlamydia, Gonorrhoea and Bacterial Vaginosis) in Australia

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Sexually transmitted infections (STIs) are particularly important to manage in pregnancy, and their incidence is closely linked to socioeconomic determinants such as poverty, poor access to healthcare, incarceration, and intergenerational trauma.[1] STIs remain a preventable driver of adverse pregnancy outcomes in Australia. Beyond causing cervicitis and ascending infection, STIs can affect pregnancy through varied, pathogen-specific pathways. This article provides a clinical overview of three common STIs — chlamydia, gonorrhoea, and bacterial vaginosis — focusing on their prevalence, associated pregnancy and neonatal complications, presentation, risk groups, and the current antenatal screening and treatment guidelines within Australia.

Chlamydia

Chlamydia *(chlamydia trachomatis)* remains the most frequently notifiable STI in Australia, with over 109,451 new cases reported in 2023 alone. It affects both genders equally and is prevalent among people aged 15–29 years.[2] Rates are disproportionately higher among Aboriginal and Torres Strait Islander peoples, particularly in remote communities, where prevalence is twice that of non-Indigenous populations.[1] These disparities reflect broader socioeconomic inequities, including reduced access to culturally safe healthcare, systemic disadvantage, and impacts of colonisation and intergenerational trauma.

Pregnancy risk: Chlamydia can ascend from the lower genital tract into the uterus, provoking an inflammatory cascade, associated with increased risk of preterm birth, low birth weight, and perinatal mortality.[3,4] A large Australian study demonstrated a link between maternal chlamydia and small for gestation age (SGA) infants.[4] Chlamydia in pregnancy is associated with neonatal complications including conjunctivitis and pneumonia.[5]

Presentation: It is estimated that 85-90% of infections are silent. Asymptomatic infections persist unless actively screened for, contributing substantially to population disease burden. Symptomatic infection is uncommon but may present with dysuria, vaginal discharge, pelvic pain, and/or anorectal symptoms, depending on infection site. Complications include ectopic pregnancy, pelvic inflammatory disease (PID), and infertility.[6]

Screening: Most Australian guidelines, including RANZCOG's, support a risk-based screening approach, recommending testing at the first antenatal visit to pregnant women <30 years and those at increased risk (i.e. new or multiple partners, prior STI diagnosis, residing in high prevalence regions).[7] In rural Western and Northern Australia, third trimester testing is already routine antenatal practice.[8] Despite this, research highlights screening gaps, particularly among Aboriginal and Torres Strait Islander women, who experience higher rates of chlamydia-related adverse pregnancy outcomes. Strengthening culturally appropriate and accessible antenatal screening remains a public health priority to reduce the burden of chlamydia in pregnancy across Australia.[1,4]

Treatment: First line treatment for vaginal chlamydia in pregnancy is stat oral azithromycin 1g. The use of tetracyclines in pregnancy is contraindicated due to the risk of tooth discolouration and impaired bone development in the foetus.[5] Education, partner notification and treatment, and contact tracing of all sexual partners in the last six months is critical to prevent maternal reinfection, hence improving maternal-neonatal outcomes. Test of cure (TOC) is recommended four weeks after treatment to avoid false positives from residual DNA, with retesting at three months to detect reinfection.[6]

Gonorrhoea

Australia recorded 44,210 gonorrhoea (*neisseria gonorrhoeae*) notifications in 2024, representing an increase of 211% over the last decade. Of those new notifications, 11,989 were reported in women, and people aged 15-29 years made up 45% of total notifications.[9] Among Aboriginal and Torres Strait Islander peoples, the 2023 age-standardised notification rate was more than four times the non-Indigenous rate.[2]

Pregnancy risk: In pregnancy, gonorrhoea is associated with adverse outcomes including ectopic pregnancy, preterm birth, SGA, low birth weight, and a twofold rise in stillbirth rates.[4,10] Vertical transmission during pregnancy is between 30 to 47%.[10] This can lead to neonatal complications including ophthalmia neonatorum, meningitis, sepsis, and rarely, disseminated gonococcal infection.[11]

Presentation: As 80% of vaginal gonorrhoea is asymptomatic, active screening is needed to detect infection.[12] Serious complications include ectopic pregnancy, PID, infertility, and severe neonatal eye infections that may lead to blindness. Gonorrhoea is also associated with a five-fold increased risk of HIV transmission.[15]

Screening: Screening is recommended for pregnant women <30 years, with known risk factors, or those living in rural/remote areas.[10]

Treatment: Treatment with intramuscular ceftriaxone 500mg (with 1% lidocaine) plus azithromycin (1g) is first line treatment in pregnancy for vaginal gonorrhoea.[10] Multi-drug resistant gonorrhoea is rising worldwide, highlighting the importance of pre-treatment swabs for culture and susceptibilities, and post-treatment test of cure at two weeks to identify resistant strains, detect treatment failures, and provide alternative treatment.[12]

Bacterial Vaginosis

Bacterial vaginosis (BV) is a polymicrobial vaginal dysbiosis with lactobacilli depletion that affects almost a third of reproductive-aged women globally. It presents with malodorous vaginal discharge and is associated with high recurrence rates.[13]

Pregnancy risk: BV in pregnancy is associated with preterm birth, low birth weight, and postpartum endometritis.[13] BV in pregnancy is more prevalent among women of lower socioeconomic status and/or history of preterm birth. A Cochrane review found whilst antibiotic therapy is effective in eradicating bacterial vaginosis in pregnancy, there was no evidence that treatment of antenatal women with BV resulted in reduced preterm births. Evidence that routine screening in asymptomatic women improves outcomes are limited.[14] Emerging evidence suggests that early treatment before 20 weeks of pregnancy may be beneficial for women with a history of preterm birth.[14]

Screening: Current Australian guidelines do not recommend screening in asymptomatic pregnant women with low-risk pregnancies.

Treatment: Treatment of choice is with oral metronidazole 400mg BD with food for seven days, or intravaginal therapy with metronidazole 0.75% gel or clindamycin 2% cream. A recent Australian study found reinfection is a significant driver for recurrence, and that BV is sexually transmissible. Concomitant partner treatment should be offered to regular male partners of women with BV.[13]

Conclusion

Addressing the burden of sexually transmitted infections (STIs) in pregnancy requires a proactive, risk-based approach to antenatal care. Universal screening for chlamydia and gonorrhoea, and interval screening in high-prevalence populations can help detect asymptomatic infections early in pregnancy, reducing maternal and neonatal complications.

Timely treatment using the pregnancy and risk-specific sections in the *Australian STI Management Guidelines* is essential. Routine test-of-cure and third trimester retesting for those at ongoing high risk, alongside prompt partner management and contact tracing, are critical to preventing reinfection and improving outcomes.[16]

Embedding equitable care models using robust recall systems, standardised partner management pathways, and culturally safe models of service delivery including self-collection and telehealth, ensures all at-risk women can access care safely. These strategies collectively strengthen antenatal STI management and contribute to reducing preventable adverse pregnancy outcomes across Australia.

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Influenza and COVID-19 in Pregnancy

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Pregnancy alters respiratory physiology and immunity, increasing susceptibility to complications from acute viral infections. Influenza and COVID-19 remain the two respiratory pathogens most likely to lead to maternal hospitalisation, intensive care, and adverse perinatal outcomes.[1,2] General practitioners are pivotal in prevention (vaccination), early diagnosis, timely antiviral therapy, and coordinated follow-up across antenatal and postpartum care.

Haemodynamic changes (increased oxygen consumption, decreased functional residual capacity), mucosal oedema, and pregnancy-related immunomodulation together raise the risk of severe viral disease. Both influenza and SARS-CoV-2 infections in pregnancy are associated with higher odds of hospitalisation and ICU admission than in non-pregnant peers, and COVID-19 has been linked to increased risks of preterm birth and other adverse outcomes.[3] Postpartum women (up to two weeks) also remain at elevated risk for influenza complications as cardiopulmonary physiology normalises.

Vaccination: The Strongest Protection

Influenza

An inactivated or recombinant influenza vaccine is recommended in every pregnancy, in any trimester, as soon as seasonal vaccine becomes available.[1] Vaccination reduces maternal influenza, hospitalisation, and febrile illness, and provides passive protection to infants via transplacental transfer of IgG – important because babies cannot be vaccinated until six months of age.[4] Co-administration with other non-live vaccines (e.g. Tdap, maternal RSV, COVID-19) is safe and effective,[5] and opportunistic same-day delivery should be used to lift coverage. Australian guidance (ATAGI/NCIRS) aligns with these principles and supports co-administration during pregnancy and revaccination in the same pregnancy if seasons span calendar years.[6]

COVID-19

Major professional bodies continue to advise vaccination during pregnancy and lactation to prevent severe COVID-19 and adverse pregnancy outcomes, and to confer passive infant protection.[7,8] Local product availability and eligibility criteria vary over time; clinicians should follow national schedules and ACOG/WHO updates for vaccine product selection and booster timing. Co-administration with influenza vaccine is acceptable.[9]

Counselling is important for compliance. Emphasise maternal benefits (preventing severe disease) and neonatal benefits (antibody transfer), reassure about non-live vaccine safety, and invite questions about timing. For patients with vaccine hesitancy, brief, strong, and presumptive recommendations from the primary clinician consistently improve uptake.[9]

Recognising and Testing

Clinical presentations of influenza and COVID are often similar. During the respiratory-virus season, test for both influenza and SARS-CoV-2 when compatible symptoms are present, especially in the third trimester or in patients with comorbidities.[3]

Treat Early: Antivirals Save Lives

Influenza Antivirals

Start oseltamivir 75mg orally twice daily for five days as soon as influenza is suspected – do not await test confirmation, and do not withhold treatment because symptom onset exceeds 48 hours if the patient is severely ill or deteriorating.[10] Pregnancy is not a contraindication to neuraminidase inhibitors; oseltamivir remains the preferred agent because of oral dosing and the most robust pregnancy safety data.[10] Zanamivir (inhaled) or peramivir (IV) are alternatives when oseltamivir is not feasible. Baloxavir is not recommended in pregnancy due to insufficient data.[11] Treat fever promptly – paracetamol is appropriate and safe in pregnancy; avoid routine NSAIDs after 20 weeks' gestation because of risk of oligohydramnios and fetal renal impairment.[12]

Offer post-exposure prophylaxis (e.g., oseltamivir 75 mg daily for seven to ten days) to pregnant or early postpartum close contacts at high risk after confirmed exposure, alongside vaccination where not yet given.[10]

COVID-19 Therapeutics

For non-hospitalised pregnant patients at risk of progression, nirmatrelvir-ritonavir (Paxlovid) is first-line within five days of symptom onset, [13,14] provided drug-drug interactions are assessed; major professional guidance advises not withholding this therapy on the basis of pregnancy or lactation alone. Remdesivir (three-day IV regimen for outpatients; longer courses for inpatients with hypoxaemia) is a reasonable alternative when Paxlovid is unsuitable;[15] growing pharmacokinetic and observational data suggest acceptable safety in pregnancy, though high-quality efficacy data are limited.[15] Molnupiravir should be avoided in pregnancy because of potential fetal toxicity; consider only if no other options are available and after shared decision-making.[3] Manage hypoxaemia aggressively; consult obstetric and infectious diseases colleagues early for hospitalised patients.[3]

Summary

The evidence base for influenza management spans many seasons and consistently supports maternal vaccination and early neuraminidase inhibitor therapy in pregnancy. For COVID-19, multiple observational data sets and living guidelines demonstrate higher maternal morbidity and preterm birth with infection,[16] and support vaccination and time-sensitive outpatient antiviral therapy in pregnancy. Data for remdesivir in pregnancy are increasingly supportive but still limited; when indicated for hospitalised cases, decisions should be individualised with multidisciplinary input. Guidance on vaccine schedules evolves with variant epidemiology; check current local and national recommendations.

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Second Trimester Miscarriage Secondary to Haemophilus Influenzae Bacteraemia

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Abstract

Haemophilus influenzae is a rare pathogen in obstetric infections. This case report focuses on a 26-year-old female who presented at 14+3 weeks gestation with increasing lower abdominal pain following sudden vaginal fluid. Despite initial planning for expectant management of her second trimester miscarriage, the patient developed signs of sepsis with persistent fevers and worsening abdominal pain. Haemophilus influenzae was identified from both blood cultures and an intraoperative endocervical gel swab, necessitating targeted antibiotic therapy. This case highlights the importance of early recognition and treatment of sepsis in obstetric patients.

Introduction

Haemophilus influenzae is a gram-negative anaerobic bacterium commonly associated with respiratory infections.[1,2] However, it is a rare pathogen that has previously been cultured in the female genital tract.[1,2] This report presents a unique case of Haemophilus influenzae bacteraemia following a second-trimester miscarriage, which underscores the importance of broad-spectrum antibiotic coverage and multidisciplinary management in obstetric sepsis to prevent morbidity and mortality.[3]

Case Report

A 26-year-old female (G5P2M1T1) presented to the emergency department with worsening sharp right lower abdominal pain rated 8/10 in severity. This was following clear PV fluid loss, with a known intrauterine pregnancy. At the time of presentation, she was 14+3 weeks gestation. She denied symptoms such as fever, nausea, vomiting, urinary or bowel symptoms, or other systemic signs of illness, with no recent infectious contacts.

Past Medical and Surgical History:
- Alpha thalassemia trait
- Anxiety
- Previous appendicectomy

Obstetric History:
- 2x spontaneous vaginal deliveries
- 1x first-trimester miscarriage
- 1x medically managed termination of pregnancy

Initial Investigations:
- Full Blood Count: Elevated white cell count (WCC) of 18.5 x 10^9/L, otherwise no abnormality.
- C-reactive protein (CRP) of 46, indicating an inflammatory/infectious process.
- Other blood tests including electrolytes, liver, and renal function were within normal reference range.
- Pelvic Ultrasound: Confirmed intrauterine fetal demise at 14+3 weeks, normal liquor volume, posterior placenta, and closed cervix (35mm), normal ovaries and adnexa.

Management Course:
- Given significant pain, the patient was admitted and management options were discussed in accordance with the *Queensland Health Stillbirth Guideline*.[4]
- Initially, the patient was opted for expectant management and began to have palpable contractions.
- The patient's pain was increasing in the right lower quadrant and was no longer able to be controlled with oral analgesia. She was commenced on patient-controlled fentanyl analgesia (PCA) with the assistance of the anaesthetics team.
- Despite the PCA, she had persistent pain and laboratory evidence of infection. Empiric IV antibiotics (gentamicin, ampicillin, and metronidazole) were initiated due to concerns for sepsis.
- Within 30 minutes of starting antibiotics (only gentamicin administered at this time), she developed a fever of 38.2°C.
- Repeat blood tests showed a persistently elevated WCC (17.3 x 10^9/L). Blood cultures were collected at the time of the fever.
- Due to clinical deterioration and ongoing pain, the obstetric team recommended an urgent suction dilation and curettage +/- extraction (D&C) under ultrasound guidance, which was performed without complication.
- Routine intraoperative investigations included an endocervical swab for microscopy/culture/sensitivity (M/C/S).

Postoperative Course:
- Despite surgical intervention, the patient continued to experience fevers and abdominal pain.
- CT abdomen/pelvis revealed no significant findings.
- Antibiotics were escalated to IV piperacillin-tazobactam 4g every six hours per local sepsis protocol.
- Blood cultures returned positive for Haemophilus influenzae (beta-lactam positive) in two sets at 13 and 18 hours. (Figure 1)
- Infectious diseases specialists initially considered the blood culture result to be a contaminant. However, on postoperative day three, the intraoperative endocervical swab also cultured Haemophilus influenzae, confirming an active infection.
- Given beta-lactam resistance, antibiotics were changed to IV ceftriaxone 2g every 12 hours and metronidazole 500mg every 12 hours.
- Following the change of antibiotics, the patient's pain significantly improved.

- Once afebrile for 24 hours, she was transitioned to oral sulfamethoxazole-trimethoprim 800/600mg every 12 hours for a 14-day course.
- The patient was safely discharged on postoperative day five, afebrile and pain-free, with gynecology and infectious disease follow-up.

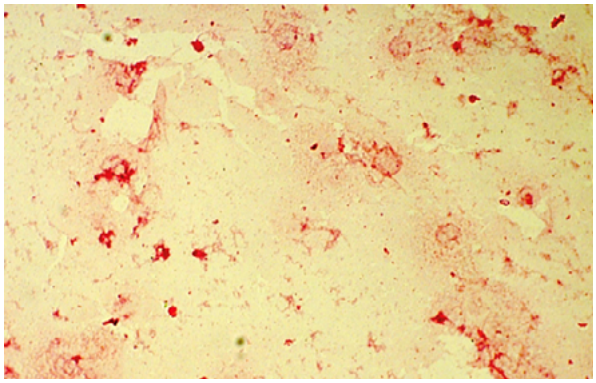

Figure 1. Haemophilus influenza in a blood culture[5]

Discussion

Haemophilus influenzae, though commonly associated with respiratory tract infections, is an unusual cause of genitourinary infections.[1,2] While uncommon, it has been previously cultured with the female genital tract. Reported cases in obstetric patients are rare, but the bacterium has been identified in amniotic fluid, postpartum endometritis, and neonatal sepsis.[1,2] The presence of Haemophilus influenzae in both blood cultures and an endocervical swab suggests a significant pathogenic role in this patient's clinical course.

Key Learning Points:

1. Atypical pathogens in obstetric sepsis: While Group B Streptococcus and Escherichia coli are more common, rare organisms like Haemophilus influenzae should be considered, especially in the setting of persistent fevers despite broad-spectrum antibiotics.[3]
2. Early escalation and multidisciplinary input: This case emphasises the importance of involving infectious disease specialists early in cases of unresolving sepsis.
3. Consideration of beta-lactam resistance: Empiric antibiotic regimens may require modification based on microbiological findings. In this case, piperacillin-tazobactam was ineffective against beta-lactamase-positive Haemophilus influenzae, necessitating a switch to ceftriaxone.

Conclusion

This case highlights an unusual but significant obstetric infection with Haemophilus influenzae following second-trimester miscarriage. Septic miscarriage is a medical emergency that requires prompt recognition and review. Prompt recognition, targeted antibiotic therapy, and multidisciplinary management were essential in ensuring a favourable outcome. Timely treatment is critical for prevention of maternal morbidity and mortality. Given the rarity of this pathogen in obstetrics, further research may be beneficial in understanding its role in pregnancy-related infections.

Conflicts of Interest

There are no conflicts of interest for this case report.

Author's Contributions

Fiegert, C: Drafted the work and revised it critically for important intellectual content. Agrees to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Arnold, S: Provided final approval of the version to be published.

Acknowledgements

Thank you to the patient whose medical history is outlined in the above case report.

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Abbreviations:

CRP – C- Reactive protein
D&C – dilation and curettage
G5P2M1T1; Gravida 5 Parity 2 Miscarriage 1 Termination 1
IV – intravenous
M/C/S – microscopy, culture and sensitivity
PCA – patient-controlled analgesia
PV – per vaginam
WCC – White Cell Count

Book Review

Dr Samantha Scherman
FRANZCOG

Book Title: *Defeating the Ministers of Death, The Compelling History of Vaccination*
Author: Prof David Isaacs
Publisher: Harper Collins
Reviewer: Dr Samantha Scherman, FRANZCOG

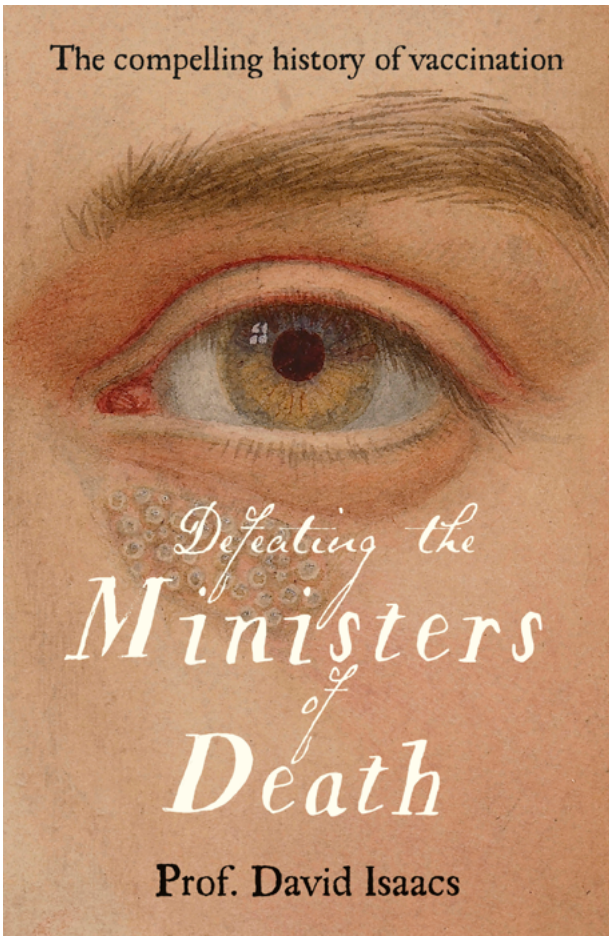
Defeating the Ministers of Death, written by Professor David Isaacs, was released in April 2019, at a time when the world was set to face the emergence of a pandemic (COVID-19) that would raise questions across the globe surrounding vaccine development, efficacy, and safety.

Professor Isaacs, who sadly passed away in August of this year, was an esteemed Australian paediatrician, who trained at Cambridge and Oxford, before heading the first department of infectious diseases at the Royal Alexandra Hospital for Children in Camperdown, Sydney (now known as the Children's Hospital at Westmead).

Although *Defeating the Ministers of Death* describes the scientific discoveries and technologies that led to the development of modern-day vaccines, it is by no means a 'dry' scientific tome. In his introduction, Professor Isaacs states that the 'history of the development of vaccines by great scientists and doctors is one full of human interest, drama and magic,' and that in his book he wished to 'explore that human dimension.'

There are chapters within the book dedicated to some of the most feared diseases in human history, such as smallpox, polio, tuberculosis, diphtheria, rabies, and tetanus, many of which have plagued the world for thousands of years and have been documented in ancient texts. Other chapters discuss the anticancer benefits of vaccines (such as the modern-day HPV vaccines), vaccines in pregnancy, vaccines for the elderly, the ethics around immunisation, and the modern-day anti-immunisation movement. There is also a chapter dedicated to the tragedies that occurred in the early days of immunisation, where some lives were lost rather than saved through immunisation because of issues with the way early vaccines were developed and manufactured.

Professor Isaacs intersperses his scientific explanations regarding vaccine development with some humorous references to old age remedies for certain infections. For example, the remedy for chickenpox in County Down, Ireland, in the 19th century included 'two kinds of food obtained from two first cousins who are married and soup made from the tails of mice.' The combination of such humorous anecdotes with the tragic tales of the millions of humans permanently disabled or deceased from infections across human history do indeed lend a very 'human dimension' to this book.



The first chapter, entitled 'Our deadliest foes,' starts with the incredibly sad story of the children of President Abraham Lincoln. The President and his wife, Mary, lost their 3-year-old son, Eddie, to a several weeks long illness of coughing and fevers, likely either diphtheria or tuberculosis. Eleven years later, their 11-year-old son, Willie, died from typhoid. Nine years later, their 18-year-old son, Tad, died from heart failure, possibly related to tuberculosis. Only one of their four children survived to adulthood, and of course Mary also had to cope with the death of her husband by shooting three years after Willie passed away.

The tragic loss of so many of your children to infectious illnesses seems almost inconceivable to those of us living here in modern day Australia, though prior to the development of vaccines and antibiotics, this was all too much of a reality for families, and unfortunately remains a reality for poorer nations where widespread vaccination and antibiotic use remains out of reach for many.

I found the chapters on vaccines in pregnancy and anticancer vaccines to be most relevant to our specialty. I was fascinated to learn from the book, that somewhat embarrassingly for obstetricians, the link between German measles infection in mothers and congenital rubella syndrome was not made by an obstetrician, or even a paediatrician, but during the Second World War by an Australian ophthalmologist called Sir Norman McAlister Gregg. According to Professor Isaacs, in 1941, Gregg started to see a large number of newborns with eye defects, particularly cataracts. He then overheard two mothers in his waiting room discussing the fact that they had both had German measles early in their pregnancies, associated with an outbreak of the infection in Sydney at that time. His medical curiosity piqued, he enquired with his colleagues as to whether they too had noticed an increase in affected newborns in their practices, and he identified 78 babies. 68 of the mothers of these babies remembered having a rubella-like illness in early pregnancy. He was, perhaps, the first person to recognise that organisms infecting a pregnant woman could cross the placenta and harm the fetus.

My father grew up in a small village in rural Canada in the 1940s and 1950s. He still remembers the fear that would sweep through the community when a polio outbreak occurred. Professor Isaac's book is not only an enjoyable and interesting read, but also a testament to the tenacity and research capabilities of those doctors and scientists who have been involved in vaccine development over the years, and to the millions of lives that have been saved across the world through vaccination.

Defeating the Ministers of Death is available in all good bookstores.

OBITUARY

Dr Graham Henderson
1942-2025

With heavy hearts, we announce the peaceful passing of Dr Graham David Henderson on 16 May 2025.

Dr Henderson graduated in Medicine from the University of Sydney in 1966. He began his medical career as a Resident at Royal North Shore and later at St George Hospital, where he developed a strong interest in obstetrics and gynaecology. He subsequently became a Registrar at the Royal Hospital for Women and earned his MRCOG, which later became a Fellowship.

In 1972, Dr Henderson and his family moved to the United Kingdom, where he undertook further training in Edinburgh and received his Fellowship of the Royal College of Surgeons of Edinburgh. He went on to work at Northampton General Hospital for 18 months, followed by a year at the Hammersmith Hospital in London.

Upon returning to Sydney, Dr Henderson commenced private practice, initially working at Blacktown and then Hornsby Hospital. He was dedicated to education, contributing to the training of nurses and general practitioners in women's health.

Dr Henderson enjoyed a long and fulfilling career at Sydney Adventist Hospital, where he was a valued and respected clinician. Throughout his career, he made a lasting impact on his patients, colleagues, and the many students he mentored.