

Expenses incurred by IVFAustralia in 2004 and 2009

	2004	2009	% increase over the 5 years
Number of IVF cycles	2703	4304	59.2%
Salaries and wages	\$4,901,605	\$10,043,730	104.9%
Supplies and consumables	\$1,864,106	\$3,616,789	94.0%
Total Variable costs	\$6,765,711	\$13,660,519	101.9%
Occupancy costs and depreciatic	\$1,613,380	\$4,352,233	169.8%
Total Operating costs	\$8,379,091	\$18,012,752	115.0%

IVF / ICSI, IUI AND CYCLE MONITORING PRICE LIST

All cycle costs are package costs. They include clinical support during the treatment cycle (ultrasound scans, theatre charges, anaesthetic charges, doctor's fees and post-op recovery where applicable). Fresh IVF / ICSI cycles which do not succeed in a clinical pregnancy are entitled to a free follow up, if booked within 6 weeks of the pregnancy test. **Blood test and medication costs vary from patient to patient and are charged separately.**

IVF AND ICSI

IVF Cycle	
IVF cycle	£3210
<u>plus</u> HFEA fee	£104.50
IVF with Blastocyst Culture	
IVF cycle	£3210
<u>plus</u> blastocyst culture	£560
<u>plus</u> HFEA fee	£104.50
ICSI Cycle	
IVF cycle	£3210
<u>plus</u> ICSI	£1255
<u>plus</u> HFEA fee	£104.50
ICSI with Blastocyst Culture	
IVF cycle	£3210
<u>plus</u> ICSI	£1255
<u>plus</u> blastocyst culture	£560
<u>plus</u> HFEA fee	£104.50

CYCLE MONITORING AND IUI

Cycle Monitoring	
Cycle monitoring	£580
Intra-Uterine Insemination (IUI)	
IUI	£700
<u>plus</u> HFEA fee	£52

FREEZING, STORAGE AND TRANSFER

Embryo Freezing and Storage	
Embryo freezing including first year's storage	£850
Additional year storage fee (payable per annum)	£300
Frozen Embryo Transfer	
Frozen embryo transfer	£900
<u>plus</u> HFEA fee	£104.50
Egg Freezing (Vitrification Method)	
Egg retrieval and freezing using vitrification method including first year's storage	£3210
Sperm Freezing	
Sperm Freezing including first year's storage	£275
Additional year storage fee (payable per annum)	£165
Import / Export of Gametes or Embryos	
Import / Export of Gametes or Embryos (administration fee only) *	£250

*This charge is for administration only, courier charges are not included.

OTHER PROCEDURES

Other Procedures	
PGS 7-chromosome screening (in addition to IVF / ICSI)	£2500
Assisted hatching (in addition to IVF / ICSI)	£560
GIFT (<u>plus</u> £104.50 HFEA fee)	£3600
Embryo transfer under general anaesthetic (additional cost)	£500
Donor Sperm	
Donor sperm (per cycle)	£1000

IVF / ICSI, IUI AND CYCLE MONITORING PRICE LIST

CONSULTATIONS AND INVESTIGATIONS

Consultations

Initial consultation	£180
Follow up consultation	£130
Telephone follow up consultation	£130
Counselling session	No charge

Ultrasound Scans and Tests

Ultrasound scan *	£150
Saline hysterosonogram	£400
Semen Assessment **	£110
Hysterosalpingogram (HSG)	£522

* A baseline ultrasound scan result from another clinic is accepted (taken up to 3 months before your consultation).

** Semen assessment results from another Assisted Conception Unit are accepted (taken up to 12 months before your consultation).

BLOOD TESTS

Virology

Virology screen (HIV, Hepatitis B & Hepatitis C) *	£105
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* All patients undergoing IVF / ICSI require HIV, Hepatitis B & C blood tests. Results taken up to 12 months before egg collection date accepted.

Common Investigative Blood Tests and Profiles *

Anti-Müllerian Hormone (AMH)	£59
Baseline profile 1 (LH, FSH & E2)	£120
Baseline profile 13 (LH, FSH, E2 & AMH)	£176
Male profile (LH, FSH, Testosterone, SHBG & Prolactin <u>plus</u> ratio)	£130
APS screen (Phospholipid Antibodies, Lupus Abs & Cardio Abs)	£231
Thyroid profile (TSH, FT4 & FT3)	£120
Liver function	£33
Chromosome karyotype	£165
Chromosome Y deletions	£110
Cystic fibrosis carrier	£147

* Patients may require hormone, chromosomal or other profiles to be taken to investigate the cause or extent of their sub-fertility.

Other Investigative Blood Tests

Quantitative beta HCG	£60
Full blood count	£27
Natural killer cells CD69	£182
Natural killer cells cytotoxicity	£412
Natural killer cells assay (CD69 & cytotoxicity)	£530
Anti-cardiolipin antibodies	£77
Lupus anti-coagulant	£66

Blood Tests during Treatment *

E2	£44
Monitoring profile (E2, LH & Progesterone)	£120

* Women on a drug regime will need to have blood tests every few days to monitor the levels of hormones in their blood. Blood tests during treatment are charged separately. Expect at least 3 blood tests during your treatment cycle. It is not possible to have your blood tests done elsewhere (except if you are a satellite patient) as the doctor needs to be able to make a quick decision on your treatment, based on your blood test results.

DRUGS

Drugs*

Estimate per stimulated ovulation monitoring / IUI cycle	£50 - £300
Estimate per IVF / ICSI cycle	£1000 - £3000
Estimate per frozen embryo transfer	£200 - £500

* Drug costs vary depending on the patient and the protocol used. Drug doses can be increased or decreased during your treatment cycle, depending on your response.

ABANDONED CYCLES

Abandoned cycle after 2 scans	£400
Abandoned cycle after 3 scans	£500
Abandoned cycle after 4 scans	£600

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Egg Recipient and Donor Programmes
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Treatments and Prices
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Treatments and Prices

Introduction

All prices are subject to change without notice and Bridge reserves the right to apply its current pricing at any time irrespective of the contents of this website. Every effort will be made to keep pricing information accurate. E&O.E.

Schedule of Fees - Valid from 1st June 2009

Consultations & Counselling

Initial Consultation	£180
<i>You will see a Fertility Specialist, our Genetics Counsellor and a Care Team Member. Please allow 1½ - 2 hours in total.</i>	
Follow-up Consultation	£90
<i>You will see a Fertility Specialist and a member of the Care Team.</i>	
Diagnostic Outcome and Treatment Planning Review	No charge
Test Results Review - semen analysis only	£60
Counselling - only when in addition to sessions included in treatments	£80

Recurrent Miscarriage Clinic

Consultation with Professor Howard Carp	£240
Screening Tests - Recurrent miscarriage/Implantation failure	£340-580

Well Woman Screen

- **Total Cost** **£246**
- **Mammography** for women over the age of 40 - additional cost **£175**

Cancellation Fees

Unless a minimum of 48 hours notice has been given, **all consultations** are subject to cancellation fees for non-attendance. Cancellation fees are levied at the **full rate** for the consultation missed.

Diagnostic Investigations

Ultrasound Scan	£145
Ultrasound Scan plus Antral Follicle Count	£260
Ultrasound Scan with Colour Doppler	£210
Ultrasound Scan by Doctor	£200
Ultrasound Scan by Doctor with Colour Doppler	£275
Follow-up Ultrasound Scan by Doctor with Colour Doppler	£200
3D/4D Scan with DVD	£250
3D - Aquascan	£235
3D - HysteroContrastSalpingography (HyCoSy)	£355
Intensive Cycle Monitoring	£525

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EGG DONORS NEEDED

We have a patient on our waiting list who badly needs help - either from a donor or someone wishing to join our Egg Sharing Programme.

[CLICK HERE](#)

Message Board

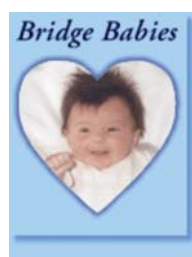
"Dear Prof,
Hope you remember me. You and your team made us so happy 6 years ago that I firstly want to say that not a day goes by without us being amazed at how lucky we are to have met you and to have such a wonderful son.
Secondly, I do have a couple who are in need of your help and wondered if you would consider seeing them before I mention your name to them. (To avoid getting their hopes up too early).
Hope to hear from you soon

S.E"



SPERM DONORS NEEDED
Bright and healthy men are needed for a serious purpose.
Generous expenses paid.
[CLICK HERE](#)

Message Board
"To Susan Smith and Ariel Zosmer for their skill, approachability and patience in answering my questions, to Jane and Rachel for their hard work, to Heather the Wonder-Radiographer for her ability to reduce my embarrassment to almost nil, to Bonnie Collins, Julia Dobson and the embryology lab for their expertise, acceptance of weekend working and willingness to explain, to the receptionists who always makes you feel welcome and never forgot my name, to accounts for their efficiency and to all the support staff working behind the scenes: -
A BIG THANK YOU and Season's Greetings and best wishes.
DM"



Pre-treatment Screening Tests

Follicle Stimulating Hormone (FSH)	£48	Hepatitis B	£55
Luteinizing Hormone (LH)	£48	Hepatitis C	£110
Oestradiol (E2)	£48	HIV	£58
Progesterone	£48	High Vaginal Swab	£65
Prolactin	£48	Chlamydia	£90
Rubella	£45	Anti-Mullerian Hormone (AMH)	£160

Ovarian Assessment Report (OAR)

Ovarian Assessment Report (as part of a treatment cycle)	£435
Female Reproductive Health Assessment (OAR + Scan and Antral Follicle Count + Consultation)	£730

Male Diagnostic & Other Procedures

Semen Analysis	£115
'Back-up' Cryopreservation of Sperm <i>Includes storage for a maximum of 12 months, after which sample will be discarded</i>	£250
Advanced Semen Analysis <i>RCA or rapid centrifugal analysis</i>	£385
Sperm DNA Fragmentation Assay <i>Quality and integrity test</i>	£415
Annual Storage - cryopreserved sperm	£250
PESA <i>At Bridge Day Care Unit, with intravenous sedation. In addition to the cost of IVF/ICSI.</i>	£1,425
Laboratory Services post PESA <i>Examination and sperm retrieval from PESA samples.</i>	£175
Sperm Cryopreservation post PESA <i>Includes storage for one year. In addition to the cost of IVF/ICSI.</i>	£360
TESE <i>At Bridge Day Care Unit, with intravenous sedation. In addition to the cost of IVF/ICSI.</i>	£1,675
Laboratory Services post TESE <i>Examination and sperm retrieval from TESE samples.</i>	£175
Sperm Cryopreservation post TESE <i>Includes storage for one year. In addition to the cost of IVF/ICSI.</i>	£455
Histological Examination of testicular biopsy post TESE	£195

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Donor Sperm

Bridge Donor Sperm - in addition to the cost of treatment	
• Bridge DonorShare administration fee	£220
• Bridge DonorShare	£2,200
Non Bridge Donor Sperm - in addition to the cost of treatment	
• Donor Matching Fee	£220
• Rent Transport Container	£47
• Courier Fees: London - within M25	At cost
• Sperm - per cycle	Price on application
• Import Fee for sperm from overseas <i>(additional to the cost of the sperm and IUI fee)</i>	£605

(additional to the cost of the sperm and IUI fee)

Message Board

"Wot a lot we got!



Ian and Sue"

EGG DONORS NEEDED

We have a patient on our waiting list who badly needs help - either from a donor or someone wishing to join our Egg Sharing Programme.

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Message Board

"Dear Prof,

"My husband and I would like to thank all the staff at The Bridge Centre for the huge part you played in enabling us to give birth to a son, William, just over a month ago.

He is a wonderful little baby and we are thoroughly enjoying learning to be parents.

Once again, many thanks.

Nicola"

Bridge Babies



Message Board

"Just a quick note to let you know that our treatment was unsuccessful but we would like to thank everyone at Bridge for the help, care, professionalism and, above all else, the chance to have a family.

Paul and Judy"

Known Sperm Donor

- Stage One: Initial Screening Fee (in addition to the cost of IUI/IVF) **£625**
- Stage Two: Full Screening Fee (in addition to the cost of IUI/IVF and only undertaken **after** initial screening completed) **£1,015**

Treatment Options

Ovulation Induction (Stimulation of Ovulation) **£495**

IUI Treatment Costs

For further information on other costs please ask for the detailed IUI price list.

- Preparation of Sperm - per cycle **£45**
- Natural Cycle **£665**
- Stimulated Cycle **£710**
Excluding the cost of drugs
- IUI under Sedation **£230**
at The Bridge Centre DCU
- HEFA Fee IUI **£52**
must be levied each cycle using donor sperm

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IVF/ICSI Treatment Costs

For a more detailed breakdown of the costs please ask for separate information sheets.

- IVF - per cycle **£3,150**
Excludes the cost of drugs
- ICSI (Intra-cytoplasmic sperm injection) **£1,190**
Supplement per cycle IVF

Specific IVF Treatments

- IVF - Egg Share - contribution per cycle **NO CHARGE**
- IVF - Egg Share - ICSI supplement per cycle **£825**
- IVF - Surrogacy - per cycle **£7,500**
- Low Stimulation IVF **£2,500**

IVF Additional Charges

- HFEA Fee IVF or IVF/ICSI - *each cycle undertaken/all UK cycles* **£104.50**
- Nominated Doctor **£400**
- Anaesthetist **£230**
- Extra Hospital Charges (London Bridge Hospital) **£1,150**

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Procedures Following Egg Collection

- Laser Assisted Hatching **£700**
Cost additional to IVF/ ICSI
- Blastocyst Culture **£350**
- Gamete Intra-Fallopian Transfer (GIFT) **£3,800**
Excludes the cost of drugs
- Laparoscopic Tubal Embryo Transfer (LIFT) **£1,700**
Cost additional to IVF and ICSI

Embryo Cryopreservation

- Embryo Cryopreservation **£445**
Includes storage for one year
- Two-Stage Embryo Cryopreservation **£665**

SPERM DONORS NEEDED
Bright and healthy men are needed for a serious purpose. Generous expenses paid.
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Includes storage for one year

Embryo Storage - annual renewal fee **£250**

Frozen Embryo Transfers - FET

Embryo Thawing Fee **£135**

Frozen Embryo Transfer (FET) **£990**

Excludes the cost of drugs

HFEA Fee FET **£104.50**

Interrupted Treatment Cycles

Interrupted IVF Cycles

When an IVF Cycle is interrupted for clinical reasons, the invoiced treatment cycle is credited and the following charges are applied for treatment only completed prior to the interruption:

for 1 to 2 scans **£375**

for 3 to 4 scans **£510**

5 or more scans **£645**

Plus the costs of any other diagnostic tests completed within the cycle.

Please note: In rare cases, where an IVF cycle proceeds to egg collection, but embryo transfer does not occur, a credit of £252 will be given against the next cycle of treatment at Bridge.

Interrupted IUI Cycles

When an IUI cycle of treatment is interrupted for clinical reasons, the invoiced treatment cycle is credited and the following charges are applied for treatment only completed prior to interruption:-

1 to 2 scans **£145 each**

Each scan thereafter **£80 each**

Plus the cost of any other diagnostic tests completed within the cycle

Interrupted FET Cycles

When an FET cycle of treatment is interrupted for clinical reasons, the invoiced treatment cycle is credited and the following charges are applied for treatment completed prior to the interruption:

1 to 2 scans **£145 each**

Each scan thereafter **£80 each**

Plus the costs of any other diagnostic tests completed within the treatment cycle.

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Pre-Implantation Genetic Diagnosis (PGD) and Screening (PGS)

Consultations and Counselling

Clinical Genetics Consultation

A consultation with a senior qualified consultant in clinical genetics. **£240**

PGD/PGS Counselling

A counselling session with a qualified counsellor on any aspect of a couple's proposed treatment **£105**

Single Gene Defects or HLA Matching

Test development **£2,310**

HFEA Application **£525**

Embryo biopsy and testing (per embryo) **£1,100**

Message Board
"I hope this finds you all well. We are fine although being a mother of two under threes at the age of 42 (soon to be 43) is proving absolutely exhausting! Not that I would change a thing - "G" and "A" are a source of constant delight and joy.

I have finally got around to getting a photograph for your "rogues gallery" ... aren't they gorgeous? Ok, so I'm an extremely biased mother, but you can't deny that they are cute!.
With best wishes from Liz"

Bridge Babies


Message Board
"Dear all,
"Thank you so much, our long awaited little boy is at home and doing well.
We are incredibly grateful to all the staff at Bridge for their expertise and support.
Thank you.
Lisa and Tony"

Chromosome Imbalance in Translocation Carriers

Test development	£575
Test validation	£290
Embryo biopsy and testing	£1,525
Sperm translocation chromosome analysis	£605

Aneuploidy

Embryo biopsy and 8 chromosome screen	£1,850
Sperm aneuploidy testing (5 chromosomes)	£605
Array CGH (24 chromosomes) analysis of up to 8 samples - thereafter £195 per sample	£2,350

These prices exclude:

The cost of the IVF/ICSI cycle and drugs

Additional genetic testing which may be required before treatment starts

For a more detailed explanation of these procedures and the possible costing, please see the separate fee schedule.

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Recipient Programmes

Bridge offers a number of treatment options, both in the UK and overseas.

Initial Consultation	£240
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Your first visit to Bridge is a very important one and we aim to use your time with us as appropriately and effectively as possible. You should plan to be at Bridge for about two hours, during which time you will see a Fertility Specialist, a member of our egg donation team and a nurse who will review your Registration Form and medical history and ensure that we have all the information you are able to supply.

Follow-up Consultation	£120
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You should plan to spend about an hour and a half at Bridge for this appointment. During this time your Infertility Specialist will review the results of the initial tests completed, advise what further tests, if any, or procedures need to be done and explain your treatment options. Again, there is the possibility that we will take a blood sample and/or perform an ultrasound scan. If information gained as a result of your Initial Consultation indicates a requirement for further tests and investigations, we will take, with your agreement, all the necessary steps.

Diagnostic Outcome and Treatment Planning Review	Free of Charge
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You should plan to be at Bridge for about two hours during which time your Infertility Specialist will agree a treatment plan with you and prescribe the medication needed. You will also see a member of our egg donation team for a general briefing on the programme you have chosen and to check that all the consents necessary are done. If a semen sample from your partner is going to be required further into the treatment cycle, we offer a special freezing and storage service at this point as 'insurance' and you may wish to take up this option.

Please note that the full consultation fee is payable at the time of booking – see notes on the back page.

Administration Fee - this applies to all Egg Donation programmes and covers the very £275 detailed preparatory work necessary for each programme, including donor matching and, in the case of the International programmes, data transfer, communication and coordination with the overseas centre.	£275
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Treatment prices start from	£4,950
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EGG DONORS NEEDED
 We have a patient on our waiting list who badly needs help - either from a donor or someone wishing to join our Egg Sharing Programme.
[CLICK HERE](#)

Message Board
 "Dear Professor Grudzinskas,
 We have pleasure in enclosing a photo of our baby for you to add to your gallery. We would like to take this opportunity to thank you and your colleagues for all your help.
 Mr and Mrs D"



Message Board
 "Words can not express our emotions at the moment - we are so grateful for all your expertise and commitment.
 With kindest regards.
 Mr and Mrs JH"

HFEA Fee - UK programmes only **£104.50**

Once you have decided whether or not you wish to be treated in the UK or overseas and the programme which best suits your individual needs, a fee schedule will be produced for you.

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Bridge Clinical Embryology and Cryoservices Laboratories Egg and Semen Cryopreservation

Egg Freezing

Initial process including egg collection and 1 year storage **£2,890**
- does not include initial consultation, screening tests or drugs

Egg Freezing - 3 freeze 'package' **£6,950**

Annual Storage cost **£250**

Subsequent four year storage cost **£700**

Nine year storage cost **£1,350**

Defrost of eggs, fertilisation and embryo transfer **£2,210**

Egg Freeze/Share

Contribution per cycle **No charge**

Administration fee **£260**

Interrupted Egg Freezing Cycles

When an Egg Freezing cycle is interrupted for clinical reasons, the invoiced treatment cycle is credited and the following charges are applied for treatment completed prior to interruption:

- for 1 to 2 scans **£375**
- for 3 to 4 scans **£510**
- 5 or more scans **£640**
- plus the costs of any other diagnostic tests completed within the cycle.

Long Term Freeze (LTF) - which includes: - **£700**

- the initial freeze
- storage for one year
- consultation with Cryolaboratory Manager
- consultation with Medical Consultant
- consultation with Counsellor
- freezing of up to 4 separate samples
- storage in 2 separate storage tanks

This does NOT include Screening Tests, which are listed below

Annual Renewal of Storage Fee **£250**

LTF with 5 Year Storage Package **£1,400**
Save £300 on annual renewal cost

LTF with 10 Year Storage Package **£2,050**
Save £900 on annual renewal cost

Combined Screening Tests **£199**
For HIV, Hepatitis B and Hepatitis C

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Drugs Charges

Buserelin / Suprefact	(Injection) 5.5ml	£62
Synarel / Nafarelin	30 iu dose	£60
Synarel / Nafarelin	60 iu dose	£105
Gonal F	75 iu amp	£24
Gonal F	300 iu amp	£96
Gonal F	450 iu amp	£144

Gonal F	900 iu amp	£288
Puregon	50iu amp	£16
Puregon	300iu Pen	£96
Puregon	600iu Pen	£192
Puregon	900iu Pen	£288
Menopur	75 iu amp	£19
Pregnyl	5000iu amp (2)	£14
Progynova	28 x 2mg tablets	£5
Cyclogest	15 pessaries	£18
Gestone IM		£9

Special Notes:

There are no refunds for unused drugs that have been taken off our premises.

Drugs cannot be supplied, nor taken from the premises, without prior payment.

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Administration Charges

Copy of Patient Notes (patients who have attended the clinic within the last twelve months)	£40
Copy of Patient Notes (patients who have attended the clinic over twelve months ago or more)	£63
Foreign Visa Letter Request	£58

You can download our Direct Debit Mandate Form [here](#)

Terms and Conditions

All services and products provided by Bridge and all applicable HFEA fees must be paid for **in full, in advance**. Please see Terms and Conditions.

For PDF of full Terms and Conditions [Click here](#)

For PDF of Storage Terms and Conditions [Click here](#)

Private Health Insurance and Third Party Payment

As noted above, all fees payable to Bridge must be paid in advance. This is the case even if a third party or any insurance company may be liable to reimburse, or otherwise pay, such amounts. Bridge will arrange for any claim forms to be signed in order to assist in reclaiming any amounts due from an insurance company, or any third party. Please discuss this with one of our Patient Accounts Managers who will assist you as appropriate.

Information sheets giving a further breakdown of the costs relevant to some of the treatments you may undergo, are available. Please contact Patient Accounts by phone on **020 7403 3363 ext 229 or 244** or patientaccounts@thebridgecentre.co.uk or, Admissions by phone on **020 7089 1449** or admissions2@thebridgecentre.co.uk

Explanation of Abbreviations and Terms used in this Document:

- **IVF** - in vitro fertilisation
- **ICSI** - intra-cytoplasmic sperm injection (injection of sperm into egg).
- **IVF+ICSI** - because ICSI cannot exist without IVF, the term

'ICSI' is commonly used to encompass both the procedures of IVF and ICSI. In this document the procedures have been listed separately in order to explain the costings.

- **ET** - embryo transfer
- **PGS** - pre-implantation genetic screening
- **PGD** - pre-implantation genetic diagnosis
- **Cryopreservation** - the process of freezing and storing tissue at optimal temperatures.
- **Biopsy** - the extraction of a small sample for the purposes of laboratory analysis for a tissue diagnosis.

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Treatment fees

Fees include all monitoring, day bed and theatre care, laboratory procedures and pregnancy confirmation.

Please note that the HFEA levies a fee, currently £104.50 for IVF/ICSI, egg recipient, surrogacy and frozen embryo treatments. Donor insemination cycles are currently £51. This levy will be charged to the patient in addition to the treatment costs detailed below.

In Vitro Fertilisation (IVF)	2300.00
General Anaesthetic (GA)	220.00
Intracytoplasmic Sperm Injection (ICSI) <i>fee in addition to IVF</i>	850.00
Surgical Sperm Retrieval (SSR) <i>fee includes sperm freezing and storage</i>	1200.00
Egg Donation with IVF (<i>monitoring charge at £90 per day if treatment is cancelled</i>)	4300.00
Egg Donation with IVF - Known Donor (<i>excludes donor's screening tests and drugs which are the responsibility of the recipient</i>)	4000.00
Egg Donation Waiting List Registration	400.00
Host Surrogacy with IVF (<i>includes semen freezing/quarantine; excludes host's screening tests and drugs</i>)	4000.00
Monitored cycle for treatment at NURTURE	400.00
Intrauterine insemination (IUI)	600.00
Donor sperm (please ask for details)	POA from 600.00
Monitored cycle for treatment outside NURTURE (maximum 4 scans, additional scans £150 each)	500.00
3 dimensional pre-treatment ultrasound scan	120.00

Fees do not include pre-treatment tests or drugs.

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Special Article

INSURANCE COVERAGE AND OUTCOMES OF IN VITRO FERTILIZATION

TARUN JAIN, M.D., BERNARD L. HARLOW, PH.D., AND MARK D. HORNSTEIN, M.D.

ABSTRACT

Background Although most insurance companies in the United States do not cover in vitro fertilization, a few states mandate such coverage.

Methods We used 1998 data reported to the Centers for Disease Control and Prevention by 360 fertility clinics in the United States and 2000 U.S. Census data to determine utilization and outcomes of in vitro fertilization services according to the status of insurance coverage.

Results Of the states in which in vitro fertilization services were available, 3 states (31 clinics) required complete insurance coverage, 5 states (27 clinics) required partial coverage, and 37 states plus Puerto Rico and the District of Columbia (302 clinics) required no coverage. Clinics in states that required complete coverage performed more in vitro fertilization cycles than clinics in states that required partial or no coverage (3.35 vs. 1.46 and 1.21 transfers per 1000 women of reproductive age, respectively; $P < 0.001$) and more transfers of frozen embryos (0.43 vs. 0.30 and 0.20 per 1000 women of reproductive age, respectively; $P < 0.001$). The percentage of cycles that resulted in live births was higher in states that did not require any coverage than in states that required partial or complete coverage (25.7 percent vs. 22.2 percent and 22.7 percent, respectively; $P < 0.001$), but the percentage of pregnancies with three or more fetuses was also higher (11.2 percent vs. 8.9 percent and 9.7 percent, respectively; $P = 0.007$). The number of fresh embryos transferred per cycle was lower in states that required complete coverage than in states that required partial or no coverage ($P = 0.001$ and $P < 0.001$, respectively).

Conclusions State-mandated insurance coverage for in vitro fertilization services is associated with increased utilization of these services but with decreases in the number of embryos transferred per cycle, the percentage of cycles resulting in pregnancy, and the percentage of pregnancies with three or more fetuses. (N Engl J Med 2002;347:661-6.)

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MORE than 4 million women in the United States are unable to have children.¹ A substantial number of these women cannot conceive with conventional methods of treatment, such as induction of ovulation, surgery, and insemination with donor sperm, and subsequently become candidates for in vitro fertilization. Since in vitro fertilization was introduced in 1978,² there has been a growing debate about whether the substantial medical costs associated with this procedure should be covered by health insurance. Estimates for the direct cost of a single in vitro fertilization cycle range from \$7,000 to \$11,000.^{3,4}

In the United States, in vitro fertilization is primarily a privately funded treatment.⁵ However, a handful of states have passed laws requiring that insurance companies provide either partial or complete coverage of in vitro fertilization. As of November 2001, three states had laws mandating complete coverage (Illinois, Massachusetts, and Rhode Island), and five states had laws requiring partial coverage (Arkansas, Hawaii, Maryland, Ohio, and West Virginia).⁶ Five states did not have in vitro fertilization services (Alaska, Idaho, Maine, Montana, and Wyoming). The remaining 37 states, plus the District of Columbia and Puerto Rico, had clinics that provided in vitro fertilization services primarily on a fee-for-service basis. On January 1, 2002, New Jersey became the fourth state to require complete insurance coverage for in vitro fertilization.

We conducted a study to determine whether insurance coverage for in vitro fertilization services is associated with increased use of such services and whether insurance coverage affects the practice patterns of fertility clinics and the outcomes of their services. Using the most recent data on rates of success of assisted reproductive technology (from 1998),⁷ we specifically sought to determine whether state-mandated insurance coverage for in vitro fertilization affects utilization, pregnancy rates, and multiple-gestation rates.

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METHODS

Collection of Data

In accordance with the Fertility Clinic Success Rate and Certification Act of 1992, the Centers for Disease Control and Prevention (CDC) collects annual data on success rates at fertility clinics.⁸ The data are compiled by the CDC; the Society for Assisted Reproductive Technology, which is an affiliate of the American Society for Reproductive Medicine; and RESOLVE: the National Infertility Association. The most recent report includes success rates in 1998 at 360 of the 390 fertility clinics in the United States.⁷ Despite the federal requirement to report success rates, 30 clinics either failed to submit their data to the CDC or did not provide verification by the clinic medical director that the tabulated success rates were correct. Two of the 30 nonreporting clinics were in states that require complete insurance coverage, and the rest were in states that do not require coverage.

The assisted reproductive techniques consisted of in vitro fertilization (in 96 percent of cycles), gamete intrafallopian transfer (in 2 percent), and zygote intrafallopian transfer (in 2 percent). The overall rates of live births per oocyte retrieval for in vitro fertilization, gamete intrafallopian transfer, and zygote intrafallopian transfer were nearly identical (29.0 percent, 28.0 percent, and 29.2 percent, respectively). Since in vitro fertilization accounted for the vast majority of the cycles, we use the term in this report as a synonym for assisted reproductive technology. Only cycles involving fresh or frozen embryos from nondonor eggs were analyzed (61,650 and 10,058 cycles, respectively).

Pertinent data from the 1998 report were downloaded from the CDC Web site for analysis.⁹ Data on fertility clinics were separated by state and then assigned to one of three categories on the basis of the requirement for insurance coverage for in vitro fertilization (complete, partial, or no coverage).

Complete insurance coverage was defined as a requirement that

health maintenance organizations (HMOs) and insurance companies cover the costs of diagnosis and treatment of infertility (including in vitro fertilization). Partial coverage was defined as a requirement of limited coverage of in vitro fertilization (e.g., required coverage only by HMOs, a maximal lifetime benefit of \$15,000, or coverage of only a portion of the cost of in vitro fertilization). No coverage was defined as the absence of any requirement that HMOs or insurance companies cover in vitro fertilization. The coverage guidelines for states with complete and partial coverage are outlined in Table 1.⁶

For each fertility clinic, the 1998 report provides percentages for several variables: cycles resulting in pregnancies, cycles resulting in live births, oocyte retrievals resulting in live births, embryo transfers resulting in live births, cancellations (cycles that were stopped before oocyte retrieval or embryo transfer), pregnancies with twins, pregnancies with three or more fetuses, live births of multiple infants, and transfers of frozen embryos resulting in live births. For purposes of calculation, we converted these percentages to raw numbers, assigned them to one of our three insurance-coverage categories, and then reconverted the data into percentages. Since the initial percentages were reported to one decimal place, there was the potential for small rounding errors during the conversion process. However, any such error would be minor because of the large numbers in the data set and because it would affect all clinics equally.

The CDC data were organized into four age groups (<35, 35 to 37, 38 to 40, and >40 years). The age range of women who underwent in vitro fertilization in 1998 was defined as 25 to 45 years, on the basis of the CDC data (less than 1 percent of women who underwent an assisted reproductive technology cycle were less than 25 or more than 45 years old). We downloaded data on the U.S. population from the Census Bureau Web site.¹⁰ Data for 2000 were used, since they were closest in time to the 1998 CDC data. Population data for women in every state were organized into four age groups (25 to 34, 35 to 37, 38 to 40, and 41 to 45 years)

TABLE 1. STATE REQUIREMENTS FOR INSURANCE COVERAGE OF IN VITRO FERTILIZATION SERVICES (AS OF NOVEMBER 2001).*

COVERAGE REQUIRED	YEAR ENACTED	SUMMARY OF COVERAGE
Complete		
Illinois	1991	Applies to all insurance carriers that cover more than 25 people; limits first-time attempts to 4 retrievals of oocytes; if a child is born, 2 retrievals of oocytes for a second pregnancy are covered
Massachusetts	1987	Applies to all insurance carriers; coverage limited to 6 retrievals of oocytes
Rhode Island	1989	Applies to all insurance carriers; insurers can impose up to a 20 percent copayment
Partial		
Arkansas	1987	Applies to all insurance carriers except HMOs; insurers can limit lifetime coverage to \$15,000; coverage is subject to the same deductibles and copayments that apply to maternity benefits
Hawaii	1987	Requires insurance carriers to cover the outpatient costs of one in vitro fertilization cycle; patient or spouse must have at least a 5-year history of infertility
Maryland	1985	Requires insurance carriers to cover the outpatient costs of in vitro fertilization, except for businesses with 50 or fewer employees; coverage limited to 3 in vitro fertilization cycles per live birth achieved, with a maximal lifetime benefit of \$100,000
Ohio	1991	Requires only that HMOs cover infertility services (not defined)
West Virginia	1997	Requires only that HMOs cover infertility services (not defined)

*Data are from the American Society for Reproductive Medicine.⁶ HMOs denotes health maintenance organizations.

and then stratified according to the three insurance-coverage categories. Age-specific utilization of in vitro fertilization per 1000 women was calculated according to insurance status on the basis of the 2000 Census data and was standardized to the age distribution in all states that offer in vitro fertilization with the use of direct standardization methods.¹¹

Statistical Analysis

Outcome data for all the fertility clinics were normally distributed. We used chi-square tests to compare the age-specific utilization rates and several key in vitro fertilization outcomes according to insurance status. A two-tailed t-test was used to compare the average numbers of fresh and frozen embryos transferred per cycle in the three insurance categories.

RESULTS

Of the 360 infertility clinics in the United States in 1998 for which data were available, 31 were in states requiring complete insurance coverage for in vitro fertilization, 27 were in states requiring partial coverage, and 302 were in states that did not require any coverage. In 1998, these clinics performed a total of 61,650 in vitro fertilization cycles involving fresh, nondonor eggs and 10,058 cycles involving transfers of frozen embryos (from nondonor eggs). In 2000, on the basis of Census data, approximately 3.2 million women between the ages of 25 and 45 years lived in states requiring complete insurance coverage for in vitro fertilization, 3.5 million lived in states requiring partial coverage, and 37.8 million lived in states that did not require any coverage. Table 2 shows the correlations

between these three categories of insurance coverage and utilization of in vitro fertilization services. Clinics in states that required complete insurance coverage performed more in vitro fertilization cycles and embryo transfers (3.35 fresh-embryo cycles and 0.43 transfer of frozen embryos per 1000 women) than states requiring partial insurance (1.46 fresh-embryo cycles and 0.30 transfer of frozen embryos per 1000 women) and states with no insurance (1.21 fresh-embryo cycles and 0.20 transfer of frozen embryos per 1000 women), after adjustment for age ($P < 0.001$ for all comparisons).

As shown in Table 3, the percentages of cycles resulting in pregnancy, cycles resulting in live births, oocyte retrievals resulting in live births, and embryo transfers resulting in live births were significantly higher in states with no mandated insurance coverage for in vitro fertilization than in states requiring partial or complete coverage ($P < 0.001$ for all comparisons). The percentage of live births involving multiple infants was also higher in the states that did not require coverage than in those that required partial or complete coverage ($P = 0.04$), primarily because of a higher rate of pregnancies involving three or more fetuses in the states with no required coverage ($P = 0.007$). The mean number of fresh embryos transferred per cycle was lower in states that required complete insurance coverage (3.25) than in states that required partial coverage (3.54, $P = 0.001$) or no coverage

TABLE 2. UTILIZATION RATES FOR IN VITRO FERTILIZATION SERVICES ACCORDING TO THE CATEGORY OF REQUIRED INSURANCE COVERAGE.*

AGE GROUP	COMPLETE COVERAGE		PARTIAL COVERAGE		NO COVERAGE	
	no. of cycles	rate/1000 women	no. of cycles	rate/1000 women	no. of cycles	rate/1000 women
Fresh-embryo cycles						
25–34 yr	4,684	3.25±0.05	2485	1.63±0.03	20,689	1.23±0.01
35–37 yr	2,485	5.09±0.10	1224	2.29±0.07	10,437	1.82±0.02
38–40 yr	2,224	4.45±0.09	903	1.63±0.06	8,910	1.52±0.02
41–45 yr	1,409	1.77±0.05	473	0.52±0.03	5,727	0.61±0.01
Total†	10,802	3.35±0.03	5085	1.46±0.02	45,763	1.21±0.01
Frozen-embryo transfers						
25–34 yr	709	0.49±0.02	611	0.40±0.02	3,979	0.24±0.004
35–37 yr	343	0.70±0.04	229	0.43±0.03	1,797	0.31±0.007
38–40 yr	211	0.42±0.03	130	0.23±0.02	1,175	0.20±0.006
41–45 yr	131	0.17±0.01	61	0.07±0.01	682	0.07±0.003
Total†	1,394	0.43±0.01	1031	0.30±0.01	7,633	0.20±0.003

*As of November 2001, Illinois, Massachusetts, and Rhode Island required complete insurance coverage, and Arkansas, Hawaii, Maryland, Ohio, and West Virginia required partial coverage. Five states did not have in vitro fertilization services. The remaining 37 states, plus Puerto Rico and Washington, D.C., provided in vitro fertilization services but did not require insurance coverage for them. For each category of coverage, the utilization rate per 1000 women (\pm SE) was calculated by dividing the number of fresh-embryo cycles or frozen-embryo transfers in each age group by the total number of women in that age group (on the basis of 2000 Census data) and multiplying by 1000. $P < 0.001$ for all comparisons of utilization rates according to the insurance-coverage category.

†Data are age-standardized rates.

TABLE 3. AGE-STANDARDIZED OUTCOMES OF IN VITRO FERTILIZATION ACCORDING TO THE CATEGORY OF REQUIRED INSURANCE COVERAGE.*

OUTCOME	COMPLETE COVERAGE	PARTIAL COVERAGE	No COVERAGE	P VALUE†
Pregnancies (% of cycles)‡	27.8±0.43	26.7±0.63	31.5±0.22	<0.001
Live births (% of cycles)	22.7±0.40	22.2±0.59	25.7±0.20	<0.001
Cancellations (% of cycles)	12.6±0.32	14.8±0.49	13.9±0.16	0.003
Live births (% of oocyte retrievals)	26.0±0.45	26.1±0.67	29.9±0.23	<0.001
Live births (% of embryo transfers)	28.5±0.49	27.9±0.71	31.8±0.24	<0.001
Twins (% of pregnancies)‡	27.6±0.82	26.8±1.12	27.8±0.37	0.89
Three or more fetuses (% of pregnancies)‡	9.7±0.55	8.9±0.77	11.2±0.26	0.007
Multiple infants (% of live births)	36.0±0.97	35.4±1.40	38.2±0.45	0.04

*Data are percentages ±SE.

†The chi-square test was used to make comparisons among the three categories of insurance coverage.

‡Pregnancies were confirmed by ultrasound evidence of one or more gestational sacs in the uterus.

(3.59, $P < 0.001$) (Table 4). A similar pattern was observed with frozen-embryo transfers, but the differences were not statistically significant.

To evaluate further the association between the number of embryos transferred and the rates of triplets or higher-order multiple gestations, we performed analyses of insurance status and multiple-gestation rates that were stratified according to the mean number of embryos transferred across all clinics (3.53). For clinics at which the mean number of embryos transferred was lower than 3.53, the rate of pregnancies in which there were three or more fetuses was 8.7 percent in states requiring complete coverage, 8.3 percent in states requiring partial coverage, and 10.4

percent in those that did not require any coverage ($P = 0.02$). For clinics at which the mean number of embryos transferred was 3.53 or higher, the rates were 10.3 percent, 10.5 percent, and 12.2 percent, respectively ($P = 0.14$).

DISCUSSION

Our study shows that states that require complete insurance coverage for in vitro fertilization services have the highest rates of utilization of such services, states that do not require any coverage have the lowest rates, and states that require partial coverage have intermediate rates. States that do not require insurance coverage have the highest number of embryos transferred per cycle, the highest rates of pregnancy and live births from in vitro fertilization, and the highest rates of live births of multiple infants (especially three or more).

It is logical to assume that if an expensive, elective medical procedure that is effective, such as in vitro fertilization, were covered by all health insurance companies, the demand for it and the rate of utilization would increase.⁵ With an increased demand for in vitro fertilization services, more clinics would open and existing clinics would increase their capacity, ultimately leading to improved access to care. Our analysis showed that complete insurance coverage for in vitro fertilization in the United States was associated with a rate of utilization that was 277 percent of the rate in the absence of coverage (3.35 vs. 1.21 fresh-embryo cycles per 1000 women of reproductive age). Consistent with this observation, in 1993, the numbers of in vitro fertilization cycles attempted per capita in Ontario, Canada, and in France, both of which provide coverage for in vitro fertilization as part of national health insurance programs, were 279 percent and 494

TABLE 4. MEAN (±SE) NUMBER OF FRESH OR FROZEN EMBRYOS TRANSFERRED, ACCORDING TO THE CATEGORY OF REQUIRED INSURANCE COVERAGE.*

REQUIRED COVERAGE	FRESH EMBRYOS		FROZEN EMBRYOS	
	TOTAL NO. OF TRANSFERS	NO. OF EMBRYOS/TRANSFER (95% CI)	TOTAL NO. OF TRANSFERS	NO. OF EMBRYOS/TRANSFER (95% CI)
Complete	8,593	3.25±0.051 (3.15–3.35)†	1394	3.11±0.124 (2.87–3.35)
Partial	4,075	3.54±0.075 (3.39–3.69)	1031	3.15±0.145 (2.87–3.43)
None	37,004	3.59±0.025 (3.54–3.64)	7633	3.27±0.054 (3.16–3.38)

*CI denotes confidence interval.

† $P = 0.001$ for the comparison with partial coverage, and $P < 0.001$ for the comparison with no coverage.

percent, respectively, of the number in the United States.⁴ These findings suggest that in states that do not require insurance coverage, a substantial number of women who might benefit from in vitro fertilization do not undergo it, probably because of financial constraints, in most cases, and possibly because of limited access to care, in some cases.

Although the rates of pregnancy and live births from in vitro fertilization are higher in states that do not require insurance coverage, so are the rates of pregnancies with three or more fetuses, probably because more embryos are transferred per cycle in these states than in states that require complete insurance coverage. It is also possible that because patients must pay out of pocket in states without mandated coverage, physicians are under pressure to obtain a "successful" outcome the first time and therefore transfer more embryos per cycle.^{12,13}

A possible alternative explanation for the lower pregnancy rate in states that require insurance coverage is that a larger proportion of older women (who are less likely than younger women to become pregnant) undergo in vitro fertilization in these states, simply because it is covered by insurance. If they had to pay out of pocket, these older women might instead choose in vitro fertilization with eggs from a donor (an approach that has a higher success rate) or adoption. However, the increase in the rate of utilization in states that require coverage as compared with those that do not is only slightly higher for women who are 38 to 45 years old than for those who are 25 to 37 (fresh-embryo cycles, a 293 percent increase vs. a 269 percent increase; transfers of frozen embryos, a 211 percent increase vs. a 201 percent increase). This small difference is not likely to account for the large difference in pregnancy rates between states requiring insurance coverage and those not requiring coverage.

We cannot rule out the possibility that the pregnancy rate is higher in states that do not require insurance coverage because a greater number of women who are likely to become pregnant (for reasons other than age) undergo in vitro fertilization in those states. Insurance companies and HMOs in states with mandated coverage require that women undergo a certain number of cycles of controlled ovarian hyperstimulation and intrauterine insemination before in vitro fertilization. Since this is not a requirement in states that do not require coverage, perhaps women in these states proceed to in vitro fertilization (a procedure with a higher success rate) more quickly to conserve financial resources. Such women may tend to have a higher rate of pregnancy with in vitro fertilization.

One of the limitations of our study is that our data reflect populations of women rather than individual women. In addition, we did not have information available to control for some potentially confounding

factors (e.g., differences between states in the cause of infertility, the quality of care, the quality of embryos, the number of oocytes retrieved per cycle, the results of ovarian-reserve testing, or the number of prior in vitro fertilization cycles attempted). However, there are no data suggesting that such factors differ among states or between states that require insurance coverage for in vitro fertilization and those that do not.

Another limitation is that the three states classified as having complete insurance coverage (Illinois, Massachusetts, and Rhode Island) may in fact limit coverage for some women. In Illinois, businesses with fewer than 25 employees are exempt from the requirement to provide insurance coverage for in vitro fertilization. Furthermore, our classification of insurance coverage does not account for instances in which a woman residing in one state obtains services in another state. For example, residents of states that do not have fertility clinics (Alaska, Idaho, Maine, Montana, and Wyoming) may pay out of pocket for in vitro fertilization services in states that require complete or partial insurance coverage. Similarly, residents of states that do not require coverage may pay for in vitro fertilization services in states that require complete or partial coverage. Conversely, some women in states that do not require insurance coverage may actually have insurance plans that cover in vitro fertilization, even though the coverage is not required. Any misclassification of insurance status would probably be random with respect to outcomes and would probably attenuate the observed associations between insurance status and outcomes.

This study has potential implications for public health. In states that do not require insurance coverage for in vitro fertilization, more embryos were transferred per cycle and there were higher rates of multiple births (especially of three or more infants). The transfer of more embryos has been associated with an increased risk of multiple births.¹⁴⁻²⁰ In addition, multiple births have been associated with increased short-term and long-term risks for the woman and her children. The maternal risks include premature labor, premature delivery, pregnancy-induced hypertension, gestational diabetes, and uterine hemorrhage.^{13,21-24} Multiple births also entail personal as well as financial costs for the parents. The risks to the children include prematurity (associated with the respiratory distress syndrome, intracranial hemorrhage, cerebral palsy, and blindness), death, and physical, mental, and developmental disabilities.^{13,22-25}

Furthermore, the economic impact of multiple births on society is tremendous. In 1991, hospital charges for the delivery of twins were 4 times as high and charges for triplets were 11 times as high as charges for a singleton delivery.²⁶ However, although multiple births as a percentage of total births might be

expected to decrease with mandated insurance coverage for in vitro fertilization services, the expected increase in the utilization of such services would probably result in a higher absolute number of multiple births.

According to a 1995 analysis, a typical health insurance plan for a family in the United States cost \$3,393 per year, and the estimated cost of adding coverage for in vitro fertilization services was \$3.14 per year.⁴ In our study, insurance coverage for in vitro fertilization was associated with a 277 percent increase in utilization (for fresh-embryo cycles). Even with this increase and even though the costs are higher today than they were in 1995, the additional cost of covering in vitro fertilization is still likely to be a small fraction of the total cost of a family plan.⁴ Of course, this does not include additional costs generated by these procedures.

In conclusion, state-mandated health insurance coverage of in vitro fertilization services is associated with greater utilization of such services but with reductions in the number of embryos transferred per cycle, the proportion of cycles resulting in pregnancy, and the proportion of pregnancies with three or more fetuses.

Dr. Hornstein is a member of the Medical Advisory Board of the Women's Integrated Network, which provides medical management and oversight of specialized insurance protocols.

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Cost savings from the reduction in ART multiple births: An analysis of ANZARD data from 2003 to 2006

The multiple birth rates for ART cycles undertaken in Australia and New Zealand were 18.8% in 2003 and 12% in 2006. New Zealand accounts for approximately 8% of cycles.

If the multiple birth rate had remained at 18.8% for ART cycles initiated in 2006, the Australian Government costs of caring for the additional multiple birth infants until 12 months of age would have been AUD 2008 \$14,078,646 (using data from the UK NHS (1)). That is, savings through the voluntary reduction in the number of embryos transferred since the introduction of the EMSN has resulted in savings to the Government of over \$14M in 2008. This is equivalent to an additional 2571 ART treatment programs¹ being funded by the Government in 2008 through the public healthcare savings achieved from caring for less ART multiple births. This equates to the birth of an additional 569 children, assuming a 20% per cycle success rate and a multiple birth rate of 10%.

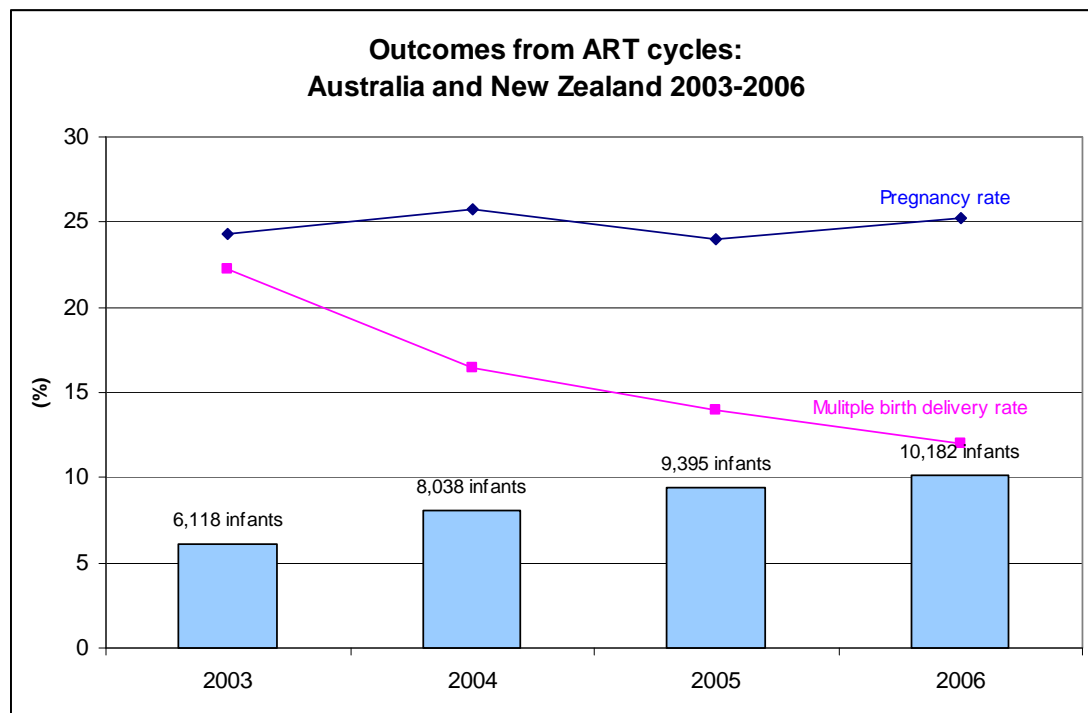
Using alternate cost estimates derived from Department of Health and Aging data (2), the savings in the cost of birth-admissions alone (maternal and infant) due to the reduction in births between 2003 and 2006 would have been AUD 2008 \$12,778,622. This is equivalent to 2334 ART treatments being funded by the Government from these savings, resulting in the birth of an additional 516 ART children.

Furthermore, the cost of ART treatment is insignificant compared to the lifetime tax contribution of ART children. A recent study calculated the lifetime net taxes paid from a child relative to the child's initial ART investment represented a 700% net return to the government in discounted US dollars from fully employed individuals. This suggests that removing barriers to IVF would have positive tax benefits for the government, notwithstanding its beneficial effect on overall economic growth (3).

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¹ An ART treatment program consists of one fresh cycle and one FET cycle – MBS items 13200, 13209, 13212, 13215, 13218, 13221.

The following figure demonstrates that the pregnancy rates have remained stable while multiple birth rates have decreased (4, 5).



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