The West Australian

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FOREIGN THE Essential guide

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The latest fertility technologies • Preconception preparation • Expert advice from professionals



The road to conception

One in six couples in Australia and New Zealand suffer infertility.

Shared equally among men and women, the vast majority of cases can be attributed to a physical problem.

However, age remains a challenge as an increasing number of people in Australia delay having their first child.

For a variety of reasons, many women wait until their 30s to begin families. Generally, reproductive potential decreases as women get older due to the normal age-related decrease in the number of eggs that remain in the ovaries.

"The longer people delay having children, the lower the rates of success via conception," Reproductive Technology Accreditation Committee Scientific Representative Dr Phill Matson said.

He said the majority of problems related to infertility were physical, but age was a limiting factor in a couple's chance for success.

"I think there is a lot of activity (in the health industry) surrounding the awareness of age so prospective parents can have families earlier," Dr Matson said.

"People only listen to that when it's too late, but there is a certain amount of evidence that people are taking note.'

Infertility is the inability of a couple to achieve conception after a year of

unprotected intercourse, or the inability to carry pregnancies to a live birth.

Many couples suffering infertility problems can be successfully treated with medical or surgical techniques, or lifestyle changes.

Dr Matson said there was a push in the health industry to have couples consider their pre-conceptual health by reducing toxic substances and keeping healthy.

Preparation time of three to four months before conception is best because it takes 70 to 80 days for new sperm to be generated and a sustained dietary balance is best achieved in women.

We are trying to overcome problems that delay fertility. It's getting couples into good shape which can be done relatively easy. In the long run, it pays dividends," Dr Matson said.

"Anything people can do to lead a healthier lifestyle can increase the chance of conception. Certainly obesity is an issue in both men and women.

"Work has been published showing semen quality is affected by obesity in men. The reality is they don't have to lose that much weight; it's just being healthy."

Dr Matson said it was essential to lower stress levels, maintain an adequate weight and get enough exercise and sleep.

Stopping alcohol consumption and smoking is also extremely beneficial to fertility in both males and females.

Dr Matson said there were many supplementary vitamins people could take including those that were designed to reduce oxidative damage in the reproductive tract.

However, unfortunately for some couples lifestyle changes cannot fix infertility. Conditions such as endometriosis, polycystic ovarian syndrome, fibroids, irregular or absent periods, history of pelvic inflammatory disease and sexually transmitted infection may all lower fertility and warrant investigation and support early in conception preparation.

Dr Matson said low technology was used wherever possible when addressing infertility or conception problems.

"We use the simplest technologies to try and pinpoint when a woman is ovulating and help them conceive naturally before moving on to more intense procedures. If all else fails, we move on to IVF," he said.

"We have a lot of pregnancies that are achieved without IVF. IVF is fairly intensive so we try to avoid that at first and use low technology wherever possible.'

of Australia -National Fertility

- 1 in 3 women in their late 20s and 30s have no partner.
- could still conceive whenever they wanted to. Despite this, 95 per cent believed their fertility declined with age.
- Only 2 per cent thought male factor was a reason to have IVF. The single largest reason for Australian couples to have IVF treatment was for male factor alone.
- Active and passive smoking harms sexual and reproductive health throughout reproductive compromising the ability to have children. Smoking more and for longer increases the risk.
- Moderate alcohol intake (one to
 - Fertility problems and

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Assisted reproductive technology on the rise

The number of assisted reproductive technology (ART) treatment cycles performed in Australia and New Zealand is growing.

Assisted reproductive technology is the application of laboratory or clinical technology to gametes (human egg or sperm) and/or embryos for the purposes of reproduction.

In a study conducted by UNSW's National Perinatal Epidemiology and Statistics Unit entitled Assisted Reproductive Technology in Australia and New Zealand 2011, it was found ART treatment was increasing rapidly in both countries.

There were more than 66,000 ART treatment cycles performed in the two countries in 2011 (61,158 and 5189 respectively). This represents an increase

of 7.4 per cent from 2010 and 16.8 per cent from 2007.

The study shows male-only infertility makes up 22.5 per cent of all problems reported by fertility clinics, compared with 28.5 per cent for female-only infertility factors.

Some 14.3 per cent reported combined male-female factors; 22.7 per cent reported unexplained infertility; and 11.7 per cent were not stated.

A continuing trend in ART treatment in Australia and New Zealand has been the reduction in the rate of multiple birth

deliveries, decreasing from 10 per cent to 6.9 per cent between 2007 and 2011.

"Australia and New Zealand are leading the way – having the lowest regional rate of multiple birth deliveries in the world," Fertility Society of Australia Associate Professor Mark Bowman said.

"This was achieved by a continuing shift in clinical practice to single embryo transfer, which has continued to increase from 63 per cent in 2007 to 73 per cent in 2011."

The substantial decrease in multiple deliveries had been achieved while the clinic pregnancy rate remained stable, at around 23 per cent.



Glossary

Infertility: the inability to conceive after 12 months of unprotected sex, or carry a baby to term

Aneuploidy: having an abnormal number of chromosomes. Extra or missing chromosomes are a common cause of birth defects.

Follicle Stimulating Hormone (FSH): the hormone produced by the pituitary gland which controls growth of ovarian follicles and maturation of egg cells in a woman, and sperm in a man.

In Vitro Fertilisation (IVF): a procedure whereby an egg (or more than one egg) is retrieved from the body of a woman and combined with sperm outside the body to achieve fertilisation.

Intracytoplasmic Sperm Injection (ICSI): an IVF technique. Fertilisation is achieved when a single sperm is injected directly into an eqq.

Intrauterine Insemination (IUI): assisted conception involving assisted insemination into the uterus. IUI can be carried out with a woman's natural cycle or with ovarium stimulation

Artificial Insemination: a procedure where sperm is introduced, by a non-coital method, into the reproductive system of a woman.

Donor Insemination (DI): introduction of sperm, which has been donated from a man other than the woman's partner, into the reproductive tract of a woman by a noncoital method.

Assisted conception: a group of medical treatments including IUI, IVF, ICSI and PGD, aimed at increasing the chance of pregnancy each month through a procedural intervention with sperm, eggs or embryos spending some time outside the body.

Frozen Embryo Transfer (FET): where an embryo that has been frozen (cryopreserved) is thawed and then transferred to the uterus/fallopian tube of a woman with the aim of achieving a pregnancy.

Gamete Intra-Fallopian Transfer: a

procedure where an egg (or more than one egg) retrieved from the body of a woman and sperm obtained from a male are both inserted back into the fallopian tube of a woman, with the aim to achieve fertilisation (and then pregnancy) within the body of the woman.

Blastocyst: stage of development of the embryo about five to six days after fertilisation.

Donation: a process by which a person who has the responsibility to make decisions about the keeping or use of any gametes or embryo gives consent for their use by another person or persons.

Surrogacy agreement: an arrangement where a woman (birth mother) agrees to carry a child for another person or couple with the intention the child will be raised by those arranged parents.

Source: The Fertility Society.

Working with your GP to manage your infertility

Facing up to the challenges of infertility starts with visiting a general practitioner who can provide you with valuable advice on managing infertility. There are countless causes of infertility, many of which can be traced to physiological problems in either the male or female.

The Australian and New Zealand Assisted Reproductive Database (ANZARD) shows last year over 60,000 Assisted Reproductive Technology (ART) cycles were undertaken by couples in Australia, demonstrating the scale of treatment and popularity of fertility treatments.

For the couples seeking treatment, the ANZARD report showed over 20 per cent of infertility issues related to men only, while over 28 per cent were related to women only.

Hollywood Fertility Centre Medical Director Dr Simon Turner said infertility was therefore a matter for both partners and working with a GP to make informed decisions about difficulties conceiving was the pathway to treatment.

"Infertility is a topic for discussion with your doctor if you and your partner have failed to conceive within one year of trying to have a baby," he said.

"If a woman is over the age of 35, she should consider talking to her GP if she has failed to conceive within six months.

"The topics for discussion with your doctor include seeking a professional infertility assessment and addressing the lifestyle factors that may affect your fertility."

Medical specialists in fertility will always seek to test both partners to evaluate the likely causes of their infertility.

These tests aim to eliminate obvious causes of infertility and also arrive at a treatment plan that focuses, as near as possible, on specific treatment requirements.

"From my years of experience, the chance of conceiving is often age-related and therefore it is important to seek fertility management early - generally if you are

worried or concerned, seek help," Dr Turner said.

He said the choice of clinic was also a kev decision.

"Your doctor can ask the fertility centre you are being referred to for their results when compared to the ANZARD data. These results show very clearly that all fertility clinics do not achieve the same outcomes for their patients, often because of the strength of the science backing the medical team " he said

"Ask your doctor to contact the fertility centre for their results prior to completing the referral or, at your first appointment at the clinic, ask for the results.

"The specialist you consult will have the figures available. Furthermore, ensure the clinic of your choice has its own laboratory, so fertility results are assessed by experts and the results are available quickly."

Dr Turner said to be sure to ask your doctor for a referral to the clinic for both partners.

"It is important that you face the challenge as a couple and that both of you participate in the fertility assessment," he said.

"While the bulk of the treatment is focused on the woman, the fertility of the male is equally important."

An assessment of the couple's lifestyle is also important to ensure there are not aspects that may affect fertility.

Hollywood Fertility Centre Nurse Manager Catherine Meunier said there were a number of issues affecting both men

"Weight and age are critical issues for women, less so for men, but along

with lifestyle issues such as alcohol consumption, smoking, and recreational drugs, they impact significantly on the chances for conception," Ms Meunier said.

"For women, the effects of each of these lifestyle issues may be heightened and we should also consider the impact of caffeine and exposure to toxins.

"Many couples also have busy, stressful working lives and practicing some relaxation techniques many have significant benefit. For those who have fly-in, fly-out jobs, just being together often enough and at the right time, is an additional consideration."

Surrogacy is a further option available for infertile couples seeking a way to conceive.

The surrogacy program at Hollywood Fertility Centre has been in operation since 2010, after the Surrogacy Act was passed in 2008 making surrogacy legal in Western Australia.

Surrogacy at Hollywood involves a woman (the surrogate) carrying a pregnancy for a couple (arranged parents) who are unable to do so themselves, usually due to reproductive abnormalities, absence of a uterus or a medical condition.



Embryos are created using the arranged parents' eggs and sperm.

The resulting embryo is later transferred to the surrogate.

Dr Turner said successful fertility treatment started with a comprehensive assessment of each couple and the development of an individualised treatment program.

"Your GP can help you along this path by referring you to an accredited fertility clinic which is committed to helping you to achieve your goal of developing your family," he said.

"It is important to seek fertility management

Using genetic testing to help you conceive

Comparative Genomic Hybridisation (CGH) is the genetic screening of embryos targeting all chromosomes.

According to Hollywood Fertility Centre (HFC), patients who achieve conception but suffer recurrent miscarriages or have repeated IVF attempts without getting pregnant can turn to CGH to enhance their chances of achieving a healthy pregnancy.

Chromosome imbalance (aneuploidy) is a major cause of early pregnancy loss and a significant contributor to repetitive implantation failure of perfectly normal looking embryos.

Testing for aneuploidy has traditionally involved a technique called FISH (fluorescent in-situ hybridisation) which looks at a small subset - five to eight - of chromosomes in the embryo on day three of development.

While this technique can be useful, HFC scientists believe CGH provides a more powerful and reliable technique. It accounts for all 22 pairs of chromosomes and the X and Y chromosomes.

CGH at HFC is performed on blastocysts which are day five or six embryos.

This allows for the results to be more precise with better embryo survival and fewer technical limitations. The proportion of chromosomal abnormalities is already reduced in blastocysts, and due to the greater cell number (100-150 cells), sampling has a minimal impact on embryo survival and is believed to be less invasive.

HFC uses blastocyst testing to ensure a sufficient amount of genetic information is available for screening to get the most reliable results.

Located within Hollywood Private Hospital in Nedlands and operating in partnership with Genea in Sydney, HFC has been offering CGH for several years after being granted permission by the WA Reproductive Technology Council.

HFC Laboratory Manager Itziar Rebollar-Lazaro said the results were encouraging with an important increase in pregnancy and implantation rates for patients of all age groups, particularly for those 38 years and over.

"By only transferring high quality blastocysts with the full chromosome complement following CGH testing, the chances of pregnancy are improved and our patients achieve a successful and ongoing pregnancy in a shorter time frame," she said.



Other common fertility treatments

After initial consultation, Hollywood Fertility Centre (HFC) fertility specialists can determine the kind of treatment required by a couple. There are a number of assisted reproduction options available.

For over 10 years, HFC has been offering different treatments including the almost non-invasive cycles of ovulation induction and intrauterine insemination (IUI), but the most effective and talked about fertility treatments are IVF and intracytoplasmic sperm injection (ICSI).

"In both cases, the eggs are fertilised in the laboratory and the resulting embryos are then transferred back into the mother, one at a time," HFC Laboratory Manager Itziar Rebollar-Lazaro said.

"Suitable excess embryos can be frozen for use in subsequent cycles and in this way we can reduce the complications associated with multiple pregnancies and increase the chance of our patients taking home a healthy baby.

HFC performs the majority of embryo transfers on Day 5 of embryo development.

According to Ms Rebollar-Lazaro, this permits improved embryo selection, and when used in combination with other additional techniques can dramatically

improve the chances of a healthy pregnancy.

"We believe that there is no better predictor of blastocyst development and suitability assessment for embryo transfer than growing the embryos to Day 5 and actually seeing them grow into blastocysts," she

"That is why we consider we do not need to use other embryo assessment tools currently available.

"With pre-implantation genetic diagnosis (PGD) we can help patients that are genetic carriers for 100s of specific conditions such as cystic fibrosis or Huntington's disease.

"For couples carrying a specific genetic condition or who have some relatives affected and don't want to see that happen to their children, we help them achieve a successful pregnancy."

Through analysis of both the male and female partners, including thorough examination, hormone profiling and semen analysis – including screening for sperm

DNA fragmentation and for anti-sperm antibodies – HFC can set couples on the path to treatment personalised for them.

HFC Senior Scientist and Head of Research Hamish Barblett said the scientific team was strong, representing over 30 years of IVF experience during the most critical phase of an IVF cycle.

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The most advanced techniques are used and our protocols are regularly presented at both local and international conferences," he said.

Students from universities all around Australia regularly attend HFC to observe the latest developments in embryo culture.

"It is of the utmost importance that scientists in IVF understand the meaning behind their work," Mr Barblett said.

"They should always be learning, improving and teaching their skills to the next generation of IVF scientists."



Hollywood Fertility Centre provides a comprehensive, individualised range of fertility treatments for women and men.

Our clinicians, scientists and support staff are committed to achieving successful outcomes for you.

Please ask your doctor for their advice.



Visit hwfc@hollywoodivf.com or call 08 9389 4200 and ask for a free copy of our Fertility Guide.





Dealing with infertility

According to PIVET Medical Centre counsellor Margaret van Keppel, a diagnosis of infertility can be very distressing, challenging and emotionally demanding.

"Most of us reach adulthood with the expectation that at some stage we will have children," she said.

"To experience difficulties in doing so can challenge us in many different ways."

Ms van Keppel said fear, anxiety, loss of control, self-esteem issues, relationship tension and grief could all be experienced by couples trying to conceive.

She said going through treatment for infertility could be demanding for couples as outcomes were uncertain and treatment was often invasive, unpleasant, protracted and expensive.

"The hormones involved in treatment can also impact on a woman's moods and

couples often experience tension and distress, at a time when they ideally need to be there for each other."

Ms van Keppel said counselling assisted people to be prepared for treatment, cope better with its demands and deal with the life-long implications of infertility.

PIVET offers counselling prior to infertility treatment to assist patients review their expectations and the likely outcomes. This pre-treatment counselling prepares patients for some of the demands and stresses inherent in treatment, looks at useful coping strategies and encourages consideration of issues including some of the ethical and moral implications of fertility treatment.

Counselling during or towards the end of treatment at PIVET tends to be of a supportive or therapeutic nature and can focus on secondary issues such as anxiety, depression, relationship difficulties, decision-making, pregnancy loss and moving forward.

PIVET also provides mandatory counselling for patients pursuing treatment involving donor gametes or embryos, to address the short and long-term implications of treatment

Ms van Keppel said she found it very rewarding to assist and support people through treatment that would hopefully help them achieve their dream of parenthood.



Lifestyle changes

Both men and women can make lifestyle changes that will improve their chances of a healthy pregnancy.

Aim for an ideal body weight

Both under and overweight women can take longer to get pregnant and female partners of obese men can also take longer to fall pregnant.

Stop or reduce smoking

In women, smoking can bring on earlier menopause. In men, it damages sperm DNA, thus reducing fertilisation. Cannabis has also been clearly shown to have a negative impact on sperm motility.

Don't consume excess alcohol

Consuming alcohol in amounts above the recommended guidelines has been shown to increase time to conceive. If the male partner drinks to excess, this can also delay pregnancy and reduce the success of ART treatment.

Reduce coffee intake

Caffeine intake to excess increases the chance of miscarriage and reduces pregnancy rates. Excess relates to four or more cups of coffee a day. Limiting the intake to one or two cups of coffee a day would be sensible.

Up to date with vaccinations

Ensure you have immunity to Rubella (German Measles) and Chicken Pox (Varicella Zoster Virus). Whether patients are undertaking ART procedures or attempting to become pregnant under natural conditions, immunity to these is important because they could be contracted during pregnancy and could severely harm the unborn child.

Complementary therapies

Acupuncture has been shown to improve pregnancy rates with IVF. Some complementary medicines may have potent actions that could interfere with the activity of prescribed medication and may even potentiate side effects. These therapies are not recommended during treatment.

Reduce stress

Stress management during treatment is important for both partners

Source: Concept Fertility Centre.

Caring for your baby should begin before you even know it's there



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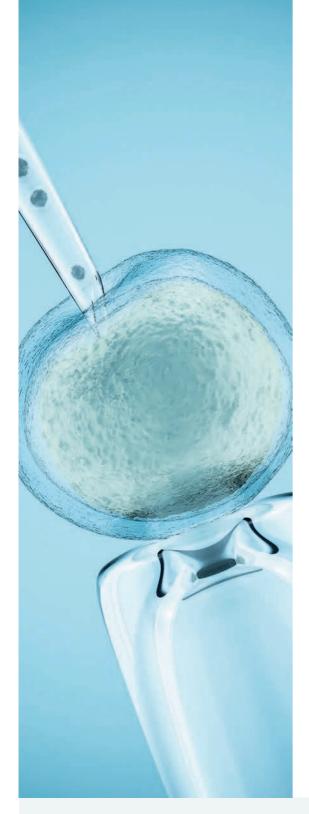
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The 9UF procedure

After an initial consultation, lifestyle changes and preliminary investigations, fertility centres can determine the kind of treatment required by a couple. There are various assisted reproduction options available.

In Vitro Fertilisation (IVF) is currently the most commonly practiced treatment for infertile women in Australia.

According to Concept Fertility Centre, IVF is the process where eggs (oocytes) are taken from the woman's body, fertilised in a laboratory with sperm and incubated, after which time one of the resulting embryos is transferred into the woman's uterus.

The basic stages involved in the IVF procedure include:

- Suppression of the natural cycle: this is via medications used to control the cycle and allow accurate timing of the egg collection which dramatically improves success.
- Growth and maturation of several eggs: in the IVF cycle, medication given by injection is used to stimulate the ovaries to develop a number of eggs, compared with a natural cycle where usually only one egg is produced.
- Monitoring egg development: the eggs develop in follicles, which are small fluid filled sacks growing in the surface layer of the ovary. As the eggs mature, the follicles increase in size and produce increasing amounts of oestradiol. By monitoring oestradiol levels with serial blood tests and follicle size and number by ultrasound, the maturity of the developing eggs can be tracked.
- Trigger injection: HCG (human chorionic gonadotrophin) is a hormone which performs the function of the naturally occurring LH (Lutenising Hormone) surge, triggering the final maturation of the eggs and ovulation.

- Collection of the eggs: this is most commonly done using a fine needle attached to a vaginal ultrasound probe.
- Fertilisation of the eggs in vitro.
- Transfer of the embryo into the uterus: this will be between Day 2 after fertilisation up until Day 5 at which stage the embryo is called a Blastocyst. No more than one embryo will be transferred because of the risk of multiple pregnancies.
- Progesterone treatment and pregnancy test: all embryos need the hormone progesterone to maintain growth before implantation into the wall of the uterus and development of the placenta. During an IVF cycle, progesterone is administered via progesterone pessaries, Crinone Gel or less often by Pregnyl injections. This progesterone supplementation will be started on the day of egg collection.
- Further treatment cycles: if pregnancy is not achieved, then a repeat attempt can be made after a full menstrual cycle has elapsed. This break is important to ensure a good response and reduce the risk of side effects in future treatment cycles. The next treatment cycle may involve blood tests and hormone tracking for frozen embryo transfer or a further IVF cycle depending on individual situations. The probability of pregnancy with IVF increases with each treatment cycle. Research has shown it may take up to five IVF cycles to achieve a pregnancy.

Treatment overview:

Stimulation of the ovaries

In this stage, medication is taken to help the ovary to develop a number of eggs.

Collection and insemination of the eggs

This procedure is usually done under light anaesthetic. The eggs and fluid are gently removed from the surrounding follicles and placed with washed and treated sperm from the male partner. Where sperm quality is compromised, ICSI (injection of a selected sperm directly into each egg) is undertaken.

Embryo development

The fertilised eggs are placed into embryo culture dishes and then into specially designed embryo incubators. The embryo development is checked daily until the time of the embryo transfer.

Embryo transfer

This is a minor procedure lasting about 15 minutes. Embryos can be transferred to the uterus two to five days after fertilisation.

Embryo storage

Embryos that are not transferred can be cryopreserved and stored for use in subsequent frozen embryo transfer cycles.

Advice and intensive programs

The usual advice for a couple trying to start a family is to have unprotected sexual intercourse for six months before having a fertility investigation, according to Concept Fertility Centre Reproductive Biologist Dr Bruce Bellinge.

This time frame should be shortened if the woman is in her 30s or one, or both partners, has some history of fertility problems.

Inevitably, sexual intercourse is timed for the fertile time of the woman's cycle.

"Doubts about one's fertility almost always result in a heightened awareness of signs of fertility that surrounds us. Pregnant friends, noisy children in supermarkets, media coverage of new reproductive technologies, hints from eager parents wanting grandchildren – all these can begin to erode the sexual self-confidence of the man or woman wishing to have children," Dr Bellinge said.

"Those not faced with infertility would be staggered be the number, complexity, and invasiveness of medical procedures that a couple with a fertility problem go through in their search for an answer to why pregnancy is not occurring."

The most basic procedure is the Basal Body Temperature Chart where the woman takes her temperature each morning before rising and marks this in a chart.

This indicates if and when ovulation is occurring. Often the woman is asked to record if she has any illness, spotting or if she thinks she is ovulating, and when the couple has intercourse.

"With the desire for a child becoming increasingly frustrated, life can become apparently cyclic – temperature, ovulation calculations, timing of sex and the disappointing signs of one's menstrual onset," Dr Bellinge said.

"It is normally after these early unsuccessful attempts at conceiving that couples turn to Concept Fertility Centre for assistance."

More investigative tests include hormone assays, hysterosalpingogram, laparoscopy, and the sperm-cervical mucus contact test. A semen analysis indicates the quality and quantity of sperm within the man's semen. More accurate timing of ovulation, using blood tests will often provide couples

with a greater chance of conception. Generally six unsuccessful cycles of timed intercourse would indicate that the couple should progress to a more intense treatment, such as IVF.

At Concept Fertility Centre, couples are encouraged to undergo counselling before they commence IVF treatment to ensure that they are provided with strategies to deal with the emotional stresses of these complex treatments.

A couple's decision to commence a treatment program, such as IVF, signifies hope and excitement that they can overcome infertility and produce children like everyone else.

Making clients comfortable

There is a movement towards impeccable customer service, comfortable clients and good communicators in the fertility field, according to Specialist Gynaecologist Dr Kevin Artley.

Coming from a background in UK reproductive medicine and infertility management, Dr Artley recently began work at Concept Fertility Centre in Subiaco.

"I think what Concept Fertility Centre has seen in me is someone who has a lot of experience and knows reproductive medicine very well," Dr Artley said.

"Hopefully they have seen I am a good communicator because it's important to get your message across and have your clients trust you."

Dr Artley completed his specialist training in Obstetrics and Gynaecology in the UK in 1984, and then as a Clinical Research Director at Monash IVF in Management of Infertility.

His former position was Medical Director at the Queens Hospital Centre for Reproductive Medicine in Burton, UK.

Dr Artley said it wasn't just the novelty aspect of reproductive medicine that drew him to the field.

"At the time of my training it was a new area and there was a lot of science and new technologies occurring. But from a clinical point of view, it was an area that I saw where I could make a difference in medicine," he said.

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"I saw IVF at that time as a real earth mover in terms of making a big difference to a lot of couples and that appealed to me. Fertility is a Cinderella thing."

Dr Artley said over the years he treated one particular couple that he would always remember

"There was one couple I dealt with the most number of times in my career so far. They had difficulty with conceiving but there were no obvious problems present," he said.

"They were so determined they wanted a child that they went through eight IVF attempts. They had dogged persistence and they had faith it was going to work.

"Thankfully at the ninth attempt, they ended up with twins and it's wonderful. I get cards

from them on their holidays and that sticks in my memory."

Dr Artley said he also received thank you cards from clients who hadn't been successful at IVF.

"They are happy you have been sympathetic and have done your best. And that's important as well because not everyone will succeed," he said.

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My best advice for couples is to carry on trying. Sometimes people worry too much at the very early stage and if you can establish there is no fundamental problems, the best advice is to be more patient."

Dr Artley said Australia had stayed under his skin and practicing reproductive medicine here had always been his dream.

"I stayed 18 years in one place. I have many years left in medicine so I thought why not



Dr Kevin Artley Specialist Gynaecologist

go back to Australia? I couldn't believe it when Concept Fertility Centre invited me to join the team. Luckily they saw something in me they thought would fit with their philosophies."

Dr Artley graduated in medicine from Leicester University.

His postgraduate training in obstetrics and gynaecology was in Leicester, Newcastle, Cambridge, London and Melbourne. He has been a consultant at Burton since 1995.

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Embryoscope to improve success rate

An improved technique for IVF that involves thousands of time-lapse photos during the earliest stages of embryo development is being employed in Perth.

The digital time lapsed imagery technology, termed the Embryoscope, is expected to improve success rates for women using IVF.

Fertility North Embryologist Yanhe Liu said the Embryoscope had only been applied in the clinical embryology field for approximately three years, and became available in Australia last year.

"Compared to the conventional way, the technology generates so much more information about how the embryos grow by continuously monitoring them with images taken every 10 to 20 minutes,' Mr Liu said.

The Embryoscope combines an incubator, a microscope and a timelapse camera to provide interruptionfree culture condition and a continuous record of an embryo's development. This is in contrast to the traditional method that involves removing embryos from an incubator once a day and, to minimise the impact of compromised culture environment outside of an incubator, observing them swiftly under a microscope to assess developmental progress during the three to five days they are in the laboratory.

"Now we are able to know not only the cell numbers and degree of fragmentations of the embryos, but also the cleavage pattern and even accurate timing for each division," Mr Liu said.

"This provides us with extra power to select the best embryo for transfer in the clinical work. Additionally, it would be able to detect subtle differences between embryos in the research."

Each Embryoscope is capable of incubating 72 embryos from up to six patients at a time and scientific specialists are able to identify optimal patterns of development or abnormalities in an embryo's growth.

Mr Liu is currently studying a PhD at Edith Cowan University (ECU) relating to new technologies in fertility.

"Basically my research will be looking at different protocols, such as sperm preparation and selection methods. However, my work will mainly focus on the embryonic effect by using the Embryoscope to fill in the knowledge gap in this area.'

The technology has recently been successfully used in Europe and the US.

Groundbreaking research at Fertility North

Fertility North is undertaking research to improve fertility treatment in Western Australia.

Under the direction of Scientific Director and adjunct ECU professor Dr Phill Matson, students are undertaking PhDs and MScs at the centre.

"We have been a very good unit in terms of providing a service. We want to take it to the next level and work out how we can improve the service. This starts with providing an educational pathway for staff so that they can increase their knowledge base," Dr Matson said.

"We have four students working with us at the moment."

Studying for a PhD, Fertility North Laboratory Manager Kelli Peirce is currently observing the use of human blood products in assisted reproduction to increase awareness and the efficacy of alternatives.

"In order for us to successfully culture embryos in vitro, the culture needs to contain protein which helps to support embryo growth," Ms Peirce said.

"There's a push now to make a medium that doesn't contain protein sourced from pulled human blood products as currently there is a minute risk of cross contamination. I will be surveying professionals working in the industry in Australia and overseas to assess the awareness of the usage. I am then going to be looking at studies in the lab as to see whether plant based and synthetic macromolecules can provide a suitable substitute for human sourced proteins which will eliminate the risk of pooled human blood products.'

In addition to Ms Peirce's work, Senior Embryologist Yanhe Liu is looking at the range of techniques in IVF to see which ones are effective. His work is touching on the new technology of the Embryoscope.

MSc students Ashleigh McEvoy and Melissa Stemp are also contributing to the research.

Mrs McEvoy is looking at the detection of sperm DNA fragmentation which has an affect on embryo development.

"As an adjunct to routine semen analysis, the DNA integrity of human sperm is often assessed when considering a male's infertility," Mrs McEvoy said.

"There are a number of different ways this can be measured and Fertility North uses a commercially available kit called the Halosperm G2 kit.

"For such tests to be efficient however. semen samples are stored until such time that batch testing can be carried out."

Mrs McEvoy has been testing an alternative storage method and has found it to be safer, more cost effective and more accurate than current storage methods

Completing a Master of Science in Human Biology, Ms Stemp is working in the biochemistry lab, looking at biochemical markers to show events that happen during the different stages of reproduction including the menstrual cycle, stimulated ovarian cycles and in the early stages of pregnancy.



Scientific Director and adjunct ECU professo

"My aim is to identify if there are any changes in the concentration of these biomarkers in healthy women during normal periods of cellular proliferation," Ms Stemp said.

"This may affect the clinical application of the biomarker whereby a woman may naturally have elevated levels of these biomarkers even though she is completely healthy. It is important that we understand what these biomarkers do in healthy women first before we can determine whether they might be a useful indicator of disease.

Mrs McEvoy and Ms Stemp presented their findings at the Fertility Society of Australia's (FSA) annual conference in Sydney in early September.

After being in the same location for over 10 years, Fertility North is in the process of designing a custom built Fertility Treatment Clinic in the new private development of Joondalup Health Campus. The clinic will allow the centre to provide patients and staff with state of the art facilities.





Success rate is very good for vasectomy reversals

Vasectomy and tubal ligation are common methods of permanent contraception. But, according to reproductive microsurgeon Dr Robert Woolcott, the procedures aren't as permanent as many people think.

With more than 2500 vasectomy reversal operations undertaken in more than 25 years, Dr Robert Woolcott has performed more reversal procedures than any other specialist reproductive microsurgeon currently practicing in Australia.

"Technical success from vasectomy reversal is exceptional," Dr Woolcott said.



Sperm returns in over 95 per cent of men and the outcome is better for those with a shorter time from vasectomy to reversal. This is due to backpressure effects on the testis causing damage to sperm production.

"In addition, the very fine tubule (epididymis) just next to the testis is damaged by this pressure and can break open and then scar over so that there is a second blockage very close to the testis."

For men who request a reversal more than 15 years after the vasectomy, the success rate is approximately 90 per cent.

When the vasectomy has been present for more than 20 years, sperm returns in about 80 per cent of men.

"Sperm usually returns gradually and in a progressive manner such that for the average man undergoing vasectomy reversal, by six weeks after surgery approximately 50 per cent of men will have sperm present and within six months, this rises to 95 per cent," Dr Woolcott said.

He said the overall postoperative pregnancy rate was high, with figures showing a 50 to 80 per cent success rate.

Although, he said, the single most important factor influencing pregnancy rates and take home baby rates following vasectomy reversal was female age.

"The younger the female partner, the higher the chance of successful pregnancy."

Microsurgical vasectomy reversal is performed using a high-powered surgical microscope and delicate microsurgical

"The stitches are so fine that they are difficult to see with the naked eye," Dr Woolcott said.

"Microsurgical techniques enable optimal visualisation of the vas deferens allowing accurate and precise placement of each suture.

"Using a multi-layered technique of extremely fine sutures provides far better results than older less precise methods."

Recovery is generally rapid, with virtually all patients leaving hospital the same day, with some minor discomfort at the operation site.

Most men can do normal, non-strenuous day-to-day activities within the first week

after vasectomy reversal. Most men can return to work within seven to 10 days of vasectomy reversal.

Those who work in sedentary occupations could do so earlier and those with very strenuous jobs should wait longer.

With health insurance, the out of pocket expense for vasectomy reversal is approximately \$4100 and without health insurance this figute is approximately \$8200.

Dr Woolcott gained post-doctoral experience at two of America's most prestigious universities - Harvard and Yale.

He is chairman of the Hollywood Fertility Centre and regularly performs vasectomy reversal at Hollywood Private Hospital.

For further details on Vasectomy Reversal or Dr Robert Woolcott visit reversal.net.au.



Government of Western Australia

Have you been involved in donor-assisted conception?

The Voluntary Register is a service for donor-conceived adults, parents of a donor-conceived child, and donors in Western Australia.

People involved in donor-assisted conception when donations were anonymous (before 1 December 2004) are particularly encouraged to register. This may help donor-conceived people gain information about their origins

For further information go to www.voluntaryregister.health.wa.gov.au

Maintaining normal weight and a healthy lifestyle to increase the chances of fertility can be achieved with the support of a GP and services available in the general community, according to the Reproductive Medicine Clinic at King Edward Memorial Hospital.

Men and women who are overweight or women who are underweight are much less likely to conceive.

Being overweight or obese are considered serious problems that will reduce the chance of conceiving, increase the risk of miscarriage, reduce the choice of fertility treatments and increase the possibility of complication in pregnancy.

Fertility treatment cannot be offered to couples where the woman has a Body Mass Index (BMI) greater than 35.

According to the WA Women's Health Services, a person's BMI should be kept between 20 and 24.

Too much deviation from this can lead to a disruption in healthy ovulation as high levels of fat can disturb hormone production and cause irregular periods. Tips for a balanced diet

- Eat a wide variety of nutritious foods and base meals on vegetables with moderate amounts of whole grains and protein.
- Choose low glycemic index carbohydrates and try to have one of these at each meal. For example legumes, pasta, wholegrain breads and cereals, basmati rice, sweet potato and some fruits and vegetables.
- Avoid foods high in saturated fat and trans fat. These can be replaced by 'healthy fats' particularly monounsaturated fat. For example nuts and nut oils, avocado, olive oil, canola oil and margarines based on olive and canola oil.
- Choose lean protein foods. This includes fish at least two times a week. Limit fatty meats including

- sausages and delicatessen meats such as salami and polony.
- Eat at least two serves of fruit and five serves of vegetables each day.
- Make sure you are consuming at least three serves of foods high in calcium, for example low fat milk, yoghurt, cheese or calcium fortified soy milk.
- Make sure you are consuming enough foods high in iron, for example lean meat, fish, poultry and iron fortified cereals.
- Balance your overall food intake with physical activity to maintain a healthy weight. Aim to do 30 minutes of moderate intensity activity such as walking, cycling or swimming at least five days per week.

Source: King Edward Memorial Hospital.



Difficulty falling Pregnant?

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Visit www.pivet.com.au for more information



Alternatives to 9UF

Both anonymous and known donations are permitted for sperm, eggs and embryos as alternatives to IVF in the state, according to the Reproductive Technology Unit of the WA Department of Health.

These procedures may be carried out for people who are eligible to undergo IVF in WA or those who are unable to conceive a child due to medical reasons or whose children may be affected by a genetic abnormality or disease.

The Department of Health states that sperm and egg donors must be over 18 years of age and in good health. Donors are required to have a medical check and blood tests to ensure they are healthy.

Couples receiving donated gametes are required to have at least one session of counselling, which ensures donors understand the significance of becoming a donor, and that complex emotional issues are considered.

"Counselling helps people to consider when and how to tell a child about their genetic origins. The person/s who consents to the procedure will be the legal parent/s of any resulting child," a Department of Health spokesperson said.

It is accepted practice across Australia that everyone undergoing an artificial fertilisation procedure undertakes a consultation with the clinic counsellor prior to beginning treatment.

A person born through donor assisted conception, who reaches the age of 16 on or after December 1, 2020, has a legal right to access identifying information about their donor. They must have approved counselling before this information is provided. For people who were donor conceived before December 1, 2004 (when the law changed) there is no automatic access to identifying information. However, people are encouraged to join the Department of Health's Voluntary Register so that it might be possible to access donor information.

The donation must be altruistic (only reasonable expenses can be paid).

Donor insemination

Couples with male fertility issues, single women and lesbian couples may access donor sperm, under the direction of a fertility clinic or authorised doctor, the Department of Health states.

"Where the male partner has an untreatable form of infertility, donated sperm may be considered," the Department of Health spokesperson said. "As a result of investigations, the doctor may recommend Donor Insemination (DI) treatment or the use of donated sperm through an IVF procedure."

DI is a medical procedure carried out by inserting semen previously collected from a donor into the vagina of a woman, at that time of the month when she is ovulating. When carried out by a doctor, the

procedure usually involves the use of frozen sperm supplied by an anonymous or known donor through a sperm bank.

The DI treatment itself is quite simple, and carries little or no risk to the woman. Donors are carefully screened for genetic and infectious diseases so the risk of their transmission is minimal.

Egg or embryo donations

As for all donations, the minimum age for an egg donor is set under the Human Reproductive Technology Act at 18 years. Although the numbers of egg donors are limited, most clinics will match several characteristics of the donor woman with the recipient, and the donor will be screened in the same way as a sperm donor in order to minimise the risk of transmission of any genetic or sexually transmissible disease. As techniques for eggs to be frozen and stored are still at an early stage of development, the donated eggs will be immediately fertilised and the embryos stored and guarantined for six months prior to use.

One way in which the recipient of donated eggs may differ from the recipient of donor sperm is that she may be significantly older. Although any woman who cannot produce her own eggs, or who is at risk of transmitting an inherited disease may need donor eggs, the donor egg program is most often used in the treatment of older women. The use of eggs from younger women has been found to significantly increase the likelihood that these older women will have a child.

Surrogacy

A surrogacy arrangement is where a woman agrees to carry a child for another person or a couple with the intention that those parents will raise the child. An eligible person is a woman who is unable to conceive a child due to medical reasons or is unable to give birth to a child.

The types of surrogacy that may be accepted in WA are gestational surrogacy (arranged parent gametes and/or donor gametes) or traditional surrogacy (birth mother egg and arranged father/donor sperm).

Laws allowing surrogacy in Western Australia were passed in December 2008 through the Surrogacy Act, making it legal for non-commercial surrogacy arrangements to be made between eligible persons in Western Australia.

The Surrogacy Act 2008, allows for the transfer of parentage of the child to the arranged parents through the Family Court of WA.

The surrogacy program at Hollywood Fertility Centre has been in operation since 2010, after the Surrogacy Act was passed.



FERTILITY NORTH HAS RECENTLY CELEBRATED ITS **10 YEAR ANNIVERSARY** AND IS NOW USING TIME LAPSE EMBRYO IMAGING.

The clinic is located in the rapidly expanding regional city of Joondalup and as the only clinic in the northern suburbs of Perth, Fertility North is a refreshing alternative to the crowded city clinics. This allows us to provide you with an individual, personalised treatment & a high level of quality of care.



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DR SANTANU BARUAH

Qualifications MBBS MRCOG(UK) CCT(UK), CGES, FRANZCOG

Both Dr Santanu Baruah & Dr Gian Urbani are also able to see Fertility North patients from their Attadale consulting rooms.

www.fertilitynorth.com.au



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Permanent love forever

In June, there were 20 approved carers involved in the Department of Child Protection and Family Support's (DCPFS) Home 4 Life Program.

Established in April 2011, the Home 4 Life program aims to provide long-term care options for children and young people who are unlikely to return to their families.

DCPFS Fostering and Adoptions Services Assistant Director Brenda Yelland said couples with fertility issues were applying to become carers with the program, which aimed to place children with a foster carer permanently.

She said the program aimed to provide a child with a caring home for life, in accordance with the department's permanency planning policies.

"We currently support a number of placements and are having great success. The first placement was arranged in November 2011 and it is anticipated that more children in need of permanent care will be able to take advantage of this program," Ms Yelland said.

"We have approximately 20 carers currently being assessed. Of the carers in the program, seven are also approved adoptive parents.

"The department is aiming to apply for several Special Guardianship Orders for some of the children and can consider carer adoption, when it is deemed to be in the best interests of the child.'

Ms Yelland said the program often received positive feedback from carers with most feeling very well supported.

After struggling with infertility problems for many years, Liz (38) and Ashley (37) were the first people in Western Australia to be matched with two boys as part of the Home 4 Life program.

"In 2003, I was admitted to hospital and I was diagnosed with endometriosis. I went through the tests for IVF but my FSH level was high and we basically found out I wasn't producing eggs. I was 31 and quite young," Liz said.

The couple moved to Australia from the UK in 2006 and it was at that point they decided to apply to foster, beginning with providing respite care in 2008.

As the couple were originally from the UK, they had to apply for Australian citizenship prior to being eligible to adopt.

"We then decided we were going to try and adopt. We were on the list but we knew there would be a long wait," Liz said.

"Then in May 2011, we were contacted about the Home 4 Life program. We accepted and then in September we got the call saying we had been matched with two boys.

At three and five, Liz said the boys were energetic as any children would be, but they had blossomed as a family.

"It's really good, it has its up and downs as any family would. Settling in has been a long process but they've really blossomed. They are super little characters," Liz said.

"We are trying to give them the best chance in life, providing them with every opportunity to be what they want to be. We have the ability to give everything they need so they can have a really good life now and in the future.

"We are hoping to move towards a Special Guardianship Order. If we are granted that, we take responsibility for the boys and the department will step away."

Liz said the boys had become a big part of her and Ashley's extended families and they were planning a trip to the UK at Christmas. The future is very bright.

"We are just like a normal family and we don't see them as foster kids, we see them as our own. They are going to be with us forever. They know that. The littlest one says he's going to look after us when we're old."

Who can become a Home 4 Life carer?

To become a long-term, permanent foster carer or Home 4 Life carer, you need to apply and be assessed by the DCPFS's Fostering Services.

You can be a couple, single, already

meet competencies specified in legislation. These are addressed as part of the foster carer assessment.

You must:

- that promotes the wellbeing of the child and protects them from harm
- be able to work with the department, the child's family
- be able to take responsibility for
- and repute.



The journey to adoption

Adoption is another method that can be considered by potential parents to care for children if they are unable to conceive due to medical problems or infertility.

The Department for Child Protection and Family Support, through its Adoption Service, is the only agency allowed to arrange adoptions in Western Australia, including the adoption of children from overseas.

Adoption provides a family for a child who is unable to live with his or her birth parents. It is a permanent legal arrangement finalised by an Adoption Order from the Family Court of Western Australia.

DCPFS Senior Practice Development Officer for Fostering and Adoption Services Jade Santa Maria said under adoption, full parental rights and responsibilities were given to the adoptive family and the birth parents no longer had legal rights over the child.

Ms Santa Maria said people opted to adopt for many reasons.

"It could be an altruistic desire but the main purpose of adoption is in the best interest of the child. It is a permanent legal arrangement finalised by an adoption order; it's different from fostering," she said.

"An adoption order is permanent for the life of the child. It's for life."

Applicants for adoption must be aged over 18 and at least one person in a couple must be an Australian citizen and the other a citizen of a country that gives similar rights to adopted children.

Single people can apply to adopt and same sex couples can apply to adopt Australianborn children. Currently, no overseas countries accept applications from same sex couples

After an initial inquiry, people interested in adopting must attend a general information session. They are then required to attend two or three education sessions. Once their Expression of Interest is received, they may be invited to lodge a formal application.

"The process to apply for adoption is different from fostering. Prospective adoptees are invited to attend an information seminar. They will then attend

a series of educational modules which will allow significant preparation for adoptive parenting," Ms Santa Maria said.

"The final step in the application process is participation in an adoption assessment. The assessment is then presented to the Adoption Applications Committee, which consists of various professional people, including those from legal and psychology backgrounds."

During an assessment, important competencies are considered such as the ability to be physically and mentally able to care for a child and the willingness to support the child's connection with his/her birth parents and culture.

"Some adoptive applicants have indicated that the application process is quite a stressful journey," Ms Santa Maria said.

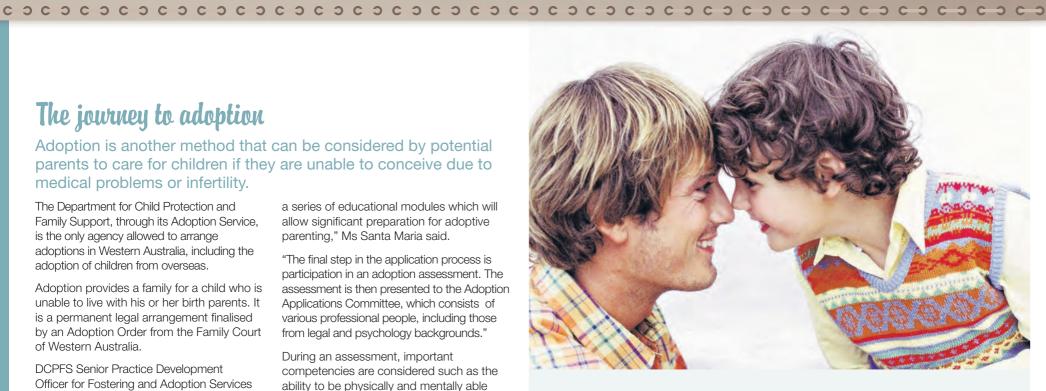
Due to changing social and economic conditions, the number of children in need of adoption both locally and from overseas has diminished in recent years.

On average, there are five to eight adoptions of locally born children and between six and 10 intercountry adoptions in Western Australia each year.

Increasingly, the children being offered for adoption have varying degrees of special needs. For these reasons, the Department for Child Protection and Family Services is encouraging prospective adoptive parents to consider alternate ways of opening their homes and their hearts to children who cannot be raised by their parents.

"It is recommended that those considering adoption, have worked through grief related to their infertility. Applicants experiencing infertility may wish to access co-counselling prior to commencing the application process."

The administrative and legal costs relating to a local adoption in Western Australia are around \$2000. The cost of adopting a child from overseas ranges from \$6000 to \$35,000.



Ongoing foster care recruitment drive

Foster caring is a demanding, yet rewarding role that involves understanding the needs of a child in care and building strong and trusting relationships.

The Department for Child Protection and Family Support Director General Terry Murphy said finding enough committed carers was perhaps the department's greatest challenge and there continued to be a need for more carers in all districts across the state

As at June 30, 2013, the total number of children in care in Western Australia was 3972. The total number of approved 'general carer' households was 1211.

The department provides care for children from birth to 18 years, for emergency, respite, short, medium and long-term care.

"The department works with its valued carers through the Foster Carer Partnership, recognising their key role in providing safety and nurturing for children in care, and the department is commitment to supporting them in this role," Mr Murphy said.

The type of supports that are offered include preparation training in readiness to become a carer, ongoing access to training and development of skills in understanding childhood trauma and attachment, access to learning and development resources and community training courses, and regular access and support from the departmental staff.

"There is no stereotype for carers, they can be can be male or female, single or a couple, with or without children and working full time, part time or even retired. We need Aboriginal and non Aboriginal carers, as well as carers from culturally and linguistically diverse backgrounds who understand the importance of maintaining links to family and culture."

There are a range of different options available for those considering becoming carers, including planned weekend respite, emergency overnight, short and longer term and permanent care. Carers who can care for both sibling groups are also needed.

"Even if you can only commit to weekend respite care, you could still make a real difference in the lives of children and their family carers," Mr Murphy said.

The option of relative foster carers is also available and at the moment, there are 1403 approved relative carer households looking after their family members.

Special Guardianship Orders can be considered for those children in need of a permanent placement providing a child with a stable, long-term placement arrangement, while supporting the child to maintain links with their family and people significant to them. As at June 30, there were 373 children on Special Guardianship Orders.

There is an ongoing recruitment drive to seek more carers and is another alternative for those wishing to parent a child.

DCPFS Senior Practice Development Officer for Fostering and Adoption Services Jade Santa Maria said more foster carers were required.

"It takes a special person who wants to give that care. Their skills and abilities are matched according to the needs of the child," she said.

"The application process is similar to that of the adoption process. Applicants interested in fostering, attend an information session and then lodge their expression of interest. The assessment process includes preparation training and a series of interviews in the applicants home. Their assessment is presented to a foster care assessment panel who makes recommendations regarding their suitability."

For information on becoming a foster carer call 1800 182 178; visit: cpfs. wa.gov.au or the department's facebook page FosterCareWa.

9mportant statistics

The total number of children in care in Western Australia is 3972.

General foster carers

The total number of approved 'general carer' households is 1211.

Relative foster carers

The total number of approved 'relative

Home 4 Life Program

Special Guardianship Orders

guardianship orders.

*As at June 30, 2013. Source: Department for Child Protection and Family Support.

