



Reproductive Technology Council

Western Australian Reproductive Technology Council

Annual Report

1 July 2016 to 30 June 2017



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Dr D J Russell-Weisz
DIRECTOR GENERAL
Department of Health
189 Royal Street
East Perth WA 6004

Dear Dr Russell-Weisz

It is with pleasure that I submit the Reproductive Technology Council (Council) Annual Report for the financial year 2016 to 2017. This report sets out details of assisted reproductive technology (ART) practices in Western Australia (WA) and the activities of Council, as required by the *Human Reproductive Technology Act 1991* (HRT Act). It is in a form suitable for submission to the Minister for Health and also, as is required, to be laid by the Minister before each House of Parliament.

Council members reviewed a range of applications for approval including applications for embryo storage extension, gamete storage extension and genetic testing of embryos.

Council hosted three seminars on the subjects of gamete donation, the presentation of reproductive technology treatment data and a postgraduate seminar where students presented their work in assisted reproductive biology.

This year Council commissioned an expert reviewer to evaluate a revised set of data, in relation to the Reproductive Technology Registers.

It is not possible for Council to operate effectively without the support of a number of people who provide their expertise and time to attend to Council matters. I especially wish to thank Council and committee members for their ongoing commitment. Finally, I recognise the ongoing financial contribution and administrative support provided by the Department of Health.

Yours sincerely

Dr Brenda McGivern
Chair
Reproductive Technology Council

September 2017

Contents

Executive summary	1
Introduction	2
Council functions	2
Membership of Council and Council committees	3
Council Chair and Council committee Chairs	3
Reproductive Technology Council Members	5
Reproductive Technology Council Deputy Members	5
Counselling Committee	6
Embryo Storage Committee	7
Licensing and Administration Advisory Committee	7
Preimplantation Genetic Diagnosis Committee	7
Scientific Advisory Committee	8
Operations of Council	9
Meetings	9
Memberships	9
Reproductive Technology Unit	9
Practice and Storage Licences	9
Applications to Council	11
Council's role as an advisory body	14
Publications and presentations	15
Developments in reproductive technology	19
Reproductive Technology and Voluntary Registers	20
References	21
Appendices	
Appendix 1: Practice and Storage Licence holders	22
Appendix 2: Financial statement	23
Appendix 3: Operations of licence holders	24
Tables	
Table 1: Approved applications for extension of embryo storage	11
Table 2: Genetic conditions approved for PGD	12
Table 3: Financial statement for the 2016–2017 annual report	23
Table 4: IVF treatments	24
Table 5: Number of recipient cycles using donations	25
Table 6: Dispersal of stored embryos	26
Figures	
Figure 1: Progression of fresh IVF cycles by year, 2008–2017	27
Figure 2: Progression of thawed embryo cycles by year, 2008–2017	27
Figure 3: Number of IVF cycles with ICSI by year, 2008–2017	28

Executive summary

This annual report was prepared by the Reproductive Technology Council (Council) for the Chief Executive Officer (CEO), Department of Health, to comply with the requirements of Section 5(6) of the HRT Act. The CEO is required to submit the report to the Minister for Health, to be laid before Parliament. The annual report outlines the use of ART in WA, and the operation of Council for the financial year from 1 July 2016 to 30 June 2017.

Council has an important role as an advisory body to the Minister for Health and to the CEO on issues related to ART, the administration of the HRT Act, and the Surrogacy Act. Council is also responsible for providing advice on licensing matters for ART services and monitoring standards of practice.

Council members reviewed a range of applications for approval under the HRT Act. Council approved 29 applications to extend embryo storage and 33 applications for genetic testing of embryos.

Council hosted three seminars this year. The first seminar provided insight into the complex issues of donor conception and the second seminar examined the ways analysis and presentation of reproductive technology data can be enhanced. Council hosted a third seminar, in collaboration with a special interest group of The Fertility Society of Australia, where postgraduate students were provided with the opportunity to showcase their work in assisted reproductive biology.

This year Council commissioned an expert reviewer to evaluate a revised set of data, in relation to the Reproductive Technology Registers.

A new Council website was launched in March 2017.

The budget allocation to Council for this year was \$62,935 and the expenditure was \$49,655. The financial statement, which outlines the distribution of expenses, is provided in this annual report.

Data collected from the annual reports submitted by WA licensees for 2016–2017 showed that 4,066 women underwent in vitro fertilisation (IVF) treatment, which is a slight decrease from 4,092 the previous year. Fertility clinics undertook 6,046 IVF treatment cycles this year, which is 3% less than the previous year.

A total of 878 intrauterine inseminations were undertaken, which represents a decrease of 19% compared to the previous year.

A total of 2,342 couples or individuals received counselling, which represents a 3% increase from the previous year. Most counselling consisted of a single session and involved the provision of information.

The number of embryos reported in storage at 30 June 2017 was 24,664.

The effective operation of Council requires the significant and dedicated support of Council and committee members, and the ongoing financial and administrative support provided by the Department of Health. This support is essential to enable Council to meet the responsibilities set out in the HRT Act and the Surrogacy Act, and to ensure the effective regulation of these Acts.

Introduction

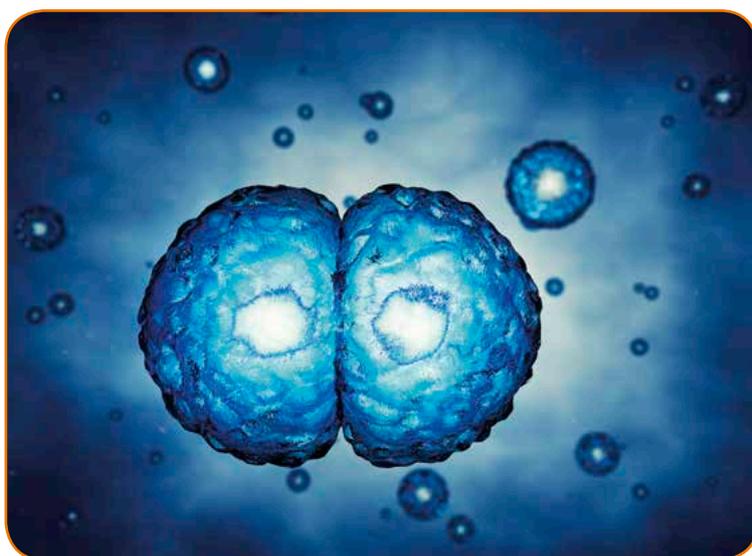
This annual report provides an account of the activities of Council for the past financial year. Council regulates ART practices in WA, as set out in the HRT Act and the Surrogacy Act. The report is structured around the legal requirements and major activities of Council and outlines the operation of Council, significant technical and social trends in relation to ART, and the activities of licence holders.

Council functions

The functions of Council are outlined in Section 14 of the HRT Act and include:

- the provision of advice to the Minister for Health on issues relating to reproductive technology, and the administration and enforcement of the HRT Act;
- the provision of advice to the CEO of Health on matters relating to licensing, administration and enforcement of the HRT Act;
- the review of the Directions and guidelines to govern ART practices and storage procedures undertaken by licensees, and thereby to regulate the proper conduct, including counselling provision, of any reproductive technology practice;
- the promotion of research, in accordance with the HRT Act, into the causes and prevention of all types of human infertility and the social and public health implications of reproductive technology;
- the promotion of informed public debate on issues arising from reproductive technology, and communication and collaboration with similar bodies in Australia and overseas.

The Minister for Health determines Council membership and is required to ensure that Council comprises individuals with special knowledge, skills and experience in ART. Council has members who are consumer representatives and members with expertise in public health, ethics and law.



Membership of Council and Council committees

This section provides biographies of the Council Chair and Council committee Chairs, a list of Council membership for this year, and the terms of reference and membership of the various Council committees.

Council Chair and Council committee Chairs

Dr Brenda McGivern

Dr Brenda McGivern is Chair of the Council. With an academic and professional background in Law, she is the Deputy Executive Dean of the Faculty of Arts, Business, Law and Education at the University of Western Australia (UWA), and continues to practise as a Consultant with Moray & Agnew Lawyers. She specialises in health, torts and insurance law. In addition to her role with the Council, she also serves on the Clinical Ethics Service for the Child and Adolescent Health Service.

Dr John Beilby

Dr John Beilby, Bachelor of Science, Doctor of Philosophy (UWA) is Chair of the Preimplantation Genetic Diagnosis Committee. He has a Fellowship of the Australasian Association of Clinical Biochemistry, is a Member of the Human Genetics Society of Australasia and a Founding Fellow of the Faculty of Science, the Royal College of Pathologists of Australasia. Dr Beilby is Head of Department of Diagnostic Genomics Laboratory, Queen Elizabeth II Medical Centre and Adjunct Professor in the UWA School of Pathology and Laboratory Medicine. Dr Beilby's research areas include studying genetic variants associated with ageing, cardiovascular disease, diabetes, and respiratory diseases.

Reverend Brian Carey

The Reverend Brian Carey is Chair of the Embryo Storage Committee. Reverend Carey is a Minister of the Uniting Church in Australia and has extensive involvement in bioethics at both a State and national level, including presenting papers on the full range of ethical and medical subjects at conferences and universities. Reverend Carey was the applied ethicist for the State of Victoria's Biotechnology Committee and a member of the Stem Cell Working Group. He was a member of Monash Medical Centre and Epworth Hospital's Human Research Ethics Committee for over twenty years. He is a member of the Curtin University Human Research Ethics Committee and also a Member of the Coroner's Ethics Committee.

Professor Roger Hart

Professor Roger Hart is Chair of the Scientific Advisory Committee. Professor Hart is a fertility specialist who has a Certificate of Reproductive Endocrinology and Infertility (CREI) and is Professor of Reproductive Medicine and Deputy Head of the School of Women's and Infants' Health, UWA. He is the lead clinician for the public fertility service of WA, and the Medical Director of Fertility Specialists of WA. He is the holder of

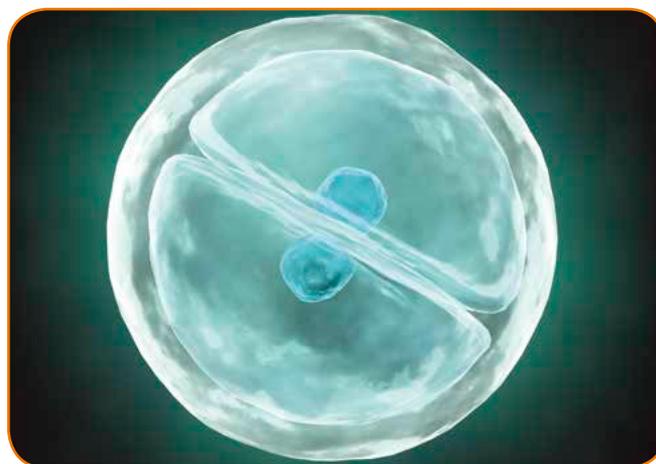
Australian National Health and Medical Research Council (NHMRC) grants to study the early life origins of impaired spermatogenesis and to study the long-term consequences of IVF treatment. He has over 100 publications in the field of reproductive medicine, is an associate editor of *Fertility and Sterility* and a member of the menstrual disorders and fertility sub-group of the Cochrane collaboration. He is a board member of the CREI sub-specialty committee, Chair of a Cancer Australia Working Party to study the management of menopausal symptoms for women with breast cancer and a member of the joint NHMRC and the European Society for Human Reproduction and Embryology Polycystic Ovary Syndrome Guideline development group.

Ms Iolanda Rodino

Ms Iolanda Rodino is Chair of the Counselling Committee. She practises as an approved infertility counsellor and clinical psychologist in private practice. Ms Rodino has worked in several fertility clinics in Perth and has extensive experience working as a clinical psychologist in the fields of infertility, and antenatal and postnatal counselling services. Ms Rodino is currently the Chair of the Australia and New Zealand Infertility Counsellors Association Research Sub-committee, Australia and New Zealand's professional infertility counselling association. Her fertility-related research interests are diverse. She has published in the areas of cross-border reproductive care, third-party reproduction, the effects of disordered eating on fertility and the psychological wellbeing in obese women and women with polycystic ovarian syndrome women undergoing fertility treatment.

Dr Joseph Parkinson

Dr Joseph Parkinson is Chair of the Licensing and Administration Advisory Committee. Dr Parkinson holds a licence in moral theology from the Lateran University in Rome and a Doctor of Philosophy in moral theology from the University of Notre Dame Australia. He is a Trustee of St John of God Healthcare, a Director of Catholic Health Australia and an honorary Fellow of Australian Catholic University. He is also a member of several ethics committees, including the research ethics and clinical ethics committees for St John of God Healthcare and the Clinical Ethics Consultancy Service at Princess Margaret Hospital. Since 2003, his substantive role has been Director the LJ Goody Bioethics Centre in Mount Hawthorn.



Reproductive Technology Council Members

Dr Brenda McGivern, Chair (nominee of the Minister for Health, representing the Law Society of Western Australia).

Dr Simon Clarke (nominee of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists).

Ms Antonia Clissa (nominee of the Department for Communities, Office of Women's Interests).

Dr Angela Cooney (nominee of the Australian Medical Association).

Ms Justine Garbellini (nominee of the Health Consumers' Council WA).

Professor Roger Hart (nominee of the UWA, School of Women's and Infants' Health).

Professor Stephan Millett (nominee of the Minister for Health).

Rev Dr Joe Parkinson (nominee of the Minister for Health).

Mr Derek Paton (nominee of the Minister for Child Protection).

Associate Professor Peter Roberts (nominee of the Minister for Health).

Dr Mo Harris (Executive Officer *ex officio*, Manager, Reproductive Technology Unit, Department of Health).

Reproductive Technology Council Deputy Members

Dr John Beilby (nominee of the Minister for Health).

Dr Peter Burton (nominee of the UWA, School of Women's and Infants' Health).

Reverend Brian Carey (nominee of the Minister for Health).

Dr Louise Farrell (nominee of the Australian Medical Association).

Dr Michèle Hansen (nominee of the Minister for Health).

Dr Andrew Harman (nominee of the Law Society of Western Australia).

Ms Rachel Oakeley (nominee of the Department for Communities, Office of Women's Interests).

Ms Iolanda Rodino (nominee of the Health Consumers' Council WA).

Dr Lucy Williams (nominee of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists).

Mrs Bridget Blackwell (Deputy Executive Officer, Senior Policy Officer, Reproductive Technology Unit, Department of Health).

Mrs Maxine Strike (Deputy Executive Officer, Senior Policy Officer, Reproductive Technology Unit, Department of Health).

Counselling Committee

Terms of reference

The committee's terms of reference are to:

- establish standards for approval of counsellors as approved counsellors, as required by the Code of Practice or Directions of the HRT Act for counselling within licensed clinics, and for counselling services available in the community;
- recommend to Council those counsellors deemed suitable for Council approval or interim approval, and reconsider those referred back to the committee by Council for further information;
- monitor and review the work of any approved counsellor;
- convene training programs for counsellors if required;
- establish a process whereby counsellors may have approval withdrawn or may appeal a Council decision;
- report annually as required by Council for its annual report to the CEO of Health, including information on its own activities and information reported to it by Approved Counsellors;
- advise and assist Council on matters relating to consultation with relevant bodies in the community and the promotion of informed public debate in the community on issues relating to reproductive technology;
- advise Council on matters relating to access to information held on the IVF and Donor Registers;
- advise Council on psychosocial matters relating to reproductive technology as Council may request.

Membership

Ms Iolanda Rodino (Chair), Ms Justine Garbellini, Mr Derek Paton, Dr Elizabeth Webb, Dr Mo Harris (*ex officio*), Ms Bridget Blackwell (deputy *ex officio*).

Embryo Storage Committee

Terms of reference

The committee's terms of reference are to:

- make decisions on applications for extension of the periods of storage of embryos on a case by case basis, based on the criteria agreed by Council, and to provide to the next meeting of Council details of all decisions made since the previous meeting;
- provide other advice or carry out other functions relating to the storage of embryos, as instructed by Council.

Membership

Reverend Brian Carey (Chair), Ms Antonia Clissa, Dr Michèle Hansen, Dr Andrew Harman, Dr Mo Harris (*ex officio*), Ms Bridget Blackwell (deputy *ex officio*).

Licensing and Administration Advisory Committee

Terms of reference

The committee's terms of reference are to:

- advise Council on matters relating to licensing under the HRT Act, including the suitability of applicants and conditions that should be imposed on any licence;
- advise Council generally as to the administration and enforcement of the HRT Act, particularly disciplinary matters;
- advise Council as to suitable standards to be set under the HRT Act, including clinical standards;
- advise Council on any other matters relating to licensing, administration and enforcement of the HRT Act.

Membership

Dr Joe Parkinson, (Chair), Dr Angela Cooney, Professor Roger Hart, Associate Professor Peter Roberts, Ms Iolanda Rodino, Dr Mo Harris (*ex officio*) Mrs Maxine Strike (deputy *ex officio*).

Preimplantation Genetic Diagnosis Committee

Terms of reference

The committee's terms of reference are to:

- advise the Council on a suitable framework for the approval of PGD under the HRT Act both generally and for specific cases;
- advise the Council on factors that it should consider when deciding whether to approve PGD;

- advise Council on standards for facilities, staffing and technical procedures;
- approve PGD applications for translocations, cystic fibrosis and Huntington's disease;
- advise as to how the ongoing process of approval of PGD should be managed effectively by the Council;
- advise the Council on other relevant matters as requested by the Council.

Membership

Dr John Beilby (Chair), Dr Peter Burton, Dr Kathy Sanders, Dr Sharron Townshend, Dr Mo Harris (*ex officio*), Mrs Maxine Strike (deputy *ex officio*).

Scientific Advisory Committee

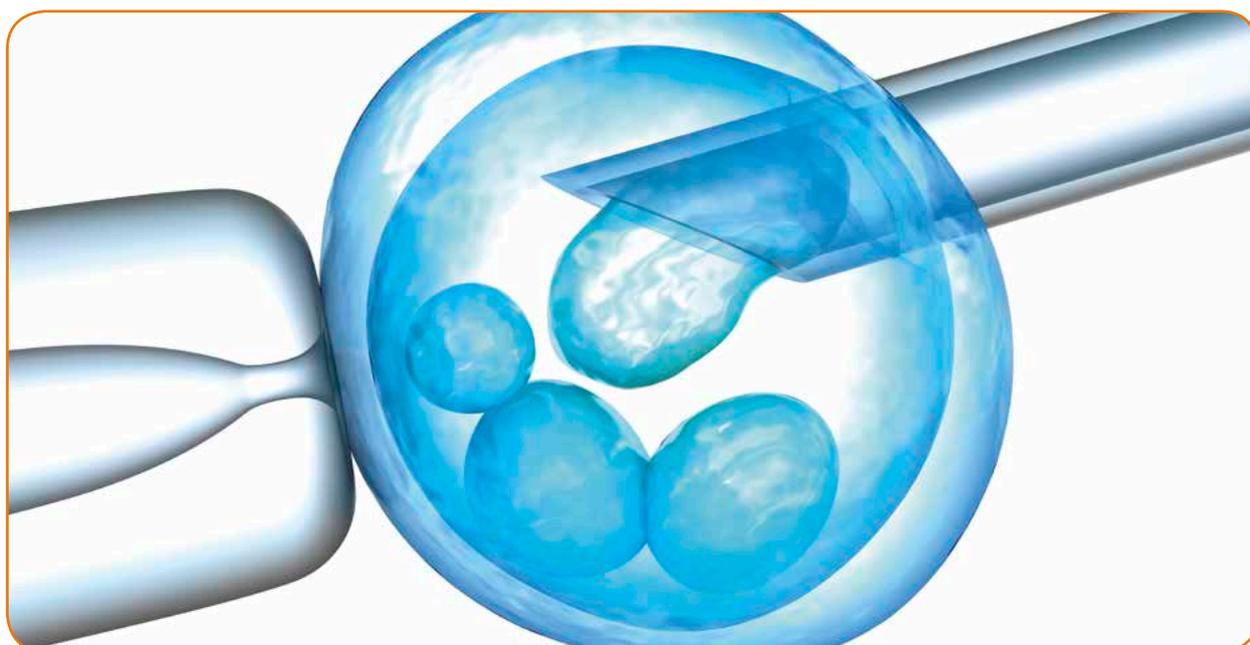
Terms of reference

The committee's terms of reference are to:

- advise Council in relation to any project of research, embryo diagnostic procedure or innovative practice for which the specific approval of Council is (or may be) sought;
- advise Council in relation to review of the HRT Act, which is to be carried out as soon as practicable after the expiry of five years from its commencement, and any other matter as instructed by Council.

Membership

Professor Roger Hart, (Chair), Dr Peter Burton, Dr Michèle Hansen, Dr Andrew Harman, Rev Dr Joe Parkinson, Associate Professor Peter Roberts, Dr Lucy Williams, Dr Mo Harris, (*ex officio*), Mrs Maxine Strike (deputy *ex officio*).



Operations of Council

Meetings

Council met on 11 occasions during the year, with attendances reaching a quorum at all meetings. The Counselling Committee met on four occasions. The PGD Committee met on two occasions, with the majority of applications for PGD considered out-of-session. The Embryo Storage Committee met on two occasions with most applications for extension of storage considered out of session. The Scientific Advisory Committee met on one occasion, with additional business conducted out of session. The Licensing and Administration Advisory Committee met on one occasion, with additional business conducted out of session.

Memberships

Outgoing and in-coming members

Ms Anne-Marie Loney (nominee of the Minister for Child Protection) resigned as Council member as of 18 October 2016. Members of Council thanked Ms Loney for her many years of service to Council.

Mr Derek Paton was appointed member of Council (nominee of the Minister for Child Protection) as of 20 December 2016.

Reproductive Technology Unit

The Department of Health's Reproductive Technology Unit provides the following administrative support to Council:

Executive Officer, Manager, Dr Mo Harris (Registered Nurse, Registered Midwife, Doctor of Philosophy).

Deputy Executive Officer, Senior Policy Officer, Mrs Maxine Strike (Bachelor of Applied Science).

Deputy Executive Officer, Senior Policy Officer, Ms Bridget Blackwell (Bachelor of Science, Master of Medical Science and Graduate Diploma of Education).

Practice and Storage Licences

Practice or storage facilities must renew their licence every three years. Council provides advice to the CEO regarding the licensing of fertility clinics. In addition, facilities are required to demonstrate compliance with the current versions of the Fertility Society of Australia Reproductive Technology Accreditation Committee (RTAC) Code of Practice and Certification Scheme. Each year all critical criteria and a third of good practice criteria and Quality Management Systems are audited. All standards are audited every three years. Fertility service providers must use a Joint Accreditation System – Australia and New Zealand (JAS-ANZ) accredited certification body for RTAC

certification. Laboratories are also required to demonstrate compliance with the National Association of Testing Authority standards.

No new licences were issued this year and no licence renewals were due.

Details of practice and storage licence holders are listed in Appendix 1 and on the Council website www.rtc.org.au.

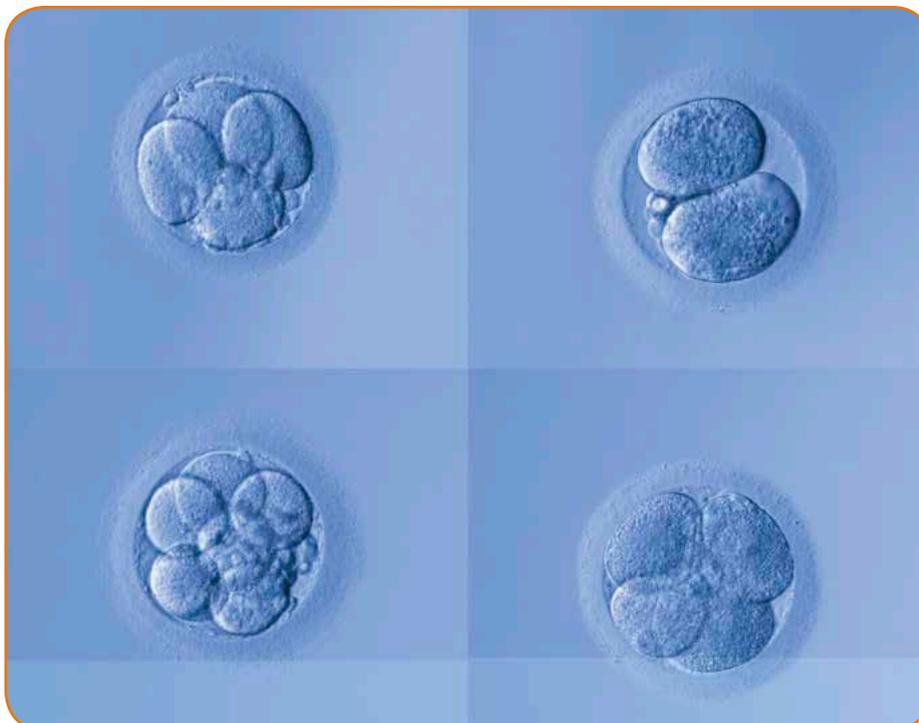
Exempt practitioners

A medical practitioner who is an exempt practitioner must ensure that minimum standards for practice, equipment, staff and facilities comply with those required for good medical practice. In addition, they must comply with any requirements established under the HRT Act.

An application for exemption must be made in the prescribed format and include evidence of registration as a medical practitioner and a written undertaking by the medical practitioner to comply with the Directions. Medical practitioners, who meet the requirements of the HRT Act, may provide artificial insemination procedures if they have a licence exemption. No new applications were received this year and no exemptions were revoked by the CEO at the request of the exempt practitioners. A list of exempt practitioners is available on the Council website www.rtc.org.au.

Approved counsellors

Council did not receive any applications this year for recognition as an approved counsellor under the HRT Act. A list of approved counsellors is available on the Council website www.rtc.org.au.



Applications to Council

Council is required to approve certain ART practices, including the storage of embryos beyond 10 years, the storage of gametes beyond 15 years, diagnostic testing of embryos, surrogacy applications, innovative procedures, and research projects. Council report in line with the National Health Information Standards and Statistics Committee Guidelines (2015) where values fewer than five are not reported. The following sections describe the activities for this year.

Embryo storage applications

Council approval is required for the storage of embryos beyond the authorised 10 year time limit. An extension may be granted under section 24(1a) of the HRT Act if Council considers there are special circumstances. Applications must be made by eligible participants (those for whom the embryos were created or donor recipients).

This year Council approved 29 applications for extension of the authorised embryo storage period compared to 25 applications that were approved the previous year. Table 1 shows the number of applications and the duration of approved storage extension that were granted for this year.

Table 1: **Approved applications for extension of embryo storage**

Extension (years)	Length of storage extension (years)			Total
	≤1	2	≥3	
Applications (n)	6	9	14	29

Storage of gametes beyond the authorised 15 year time limit also requires Council approval. This year Council approved 19 applications.

Preimplantation genetic testing

Council approves applications for genetic testing of embryos. Preimplantation genetic diagnosis (PGD) can be used where there is a known risk for serious genetic conditions. Preimplantation genetic screening (PGS) tests the developing embryo for either extra or missing chromosomes (aneuploidy). This can be a common cause of pregnancy loss. PGS does not require specific Council approval when there are known risk factors for aneuploidy. However, PGS may also be indicated when there are other factors and these are considered by Council on a case-by-case basis.

Each application for PGD is supported by a letter from a clinical geneticist. Council approval may be subject to the advice of the PGD Committee. In addition, a laboratory test (a feasibility study) may be required to determine if it is possible to test embryos for the specific genetic condition.

This year, a total of 33 applications for PGD were approved. The genetic conditions that were approved for PGD are listed in Table 2.

Table 2: Genetic conditions approved for PGD

Condition	
αThalassaemia	GAPPS syndrome
BRACA 1	Haemophilia A
BRACA 2	Huntington's disease
Cerebral Cavernous Malformation	LQT syndrome
Congenital adrenal hyperplasia	Myotonic Dystrophy
Charcot-Marie-Tooth Disease	Nemaline myopathy
Cystic fibrosis	Pendred syndrome
Duchenne Muscular Dystrophy	Retinitis pigmentosa
Epidermolysis Bullosa Simplex	SMARD1
Fabry disease	Translocations
Fragile X syndrome	

All diagnostic procedures for a fertilising egg or an embryo must have prior Council approval. Applications for cystic fibrosis, translocations and Huntington's disease may be approved by the PGD committee. General approval may be provided in the Directions or specific approval may be given in a particular case (Sections 7(1)(b), 14(2b), 53(W)(2)(d) and 53(W)(4) of the HRT Act).

Surrogacy data

Values of fewer than five are no longer reported. However, aggregated data of five or more may be included in cumulative totals (last reported in 2015*). To date a total of 28 surrogacy applications have been approved by Council and a total of 10 births have been reported.

National data for surrogacy cycles and births is reported in the Australian New Zealand Assisted Reproduction Database (ANZARD) report (Harris et al, 2016).

**Erratum. The number of surrogacy applications received by Council reported in the 2010-2011 Annual Report has been revised from seven to eight and the number of applications approved by Council reported in the 2011-2012 Annual Report has been revised from six to seven. These revisions have not altered the total number of applications reported in the 2014-2015 Annual report.*

Innovative procedures

Innovative procedures must be approved by Council under Direction 9.4. New and innovative procedures are monitored through approval and annual reporting by clinics. This year Council approved an application for in vitro maturation submitted by Fertility Great Southern.

Research applications

Research projects undertaken by licensees, other than research on excess embryos requiring a NHMRC licence, must receive Council approval. General Council approval has been granted for research such as surveys of participants and research involving additional testing of samples collected at the time of a procedure. Specific approval is required for all other research projects. Progress reports of Council approved research projects must be submitted with the licensee's annual report. This year no applications for research projects were submitted to Council.

National Health and Medical Research Council Licences

Differences between State and Commonwealth legislation have led to uncertainty regarding the authority of the NHMRC to license and monitor research on excess embryos from ART. Research that requires an NHMRC licence is not being undertaken in WA. The legal uncertainty will need to be resolved by amendment of the HRT Act.

Contraventions of the HRT Act

This year the CEO issued a Summary Determination to a Licence Supervisor in relation to a contravention of the HRT Act. The main provisions that were contravened relate to consent, gamete storage and record keeping.

Finances

The budget allocation to Council was \$62,935 with expenditure totalling \$49,655. The financial statement in Appendix 2 outlines the distribution of expenses.

Council's role as an advisory body

Council has a prescribed role to promote informed public debate and discussion on ART, and to communicate and collaborate with similar bodies in Australia and overseas. Another function of Council is to advise the CEO and Minister for Health on matters relating to ART.

Council hosted a special event on 17 November 2016. Ms Suzanne Midford, Approved Counsellor and the Clinical Director of Perth Psychological Services WA, provided insight into the complex issues of donor conception. Mr Derek Paton from the Department for Child Protection and Family Support shared lessons learned from adoption processes in WA. The event attracted an audience of 37 people.

Council hosted a special event on 8 February 2017. The invited speaker was Associate Professor Georgina Chambers, Director of the National Perinatal Epidemiology and Statistics Unit at the University of New South Wales and data custodian of ANZARD database. Her presentation on IVF Registries 'measuring patient, practice and policy outcomes' explored how the analysis and reporting of complex ART data may be enhanced, by taking into account and adjusting for factors known to affect outcome, to provide more meaningful high-quality information. The event attracted an audience of 35 people.

Council supported a postgraduate seminar in collaboration with the Scientists in Reproductive Technology, a special interest group representing the scientific membership of The Fertility Society of Australia, on 30 May 2017. Postgraduate students from WA universities were given the opportunity to present their work in assisted reproductive biology and discuss their work with scientists and researchers from fertility clinics. The seminar was attended by 45 people.

This year Council commissioned an expert review of a revised set of data, in relation to the Reproductive Technology Registers.

A new Council website was launched in March this year. The redesign included:

- New infrastructure architecture which provides a high level overview of site content
- Enhanced operation and appearance of the website.

Publications and presentations

Council members are active in the field of ART. This section lists the publications and presentations of Council members. It demonstrates their level of activity, expertise and commitment to scientific endeavour, and social and ethical debates related to reproductive technology.

Publications

- Adua E, Russell A, **Roberts P**, Wang Y, et al, 2017. Innovation Analysis on Postgenomic Biomarkers: Glycomics for Chronic Diseases, *OMICS: A Journal of Integrative Biology*. 21(4): 183-196.
- Bates K.A, Sohrabi H.R, Rainey-Smith S.R, **Beilby J**, et al, 2017. Serum high-density lipoprotein is associated with better cognitive function in a cross-sectional study of aging women. *International Journal of Neuroscience*, 127(3): 243-252.
- Baynam G, Broley S, Bauskis A, **Beilby J**, et al, 2017. Initiating an undiagnosed diseases program in the Western Australian public health system. *Orphanet Journal of Rare Diseases*, 12(1): 83.
- Beale J.M.A, Pontre J.C, & **Hart R**, 2016. The long-term health outcomes for children born as a result of in vitro fertilization treatment. In: Sheiner, E (ed) *The Long-Term Impact of Medical Complications in Pregnancy: A Window into Maternal and Fetal Future Health*. 4th edition. CRC Press, Taylor & Francis.
- Chan Y.X, Knuiman M.W, Hung J, **Beilby J.P**, et al, 2016. Neutral associations of testosterone, dihydrotestosterone and estradiol with fatal and non-fatal cardiovascular events, and mortality in men aged 17-97 years. *Clinical Endocrinology*, 85(4): 575-582.
- Cheung A.S, Yeap B.B, Hoermann R, **Beilby J.P**, et al, 2017. Effects of androgen deprivation therapy on telomere length. *Clinical Endocrinology* \ doi: 10.1111/cen.13382. [e-publication].
- Graff M, Scott R.A, Justice A.E, **Beilby J**, et al, 2017. Genome-wide physical activity interactions in adiposity– A meta-analysis of 200,452 adults. *PLOS Genetics*, 27:13(4) e1006528 [e-publication].
- Hamilton K, Hadlow N, **Roberts P**, Sykes P, et al, 2017. Longitudinal changes in thyroid hormones during conception cycles and early pregnancy. *Clinical and Medical Biochemistry*, 3:1. DOI: 10.4172/2471-2663.1000125 [e-publication].
- Hamilton K, Hadlow N, **Roberts P**, Sykes P, et al, 2016. Longitudinal changes in maternal serum concentrations of antimüllerian hormone in individual women during conception cycles and early pregnancy. *Fertility & Sterility*, 106(6): 1407-1413.
- Hart R.J**, Doherty D.A, Keelan J.A, McLachlan R, Skakkebaek N.E, et al, 2016. Early life events predict adult testicular function; data derived from the Western Australian (Raine) birth cohort. *The Journal of Clinical Endocrinology & Metabolism*, 101(9): 3333-3344.

- Hart R.J**, Rumbauts I, & Norman R.J. 2017. Growth Hormone in IVF cycles: any hope? *Current Opinions in Obstetrics and Gynaecology*, 29(3): 119-125.
- Joham A, Palomba S, **Hart R**. 2016. Polycystic ovary syndrome, obesity, and pregnancy. *Seminars in Reproductive Medicine*, 342(2): 93-101.
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Rodino I.S, June 2017. Valuing Donation: Re-evaluating tissue, blood and reproductive donations from live donors in Australia, Melbourne, Australia.



Developments in reproductive technology

Mitochondrial donation

Mitochondrial inheritable disorders are incurable disorders that are passed from mother to child and can result in progressive disability and death. On 15 December 2016 the United Kingdom Government approved the first clinic application for mitochondrial donation. Patients will now be able to apply individually to the Human Fertility and Embryology Authority to undergo mitochondrial donation treatment at an approved clinic (*Human Fertilisation and Embryology Act 2008*).

Ethical review of genome editing

The Nuffield Council on Bioethics published the first stage of an ethical review of genome editing in September 2016. The report discussed genome editing from scientific, ethical, and human health perspectives. Although the technique is still undergoing refinement, there has been a rapid uptake and use across many fields of biological research. The report discussed potential ethical challenges associated with genome editing and highlighted the importance of public debate. The public debate will assist in the development of related governance (The Nuffield Council on Bioethics, 2016).

Legislation

South Australian (SA) amendments to the *Assisted Reproductive Treatments Act 1988*, as of 21 March 2017, extended the availability of assisted reproductive technologies and surrogacy arrangements to same sex couples in SA (*The Statutes Amendment Act 2017*).

The report of a review of the *Assisted Reproductive Technology Act 1988* (SA), which examined the operations of and effectiveness of changes made to the Act in 2010, was tabled in the SA Parliament in April 2017. The report examined the complex social, bioethical and legal issues and considered how these might be more appropriately regulated (Allan, 2017).

The Experts' Group on Parentage / Surrogacy project is an ongoing program of work to examine international law in relation to legal parentage in cross-border situations, including international surrogacy arrangements. In its latest report the expert group considered that in the matter of legal parentage a multilateral instrument would be feasible and public policy should take into account the best interests of the child (Experts' Group Report, 2017).

The National Health and Medical Research Council (NHMRC) released the revised 'Ethical guidelines on the use of assisted reproductive technology in clinical practice and research in April 2017' (NHMRC, 2017).

Reproductive Technology and Voluntary Registers

Information on ART in WA is provided to the Department of Health by licensees and exempt practitioners, as set out in Schedule 2 Part 2 of the Directions under the HRT Act. Data relating to ART is collected annually from each fertility service provider in WA. In addition, clinics submit their electronic data to the Department of Health.

The Reproductive Technology Registers enable ongoing monitoring of practice and provide an important resource for epidemiological research. Appendix 3 provides summary data from the annual reports of the fertility clinics in WA.

The Voluntary Register (VR) provides a service for people to share information or meet people they are connected to as a result of donor conception treatment. Donor-conceived people 18 years or older, donors and parents of donor-conceived children under 18 years old are eligible to join the VR.

A match is when two or more people registered on the VR have the same donor code (unless they indicate they do not wish to share information). Details of the VR can be found on the Department of Health website [Voluntary Register WA](#).

As of 30 June 2017 there were 240 people registered on the VR. There have been 48 applications identified as matches of which 26 applicants have proceeded to contact.

The VR is advertised by the Department of Health in the West Australian newspaper three times a year and periodically in other media to promote awareness of the service.



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Appendix 1: Practice and Storage Licence holders

Concept Fertility Centre

Concept Day Hospital
218 Nicholson Road
Subiaco WA 6008

Fertility Great Southern

Unit 5
3 Mount Shadforth Road
Denmark WA 6333

Fertility North

Suite 30 Level 2
Joondalup Private Hospital
60 Shenton Avenue
Joondalup WA 6027

Fertility Specialists South

1st Floor
764 Canning Highway
Applecross WA 6153

Fertility Specialists of Western Australia

Bethesda Hospital
25 Queenslea Drive
Claremont WA 6010

Hollywood Fertility Centre

Hollywood Private Hospital
Monash Avenue
Nedlands WA 6009

Keogh Institute for Medical Research

1st Floor C Block
QEll Medical Centre
Nedlands WA 6009
(Artificial insemination only)

PIVET Medical Centre

Perth Day Surgery Centre
166-168 Cambridge Street
Leederville WA 6007

Appendix 2: Financial statement

The Department of Health funds the administration of the HRT Act, including the operations of Council. The 2016–2017 Council budget allocation was \$62,935 with expenditure totalling \$49,655 for the financial year. Table 3 shows the financial statement for the 2016–2017 annual report.

Table 3: **Financial statement for the 2016–2017 annual report**

Expenditure by category 2016–2017	Expenditure (\$)	Income (\$)
Training, registration, course fees, interstate travel	6,238	
Food supplies and catering	4,150	
Administration and clerical	1,608	
Reproductive Technology Council sitting fees	19,292	
Other expenses:		
Stationery and printing, including annual report	3,609	
RTC special event seminars	5,667	
Data development	9,091	
Total	\$49,655	\$62,935

Appendix 3: Operations of licence holders

Fertility clinics licensed under the HRT Act are required to submit summary reports at the end of each financial year. This section outlines the information submitted by licensees and exempt practitioners. Seven clinics in WA have Storage Licences and Practice Licences authorising artificial fertilisation procedures including IVF. One clinic has a Storage Licence and a Practice Licence only for artificial insemination.

The aggregated data, tables, graphs, analysis and interpretation of data presented in this appendix have been provided by the Purchasing and Systems Performance Division of the Department of Health. Data are presented on the activities of licence holders for this year and assisted reproductive technology trends for the past 10 years in WA. In some instances percentages may not add up to 100% due to rounding to whole numbers.

Assisted reproductive technologies in Western Australia

The procedure of IVF involves the fertilisation of oocytes (eggs) in a laboratory and placing the embryo (fertilised egg) in the uterus. This procedure can be either a fresh cycle, where the embryo is not cryopreserved, or a thaw cycle where the embryo is thawed and transferred to the women's uterus.

A total of 4,066 women underwent assisted reproduction treatment in WA this year. This number is similar to the previous year (n=4,092). There were 6,046 treatment cycles compared to 6,256 during the previous year, which is a decrease of 3%. Table 4 provides an overview of the initiated cycles.

Table 4: **IVF treatments**

	IVF fresh	IVF thaw	Total
Women treated	2,424	1,642	4,066
Treatment cycle	3,327	2,719	6,046
Cycle with oocyte retrieval	2,938		2,938
Cycle with embryo transfer	1,688	2,461	4,149
Cycle with embryo storage	1,794		1,794

Fresh IVF transfer techniques included 167 surgical sperm aspirations and 1,939 intracytoplasmic sperm injection (ICSI) procedures, where a single sperm is directly injected into an egg and the fertilised egg is transferred to the woman's uterus.

A total of 878 intrauterine insemination (IUI) treatment cycles were reported by eight licensees and one exempt practitioner. This represents a 19% reduction in the number of IUI treatment cycles compared to the previous year (n=1,080). The reported ongoing pregnancy rate for IUI was 6% (n=55). The partners' sperm were used for 72% of procedures. Donor sperm were used for 28% of procedures. Gonadotrophin was used for 55% of cycles, Clomid was used in 20% of cycles, and 25% were natural cycles.

The number of IVF recipient cycles, where a woman received donor sperm, donor oocytes, or donor embryos is shown in Table 5.

Table 5: Number of recipient cycles using donations

	Fresh IVF cycle	Thawed embryo cycle
Sperm	246	197
Oocyte	22	58
Embryo	-	77

In addition there were 42 cycles where oocytes were donated.

Public fertility clinic referrals

This year 53 patients from King Edward Memorial Hospital Fertility Clinic were referred to three fertility clinics for treatment. A total of 42 treatment cycles were provided, with 16 women having IVF with fresh embryo transfer and 28 having IVF with thawed embryo transfer.

Serious morbidity and mortality

Clinics are required to provide information regarding complications of ART treatment. There were eight reported cases of severe ovarian hyperstimulation syndrome (OHSS). There were no reports of mortality in association with fertility treatment.

Counselling

A total of 2,342 couples or individuals received counselling, which represents a 3% increase from the previous year (n=2,278). Most participants (76%) received a single counselling session and the majority of these sessions (66%) involved information counselling. Others having a single counselling session received support counselling (24%), therapeutic counselling (6%) and counselling for other reasons (2%). Of the 24% of participants who had more than one session, 25% had support counselling and 41% had information counselling. Counselling for donors and donor recipients accounted for 38% of all sessions. There were 904 donor and recipient counselling sessions representing a decrease of 19% from the previous year.

Embryo storage

The number of embryos in storage was reported as 24,664 as of 30 June 2017. The dispersal of embryos for this year is shown in Table 6.

Table 6: **Dispersal of stored embryos**

Embryo dispersal	n
Embryos in storage 30/6/2016	23,026
Embryos created from IVF	6,481
Used in frozen embryo transfer treatments	3,086
Transferred between clinics in WA	185
Transferred to clinics outside WA	145
Transferred from interstate	88
Embryo disposition	1,700
Embryos in storage 30/06/17	24,664

Assisted reproductive technology trends in WA

Overall, the number of IVF treatment cycles in WA decreased by 3% compared to the previous year (n=6,046 vs n=6,256). National statistics show a 2.4% increase in ART treatment cycles in 2014 (Harris et al. 2016).

Overall, in WA the proportion of fresh to thawed cycles this year was 55% of all cycles. This proportion has remained relatively stable over the years (range 57% – 61%). National statistics for 2014 show that 59% of ART cycles, where the patients used their own eggs or embryos, were fresh IVF cycles. Figure 1 shows the progression of fresh IVF cycles.

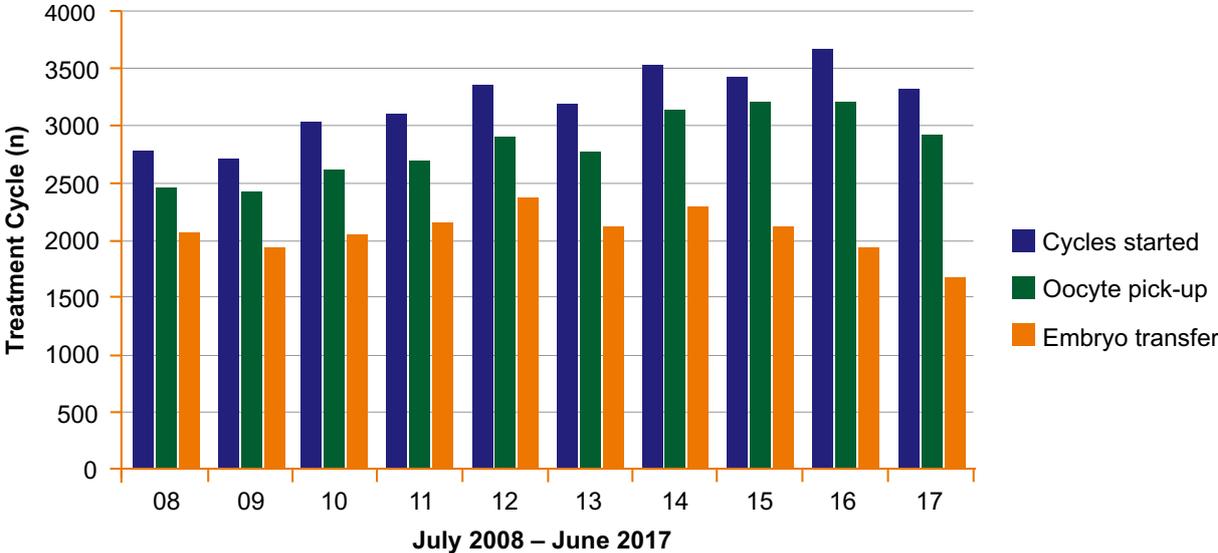


Figure 1: Progression of fresh IVF cycles by year, 2008–2017

Figure 2 shows the progression of thawed embryo cycles. The trend for thawed embryo transfer cycles is essentially unchanged.

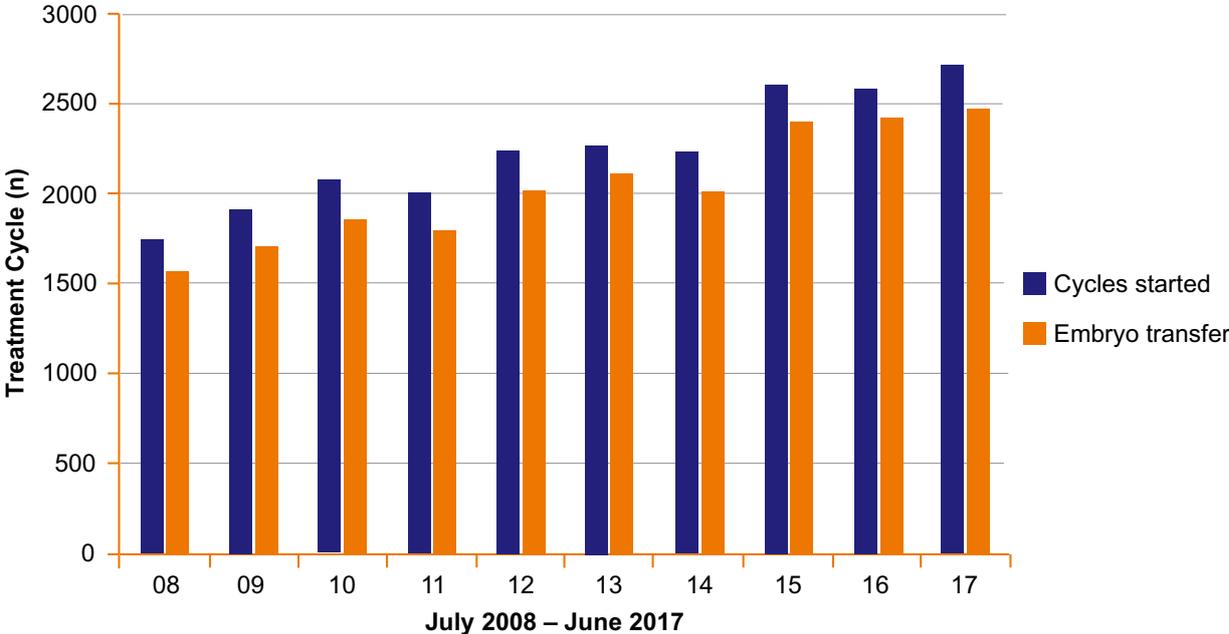


Figure 2: Progression of thawed embryo cycles by year, 2008–2017

Intracytoplasmic sperm injection procedures

The number of IVF procedures where ICSI was used is shown in figure 3. This procedure was used in 66% of fresh cycles where fertilisation was attempted in WA this year. National statistics show that the use of ICSI has increased over the past decade. Australia and New Zealand data for procedures in 2014, reported ICSI was used in 68% of autologous fresh cycles where fertilisation was attempted (Harris et al. 2016).

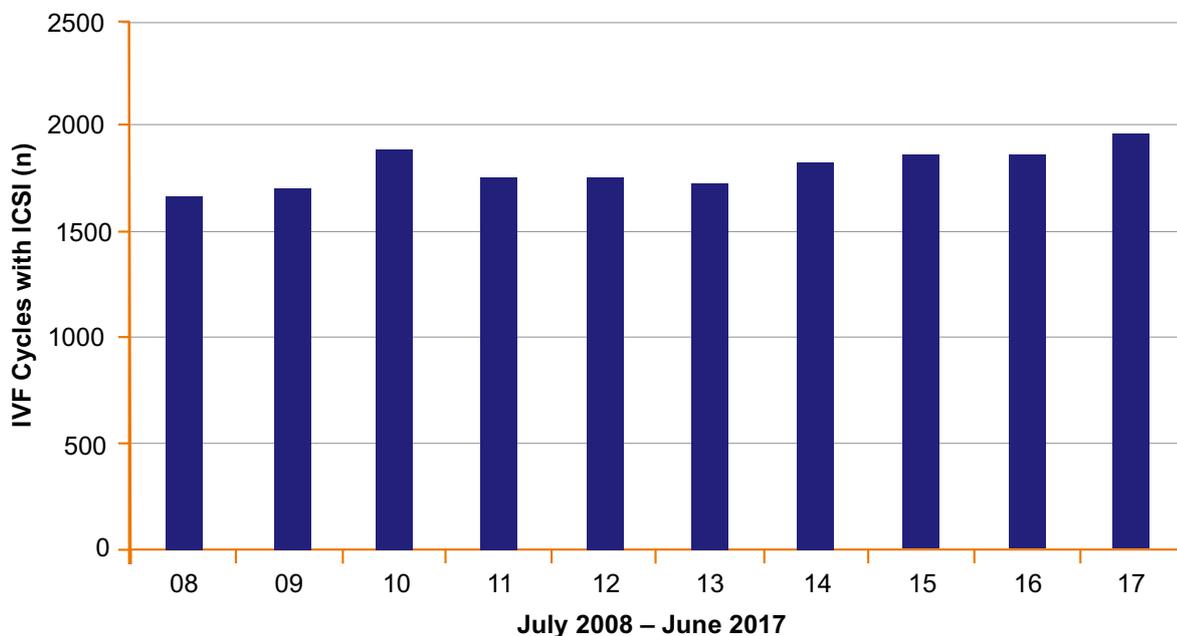


Figure 3: **Number of IVF cycles with ICSI by year, 2008–2017**

Number of sperm donors

Sperm donor data are currently under review. It was noted clinics were interpreting the required information in slightly different ways.

This year the number of new donors, now defined as donors whose samples became available for treatment in this financial year, was reported as 16 in total.

Revised data will be published in subsequent reports.



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