

AUSTRALIAN INSTITUTE OF HEALTH AND WELFARE
NATIONAL PERINATAL STATISTICS UNIT
AND
THE FERTILITY SOCIETY OF AUSTRALIA
ASSISTED CONCEPTION SERIES
Number 4

Assisted conception Australia and New Zealand 1997

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and
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AIHW National Perinatal Statistics Unit
Sydney, 1999

AIHW cat. no. PER 10

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This is the fourth publication of the Australian Institute of Health and Welfare National Perinatal Statistics Unit's Assisted Conception Series. A complete list of the AIHW National Perinatal Statistics Unit's publications is available from the Publications Unit, Australian Institute of Health and Welfare, GPO Box 570, Canberra ACT 2601, or via the NPSU web site (<http://www.aihw.gov.au/npsu/>)

ISSN 1038 7234
ISBN 1 74024 009 X

Suggested citation

Hurst T, Shafir E & Lancaster P 1999. Assisted conception Australia and New Zealand 1997. AIHW cat. no. PER 10. Sydney: Australian Institute of Health and Welfare National Perinatal Statistics Unit (Assisted Conception Series no. 4).

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Published by Australian Institute of Health and Welfare National Perinatal Statistics Unit
Printed by Ausdoc on Demand

Contents

List of figures.....	v
List of tables.....	vi
Acknowledgments.....	x
Collaborating IVF and GIFT units.....	xi
Abbreviations.....	xiii
Highlights	1
1 Introduction	3
1.1 Variations in use of assisted conception.....	3
2 Treatment cycles and pregnancy rates	5
2.1 IVF and GIFT treatment cycles and pregnancy rates in 1997.....	6
3 IVF pregnancies.....	8
3.1 Maternal and paternal characteristics.....	8
3.1.1 Place of residence	8
3.1.2 Parental age.....	8
3.1.3 Previous pregnancies.....	9
3.1.4 Duration of infertility	9
3.1.5 Causes of infertility.....	9
3.2 Management of IVF pregnancies	10
3.2.1 Ovarian stimulation.....	10
3.2.2 Treatment cycle in which pregnancy occurred.....	11
3.2.3 Number of oocytes collected	11
3.2.4 Number of embryos transferred	11
3.2.5 Donor or frozen gametes and embryos.....	12
3.2.6 Microinsemination.....	13
3.2.7 Drugs used in luteal phase of pregnancy	13
3.3 Outcome of pregnancy	13
3.3.1 Maternal deaths.....	13
3.3.2 Maternal age and outcome of pregnancy	13
3.3.3 Spontaneous abortion.....	14
3.3.4 Ectopic pregnancy.....	14
3.3.5 Heterotopic pregnancies	15
3.3.6 Selective reduction of fetuses	15
3.3.7 Complications of pregnancy.....	15

3.3.8 Viable pregnancies of at least 20 weeks' gestation.....	16
3.3.9 Multiple pregnancies.....	17
3.3.10 Method of delivery	19
3.3.11 Sex of infants.....	19
3.3.12 Birthweight	20
3.3.13 Perinatal mortality	20
3.3.14 Congenital malformations	22
4 GIFT pregnancies.....	23
4.1 Maternal and paternal characteristics.....	23
4.1.1 Place of residence	23
4.1.2 Parental age.....	23
4.1.3 Previous pregnancies.....	24
4.1.4 Duration and causes of infertility	24
4.2 Management of GIFT pregnancies	24
4.2.1 Ovarian stimulation.....	24
4.2.2 Number of oocytes collected and transferred.....	25
4.2.3 Drugs used in luteal phase of pregnancy	25
4.3 Outcome of pregnancy	26
4.3.1 Maternal deaths.....	26
4.3.2 Spontaneous abortion and ectopic pregnancy.....	26
4.3.3 Heterotopic pregnancies	26
4.3.4 Complications of pregnancy.....	26
4.3.5 Viable pregnancies of at least 20 weeks' gestation.....	26
4.3.6 Multiple pregnancies.....	27
4.3.7 Method of delivery	27
4.3.8 Sex of infants.....	27
4.3.9 Infant's birthweight	27
4.3.10 Perinatal mortality	27
4.3.11 Congenital malformations	28
5 Tables.....	29
6 Bibliography	68
Appendix 1: Definitions	74
Appendix 2: Notification form	75

List of figures

Figure 1:	Ratio of treatment cycles to number of women in reproductive age group, 1997	4
Figure 2:	Assisted conception pregnancies by method of conception, 1990–1997	5
Figure 3:	Outcome of IVF pregnancies by year of conception, 1979–1997	8
Figure 4:	Place of parental residence, IVF pregnancies, 1979–1997	9
Figure 5:	Duration of infertility, IVF pregnancies, 1979–1997	10
Figure 6:	Causes of infertility, IVF pregnancies, 1979–1997	10
Figure 7:	Drugs used to stimulate ovulation, IVF pregnancies, 1979–1997	11
Figure 8:	Mean number of oocytes collected by laparoscopy or ultrasound guidance, IVF and GIFT pregnancies, 1987–1997	12
Figure 9:	Percentage distribution of number of embryos transferred, IVF pregnancies, 1979–1997	12
Figure 10:	Mean number of embryos/oocytes transferred, IVF and GIFT pregnancies, 1979–1997	13
Figure 11:	Incidence of ectopic pregnancy and spontaneous abortion, IVF pregnancies, 1979–1997	14
Figure 12:	Spontaneous abortions by maternal age groups, IVF and GIFT pregnancies, 1979–1997	15
Figure 13:	Incidence of preterm birth in singleton IVF pregnancies, 1979–1997	17
Figure 14:	Incidence of twin pregnancy, IVF and GIFT, 1979–1997	18
Figure 15:	Incidence of triplet pregnancy, IVF and GIFT, 1979–1997	18
Figure 16:	Multiple pregnancies after assisted conception, Australia and New Zealand, 1996–1997	19
Figure 17:	Caesarean birth rates, singleton and multiple IVF pregnancies, 1979–1997	20
Figure 18:	Birthweight of IVF and GIFT births, 1979–1997	21
Figure 19:	Incidence of low birthweight in singleton IVF births, 1979–1997	21
Figure 20:	Perinatal mortality in singleton and multiple IVF births, 1979–1997	22
Figure 21:	Outcome of GIFT pregnancies by year of conception, 1985–1997	23
Figure 22:	Causes of infertility, GIFT pregnancies, 1985–1997	24
Figure 23:	Percentage distribution of number of oocytes transferred, GIFT pregnancies, 1985–1997	25
Figure 24:	Perinatal mortality in singleton and multiple GIFT births, 1985–1997	28

List of tables

Table 1:	Use of assisted conception to treat infertility, selected States, Australia and New Zealand, 1997	29
Table 2:	Viable pregnancy rates for all techniques of assisted conception, 1997	29
Table 3:	Oocyte retrieval cycles for IVF, ICSI and GIFT, by maternal age, cause of infertility, and drugs used to stimulate ovulation, 1997	30
Table 4:	Embryo transfer cycles for IVF, ICSI and GIFT, by number of embryos or oocytes transferred, 1997.....	30
Table 5:	Number of transfer cycles after cryopreservation, by maternal age, cause of infertility, and number of embryos transferred, 1997.....	31
Table 6:	IVF pregnancies after transfer of fresh embryos to uterus, numbers and pregnancy rates in each IVF unit, 1997	32
Table 7:	IVF pregnancies after ICSI, numbers and pregnancy rates in each IVF unit, 1997	33
Table 8:	Pregnancy rates by type of transfer and technique of sperm collection, ICSI pregnancies, 1997	34
Table 9:	IVF pregnancies after use of donor oocytes, numbers and pregnancy rates in each IVF unit, 1997	34
Table 10:	GIFT pregnancies, numbers and pregnancy rates in each IVF unit, 1997	35
Table 11:	IVF pregnancies after embryo freezing but without ICSI, numbers and pregnancy rates in each IVF unit, 1997	36
Table 12:	IVF pregnancies after ICSI and embryo freezing, numbers and pregnancy rates in each IVF unit, 1997.....	37
Table 13:	Treatment related to embryo freezing in each IVF unit, 1997	38
Table 14:	Numbers and outcomes of IVF pregnancies by year of conception, 1979–1997.....	38
Table 15:	Place of parental residence, IVF pregnancies, 1979–1997	39
Table 16:	Maternal ages, IVF pregnancies, 1979–1997.....	39
Table 17:	Paternal ages, IVF pregnancies, 1979–1997	39
Table 18:	Previous pregnancies for pregnant women, IVF pregnancies, 1979–1997	40
Table 19:	Duration of infertility, IVF pregnancies, 1979–1997	40
Table 20:	Outcome of pregnancy by duration of infertility, IVF pregnancies, 1996–1997.....	40
Table 21:	Causes of infertility, IVF pregnancies, 1979–1997	41
Table 22:	Outcome of pregnancy by causes of infertility, IVF pregnancies, 1996–1997	41
Table 23:	Drugs used to stimulate ovulation, IVF pregnancies, 1979–1997	41
Table 24:	IVF treatment cycle in which conception occurred, 1979–1997.....	42

Table 25:	Number of oocytes collected by laparoscopy or ultrasound guidance, IVF pregnancies, 1979–1997	42
Table 26:	Number of embryos transferred, IVF pregnancies, 1979–1997	42
Table 27:	Outcome of pregnancy by number of embryos transferred, IVF pregnancies, 1996–1997.....	43
Table 28:	Number of IVF pregnancies following donor oocytes, sperm or embryos, and frozen embryos or oocytes, 1979–1997	43
Table 29:	Outcome of pregnancy after use of donor gametes, donor or frozen embryos, IVF pregnancies, 1979–1997.....	43
Table 30:	Number and outcome of pregnancies after microinsemination, 1990–1997	44
Table 31:	Drugs used in the luteal phase after embryo transfer, IVF pregnancies, 1979–1997.....	44
Table 32:	Outcome of pregnancy by maternal age groups, IVF pregnancies, 1979–1997	45
Table 33:	Spontaneous abortions, IVF pregnancies, 1979–1997	45
Table 34:	Incidence of spontaneous abortions in maternal age groups, IVF pregnancies, 1979–1997	45
Table 35:	Ectopic pregnancies after IVF, 1979–1997.....	46
Table 36:	Heterotopic pregnancies after IVF, 1979–1997.....	46
Table 37:	Reported complications of pregnancy, IVF pregnancies, 1990–1997	46
Table 38:	Duration of singleton and multiple IVF pregnancies of at least 20 weeks' gestation, 1996–1997	47
Table 39:	Duration of singleton and multiple IVF pregnancies of at least 20 weeks' gestation after microinsemination, 1990–1997.....	47
Table 40:	Duration of pregnancy of singleton IVF births after use of donor sperm, donor oocytes or frozen embryos, 1996–1997	48
Table 41:	Maternal age and duration of singleton IVF pregnancies of at least 20 weeks' gestation, 1996–1997	48
Table 42:	Causes of infertility and duration of singleton IVF pregnancies of at least 20 weeks' gestation, 1996–1997	49
Table 43:	Plurality of IVF pregnancies of at least 20 weeks' gestation, 1979–1997.....	49
Table 44:	Plurality of IVF pregnancies of at least 20 weeks' gestation and number of embryos transferred, 1996–1997.....	50
Table 45:	Multiple pregnancies, IVF and GIFT pregnancies, State and Territory, 1996–1997.....	50
Table 46:	Multiple pregnancies in each IVF unit, IVF and GIFT pregnancies, 1996–1997.....	51
Table 47:	Method of delivery for singleton and multiple IVF pregnancies of at least 20 weeks' gestation, 1996–1997	52
Table 48:	Sex of infants in singleton and multiple IVF births of at least 20 weeks' gestation, 1979–1997	52

Table 49:	Birthweight of IVF live births and stillbirths, 1996–1997	52
Table 50:	Birthweight of infants in singleton and multiple IVF births of at least 20 weeks' gestation, 1996–1997	53
Table 51:	Birthweight of infants in singleton and multiple births of at least 20 weeks' gestation after microinsemination, 1990–1997	53
Table 52:	Birthweight of infants in singleton IVF births after use of donor sperm, donor oocytes or frozen embryos, 1979–1997	54
Table 53:	Outcome of infants in singleton and multiple IVF births of at least 20 weeks' gestation, 1996–1997	54
Table 54:	Major congenital malformations in singleton and multiple IVF births of at least 20 weeks' gestation, 1979–1997	54
Table 55:	Numbers and outcomes of GIFT pregnancies by year of conception, 1985–1997.....	55
Table 56:	Place of parental residence, GIFT pregnancies, 1985–1997	55
Table 57:	Maternal ages, GIFT pregnancies, 1985–1997	55
Table 58:	Paternal ages, GIFT pregnancies, 1985–1997.....	56
Table 59:	Previous pregnancies for pregnant women, GIFT pregnancies, 1985–1997.....	56
Table 60:	Duration of infertility, GIFT pregnancies, 1985–1997	56
Table 61:	Outcome of pregnancy by duration of infertility, GIFT pregnancies, 1996–1997.....	57
Table 62:	Causes of infertility, GIFT pregnancies, 1985–1997	57
Table 63:	Outcome of pregnancy by causes of infertility, GIFT pregnancies, 1996–1997.....	58
Table 64:	Drugs used to stimulate ovulation, GIFT pregnancies, 1985–1997.....	58
Table 65:	GIFT treatment cycle in which conception occurred, 1985–1997.....	58
Table 66:	Number of oocytes collected by laparoscopy or ultrasound guidance, GIFT pregnancies, 1985–1997	59
Table 67:	Number of oocytes transferred, GIFT pregnancies, 1985–1997.....	59
Table 68:	Outcome of pregnancy by number of oocytes transferred, GIFT pregnancies, 1996–1997.....	60
Table 69:	Drugs used in the luteal phase after embryo transfer, GIFT pregnancies, 1985–1997.....	60
Table 70:	Outcome of pregnancy by maternal age groups, GIFT pregnancies, 1985–1997.....	61
Table 71:	Spontaneous abortions, GIFT pregnancies, 1985–1997.....	61
Table 72:	Incidence of spontaneous abortions in maternal age groups, GIFT pregnancies, 1985–1997	61
Table 73:	Ectopic pregnancies after GIFT, 1985–1997	62
Table 74:	Heterotopic pregnancies after GIFT, 1985–1997	62

Table 75:	Reported complications of pregnancy, GIFT pregnancies, 1990–1997	62
Table 76:	Duration of singleton and multiple GIFT pregnancies of at least 20 weeks' gestation, 1996–1997	63
Table 77:	Maternal age and duration of singleton GIFT pregnancies of at least 20 weeks' gestation, 1996–1997	63
Table 78:	Causes of infertility and duration of singleton GIFT pregnancies of at least 20 weeks' gestation, 1996–1997	64
Table 79:	Plurality of GIFT pregnancies of at least 20 weeks' gestation, 1985–1997	64
Table 80:	Plurality of GIFT pregnancies of at least 20 weeks' gestation and number of oocytes transferred, 1996–1997	65
Table 81:	Method of delivery for singleton and multiple GIFT pregnancies of at least 20 weeks' gestation, 1996–1997	65
Table 82:	Sex of infants in singleton and multiple GIFT births of at least 20 weeks' gestation, 1985–1997	65
Table 83:	Birthweight of GIFT live births and stillbirths, 1996–1997	66
Table 84:	Birthweight of infants in singleton and multiple GIFT births of at least 20 weeks' gestation, 1996–1997	66
Table 85:	Outcome of infants in singleton and multiple GIFT births of at least 20 weeks' gestation, 1996–1997	67
Table 86:	Major congenital malformations in singleton and multiple GIFT births of at least 20 weeks' gestation, 1985–1997	67

Acknowledgments

We thank staff of the IVF units in Australia and New Zealand for completing the data forms and providing additional information. We appreciate the efforts of those individuals, especially clinic co-ordinators and scientists, who have carefully checked records to obtain further details of clinical outcomes, or have provided data on the numbers of women treated, cycles of treatment and laboratory procedures.

We gratefully acknowledge financial support from the Fertility Society of Australia and Serono Australia Pty Ltd. The AIHW National Perinatal Statistics Unit is funded by a grant from the Australian Institute of Health and Welfare to the University of New South Wales.

We thank Professor Michael Chapman, Professor Douglas Saunders, Dr Richard Madden and Dr David Molloy for reviewing the report.

Requests for data

Any enquiries about data for individual IVF units should be directed to the unit concerned. Other enquiries should be made to the AIHW National Perinatal Statistics Unit.

The report may be obtained from:

- Government Info Shops, or AusInfo Mail Order Sales
- Call toll-free on 132 447 or visit <http://www.ausinfo.gov.au/>

Collaborating IVF and GIFT units

New South Wales

North Shore Assisted Reproductive Technology, Sydney (Professor Douglas M. Saunders)
St George Fertility Centre, Sydney (Dr David C. Macourt)
Lingard Fertility Centre, Newcastle (Dr Robert Woolcott)
Westmead Fertility Centre, Sydney (Associate Professor Peter Illingworth)
City West IVF, Sydney (Dr Geoffrey L. Driscoll)
Royal Prince Alfred Hospital, Sydney (Professor Robert P.S. Jansen)
Sydney IVF, Sydney (Professor Robert P.S. Jansen)
Royal Hospital for Women Fertility Group, Sydney (Dr Trevor Johnson)
Albury Reproductive Medicine Centre, Albury (Dr Scott Giltrap)
IVF South, Sydney (Professor Michael Chapman)
Fertility First, Sydney (Dr Anne Clark)

Victoria

Royal Women's Hospital and Melbourne IVF, Melbourne (Dr Andrew Speirs, Dr Ian Johnston)
Monash IVF, Melbourne (Professor Gab Kovacs)
Melbourne Assisted Conception Centre, Mercy Hospital for Women, Melbourne (Dr Mac Talbot)
Mildura Reproductive Medicine Centre, Mildura (Dr John McBain)

Queensland

Queensland Fertility Group, Brisbane (Dr David Molloy)
Monash IVF Gold Coast Fertility Centre, Southport (Dr Irving T. Korman)
Queensland In-Vitro Fertilization Services, Brisbane (Dr John Allan)
North Queensland IVF Services, Townsville (Dr Glenn Schaefer)
Toowoomba IVF, Toowoomba (Dr John Esler)
IVF Queensland Medical Centre, Buderim (Dr James Dick)

South Australia

The Queen Elizabeth Hospital, Adelaide (Professor Rob Norman)
Flinders Reproductive Medicine, Adelaide (Associate Professor Stephen J. Judd)

Western Australia

PIVET Medical Centre, Perth (Dr John L. Yovich)
Concept Fertility Centre, Perth (Dr Rob Mazzucchelli)
Fertility West, Perth (Dr Anne Jequier)

Tasmania

TASIVF, Hobart (Dr Steve Sonneveld)

Launceston SIVF, Launceston (Dr Timothy Sutton)

Australian Capital Territory

Canberra Fertility Centre, Canberra (Dr Martyn A. Stafford-Bell)

New Zealand

Fertility Plus, Auckland (Dr Guy Gudex)

Fertility Associates, Auckland (Dr Richard Fisher, Dr Freddie Graham)

Otago Fertility Services, Dunedin (Associate Professor Wayne Gillett)

ARTEMIS North Shore Fertility, Auckland (Dr Barry Lowe)

The Fertility Centre, Christchurch (Dr Peter Benny)

Fertility Associates, Wellington (Professor John Hutton)

Abbreviations

NSW	New South Wales
Vic	Victoria
Qld	Queensland
WA	Western Australia
SA	South Australia
Tas	Tasmania
ACT	Australian Capital Territory
NT	Northern Territory
AIHW	Australian Institute of Health and Welfare
NPSU	National Perinatal Statistics Unit
GIFT	gamete intrafallopian transfer
GnRHa	gonadotrophin-releasing hormone analogues
hCG	human chorionic gonadotrophin
ICSI	intracytoplasmic sperm injection
IVF	in-vitro fertilisation
MESA	microepididymal sperm aspiration
na	not available
PESA	percutaneous epididymal sperm aspiration
PROST	pronuclear stage transfer
PZD	partial zona dissection
SUZI	subzonal insemination
TESE	testicular sperm extraction
TEST	tubal embryo stage transfer
ZIFT	zygote intrafallopian transfer

Highlights

- In Australia, infertile couples were treated by in-vitro fertilisation (IVF) and gamete intrafallopian transfer (GIFT) in 29 units in 1997. New Zealand had 6 IVF units in this period. There were 3,164 births after assisted conception in Australia in 1996, accounting for 1.2% of all births. In New Zealand, there were 254 births after assisted conception in 1996. The number of births continued to increase in 1997, by 9.3% to 3,458 in Australia and by 7.9% to 274 in New Zealand.
- There has been a marked increase in treatment cycles in which intracytoplasmic sperm injection (ICSI) was attempted. Oocyte retrieval cycles for microinsemination increased from 1,243 in 1993 to 2,786 in 1994, 4,261 in 1995, 5,271 in 1996 and 6,308 in 1997. With an additional 3,203 embryo transfer cycles in 1997 after microinsemination and embryo freezing, microinsemination accounted for 40.7% of all transfer cycles in that year. The overall proportion of assisted conception pregnancies resulting from ICSI and other types of microinsemination increased rapidly from less than 1 in 200 (0.4%) in 1990 to 1 in 3 (33.2%) in 1996 and more than 1 in 3 (37.9%) in 1997.
- When all techniques of assisted conception are included together, the viable pregnancy rate in 1997 was 15.2 per 100 embryo transfer cycles, indicating that more than 1 in 7 treatment cycles reaching the stage of embryo transfer resulted in a viable pregnancy of 20 weeks or more.
- In 1997, after transfer of fresh embryos to the uterus, the viable pregnancy rate was 13.3 per 100 oocyte retrieval cycles for IVF without ICSI and 14.7 per 100 oocyte retrieval cycles for ICSI. After GIFT, the viable pregnancy rate was 20.0 per 100 oocyte retrieval cycles.
- After embryo freezing in 1997, the viable pregnancy rate was 12.2 per 100 embryo transfer cycles for IVF without ICSI and 11.4 per 100 embryo transfer cycles for ICSI. After oocyte donation and IVF, the viable pregnancy rate was 15.3 per 100 embryo transfer cycles.
- Between 1996 and 1997, there were slight decreases in the proportion of cycles with more than 3 embryos or oocytes transferred. For all IVF, more than 3 embryos were transferred to the uterus in 2.8% of cycles in 1996 and 2.7% of cycles in 1997; for GIFT, more than 3 oocytes were transferred in 7.2% of cycles in 1996 and 6.9% of cycles in 1997. Women aged 40 years and over accounted for 17.1% of IVF oocyte retrieval cycles, 12.0% of ICSI retrieval cycles, 17.4% of GIFT retrieval cycles, 12.1% of IVF transfer cycles after embryo freezing, 9.1% of ICSI transfer cycles after embryo freezing, and 48.4% of transfer cycles after use of donor oocytes and embryo freezing.
- The multiple pregnancy rate varied markedly between IVF units. In 1996 and 1997, the multiple pregnancy rate for all types of assisted conception ranged from 6.8% to 29.6%. During this same period, multiple pregnancy occurred in 1 in 5 (20.2%) of all IVF and GIFT pregnancies. In IVF pregnancies, twins increased from 17.4% in 1996 to 18.8% in 1997, triplets occurred in 1.4% in both 1996 and 1997, and there were 4 quadruplet pregnancies in 1996. In GIFT pregnancies, twins decreased from 21.0% in 1996 to 18.8% in 1997, triplets decreased from 2.9% in 1996 to 2.5% in 1997, and there was 1 quadruplet pregnancy in 1996.

- In 1996 and 1997, 75 (51.4%) of 146 perinatal deaths after IVF, and 19 (70.4%) of 27 perinatal deaths after GIFT, occurred in multiple births.
- Among 4,476 IVF pregnancies after intracytoplasmic sperm injection and other methods of microinsemination between 1990 and 1997, live births occurred in 77.5%, spontaneous abortion in 19.1%, and ectopic pregnancy in 1.9%. Twins occurred in 17.6% of viable pregnancies, triplets in 1.3%, and there were five quadruplet pregnancies. Among 4,237 ICSI births, the perinatal death rate was 26.2 per 1,000 births; for singleton births, it was 15.8 per 1,000 births; for twins, 42.1 per 1,000 births; and for triplets, 85.1 per 1,000 births. Congenital malformations were reported in 118 (2.8%) fetuses and infants after ICSI, similar to the overall rate among IVF births (2.6%) and GIFT births (2.4%).

1 Introduction

This report contains a summary of the results of treatment of infertility by assisted conception in all units in Australia and New Zealand in 1997 and outcomes of pregnancies conceived in 1996 and 1997. The report includes data on in-vitro fertilisation (IVF), gamete intrafallopian transfer (GIFT), and the technique of intracytoplasmic sperm injection (ICSI) used mainly to treat male infertility, but excludes other treatment of infertility by artificial insemination or by ovulation induction without IVF or GIFT. In Australia, there were 29 IVF or GIFT units in 1997. In New Zealand, there were 6 units in 1997. Some IVF units have set up satellite clinics that are linked to major IVF centres in capital cities. Regional centres where satellite clinics have been established include: Albury, Coffs Harbour, Gosford, Lismore, Orange, Wagga Wagga and Wollongong in New South Wales; Ballarat, Bendigo, Broadmeadows, Casterton, Geelong, Maryvale, Morwell, Sale, Shepparton and Wangaratta in Victoria; Cairns, Mackay, Nambour, Rockhampton and Townsville in Queensland; Attadale in Western Australia; and Darwin in the Northern Territory.

The IVF units reported summary data on treatment cycles and also notified each pregnancy on a standard form (Appendix 2). The data included the number of cycles commenced in 1997 and the number progressing to the stages of oocyte retrieval, embryo transfer, clinical pregnancy, and viable pregnancies of at least 20 weeks' gestation. Each IVF unit reported separate results for IVF and uterine transfer of fresh embryos, IVF and tubal transfer of fresh embryos, IVF and transfer of frozen/thawed embryos, donor oocytes, ICSI and GIFT. The tables on treatment cycles are mutually exclusive and so differ slightly from the presentation of IVF results in reports for the years prior to 1991. Each IVF unit was also requested to provide tabulated data on the age distribution, causes of infertility, drugs used to stimulate ovulation, and the number of embryos or oocytes transferred for women treated by IVF, intracytoplasmic sperm injection (ICSI), GIFT and transfer of frozen embryos. Tabulated summaries of results and notified pregnancies were returned to each unit to check their accuracy and completeness.

Each IVF unit is designated by an alphabetical letter which may differ from that given to the unit in previous reports. This code is based on the relative size of the IVF unit (based on the total number of treatment cycles) and therefore may vary from year to year.

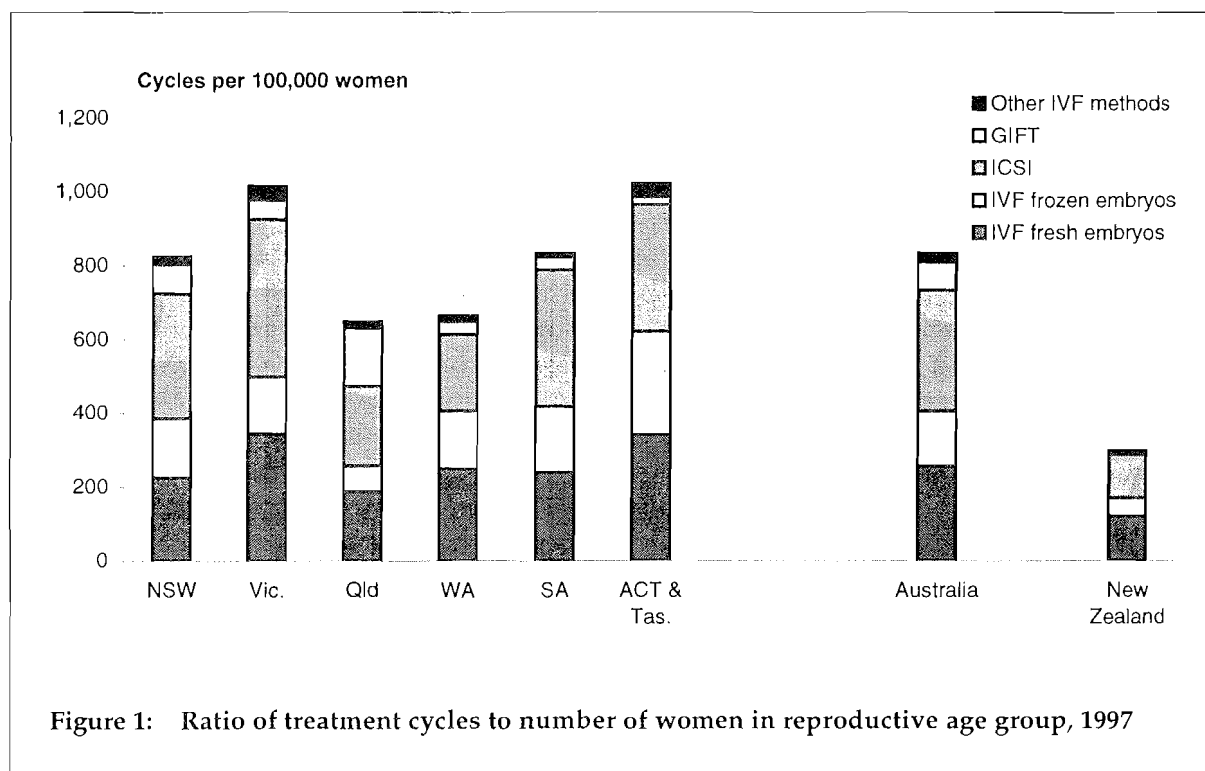
All analyses of treatment cycles and pregnancy outcome in this report are based on the year of treatment and conception. Data on pregnancy outcome are given for 1996 and 1997, and include births up to September 1998.

1.1 Variations in use of assisted conception

The use of assisted conception to treat infertility can be compared in different populations by relating the number of treatment cycles during a year to the number of women in the reproductive age group. The total number of treatment cycles can be estimated by adding those that reach the stage of oocyte retrieval for IVF and GIFT to the number of transfer cycles for frozen/thawed embryos and donor oocytes. As most women treated by assisted conception are aged between 25 and 44 years, the ratio of the number of treatment cycles is expressed per 100,000 women aged 25-44 years. In the figures for 1997, South Australia and the Northern Territory are reported together because the only IVF clinic in Darwin is a satellite clinic of the Queen Elizabeth Hospital in Adelaide. Also, the figures for Tasmania

and the Australian Capital Territory are combined because there are only three IVF units between the two regions.

There were considerable variations in treatment ratios among the Australian States, and marked differences between Australia and New Zealand (Table 1, Figure 1). In 1997, the treatment ratio in Australia was 835 cycles per 100,000 women, which was 5.2% higher than in 1996. This ratio was nearly three times higher than in New Zealand which had a ratio of 300 per 100,000 women, 7.9% higher than in 1996. In Australia, the highest treatment ratios were in the Australian Capital Territory/Tasmania and Victoria and the lowest ratios were in Queensland and Western Australia. As these ratios are based on the States in which the IVF units are located, comparisons between States may be slightly affected by interstate movements of infertile women for treatment. In Victoria, Tasmania and the Australian Capital Territory, there were relatively more treatment cycles for IVF with fresh embryos than in the other States or New Zealand. Tasmania and the Australian Capital Territory had relatively more IVF with frozen embryos, and Victoria had more treatment cycles using ICSI (fresh or frozen) than in the other States or New Zealand. GIFT was more likely to be used in Queensland than elsewhere.

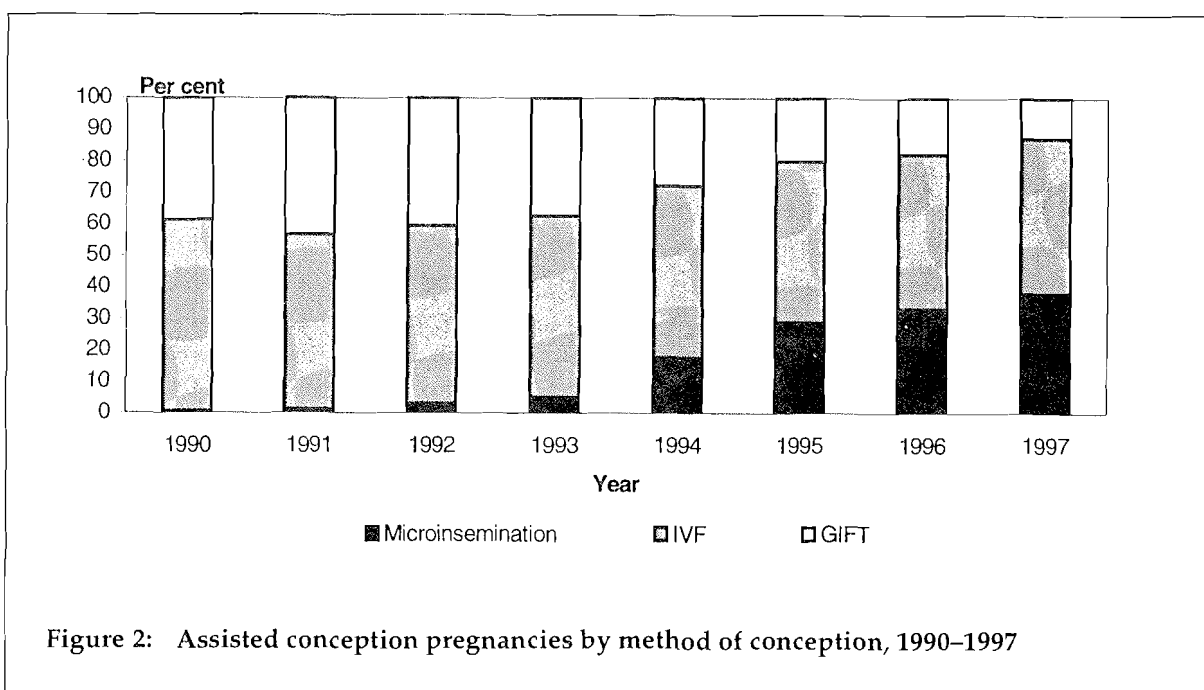


2 Treatment cycles and pregnancy rates

As in previous reports, pregnancy rates are expressed per 100 treatment cycles that reach the stage of oocyte retrieval. In treatment cycles in which embryos were transferred after embryo freezing or oocyte donation, pregnancy rates are expressed per 100 embryo transfer cycles.

Between 1991 and 1996, the total number of treatment cycles for all types of assisted conception increased each year from 16,809 in 1991 to 17,874 in 1992, 18,765 in 1993, 20,706 in 1994, 22,303 in 1995 and 24,121 in 1996. In 1997, there was a further increase of 6.8% to 25,766 cycles.

Following the trend of recent years, the use of microinsemination to treat mainly male infertility continued to increase in 1997. This pattern has been reflected in the resulting viable pregnancies (Figure 2). There were 337 oocyte retrieval cycles for these techniques in 1990, the number then rising each year to 2,786 cycles in 1994, 4,261 cycles in 1995, 5,271 cycles in 1996, and by a further 19.7% to 6,308 cycles in 1997. Microinsemination with transfer of fresh or frozen embryos accounted for 19.7% of all types of assisted conception in 1994, 30.0% in 1995, 35.1% in 1996 and 40.7% in 1997.



The number of transfer cycles after embryo freezing has also continued to increase, from 6,801 cycles in 1996 to 7,723 cycles in 1997, an increase of 13.6%. Transfer cycles after both microinsemination and embryo freezing almost doubled from 929 in 1994 to 1,794 in 1995, increased by a further 26.6% to 2,272 cycles in 1996, and then by another 41.0% to 3,203 cycles in 1997.

2.1 IVF and GIFT treatment cycles and pregnancy rates in 1997

Summary data on treatment cycles and pregnancies in 1997 were reported by all IVF units in Australia and New Zealand, but the notifications of pregnancies from one relatively small IVF unit were received too late to be included in this report. The outcomes of all pregnancies conceived in 1996, which were not included in the previous report on assisted conception, are also given in this report. A copy of the pregnancy notification form used in 1996 and 1997 can be found in Appendix 2.

The interpretation of pregnancy rates for the various techniques of assisted conception, and comparison of results in different IVF units, are influenced not only by factors such as age of treated the women and number of embryos or oocytes transferred but also by the relative use of a constantly changing array of techniques. Combining the results for IVF, ICSI and GIFT (but excluding cycles in which frozen embryos or donor oocytes were transferred), the overall viable pregnancy rate was 14.8 per 100 oocyte retrieval cycles (Table 2), slightly higher than the viable pregnancy rate 14.2 per 100 cycles in 1996. When all techniques of assisted conception are included, the viable pregnancy rate for all cycles in which embryos or oocytes were transferred was 15.2 per 100 transfer cycles, compared with 14.4 per 100 transfer cycles in 1996.

IVF units provided summary data on age of the treated women, causes of infertility, drugs used for ovarian stimulation, and number of embryos or oocytes transferred for treatment cycles which progressed to this stage of treatment. Separate data were given for transfers of fresh embryos for IVF, ICSI, and GIFT (Tables 3 and 4) and for frozen embryo transfers for IVF, ICSI and donor oocytes (Table 5). There were relatively more older women among those treated by assisted conception in 1997, continuing the trend of recent years. The proportion of women aged 35 years and over in 1997 was 50.8% for IVF, 44.4% for ICSI and 46.7% for GIFT (Table 3); for women with frozen embryo transfers, the proportion aged 35 years and over was 45.3% for IVF, 38.7% for ICSI and 69.6% for donor oocytes (Table 5). The causes of infertility and the drugs used to stimulate ovulation generally showed a pattern similar to that in previous years. The main causes of infertility were tubal for women treated by IVF, male factor for those treated by ICSI, unexplained infertility for women treated by GIFT and other female causes for those using donor oocytes. For IVF, ICSI and GIFT, the main ovarian stimulants were GnRH analogues, accounting for 92.6%, 92.6% and 93.6%, respectively. In 1997, more than three embryos were transferred in 2.9% of IVF cycles and in 2.3% of ICSI cycles, and more than 3 oocytes were transferred in 6.9% of GIFT cycles (Table 4). More than three thawed embryos were transferred in 0.9% of IVF cycles, in 0.8% of ICSI cycles and in 2.6% of donor oocyte cycles (Table 5).

In 1997, 8,127 treatment cycles were commenced for IVF with a view to subsequent transfer of fresh embryos to the uterus (Table 6). Oocyte retrieval was attempted in 6,697 cycles and embryos were transferred in 5,471 cycles. There were 1,151 clinical pregnancies (17.2 per 100 oocyte retrieval cycles) and 896 viable pregnancies (13.4 per 100 oocyte retrieval cycles). There were marked variations in pregnancy rates among the individual IVF units. This may be partly attributable to differences in selection criteria, methods of treatment, and the characteristics of infertile couples, or to random fluctuations due to the relatively small number of treatment cycles in some IVF units.

An additional 148 treatment cycles were commenced for tubal transfer of embryos after IVF, 12.9% less than the number of cycles commenced in 1996 and less than half the number of cycles commenced in 1995. These resulted in 20 clinical pregnancies (14.1 per 100 oocyte retrieval cycles) and 15 viable pregnancies (10.6 per 100 oocyte retrieval cycles).

In 1997, 33 of the 35 IVF units in Australia and New Zealand used microinsemination techniques to treat infertility. Intracytoplasmic sperm injection (ICSI) was the only type of microinsemination used; no units were using subzonal insemination in 1997. Oocyte retrieval was attempted in 6,234 cycles and embryos were transferred in 5,364 cycles (Table 7), resulting in 1,123 clinical pregnancies (18.0 per 100 oocyte retrieval cycles) and 920 viable pregnancies (14.8 per 100 oocyte retrieval cycles). Pregnancy rates were lower after tubal transfer of ICSI embryos, but there were few treatment cycles in this group (Table 8). Special techniques of sperm collection, such as testicular sperm extraction (TESE), microepididymal sperm aspiration (MESA) and percutaneous epididymal sperm aspiration (PESA), were used in 13.2% of all ICSI treatment cycles (Table 8). Pregnancy rates were generally higher after use of these techniques than for all ICSI cycles.

The 621 embryo transfer cycles after use of donor oocytes (Table 9) resulted in 124 clinical pregnancies (20.0 per 100 embryo transfer cycles) and 95 viable pregnancies (15.3 per 100 embryo transfer cycles).

There were 2,195 treatment cycles commenced for GIFT in 1997 (Table 10), fewer than in previous years, resulting in 506 clinical pregnancies (26.3 per 100 oocyte retrieval cycles) and 384 viable pregnancies (20.0 per 100 oocyte retrieval cycles). There has been relatively little change in GIFT pregnancy rates during the period since the early 1990s in which the use of GIFT has declined.

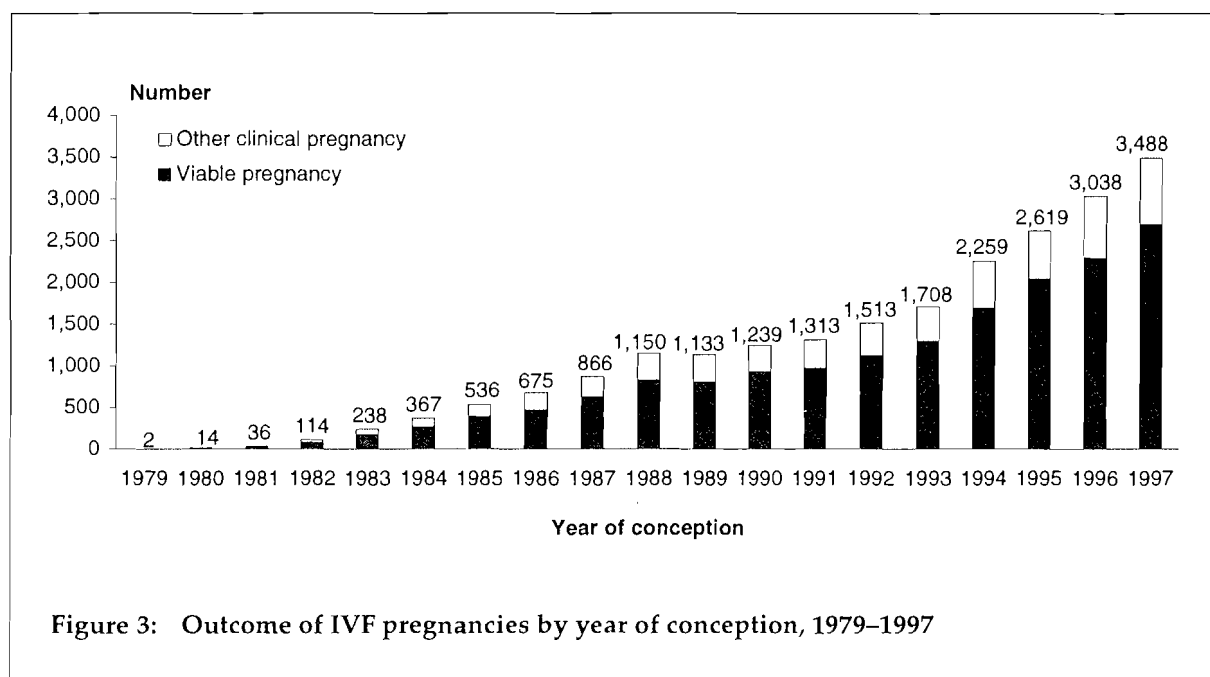
Data for transfer cycles after embryo freezing are given for conventional IVF (Table 11) and for microinsemination (Table 12). There were 4,520 embryo transfer cycles in the first group and 3,203 cycles in the second group. The total of 7,723 transfer cycles in 1997 continued the increasing trend of previous years (4,607 transfer cycles in 1993, 5,238 in 1994, 6,198 in 1995 and 6,801 in 1996). After conventional IVF and embryo freezing, there were 715 clinical pregnancies (15.8 per 100 embryo transfer cycles) and 551 viable pregnancies (12.2 per 100 embryo transfer cycles). After ICSI and embryo freezing, the clinical and viable pregnancy rates were 14.3 and 11.4 per 100 embryo transfer cycles, respectively.

Embryo freezing avoids the necessity for repeated ovarian stimulation in every treatment cycle. As more couples have their infertility treated by IVF, more embryos are frozen each year. In 1997, more than 6,000 couples decided to have their embryos frozen and more than 32,000 embryos were frozen in that year (Table 13). The number of embryos frozen exceeds the number thawed, thus increasing the total number of embryos in storage each year. In 1997, the average number of embryos frozen was 5.1 per couple, while there were 2.8 embryos per couple transferred after thawing. Some thawed embryos (29.4%) were unsuitable for transfer. By the end of 1997, more than 46,000 frozen embryos were in storage. Policies on how long frozen embryos are kept in storage vary among the IVF units. Comparing changes in the number of stored embryos in different IVF units enables review of these policies.

3 IVF pregnancies

This section contains data on all pregnancies other than those resulting from GIFT; it therefore includes pregnancies occurring after transfer of fresh embryos to the uterus or fallopian tubes, transfer of frozen/thawed embryos, use of donor oocytes, and the use of ICSI.

There were 3,038 clinical pregnancies after IVF in 1996 (Table 14, Figure 3), more than in any previous year and an increase of 419 (16.0%) above the number in 1995. There was a further increase of 450 (14.8%) clinical pregnancies to 3,488 in 1997. Live birth was the outcome in 74.2% of the pregnancies in 1996 and in 76.4% in 1997.



3.1 Maternal and paternal characteristics

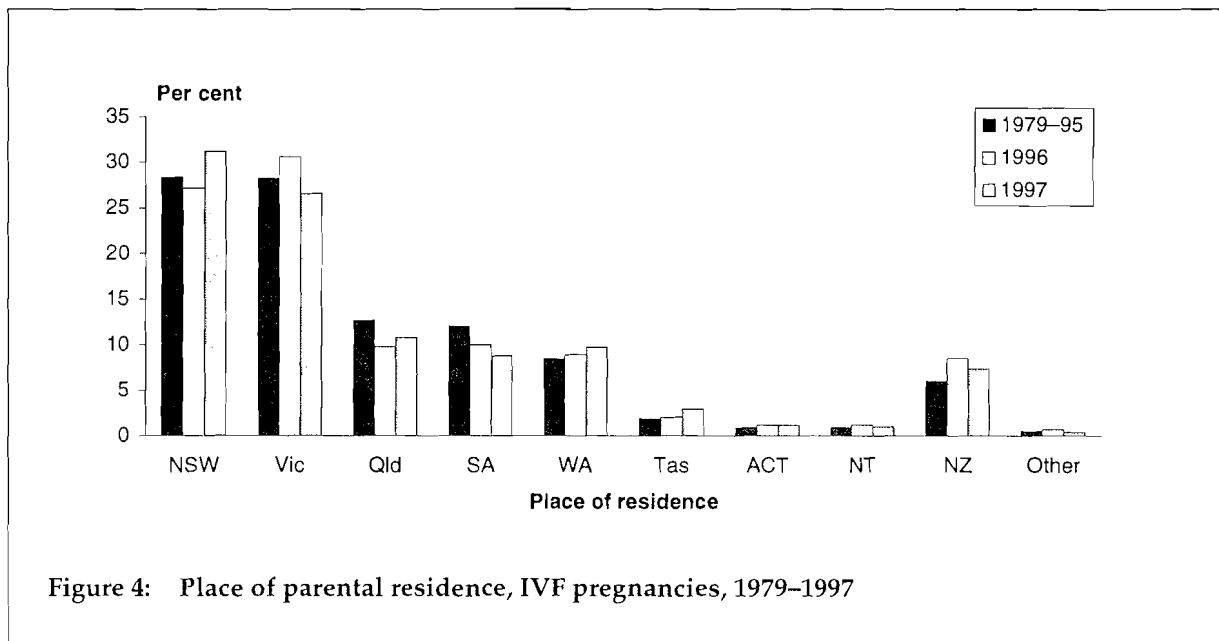
3.1.1 Place of residence

Since 1995, there has been an increase in the number of IVF pregnancies in all Australian States and Territories, except the Northern Territory, and in New Zealand. In 1996 and 1997, nearly 60% of all pregnancies were to couples living in Victoria and New South Wales (Table 15, Figure 4).

3.1.2 Parental age

The majority (80.1%) of women conceiving by IVF in 1996 were in their 30s or 40s (Table 16); this proportion increased slightly to 80.5% in 1997. The proportion of women aged 35 years and over was 40.7% in 1996 and 41.1% in 1997, considerably higher than the proportion of 14.3% for all mothers giving birth in Australia in 1996. Fathers aged 35 years and over increased from 57.9% in 1996 to 59.2% in 1997 (Table 17). The increase in paternal age was

most pronounced for men aged 45 years and over, increasing from 5.9% in previous years to 9.7% in both 1996 and 1997.



3.1.3 Previous pregnancies

Women who conceived in 1996 and 1997 had similar previous reproductive experiences to those who conceived in earlier years, but there was a slight increase in the proportion of women who had not been pregnant previously (Table 18).

3.1.4 Duration of infertility

There were relatively more women with shorter periods of infertility in 1996 and 1997 than in previous years (Table 19, Figure 5). The proportion of women infertile for a period of less than four years increased from 37.6% in 1979–1995 to 48.4% in 1996 and 52.6% in 1997. Women who had been infertile for 8 years or more were less likely to achieve a live birth than those who had been infertile for shorter periods (Table 20).

3.1.5 Causes of infertility

Women conceiving after IVF in 1996 and 1997 were more likely to have infertility due to male factors only or multiple causes than in previous years (19.2% in 1979–1995, 34.3% in 1996, and 33.3% in 1997, and 26.7% in 1979–1995, 30.7% in 1996, and 26.6% in 1997, respectively) and were less likely to have tubal causes (33.6% in 1979–1995, 12.6% in 1996, and 12.3% in 1997) (Table 21, Figure 6). There has been a gradual increase in other stated causes of infertility and unexplained infertility over this period.

The proportion of pregnancies resulting in live births was highest for male infertility (78.9%) and lowest for tubal infertility (72.5%) (Table 22). Spontaneous abortion was highest for endometriosis (22.6%) and lowest for male infertility (17.9%). Ectopic pregnancy was more likely among women treated for tubal causes of infertility (5.5%) than for other causes. Stillbirth was slightly more likely among women treated for tubal infertility (1.2%) than for other causes, but the number of stillbirths in each group was relatively small.

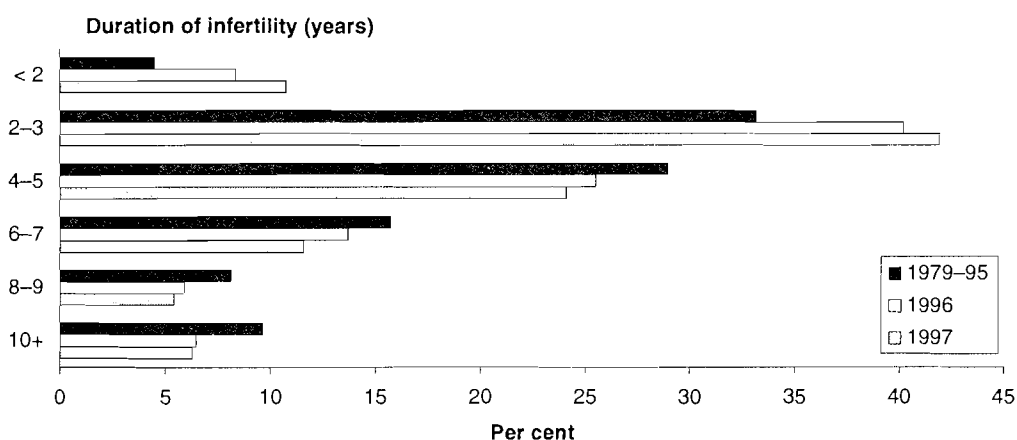


Figure 5: Duration of infertility, IVF pregnancies, 1979-1997

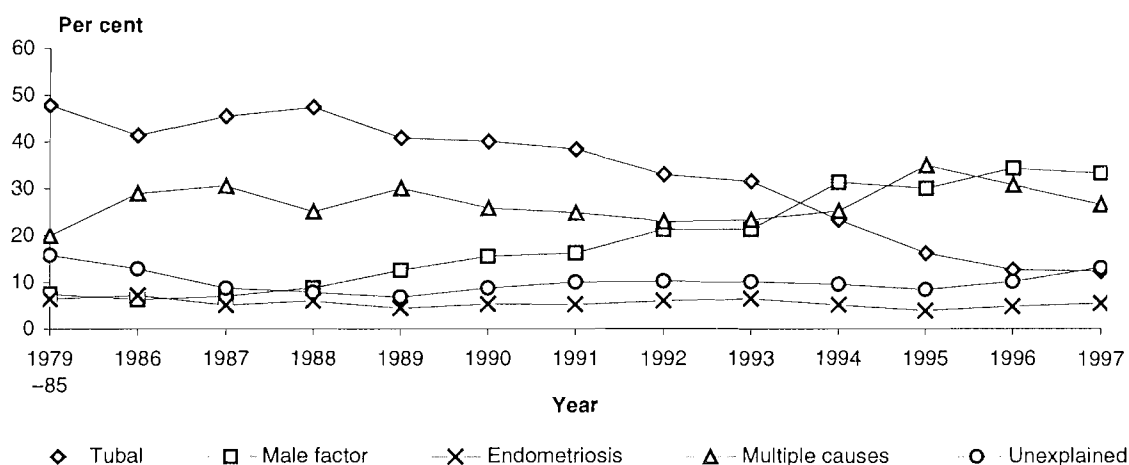


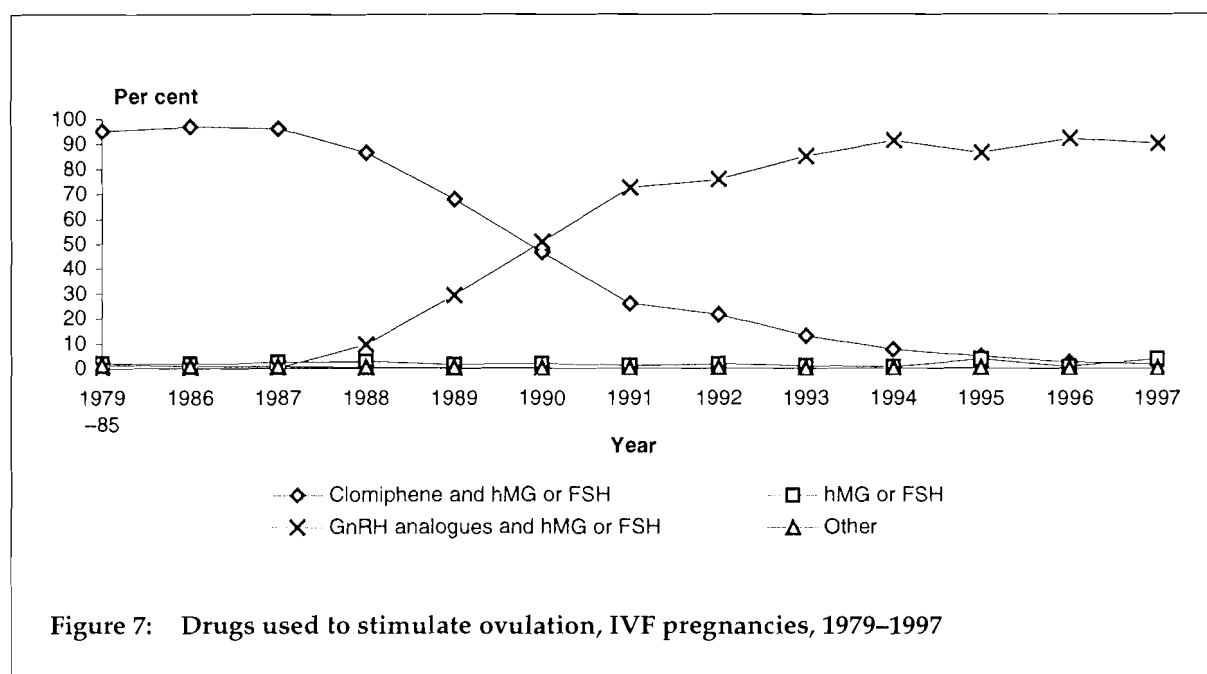
Figure 6: Causes of infertility, IVF pregnancies, 1979-1997

3.2 Management of IVF pregnancies

3.2.1 Ovarian stimulation

Continuing the trend of recent years, gonadotrophin-releasing hormone analogues (GnRHa) combined with gonadotrophins were the main drugs used for stimulating ovulation. In 1996 and 1997, these drugs were used in over 90% of treatment cycles that resulted in IVF pregnancies (Table 23, Figure 7). The use of clomiphene to stimulate ovulation has declined

from over 90% of treatment cycles in the mid-1980s to less than 5% of treatment cycles in 1996 and 1997.



3.2.2 Treatment cycle in which pregnancy occurred

Over 40% of all IVF pregnancies occurred in the first treatment cycle (43.5% in 1979–1995, 43.9% in 1996 and 48.9% in 1997), and more than two-thirds of all IVF pregnancies occurred in the first or second treatment cycle (Table 24).

3.2.3 Number of oocytes collected

The average number of oocytes collected by laparoscopy or ultrasound guidance for IVF has continued to increase (Table 25, Figure 8). In 1996 and 1997, 15 or more oocytes were collected in over a quarter of all treatment cycles and the mean number of oocytes collected was 11.6 per cycle and 12.0 per cycle, respectively.

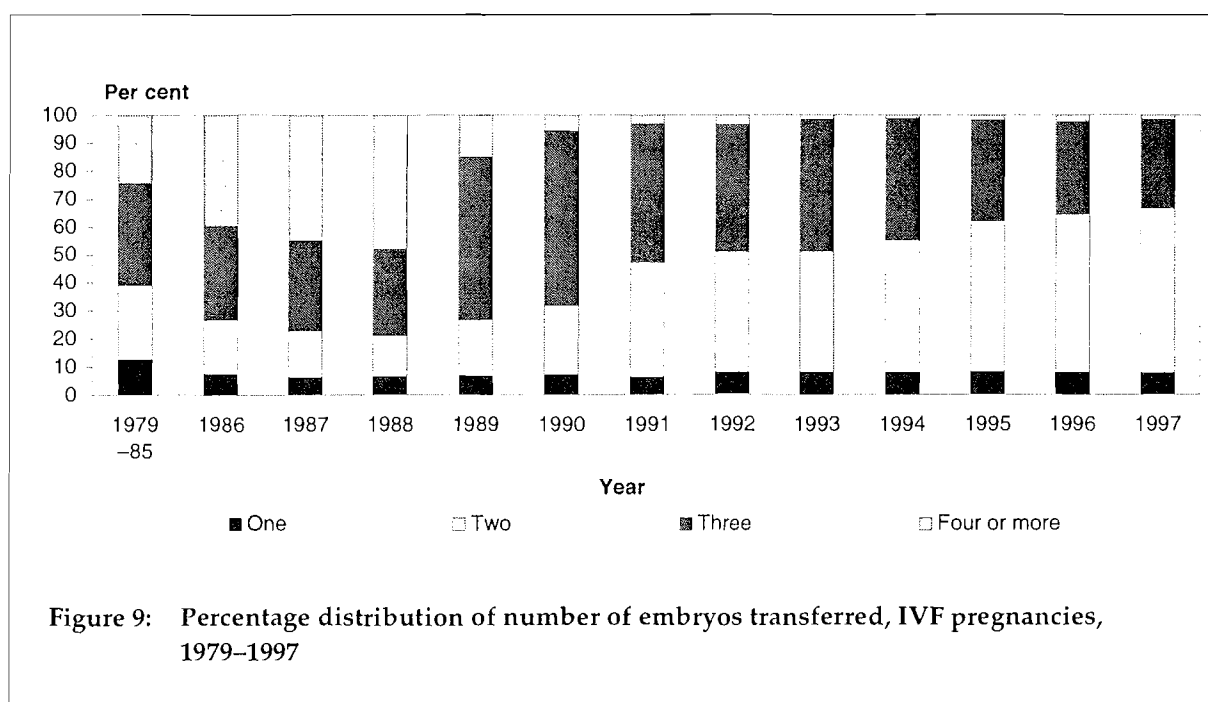
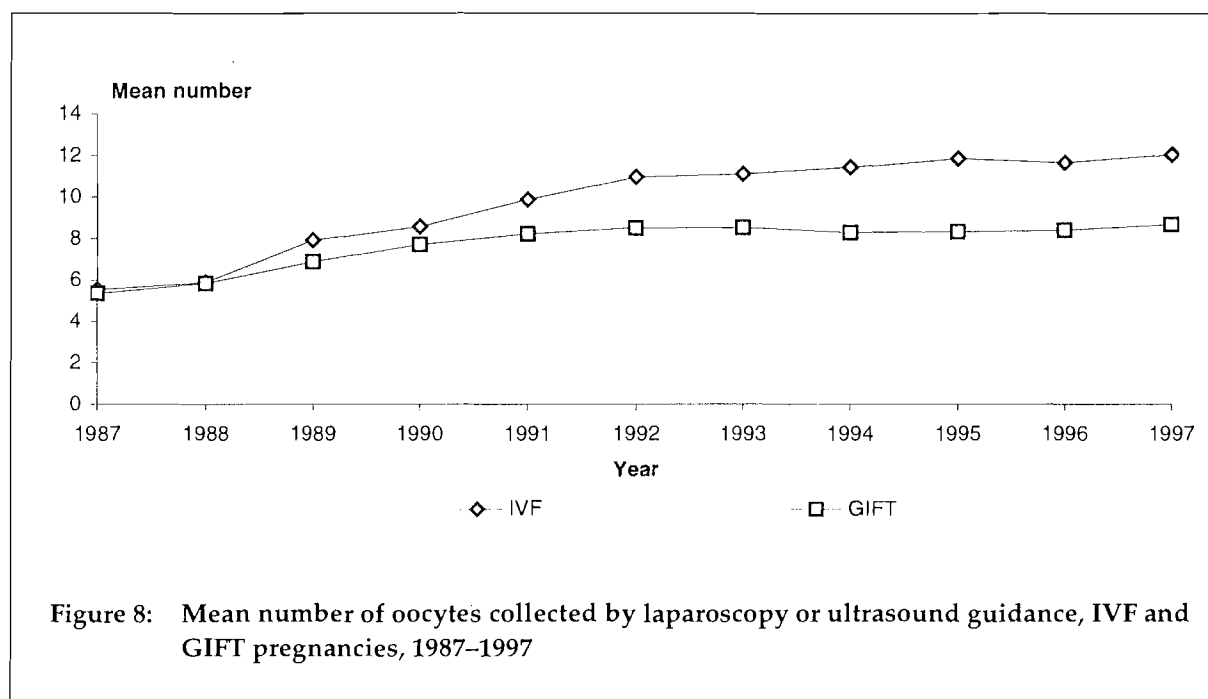
3.2.4 Number of embryos transferred

There has been a continuing decline in the proportion of IVF pregnancies that resulted from transfer of 3 or more embryos (Figure 9). In 1996, only 2.5% of pregnancies followed transfer of 4 or more embryos; this declined further to 1.7% in 1997 (Table 26). More than 60% of the pregnancies followed transfer of 1 or 2 embryos. The average number of embryos transferred in 1995, 1996 and 1997 was 2.3, less than in previous years (Figure 10).

Of the 138 (2.1%) IVF pregnancies resulting from transfer of 4 or more embryos in 1996 and 1997, 37 (26.8%) resulted in spontaneous abortion, 3 (2.2%) in termination of pregnancy and 2 (1.4%) in stillbirth (Table 27).

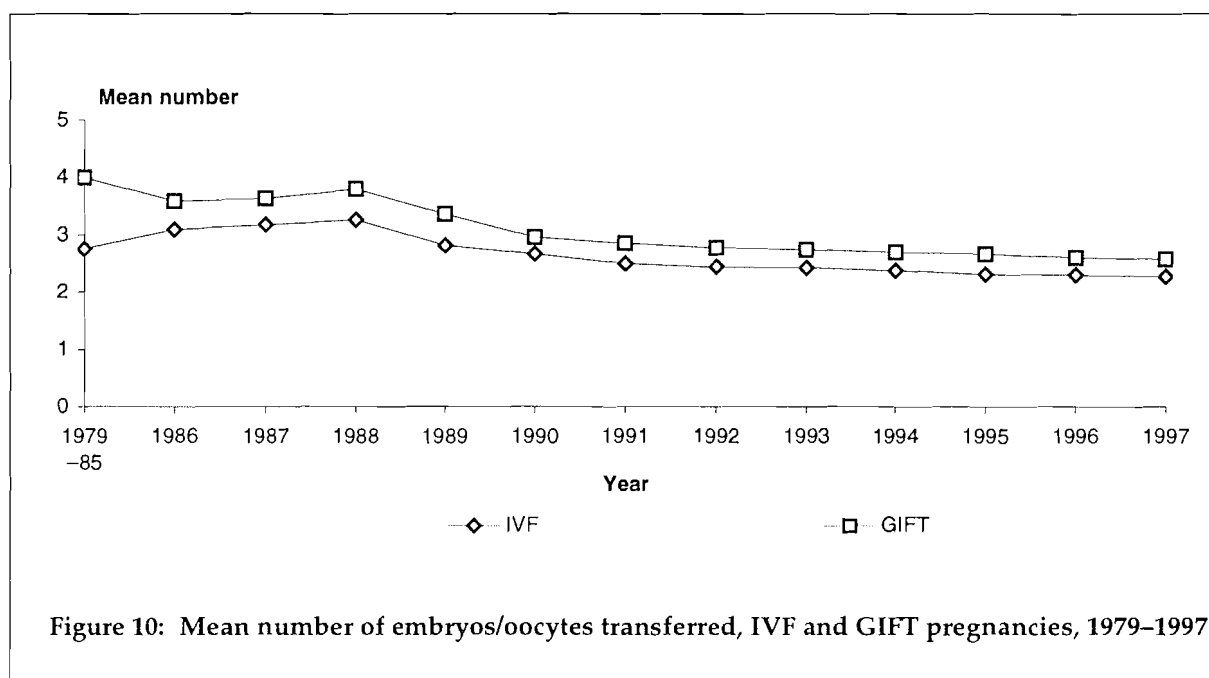
3.2.5 Donor or frozen gametes and embryos

The number of IVF pregnancies that followed transfer of frozen/thawed embryos has continued to increase from 530 in 1992 to 1,014 in 1996 and 1,192 in 1997 (Table 28). The number of pregnancies after use of donor embryos or donor oocytes increased from 104 in 1995 to 133 in 1997, whereas the number of pregnancies after the use of donor sperm has declined during this period. The outcome of pregnancies after donor sperm, donor oocytes or frozen embryos was similar to that of all IVF pregnancies (Table 29).



3.2.6 Microinsemination

IVF pregnancies after microinsemination increased markedly from 1,737 in the six-year period 1990–1995 to 1,224 in 1996 and 1,515 in 1997 (Table 30). There were relatively more live births and fewer ectopic pregnancies after microinsemination than among all IVF pregnancies.



3.2.7 Drugs used in luteal phase of pregnancy

Over 80% of women who became pregnant in 1996 and 1997 were treated with drugs during the luteal phase (Table 31). Human chorionic gonadotrophin (hCG) and progestagen were the most commonly used drugs, in 45.0% and 19.1% of IVF pregnancies in 1996 and 44.5% and 20.1% in 1997, respectively.

3.3 Outcome of pregnancy

3.3.1 Maternal deaths

One woman who conceived by IVF in 1996 died from a pulmonary embolus 8 days after giving birth by caesarean section. There have been three maternal deaths reported in IVF pregnancies among a total of 22,308 pregnancies.

3.3.2 Maternal age and outcome of pregnancy

The proportion of women who achieve a live birth after conceiving by IVF decreases with advancing maternal age. Slightly more than three-quarters of women aged less than 35 years gave birth to liveborn infants compared with 74.5% among women aged 35 to 39 years and 59.7% among women aged 40 years and over (Table 32). Spontaneous abortion and

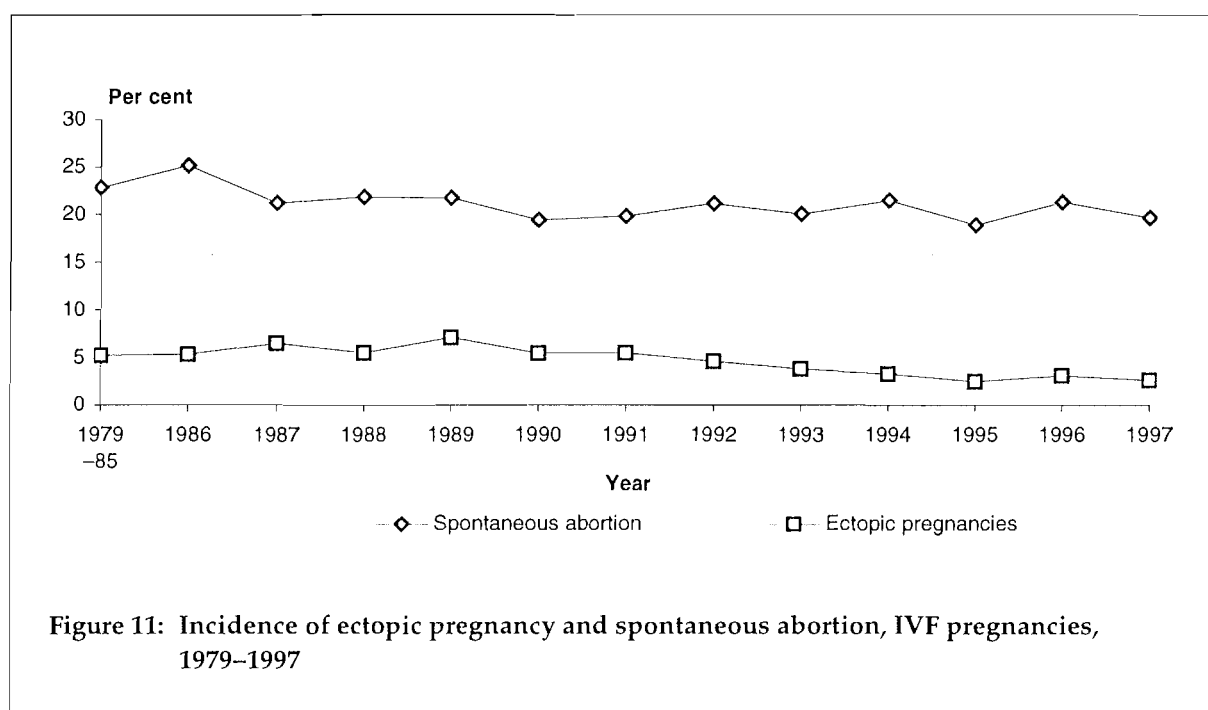
termination of pregnancy were more likely among women of 40 years and over. There was little variation in the occurrence of stillbirths in the various age groups.

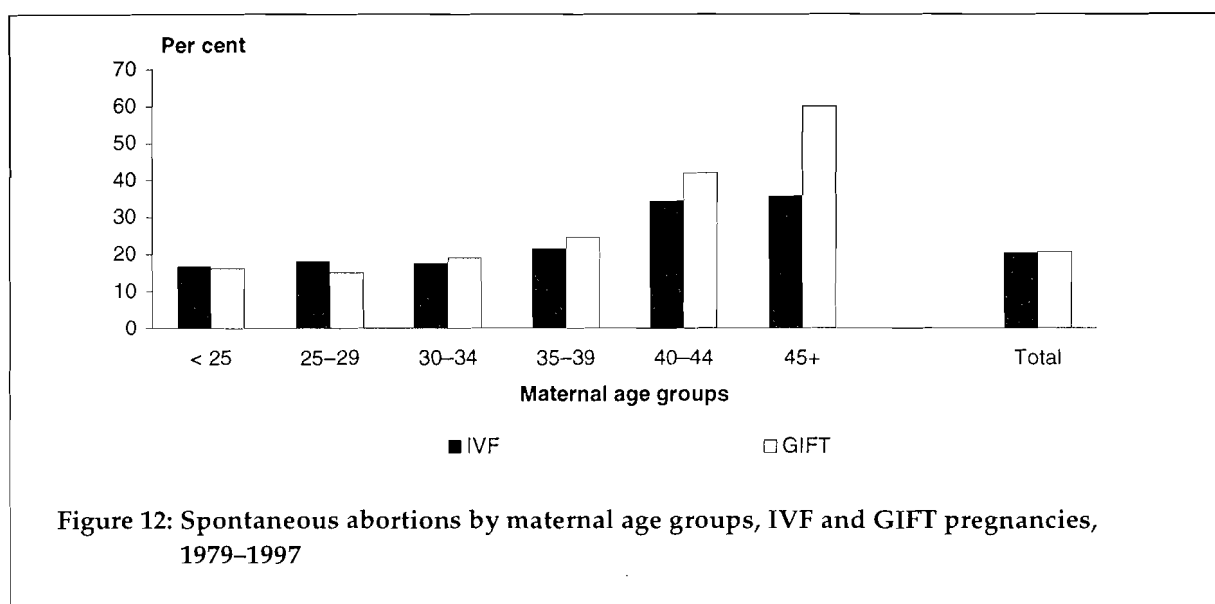
3.3.3 Spontaneous abortion

There has been little change in the rate of spontaneous abortion in IVF pregnancies in recent years (Table 33, Figure 11). Spontaneous abortion was more likely for older women, increasing from 16.9% for women less than 25 years to 39.7% for women 45 years and over, but only 0.6% of women were in this oldest age group (Table 34, Figure 12). Among 4,476 pregnancies conceived after microinsemination in 1990–1997, there were 853 (19.1%) spontaneous abortions (Table 30).

3.3.4 Ectopic pregnancy

The proportion of ectopic pregnancies declined from 4.5% in 1979–1995, to 3.1% in 1996 and 2.6% in 1997 (Table 35, Figure 11). This declining trend is partly attributable to relatively fewer ectopic pregnancies among the increasing proportion of women whose infertility was due to male factors. Among 4,476 pregnancies conceived after microinsemination in 1990–1997, there were 85 (1.9%) ectopic pregnancies (Table 30).





3.3.5 Heterotopic pregnancies

Heterotopic pregnancies are those in which there is both a uterine and tubal (ectopic) pregnancy simultaneously. The uterine pregnancy may abort or may continue on to a birth. Heterotopic pregnancies are uncommon. Since assisted conception began in Australia and New Zealand, 169 cases of heterotopic pregnancies (107 leading to abortion and 62 continuing to a birth) have been reported, accounting for 0.5% of all assisted conception pregnancies. There were no reported IVF heterotopic pregnancies prior to 1984 and the first GIFT heterotopic pregnancy was reported in 1986. There have been 14 ICSI heterotopic pregnancies (7 leading to abortion and 7 continuing to a birth). Heterotopic pregnancies after IVF have declined from 0.9% in 1979-1991 to 0.4% in 1996 and 0.2% in 1997 (Table 36).

3.3.6 Selective reduction of fetuses

Selective reduction of fetuses may be performed in early pregnancy to abort a severely malformed fetus in a multiple pregnancy or to avoid multiple births. Among pregnancies conceived in 1996, selective reduction was performed in 6 IVF and 2 GIFT pregnancies. Among pregnancies conceived in 1997, there was selective reduction in 9 IVF and 1 GIFT pregnancies. Fetal reduction had previously been performed in 41 pregnancies between 1988 and 1995. Of the 18 pregnancies with selective reduction in 1996-1997, four fetuses were reduced to three in 1 IVF pregnancy and four were reduced to two in 1 IVF and 1 GIFT pregnancies; three fetuses were reduced to two in 8 IVF and 2 GIFT pregnancies and three fetuses were reduced to one in 2 IVF pregnancies; and two fetuses were reduced to one in 3 IVF pregnancies. The indication for fetal reduction was a congenital malformation in 2 IVF pregnancies: trisomy 21 and thalassaemia major, both reduced from two fetuses to one. None of the selective reductions in GIFT pregnancies was for fetal malformations. Among the 18 IVF and GIFT pregnancies in which selective reduction was performed in 1996 and 1997, spontaneous abortion of the remaining fetuses was the outcome in 6 pregnancies.

3.3.7 Complications of pregnancy

Significant complications of pregnancy are recorded in tick boxes on the forms used to notify information about the women conceiving by assisted conception and their pregnancies. No

information was given for the data item on complications in 2,131 (12.4%) of the 17,177 pregnancies conceived after IVF in the period from 1990 to 1997. Among the other 15,046 pregnancies for which information was recorded, pregnancy-induced hypertension was reported in 6.2%, threatened abortion in 4.7%, antepartum haemorrhage in 1.8% and placenta praevia in 1.2% (Table 37). Other complications such as maternal medical conditions, fetal growth restriction and premature labour were reported in 15.7% of IVF pregnancies. Any comparison of these reported complications between IVF and other pregnancies should take account of how the information is collected and also the incomplete recording of this data item. Ascertainment of pregnancy complications is improving; this data item was not completed in only 1.9% of pregnancies conceived in 1996–1997 compared with 18.8% in the period from 1990 to 1995.

3.3.8 Viable pregnancies of at least 20 weeks' gestation

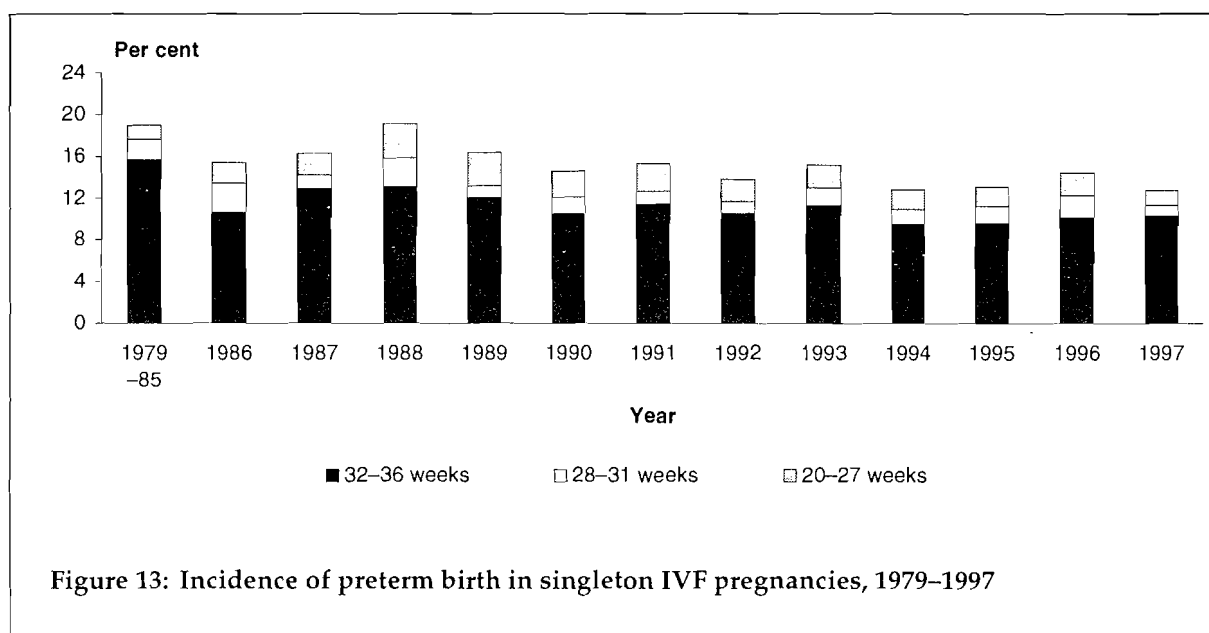
Reflecting the overall increase in the number of IVF pregnancies conceived in 1996 and 1997, there was a considerable increase in births. In Australia, there were 3,011 births after IVF in 1997 compared with 2,510 infants conceived in 1996, 2,303 conceived in 1995, and 1,853 conceived in 1994. In New Zealand, the numbers of infants were 267 for conceptions in 1997, 252 for 1996, 169 for 1995, and 154 for 1994.

Preterm births of less than 37 weeks' gestation occurred in 23.8% of all IVF pregnancies in 1996–1997 (Table 38). The incidence of preterm births was higher with increasing plurality, ranging from 13.5% for singleton IVF pregnancies to 62.8% for twin pregnancies and 95.8% for triplet pregnancies. Preterm births among singleton IVF pregnancies declined to their lowest level of 12.7% in 1997 (Figure 13), but this rate was nearly double that for all Australian singleton pregnancies (6.7% in 1996).

After microinsemination, the incidence of preterm births in 1990–1997 was 21.6% for all pregnancies, 12.0% for singleton pregnancies and 59.0% for twin pregnancies (Table 39), slightly less than that for all IVF pregnancies.

In 1996–1997, preterm births occurred in 14.0% of 139 singleton IVF births after use of donor sperm, in 19.9% of 131 births after use of donor oocytes, and in 11.9% of 1,463 births after use of frozen embryos (Table 40).

As in previous years, there was a high proportion of preterm births among singleton IVF pregnancies in all maternal age groups (Table 41) and for all causes of infertility (Table 42). The proportion increased with advancing maternal age from 11.9% for mothers aged 25–29 years to 15.5% for those aged 40 and over. Mothers aged under 25 years had the highest rate of preterm birth (18.8%). Preterm birth was less likely if infertility was due to endometriosis (10.5%) than if it was due to other causes; the highest incidence (14.9%) was among women whose infertility was due to tubal causes.

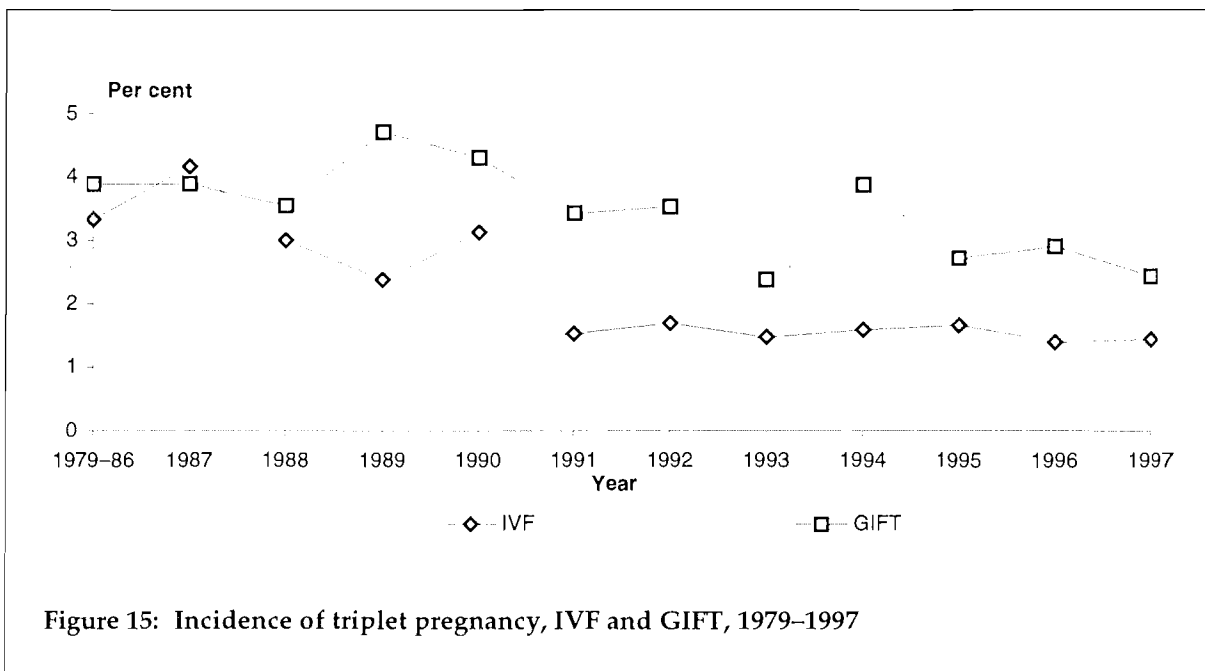
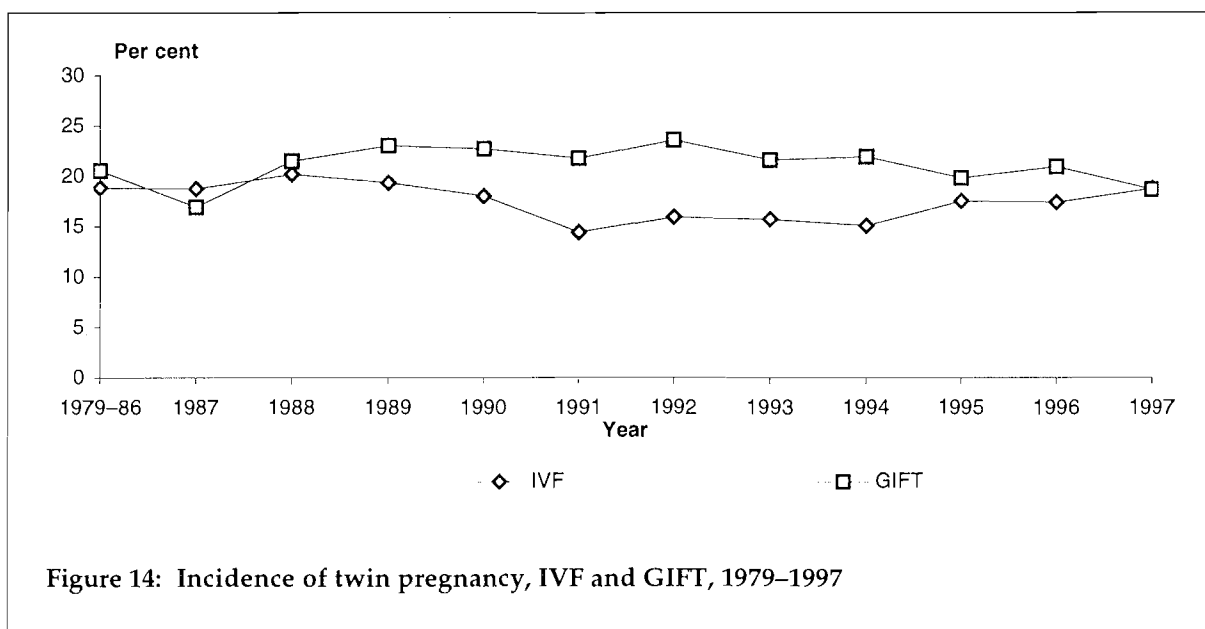


3.3.9 Multiple pregnancies

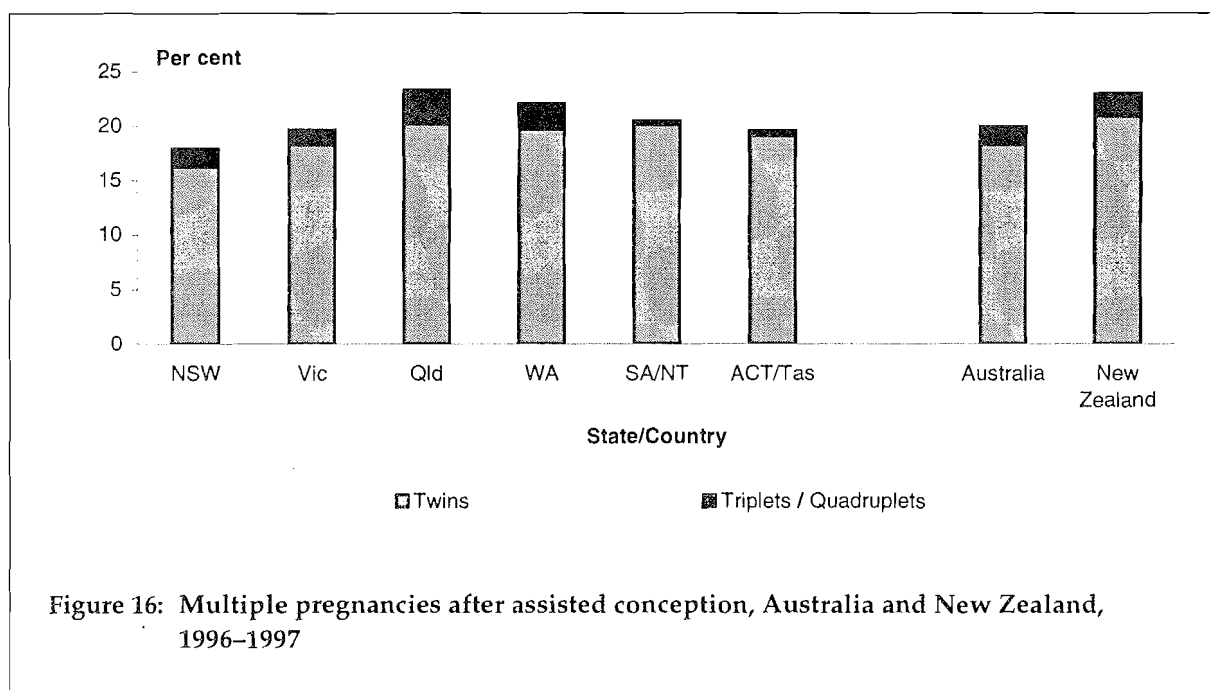
Multiple pregnancy occurred in 19.0% of IVF pregnancies in 1996 and 20.2% in 1997, similar to the proportion of 19.5% in previous years (Table 43) and much higher than that for all Australian births (1.4% in 1996). The incidence of twin pregnancy after IVF declined from 20.4% in 1988 to 14.4% in 1991, but has since risen again to 17.4% in 1996 and 18.8% in 1997 (Figure 14). The incidence of triplet pregnancy in both 1996 and 1997 was 1.4% (Figure 15). Four quadruplet pregnancies occurred in 1996.

Multiple pregnancy was more likely after transfer of fresh embryos than after transfer of frozen/thawed embryos. In 1996 and 1997, twins occurred in 21.0% of pregnancies after transfer of fresh embryos, triplets in 1.9% and there were 3 quadruplet pregnancies. Among pregnancies after transfer of frozen embryos, twins occurred in 12.7%, triplets in 0.4% and there was 1 quadruplet pregnancy.

The likelihood of multiple pregnancy depends on the number of embryos transferred. In 1996 and 1997, twins occurred in 18.7% of IVF pregnancies after transfer of 2 embryos, in 21.3% after transfer of 3 embryos, and in 18.5% after transfer of 4 embryos (Table 44). Among 3,511 pregnancies conceived after microinsemination in 1990–1997, there were 669 multiple pregnancies (19.1%); twins occurred in 617 (17.6%), triplets in 47 (1.3%) and quadruplets in 5 (0.1%).



Multiple pregnancies after assisted conception were slightly less common in Australia (19.9%) than in New Zealand (23.0%) (Table 45, Figure 16). Queensland and Western Australia had the highest multiple pregnancy rates, 23.3% and 22.1%, respectively, and New South Wales had the lowest, 18.0%. There were relatively more triplets and quadruplets in Queensland (3.1%) and Western Australia (2.4%) than in other States.



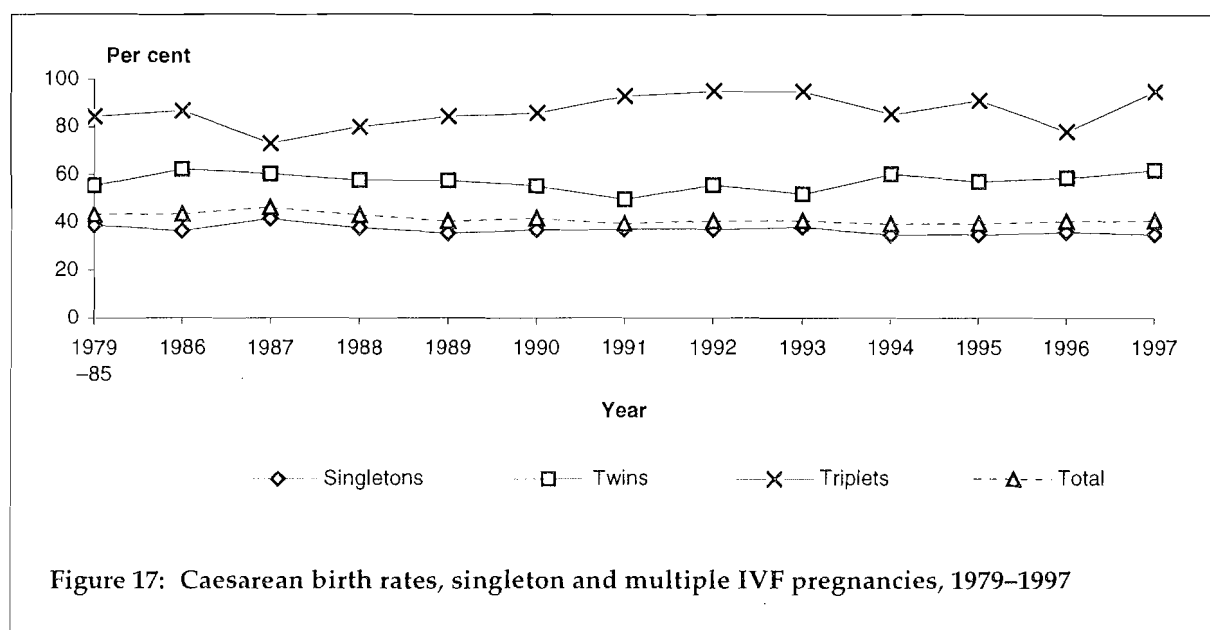
Multiple pregnancy rates varied considerably among the IVF units, ranging from 6.8% to 29.6%, with one small unit having no multiple pregnancies (Table 46). Some of this variability may be due to the relatively small numbers of pregnancies reported in many of the units (57.1% reported fewer than 100 pregnancies, and 74.3% reported fewer than 200 in the years 1996 and 1997). When only the larger IVF units with at least 100 reported pregnancies were considered, multiple pregnancy rates ranged from 13.1% (among 145 pregnancies) to 29.6% (among 165 pregnancies). Overall, multiple pregnancies occurred in 20.3% of the total of 5,870 IVF and GIFT pregnancies in the two-year period.

3.3.10 Method of delivery

As in previous years, caesarean rates were higher for multiple than for singleton IVF pregnancies (Figure 17). In 1996–1997, the caesarean rate was 35.8% for singleton pregnancies, 61.0% for twin pregnancies and 87.3% for triplet pregnancies (Table 47). The caesarean rate for singleton IVF pregnancies was considerably higher than the rate of 19.1% for singleton Australian births in 1996. The caesarean rate for singleton IVF pregnancies increased with maternal age, from 29.8% for mothers under 30 years of age to 54.8% for mothers aged 40 years and over.

3.3.11 Sex of infants

The sex ratio of infants born after IVF was 105.7 in 1996 and 108.7 in 1997, similar to previous years (Table 48). The sex ratio of infants born in all years after use of donor sperm was 101.4 among 1,444 births; after use of donor oocytes, it was 115.6 among 565 births; and after use of frozen embryos, it was 108.1 among 5,269 births. Among the 4,237 births after microinsemination, the sex ratio was 95.1.



3.3.12 Birthweight

The mean birthweight and the incidence of low birthweight (less than 2500 g) for infants born after IVF in 1996 and 1997 differed considerably from the birthweights for all Australian births in 1996. The mean birthweight of IVF births in 1996 and 1997 was 2,900 g (Table 49), 460 g less than the mean birthweight of 3,360 g for all Australian births in 1996. The high incidence of multiple births after IVF accounted for much of this difference (Table 50). For singleton births, the mean birthweight was 3,236 g after IVF and 3,389 g for all Australian births; for twins, 2,313 g and 2,392 g, respectively; and for triplets, 1,700 g and 1,642 g, respectively. Among singleton IVF births in 1996 and 1997, low birthweight occurred in 10.6%, compared with 5.1% for all singleton births in Australia in 1996.

The mean birthweight of 2,842 singleton births after microinsemination was 3,248 g (Table 51), similar to that for all singleton IVF births. Low birthweight occurred in 9.9% of singleton births after microinsemination (Table 51), in 10.5% after donor sperm, in 13.2% after donor oocytes, and in 7.6% after embryo freezing (Table 52).

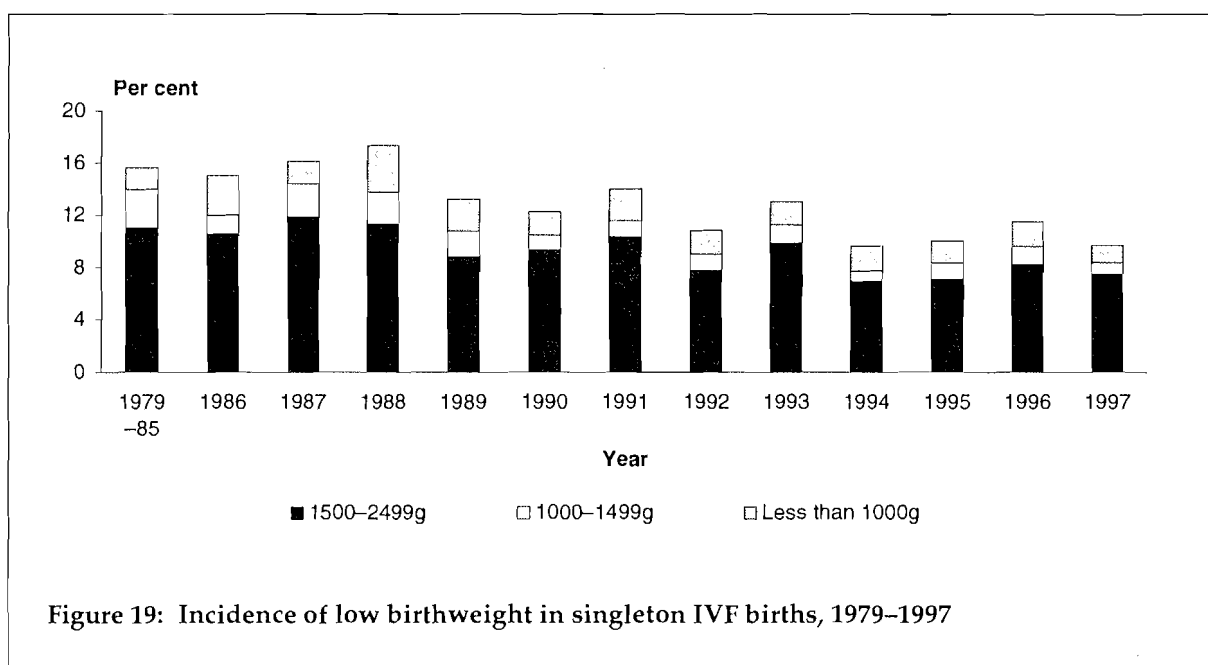
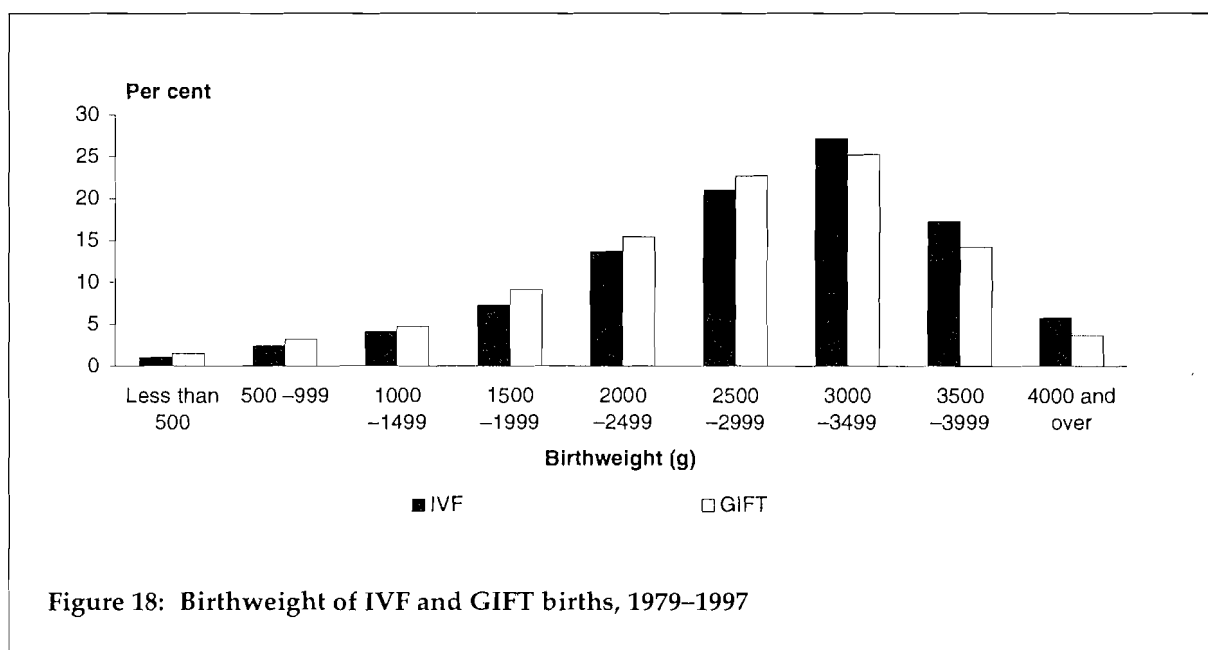
There were relatively fewer low birthweight infants born after IVF than after GIFT (Figure 18). The incidence of low birthweight in singleton IVF births was lowest in 1994, then slightly higher in subsequent years (Figure 19).

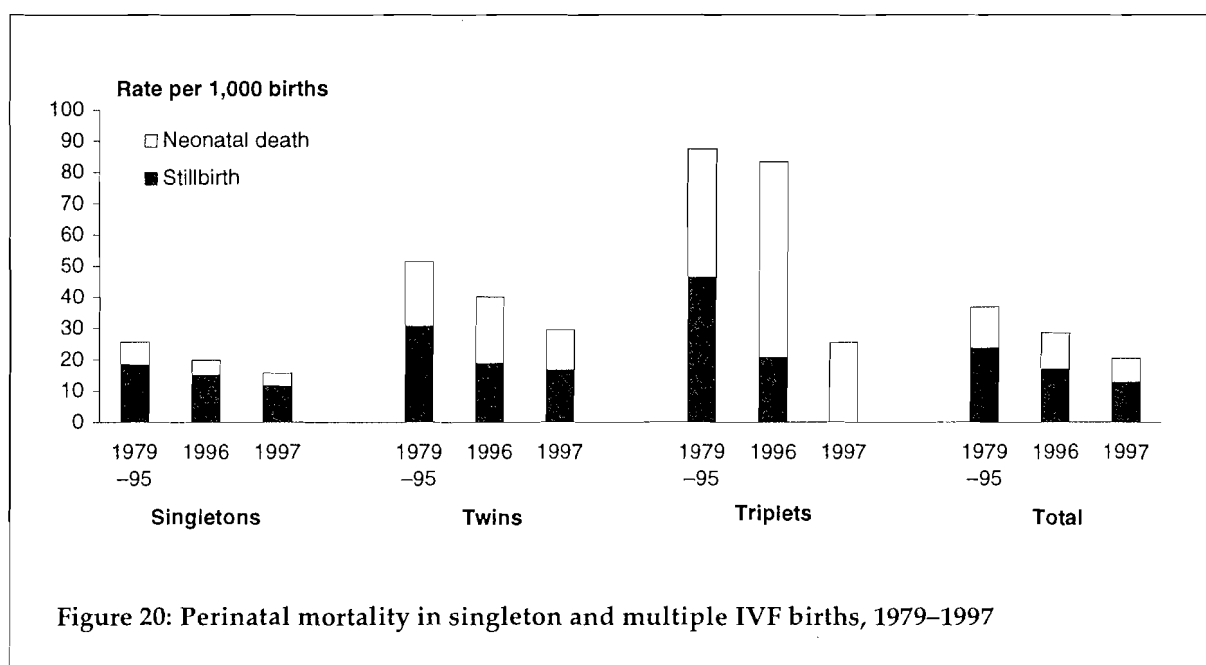
3.3.13 Perinatal mortality

Perinatal deaths include fetal deaths (stillbirths) of at least 20 weeks' gestation and neonatal deaths of liveborn infants occurring within 28 days of birth. The perinatal death rate for all IVF births in 1996–1997 was 24.2 per 1,000 births (Table 53), lower than in previous years (Figure 20); for singleton births, the rate was 17.7 per 1,000 births, for twins, 34.3 per 1,000 births, and for triplets, 51.6 per 1,000 births. Among 4,237 births after microinsemination in 1990–1997, the perinatal death rate was 26.2 per 1,000 births; for singleton births, the rate was 15.8 per 1,000 births, for twins, 42.1 per 1,000 births, and for triplets, 85.1 per 1,000 births.

The perinatal death rate after assisted conception is considerably higher than for all births. In 1997, the perinatal death rate among all births of at least 20 weeks' gestation or 400 g

birthweight in Australia was 9.2 per 1,000 births (Australian Bureau of Statistics 1999). Factors contributing to the higher perinatal death rate after assisted conception include relatively more older mothers, their underlying causes of infertility, and the much higher incidence of multiple births than in the general population.





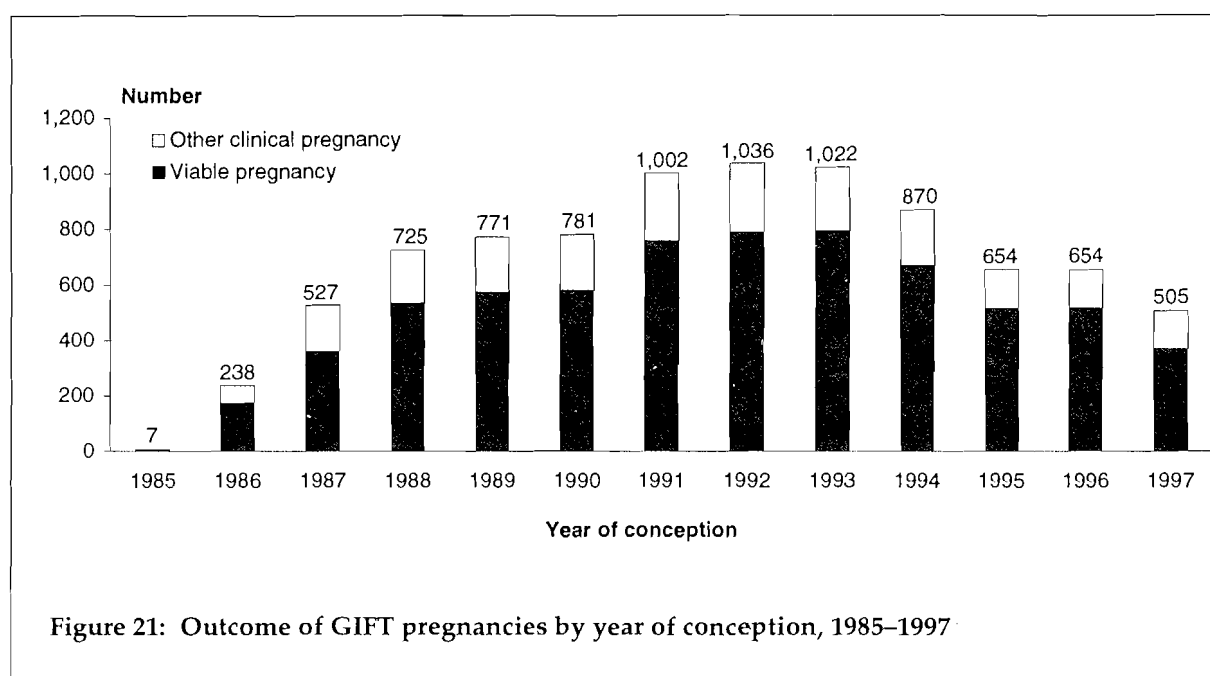
3.3.14 Congenital malformations

Among 20,376 live births, stillbirths and induced abortions of at least 16 weeks' gestation after IVF in 1979–1997, there were 529 (2.6%) infants and fetuses with major congenital malformations (Table 54). The malformation rate was higher in singleton births (3.0%) than in multiple births (1.7%).

Among pregnancies conceived in 1990–1997 after microinsemination, there were 18 pregnancies terminated for fetal abnormality and 4,237 births. Major congenital malformations were notified in 118 fetuses and infants, a malformation rate of 2.8%. There were 98 (3.4%) malformations among 2,860 singleton births and 20 (1.4%) among 1,395 multiple births.

4 GIFT pregnancies

The number of GIFT pregnancies has declined substantially since 1994, after showing little change between 1991 and 1993 (Table 55, Figure 21). There were 505 GIFT pregnancies in 1997, about half the number conceived in 1991, 1992 and 1993. In 1996, 78.3% of GIFT pregnancies resulted in live births; in 1997, there were relatively more early pregnancy losses and live births occurred in 71.5% of pregnancies.



4.1 Maternal and paternal characteristics

4.1.1 Place of residence

In 1996 and 1997, there were relatively more GIFT pregnancies in Queensland, increasing from 28.5% in 1985–1995 to 36.4% in 1996 and 43.8% in 1997 (Table 56). There was a decline in the proportion in most States; 75% of all GIFT pregnancies occurred in Queensland or New South Wales.

4.1.2 Parental age

Women who conceived after GIFT in 1996 and 1997 were older than those in previous years, increasing from 30.0% aged 35 years and over in 1985–1995 to 37.8% in 1996 and 41.2% in 1997 (Table 57). Paternal age also increased from 46.9% aged 35 years and over in 1985–1995 to 51.8% in 1996 and 55.0% in 1997 (Table 58). Fathers were relatively older than mothers, with more than three times as many fathers aged 40 years and over. In 1985–1997, 5.7% of mothers and 18.7% of fathers were in this age group. Women who became pregnant after GIFT were generally older than the mothers of all babies born in Australia, and slightly younger than those who became pregnant after IVF. In 1996 and 1997, 39.3% of GIFT

pregnancies were to women aged 35 years and over, compared with 40.9% of IVF pregnancies and 14.3% of all Australian births.

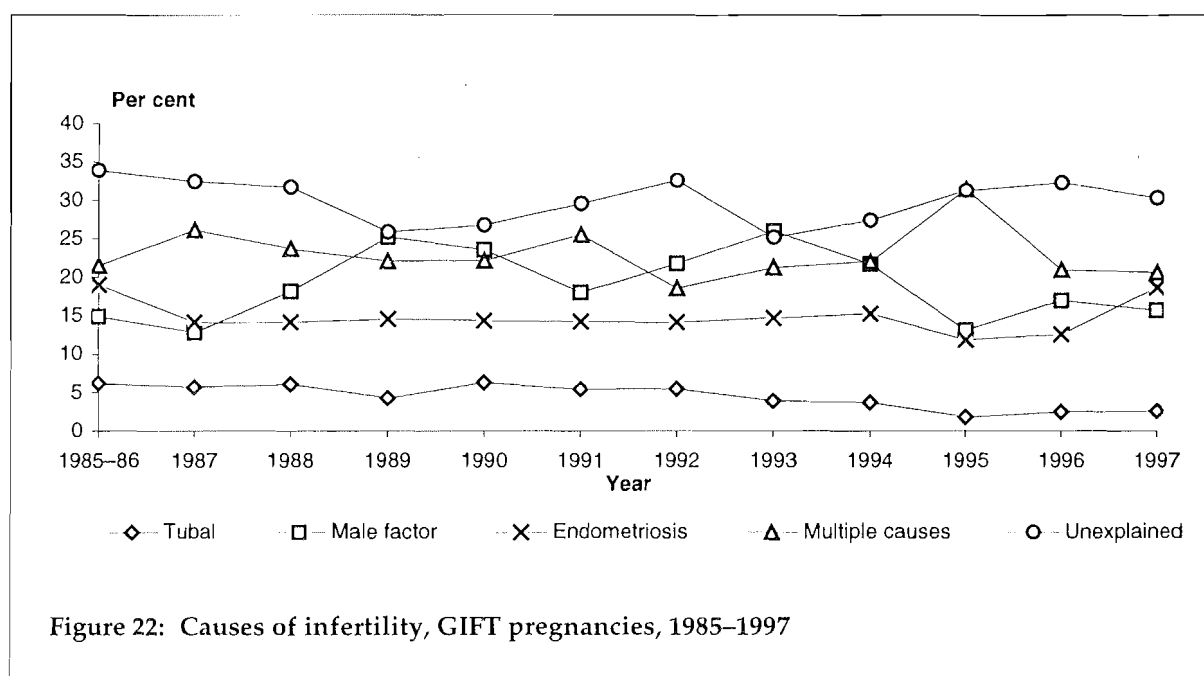
4.1.3 Previous pregnancies

Women who conceived by GIFT in recent years were slightly more likely to have been pregnant more than once previously than those who had conceived by GIFT in earlier years (Table 59).

4.1.4 Duration and causes of infertility

Among women conceiving by GIFT in 1996 and 1997, more than 50% had been infertile for periods of less than 4 years, relatively more than in previous years (Table 60). The likelihood of spontaneous abortion was highest among those with a duration of infertility of 8 or more years; these women were also less likely to have a live birth (69.7%) than those who had a shorter duration of infertility (Table 61).

The causes of infertility that preceded GIFT pregnancies in 1996 and 1997 varied slightly from those in previous years (Table 62, Figure 22). The proportion of GIFT pregnancies resulting in live births was similar for all causes of infertility in 1996 and 1997 (Table 63). There was a low incidence of ectopic pregnancy among women whose infertility was due to endometriosis (0.6%) or male factor (0.5%). The highest incidence of ectopic pregnancy after GIFT was associated with tubal causes of infertility (6.9%).



4.2 Management of GIFT pregnancies

4.2.1 Ovarian stimulation

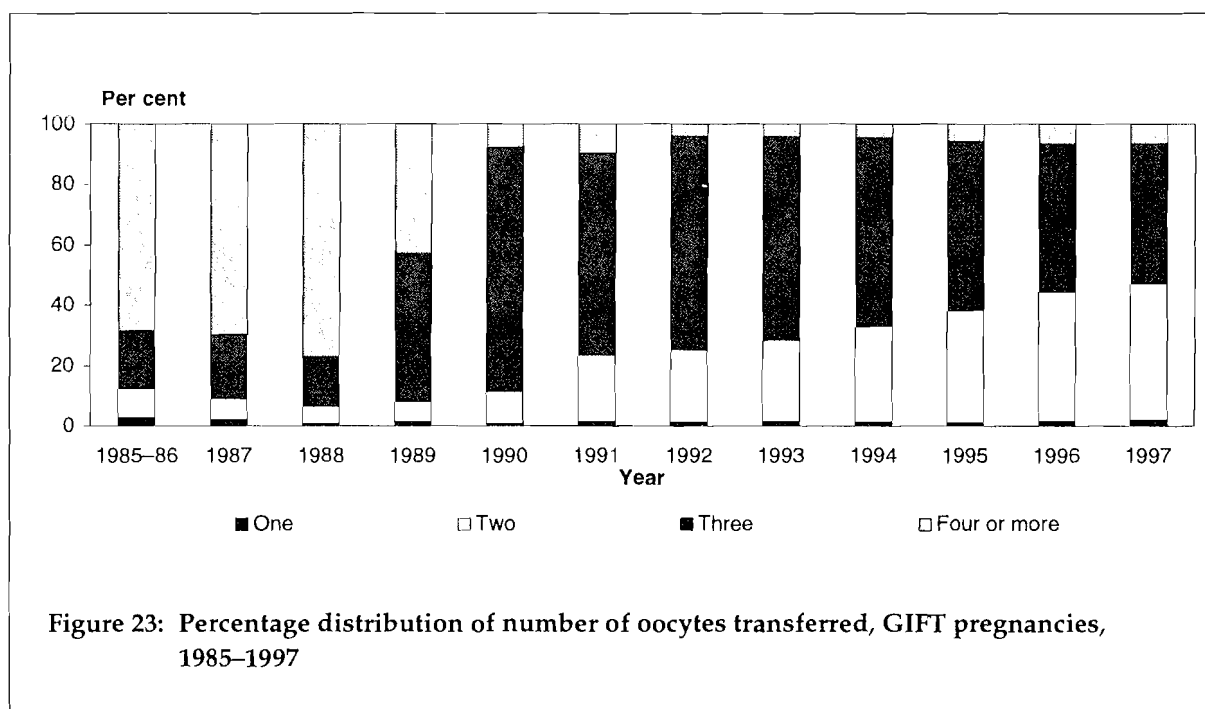
The trend of increasing use of GnRH analogues (97.2% in 1996 and 94.5% in 1997) and declining use of clomiphene (1.4% and 2.0%, respectively) to induce ovulation (Table 64) was

similar to that for IVF pregnancies (Figure 7). Over half (52.2%) of GIFT pregnancies occurred in the first treatment cycle in 1996 and 1997, and another quarter (23.6%) occurred in the second cycle, slightly higher than in previous years (Table 65).

4.2.2 Number of oocytes collected and transferred

The mean number of oocytes collected in treatment cycles that resulted in GIFT pregnancies was 8.4 in 1996 and 8.7 in 1997 (Table 66), higher than in previous years but much lower than the means of 11.6 and 12.0, respectively, for IVF pregnancies (Figure 8). In 1996 and 1997, 15 or more oocytes were collected in 10.8% of all treatment cycles, higher than in previous years (7.7%).

In 1997, 93.4% of GIFT pregnancies followed transfer of three or fewer oocytes (Table 67), similar to 1996 (93.3%) and much higher than in previous years (77.3%). In the 1990s, there has been an increasing trend in pregnancies occurring after transfer of 2 oocytes, increasing from 10.6% in 1990 to 45.1% in 1997 (Figure 23). The proportion of pregnancies with live births varied with the number of oocytes transferred (Table 68). Women having pregnancies following the transfer of 1 oocyte or at least 4 oocytes were the least likely to have a live birth (54.5% and 66.2%, respectively), while women having 2 or 3 oocytes transferred were the most likely to have a live birth (76.3% and 77.1%, respectively).



4.2.3 Drugs used in luteal phase of pregnancy

Most women (98.2%) who became pregnant after GIFT in 1996 and 1997 were treated with drugs during the luteal phase (Table 69). Human chorionic gonadotrophin (hCG) and Proluton were the most commonly used drugs.

4.3 Outcome of pregnancy

4.3.1 Maternal deaths

Three maternal deaths have been reported in GIFT pregnancies, but there were no deaths in 1996 or 1997.

4.3.2 Spontaneous abortion and ectopic pregnancy

Among almost 8,800 GIFT pregnancies conceived between 1985 and 1997, spontaneous abortion was the outcome in 20.7% (Table 70).

In 1996, spontaneous abortion occurred in 19.8% of intrauterine GIFT pregnancies and this increased to 23.9% in 1997, higher than in previous years (Table 71). Older women had higher rates of spontaneous abortion, 44.4% for those aged 40–44 years and 60.0% for those aged 45 and over (Table 72).

Ectopic pregnancy occurred in 1.7% of GIFT pregnancies in 1996, fewer than in previous years (Table 73). In 1997, the incidence of ectopic pregnancies after GIFT increased to 3.2%.

4.3.3 Heterotopic pregnancies

Heterotopic pregnancies after GIFT declined from 0.8% in 1985–1991 to 0.2% in 1994 and 1995, but then increased to 0.5% in 1996 and 0.8% in 1997 (Table 74).

4.3.4 Complications of pregnancy

The comments under this heading in Section 3.3.7 should be noted. Information was not recorded for this data item in 1,176 (18.0%) of the 5,359 pregnancies conceived after GIFT between 1990 and 1997. Ascertainment of pregnancy complications is improving, only 2.4% of notifications of GIFT pregnancies lacking completion of this data item in 1996–1997. Among 5,348 GIFT pregnancies for which information was recorded, pregnancy-induced hypertension was reported in 6.6%, threatened abortion in 6.0%, antepartum haemorrhage in 2.4%, placenta praevia in 0.9% and other complications in 19.0% (Table 75).

4.3.5 Viable pregnancies of at least 20 weeks' gestation

Reflecting the overall decline in the number of GIFT pregnancies in recent years, the number of births in Australia after GIFT decreased from 1,023 in 1992 to 654 in 1996 and 447 in 1997. There were very few births after GIFT in New Zealand, from 9 in 1992, to 5 in 1993, 7 in 1994, 6 in 1995, 2 in 1996 and 7 in 1997. The total of 3,164 births after IVF and GIFT in Australia in 1996 represented 1.2% of the national births.

Preterm birth occurred in 23.2% of all GIFT pregnancies in 1996 and 1997 (Table 76), similar to other years, and in 12.5% of singleton pregnancies, in 53.1% of twin pregnancies, and in 100.0% of triplet pregnancies. In singleton GIFT pregnancies, there was a lower incidence of preterm birth for births to mothers aged 25–29 years (8.3%), while the incidence of preterm birth was higher in the older maternal age groups (Table 77). Relatively lower rates of preterm birth occurred when infertility was due to male factors (4.3%); the incidence of preterm birth was similar for all other causes of infertility (Table 78).

4.3.6 Multiple pregnancies

Twins occurred in 21.0% of GIFT pregnancies in 1996 and in 18.8% in 1997 (Table 79), slightly lower than the rate in recent years (Figure 14). The incidence of triplets after GIFT was 2.9% in 1996 and 2.5% in 1997, still higher than in IVF pregnancies (Figure 15). There was also 1 quadruplet pregnancy in 1996.

In 1996 and 1997, as in previous years, higher multiple pregnancy rates were usually associated with transfer of more oocytes (Table 80). There were 2 (16.7%) twin pregnancies after transfer of one oocyte, 16.8% after transfer of two oocytes, 24.2% after three oocytes, and 14.0% after transfer of 4 oocytes.

4.3.7 Method of delivery

Caesarean birth rates for GIFT pregnancies were higher for multiple births than for singleton births (Table 81). In 1996 and 1997, the caesarean rate was 33.3% in singleton pregnancies, 66.1% in twin pregnancies, and 79.2% in triplet pregnancies. In singleton GIFT pregnancies, the caesarean rate was 19.7% for mothers aged less than 25 years, 26.3% for those aged 25–29, 30.6% for those aged 30–34, 41.1% for those aged 35–39, and 47.4% for mothers aged 40 years and over.

4.3.8 Sex of infants

The sex ratio of infants born after GIFT in 1996 was 119.4, higher than in previous years (Table 82). In 1997, the sex ratio was 109.3, decreasing from 112.6 for singletons to 109.1 for twins and 80.0 for triplets. In recent years, the sex ratio of infants born after GIFT has been consistently higher than the sex ratio for IVF.

4.3.9 Infant's birthweight

The mean birthweight of 2,824 g after GIFT in 1996 and 1997 (Table 83) was slightly higher than that of 2,803 g in the previous year but less than the average of 2,900 g after IVF. The high incidence of multiple births after GIFT accounted for much of this difference (Table 84). In 1996 and 1997, for singleton GIFT births, the mean birthweight was 3,209 g; for twins, it was 2,367 g; and for triplets, it was 1,532 g.

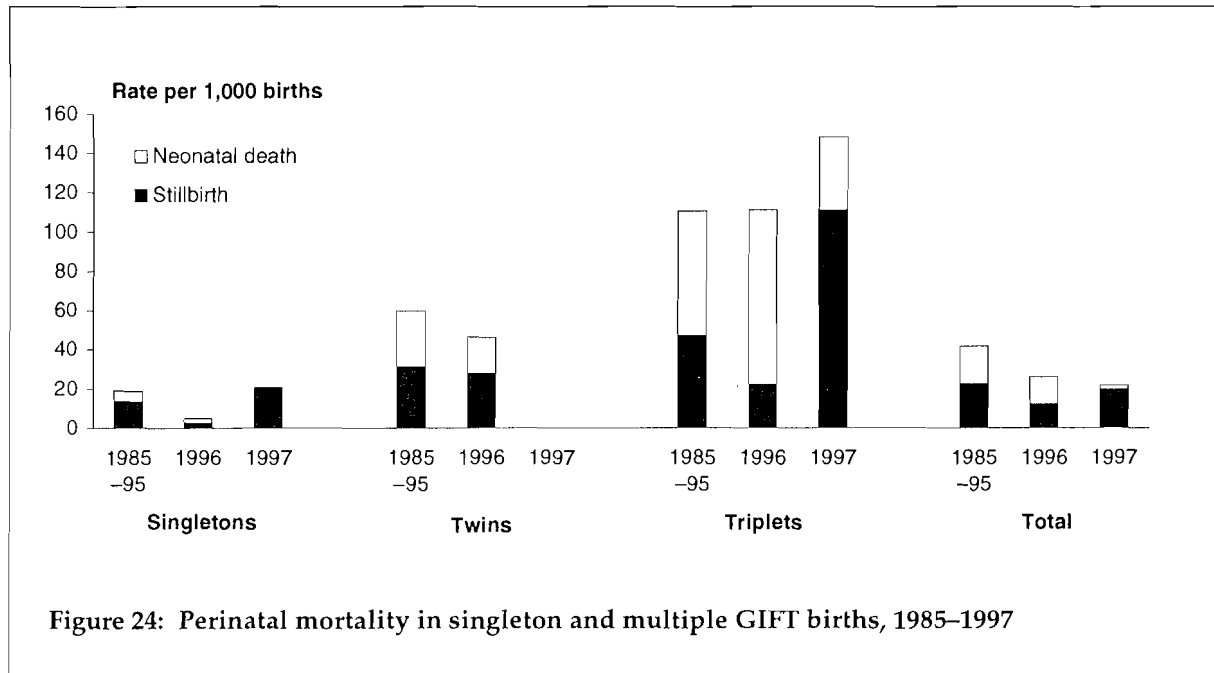
In 1996 and 1997, low birthweight occurred in 29.5% of all GIFT pregnancies (Table 84), slightly less than the rate in 1995 (31.3%). There were relatively more low birthweight infants born after GIFT than after IVF (Figure 18). Low birthweight was more likely with increasing plurality, ranging from 9.6% for singleton GIFT births to 52.7% for twins and 98.6% for triplets.

4.3.10 Perinatal mortality

The perinatal death rate after GIFT in 1996 and 1997 was 24.3 per 1,000 births (Table 85), lower than the total rate of 29.5 per 1,000 births in 1995. There were relatively fewer stillbirths; the stillbirth rate was 15.3 per 1,000 births compared with 20.2 per 1,000 in 1995 (Figure 24). Of the 27 perinatal deaths after GIFT in 1996 and 1997, 19 (70.4%) were in multiple births.

4.3.11 Congenital malformations

Major congenital malformations occurred in 209 (2.4%) of 8,608 births and induced abortions after GIFT in the period from 1985 to 1997 (Table 86). The malformation rate of 2.7% in singleton births was slightly higher than that of 2.0% in multiple births.



5 Tables

Table 1: Use of assisted conception to treat infertility, selected States, Australia and New Zealand, 1997

State / Country	Women aged 25–44 years (thousands)	Treatment cycles ^(a)	Ratios ^(b)
New South Wales	967	7,986	826
Victoria	723	7,349	1,017
Queensland	523	3,399	649
Western Australia	283	1,880	665
South Australia ^(c)	255	2,127	834
Australian Capital Territory and Tasmania	122	1,252	1,023
Australia	2,874	23,993	835
New Zealand	592	1,773	300

(a) Includes IVF fresh, IVF frozen, GIFT, ICSI, Tubal transfer and Donor oocytes/embryos

(b) Treatment cycles per 100,000 women aged 25–44 years

(c) Includes external unit based in the Northern Territory

Table 2: Viable pregnancy rates for all techniques of assisted conception, 1997

Type of assisted conception	Oocyte retrieval cycles	Embryo/ gamete transfer cycles	Viable pregnancies	Viable pregnancy rate per 100 oocyte retrievals	Viable pregnancy rate per 100 embryo transfers
IVF: fresh embryos	6,839	5,593	911	13.3	16.3
ICSI: fresh embryos	6,308	5,438	928	14.7	17.1
IVF: frozen embryos	-	4,520	551	-	12.2
ICSI: frozen embryos	-	3,203	364	-	11.4
IVF: donor oocytes	-	621	95	-	15.3
GIFT	1,924	1,858	384	20.0	20.7
All techniques	15,071 ^(a)	21,233	3,233	14.8 ^(a)	15.2

(a) Exclude data on cycles with frozen embryos and donor oocytes

Table 3: Oocyte retrieval cycles for IVF, ICSI and GIFT, by maternal age, cause of infertility, and drugs used to stimulate ovulation, 1997

Characteristic	Oocyte retrieval cycles attempted					
	IVF		ICSI		GIFT	
	Number	Per cent	Number	Per cent	Number	Per cent
Maternal age (at start of treatment)						
<20	1	0.0	5	0.1	-	-
20-24	82	1.2	168	2.7	31	1.6
25-29	915	13.8	1,158	18.8	326	17.0
30-34	2,267	34.1	2,098	34.0	665	34.7
35-39	2,240	33.7	1,996	32.4	562	29.3
40-44	1,046	15.7	680	11.0	315	16.4
45+	93	1.4	63	1.0	20	1.0
Not stated	4		-		-	
All ages	6,648	100.0	6,168	100.0	1,919	100.0
Cause(s) of infertility						
Tubal only	2,120	31.9	226	3.6	65	3.4
Other female only	924	13.9	241	3.8	463	24.1
Male factors only	839	12.6	3,811	60.3	260	13.5
Multiple causes	1,227	18.4	1,405	22.2	279	14.5
Unexplained	1,546	23.2	642	10.2	852	44.4
Not stated	3		-		-	
All causes	6,659	100.0	6,325	100.0	1,919	100.0
Ovarian stimulation						
GnRH analogues + other	6,154	92.6	5,858	92.6	1,793	93.5
No GnRH analogues						
— clomiphene + any other	289	4.3	370	5.8	66	3.4
— other drugs	27	0.4	16	0.3	14	0.7
— natural cycles	176	2.6	81	1.3	44	2.3
Not stated	13		-		2	
Total	6,659	100.0	6,325	100.0	1,919	100.0

Table 4: Embryo transfer cycles for IVF, ICSI and GIFT, by number of embryos or oocytes transferred, 1997

Number of embryos / oocytes transferred	Embryo transfer cycles					
	IVF		ICSI		GIFT	
	Number	Per cent	Number	Per cent	Number	Per cent
One	798	14.3	720	13.2	101	5.5
Two	2,828	50.6	2,924	53.7	855	46.1
Three	1,799	32.2	1,679	30.8	769	41.5
Four	159	2.8	119	2.2	106	5.7
Five	7	0.1	6	0.1	4	0.2
Six or more	2	0.0	2	0.0	18	1.0
Not stated	4		-		-	
Total	5,597	100.0	5,450	100.0	1,853	100.0

Table 5: Number of transfer cycles after cryopreservation, by maternal age, cause of infertility, and number of embryos transferred, 1997

Characteristic	Embryo transfer cycles					
	IVF		ICSI		Donor oocytes	
	Number	Per cent	Number	Per cent	Number	Per cent
Maternal age (at start of treatment)						
<20	4	0.1	1	0.0	-	-
20-24	62	1.4	68	2.4	1	0.3
25-29	657	14.9	613	21.5	23	6.7
30-34	1,689	38.3	1,069	37.4	81	23.5
35-39	1,465	33.2	843	29.5	73	21.2
40-44	505	11.4	247	8.7	115	33.3
45+	29	0.7	14	0.5	52	15.1
Not stated	276		170		10	
All ages	4,687	100.0	3,025	100.0	355	100.0
Cause(s) of infertility						
Tubal only	1,133	26.9	53	2.0	15	4.7
Other female only	637	15.1	59	2.3	129	40.1
Male factors only	577	13.7	1,670	64.1	32	9.9
Multiple causes	751	17.9	639	24.5	89	27.6
Unexplained	1,108	26.3	185	7.1	57	17.7
Not stated	481		419		33	
All causes	4,687	100.0	3,025	100.0	355	100.0
Number of embryos transferred						
One	930	20.9	624	21.8	90	25.6
Two	2,593	58.4	1,741	60.7	183	52.0
Three	877	19.7	478	16.7	70	19.9
Four	42	0.9	22	0.8	9	2.6
Five	1	0.0	1	0.0	-	-
Six or more	-	-	-	-	-	-
Not stated	244		159		3	
Total	4,687	100.0	3,025	100.0	355	100.0

Table 6: IVF pregnancies after transfer of fresh embryos to uterus, numbers and pregnancy rates in each IVF unit, 1997

Stage of treatment	IVF unit												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Treatment cycles commenced	1,196	1,258	582	507	247	363	432	296	289	144	275	222	147
Cycles with oocyte retrieval	908	1,024	493	444	225	333	338	219	233	133	221	201	130
Cycles with embryo transfer	714	749	426	414	174	263	294	191	192	86	194	163	112
Clinical pregnancies	119	157	80	100	30	97	69	38	27	10	42	22	18
Viable pregnancies	96	121	40	79	25	75	61	31	24	6	37	17	14
Clinical pregnancies per 100 oocyte retrieval cycles	13.1	15.3	16.2	22.5	13.3	29.1	20.4	17.4	11.6	7.5	19.0	10.9	13.8
Viable pregnancies per 100 oocyte retrieval cycles	10.6	11.8	8.1	17.8	11.1	22.5	18.0	14.2	10.3	4.5	16.7	8.5	10.8

Stage of treatment	IVF unit												
	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Treatment cycles commenced	287	58	198	60	190	216	82	80	155	84	112	104	56
Cycles with oocyte retrieval	212	52	166	54	183	161	75	65	138	82	90	87	50
Cycles with embryo transfer	168	48	129	43	165	141	61	49	117	77	73	69	44
Clinical pregnancies	49	14	33	7	49	28	6	16	28	20	16	13	4
Viable pregnancies	41	10	26	6	34	26	5	9	22	18	13	11	2
Clinical pregnancies per 100 oocyte retrieval cycles	23.1	26.9	19.9	13.0	26.8	17.4	8.0	24.6	20.3	24.4	17.8	14.9	8.0
Viable pregnancies per 100 oocyte retrieval cycles	19.3	19.2	15.7	11.1	18.6	16.1	6.7	13.8	15.9	22.0	14.4	12.6	4.0

Stage of treatment	IVF unit										Total
	AA	AB	AC	AD	AE	AF	AG	AH	AI		
Treatment cycles commenced	98	-	114	53	40	56	30	40	56	8,127	
Cycles with oocyte retrieval	65	-	89	48	37	54	15	29	43	6,697	
Cycles with embryo transfer	57	-	72	43	25	48	14	24	32	5,471	
Clinical pregnancies	15	-	12	13	3	6	-	7	3	1,151	
Viable pregnancies	11	-	12	8	3	5	-	5	3	896	
Clinical pregnancies per 100 oocyte retrieval cycles	23.1	-	13.5	27.1	8.1	11.1	-	24.1	7.0	17.2	
Viable pregnancies per 100 oocyte retrieval cycles	16.9	-	13.5	16.7	8.1	9.3	-	17.2	7.0	13.4	

Table 7: IVF pregnancies after ICSI, numbers and pregnancy rates in each IVF unit, 1997

Stage of treatment	IVF unit												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Treatment cycles commenced	982	991	378	576	350	329	163	263	151	197	293	199	147
Cycles with oocyte retrieval	982	870	378	530	341	308	145	219	137	188	226	178	147
Cycles with embryo transfer	825	694	360	490	286	261	129	171	108	154	198	167	130
Clinical pregnancies	140	155	96	121	54	83	27	28	22	25	53	29	21
Viable pregnancies	113	129	77	108	39	68	24	19	19	16	46	21	13
Clinical pregnancies per 100 oocyte retrievals	14.3	17.8	25.4	22.8	15.8	26.9	18.6	12.8	16.1	13.3	23.5	16.3	14.3
Viable pregnancies per 100 oocyte retrievals	11.5	14.8	20.4	20.4	11.4	22.1	16.6	8.7	13.9	8.5	20.4	11.8	8.8

Stage of treatment	IVF unit												
	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Treatment cycles commenced	86	240	107	235	103	68	112	116	73	129	69	78	64
Cycles with oocyte retrieval	86	234	86	211	98	61	111	97	64	128	53	62	58
Cycles with embryo transfer	79	207	69	171	87	50	105	80	60	120	47	51	52
Clinical pregnancies	20	29	10	34	25	9	20	12	15	25	9	10	11
Viable pregnancies	19	23	8	27	21	8	18	11	13	23	6	8	8
Clinical pregnancies per 100 oocyte retrievals	23.3	12.4	11.6	16.1	25.5	14.8	18.0	12.4	23.4	19.5	17.0	16.1	19.0
Viable pregnancies per 100 oocyte retrievals	22.1	9.8	9.3	12.8	21.4	13.1	16.2	11.3	20.3	18.0	11.3	12.9	13.8

Stage of treatment	IVF unit										Total
	AA	AB	AC	AD	AE	AF	AG	AH	AI		
Treatment cycles commenced	-	-	28	52	46	27	46	47	8	6,753	
Cycles with oocyte retrieval	-	-	28	49	44	26	36	45	8	6,234	
Cycles with embryo transfer	-	-	23	49	31	26	32	44	8	5,364	
Clinical pregnancies	-	-	4	8	4	7	6	10	1	1,123	
Viable pregnancies	-	-	4	8	4	7	4	7	1	920	
Clinical pregnancies per 100 oocyte retrievals	-	-	14.3	16.3	9.1	26.9	16.7	22.2	12.5	18.0	
Viable pregnancies per 100 oocyte retrievals	-	-	14.3	16.3	9.1	26.9	11.1	15.6	12.5	14.8	

Table 8: Pregnancy rates by type of transfer and technique of sperm collection, ICSI pregnancies, 1997

Stage of treatment	Type of transfer		Sperm collection technique			
	Uterine	Tubal	TESE	MESA	PESA	Other
Treatment cycles commenced	6,753	87	490	290	116	6
Cycles with oocyte retrieval	6,234	74	484	269	115	6
Cycles with embryo transfer	5,364	74	412	247	104	6
Clinical pregnancies	1,123	12	83	63	30	2
Viable pregnancies	920	8	74	54	22	1
Clinical pregnancies per 100 oocyte retrievals	18.0	16.2	17.1	23.4	26.1	33.3
Viable pregnancies per 100 oocyte retrievals	14.8	10.8	15.3	20.1	19.1	16.7

Table 9: IVF pregnancies after use of donor oocytes, numbers and pregnancy rates in each IVF unit, 1997

Stage of treatment	IVF unit												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Cycles with embryo transfer	138	141	52	28	3	7	38	23	6	31	11	8	25
Clinical pregnancies	23	33	7	7	1	4	6	4	1	6	4	1	7
Viable pregnancies	21	23	5	3	1	4	6	2	1	4	4	1	3
Clinical pregnancies per 100 embryo transfers	16.7	23.4	13.5	25.0	33.3	57.1	15.8	17.4	16.7	19.4	36.4	12.5	28.0
Viable pregnancies per 100 embryo transfers	15.2	16.3	9.6	10.7	33.3	57.1	15.8	8.7	16.7	12.9	36.4	12.5	12.0

Stage of treatment	IVF unit												
	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Cycles with embryo transfer	1	14	6	11	10	16	-	4	6	3	10	-	4
Clinical pregnancies	-	1	-	3	4	2	-	-	-	-	2	-	1
Viable pregnancies	-	1	-	2	4	2	-	-	-	-	-	-	1
Clinical pregnancies per 100 embryo transfers	-	7.1	-	27.3	40.0	12.5	-	-	-	-	20.0	-	25.0
Viable pregnancies per 100 embryo transfers	-	7.1	-	18.2	40.0	12.5	-	-	-	-	-	-	25.0

Stage of treatment	IVF unit									
	AA	AB	AC	AD	AE	AF	AG	AH	AI	Total
Cycles with embryo transfer	9	-	2	-	7	-	6	-	1	621
Clinical pregnancies	3	-	-	-	1	-	2	-	1	124
Viable pregnancies	3	-	-	-	1	-	2	-	1	95
Clinical pregnancies per 100 embryo transfers	33.3	-	-	-	14.3	-	33.3	-	100.0	20.0
Viable pregnancies per 100 embryo transfers	33.3	-	-	-	14.3	-	33.3	-	100.0	15.3

Table 10: GIFT pregnancies, numbers and pregnancy rates in each IVF unit, 1997

Stage of treatment	IVF unit												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Treatment cycles commenced	21	191	607	86	235	189	90	1	2	148	16	126	5
Cycles with oocyte retrieval	21	156	537	80	205	172	69	1	2	142	14	101	5
Cycles with gamete transfer	21	146	528	80	182	170	67	1	2	136	14	98	5
Clinical pregnancies	2	34	176	23	48	45	6	1	-	36	3	19	2
Viable pregnancies	2	30	127	16	37	39	5	1	-	25	3	15	1
Clinical pregnancies per 100 oocyte retrieval cycles	9.5	21.8	32.8	28.8	23.4	26.2	8.7	100.0	-	25.4	21.4	18.8	40.0
Viable pregnancies per 100 oocyte retrieval cycles	9.5	19.2	23.6	20.0	18.0	22.7	7.2	100.0	-	17.6	21.4	14.9	20.0

Stage of treatment	IVF unit												
	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Treatment cycles commenced	-	38	22	15	8	16	99	-	-	-	5	2	83
Cycles with oocyte retrieval	-	37	19	11	8	13	96	-	-	-	5	2	59
Cycles with gamete transfer	-	37	19	11	8	13	94	-	-	-	5	2	57
Clinical pregnancies	-	12	4	4	2	3	33	-	-	-	3	-	10
Viable pregnancies	-	9	3	2	2	3	25	-	-	-	3	-	7
Clinical pregnancies per 100 oocyte retrieval cycles	-	32.4	21.1	36.4	25.0	23.1	34.4	-	-	-	60.0	-	16.9
Viable pregnancies per 100 oocyte retrieval cycles	-	24.3	15.8	18.2	25.0	23.1	26.0	-	-	-	60.0	-	11.9

Stage of treatment	IVF unit										Total
	AA	AB	AC	AD	AE	AF	AG	AH	AI		
Treatment cycles commenced	-	164	4	-	-	3	1	15	3	2,195	
Cycles with oocyte retrieval	-	146	3	-	-	3	-	14	3	1,924	
Cycles with gamete transfer	-	141	2	-	-	3	-	13	3	1,858	
Clinical pregnancies	-	36	-	-	-	-	-	3	1	506	
Viable pregnancies	-	27	-	-	-	-	-	1	1	384	
Clinical pregnancies per 100 oocyte retrieval cycles	-	24.7	-	-	-	-	-	21.4	33.3	26.3	
Viable pregnancies per 100 oocyte retrieval cycles	-	18.5	-	-	-	-	-	7.1	33.3	20.0	

Table 11: IVF pregnancies after embryo freezing but without ICSI, numbers and pregnancy rates in each IVF unit, 1997

Stage of treatment	IVF unit												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Cycles with embryo transfer	789	282	216	415	247	154	334	205	222	169	147	158	218
Clinical pregnancies	122	36	29	65	46	40	60	42	30	26	26	29	13
Viable pregnancies	95	31	23	50	28	33	59	37	25	17	20	19	8
Clinical pregnancies per 100 embryo transfers	15.5	12.8	13.4	15.7	18.6	26.0	18.0	20.5	13.5	15.4	17.7	18.4	6.0
Viable pregnancies per 100 embryo transfers	12.0	11.0	10.6	12.0	11.3	21.4	17.7	18.0	11.3	10.1	13.6	12.0	3.7

Stage of treatment	IVF unit												
	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Cycles with embryo transfer	119	85	133	78	100	85	17	45	21	8	30	38	19
Clinical pregnancies	17	13	10	12	31	11	1	8	2	1	6	5	3
Viable pregnancies	8	10	7	7	24	10	-	5	2	1	3	4	3
Clinical pregnancies per 100 embryo transfers	14.3	15.3	7.5	15.4	31.0	12.9	5.9	17.8	9.5	12.5	20.0	13.2	15.8
Viable pregnancies per 100 embryo transfers	6.7	11.8	5.3	9.0	24.0	11.8	-	11.1	9.5	12.5	10.0	10.5	15.8

Stage of treatment	IVF unit										Total
	AA	AB	AC	AD	AE	AF	AG	AH	AI		
Cycles with embryo transfer	52	-	12	20	34	38	17	5	8	4,520	
Clinical pregnancies	9	-	-	5	7	5	4	-	1	715	
Viable pregnancies	5	-	-	4	4	4	4	-	1	551	
Clinical pregnancies per 100 embryo transfers	17.3	-	-	25.0	20.6	13.2	23.5	-	12.5	15.8	
Viable pregnancies per 100 embryo transfers	9.6	-	-	20.0	11.8	10.5	23.5	-	12.5	12.2	

Table 12: IVF pregnancies after ICSI and embryo freezing, numbers and pregnancy rates in each IVF unit, 1997

Stage of treatment	IVF unit												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Cycles with embryo transfer	824	143	122	279	154	121	118	232	143	91	54	58	141
Clinical pregnancies	106	22	11	44	31	36	28	18	20	12	11	6	9
Viable pregnancies	85	19	6	39	24	31	24	14	18	6	10	2	6
Clinical pregnancies per 100 embryo transfers	12.9	15.4	9.0	15.8	20.1	29.8	23.7	7.8	14.0	13.2	20.4	10.3	6.4
Viable pregnancies per 100 embryo transfers	10.3	13.3	4.9	14.0	15.6	25.6	20.3	6.0	12.6	6.6	18.5	3.4	4.3

Stage of treatment	IVF unit												
	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Cycles with embryo transfer	39	149	89	111	56	19	18	73	10	15	9	14	6
Clinical pregnancies	6	13	4	24	19	2	2	13	-	1	2	1	1
Viable pregnancies	3	10	3	14	18	2	2	12	-	1	2	1	1
Clinical pregnancies per 100 embryo transfers	15.4	8.7	4.5	21.6	33.9	10.5	11.1	17.8	-	6.7	22.2	7.1	16.7
Viable pregnancies per 100 embryo transfers	7.7	6.7	3.4	12.6	32.1	10.5	11.1	16.4	-	6.7	22.2	7.1	16.7

Stage of treatment	IVF unit										Total
	AA	AB	AC	AD	AE	AF	AG	AH	AI		
Cycles with embryo transfer	40	-	-	20	16	11	27	1	-	3,203	
Clinical pregnancies	7	-	-	3	4	-	1	-	-	457	
Viable pregnancies	5	-	-	2	3	-	1	-	-	364	
Clinical pregnancies per 100 embryo transfers	17.5	-	-	15.0	25.0	-	3.7	-	-	14.3	
Viable pregnancies per 100 embryo transfers	12.5	-	-	10.0	18.8	-	3.7	-	-	11.4	

Table 13: Treatment related to embryo freezing in each IVF unit, 1997

Stage of treatment	IVF unit												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Patients having embryos frozen	957	600	417	551	301	445	350	296	231	197	243	122	167
Embryos that were frozen	4,540	2,067	1,966	2,729	1,081	2,115	2,115	1,594	1,457	1,013	1,158	964	989
Embryos thawed	3,340	1,490	1,295	2,003	1,019	1,087	1,296	1,316	987	646	722	671	839
Patients receiving thawed embryos	988	415	292	467	301	322	333	237	245	195	179	157	184
Embryos transferred after thawing	2,664	1,010	864	1,280	754	879	923	951	720	524	437	421	595
Frozen embryos in storage	8,597	4,620	2,019	4,748	na	na	2,997	3,460	2,690	1,631	1,560	1,413	1,133

Stage of treatment	IVF unit												
	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Patients having embryos frozen	111	187	151	153	142	121	91	39	44	40	41	74	49
Embryos that were frozen	725	668	848	862	1,099	608	372	731	234	309	271	322	207
Embryos thawed	475	609	663	598	616	343	188	475	171	121	156	301	130
Patients receiving thawed embryos	168	247	110	123	131	90	35	76	34	20	46	52	27
Embryos transferred after thawing	374	442	522	437	456	288	84	317	64	40	101	98	55
Frozen embryos in storage	933	1,170	1,116	1,116	1,818	917	546	529	266	306	366	483	322

Stage of treatment	IVF unit										Total
	AA	AB	AC	AD	AE	AF	AG	AH	AI		
Patients having embryos frozen	41	-	34	40	37	40	40	28	11	6,391	
Embryos that were frozen	266	-	180	179	233	166	146	71	42	32,327	
Embryos thawed	345	-	65	133	161	161	147	17	25	22,611	
Patients receiving thawed embryos	64	-	12	40	32	49	34	6	8	5,719	
Embryos transferred after thawing	199	-	27	84	105	116	99	14	15	15,959	
Frozen embryos in storage	501	-	115	139	323	216	188	67	17	46,322 (a)	

(a) Excludes E and F

Table 14: Numbers and outcomes of IVF pregnancies by year of conception, 1979–1997

Outcome of pregnancy	Year of conception							
	1979–95		1996		1997		1979–97	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Spontaneous abortion	3,281	20.8	643	21.2	681	19.5	4,605	20.6
Termination of pregnancy	84	0.5	15	0.5	22	0.6	121	0.5
Ectopic pregnancy	712	4.5	93	3.1	91	2.6	896	4.0
Stillbirth	215	1.4	33	1.1	30	0.9	278	1.2
Live birth ^(a)	11,490	72.8	2,254	74.2	2,664	76.4	16,408	73.6
All outcomes	15,782	100.0	3,038	100.0	3,488	100.0	22,308	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

Table 15: Place of parental residence, IVF pregnancies, 1979–1997

Place of usual residence	Number			Per cent		
	1979–95	1996	1997	1979–95	1996	1997
	4,461	824	1,079	28.4	27.1	31.2
Victoria	4,439	928	919	28.2	30.6	26.6
Queensland	1,993	297	374	12.7	9.8	10.8
South Australia	1,892	304	303	12.0	10.0	8.8
Western Australia	1,332	270	336	8.5	8.9	9.7
Tasmania	295	62	101	1.9	2.0	2.9
Australian Capital Territory	138	35	40	0.9	1.2	1.2
Northern Territory	145	36	36	0.9	1.2	1.0
New Zealand	947	259	256	6.0	8.5	7.4
Other countries	84	21	15	0.5	0.7	0.4
Not stated	56	2	29			
All regions	15,782	3,038	3,488	100.0	100.0	100.0

Table 16: Maternal ages, IVF pregnancies, 1979–1997

Age group (years)	Number			Per cent		
	1979–95	1996	1997	1979–95	1996	1997
Less than 20	4	-	-	0.0	-	-
20–24	340	55	71	2.2	1.8	2.0
25–29	3,619	548	608	23.0	18.0	17.4
30–34	6,797	1,197	1,375	43.1	39.4	39.4
35–39	4,198	964	1,137	26.6	31.7	32.6
40–44	754	233	265	4.8	7.7	7.6
45 and over	53	40	30	0.3	1.3	0.9
Not stated	17	1	2			
All ages	15,782	3,038	3,488	100.0	100.0	100.0

Table 17: Paternal ages, IVF pregnancies, 1979–1997

Age group (years)	Number					
	1979–95	1996	1997	1979–95	1996	1997
Less than 20	1	-	-	0.0	-	-
20–24	141	9	20	0.9	0.3	0.6
25–29	2,036	339	316	13.7	11.2	9.1
30–34	5,506	927	1,077	37.0	30.7	31.1
35–39	4,441	935	1,168	29.9	30.9	33.8
40–44	1,867	522	543	12.6	17.3	15.7
45 and over	871	292	336	5.9	9.7	9.7
Not stated	919	14	28			
All ages	15,782	3,038	3,488	100.0	100.0	100.0

Table 18: Previous pregnancies for pregnant women, IVF pregnancies, 1979–1997

Number of previous pregnancies	Number				Per cent			
	1979–94	1995	1996	1997	1979–94	1995	1996	1997
One	6,107	1,348	1,612	1,816	47.9	51.9	53.1	52.2
Two	3,550	710	798	1,003	27.8	27.4	26.3	28.8
Three	1,651	293	357	395	12.9	11.3	11.8	11.4
Four or more	849	140	144	152	6.7	5.4	4.7	4.4
Not stated	604	104	123	112	4.7	4.0	4.1	3.2
	402	24	4	10				
All women	13,163	2,619	3,038	3,488	100.0	100.0	100.0	100.0

Table 19: Duration of infertility, IVF pregnancies, 1979–1997

Duration of infertility (years)	Number			Per cent		
	1979–95	1996	1997	1979–95	1996	1997
Less than 2	673	251	366	4.5	8.3	10.7
2–3	4,984	1,210	1,429	33.1	40.1	41.9
4–5	4,349	768	821	28.9	25.5	24.1
6–7	2,365	413	395	15.7	13.7	11.6
8–9	1,220	177	184	8.1	5.9	5.4
10 or more	1,452	195	215	9.7	6.5	6.3
Not stated	739	24	78			
All pregnancies	15,782	3,038	3,488	100.0	100.0	100.0

Table 20: Outcome of pregnancy by duration of infertility, IVF pregnancies, 1996–1997

Outcome of pregnancy	Duration of infertility (years)					
	Less than 4		4–7		8 or more	
	Number	Per cent	Number	Per cent	Number	Per cent
Spontaneous abortion	635	19.5	486	20.3	185	24.0
Termination of pregnancy	23	0.7	10	0.4	2	0.3
Ectopic pregnancy	85	2.6	73	3.0	24	3.1
Stillbirth	28	0.9	29	1.2	5	0.6
Live birth ^(a)	2,485	76.3	1,799	75.1	555	72.0
All outcomes	3,256	100.0	2,397	100.0	771	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

Note. The duration of infertility was not stated for 102 pregnancies

Table 21: Causes of infertility, IVF pregnancies, 1979–1997

Causes of infertility	Number			Per cent		
	1979–95	1996	1997	1979–95	1996	1997
Tubal	5,290	383	428	33.6	12.6	12.3
Male factor	3,031	1,040	1,158	19.2	34.3	33.3
Endometriosis	848	146	190	5.4	4.8	5.5
Other stated causes	848	225	320	5.4	7.4	9.2
Multiple causes	4,212	932	925	26.7	30.7	26.6
Unexplained infertility	1,535	306	456	9.7	10.1	13.1
Not stated	18	6	11			
All causes	15,782	3,038	3,488	100.0	100.0	100.0

Table 22: Outcome of pregnancy by causes of infertility, IVF pregnancies, 1996–1997

Outcome of pregnancy	Causes of infertility					
	Tubal	Male	Endometriosis	Multiple	Unexplained	All causes ^(b)
	Number					
Spontaneous abortion	166	394	76	388	150	1,324
Termination of pregnancy	2	11	1	8	10	37
Ectopic pregnancy	45	42	6	50	24	184
Stillbirth	10	17	3	19	6	63
Live birth ^(a)	588	1,734	250	1,392	572	4,918
All outcomes	811	2,198	336	1,857	762	6,526
	Per cent					
Spontaneous abortion	20.5	17.9	22.6	20.9	19.7	20.3
Termination of pregnancy	0.2	0.5	0.3	0.4	1.3	0.6
Ectopic pregnancy	5.5	1.9	1.8	2.7	3.1	2.8
Stillbirth	1.2	0.8	0.9	1.0	0.8	1.0
Live birth ^(a)	72.5	78.9	74.4	75.0	75.1	75.4
All outcomes	100.0	100.0	100.0	100.0	100.0	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

(b) Includes 562 pregnancies with 'other' or 'not stated' causes of infertility

Table 23: Drugs used to stimulate ovulation, IVF pregnancies, 1979–1997

Drugs	Number			Per cent		
	1979–95	1996	1997	1979–95	1996	1997
Natural cycles	164	133	145	1.1	4.4	4.2
Clomiphene and hMG or FSH	5,925	77	59	39.8	2.5	1.7
hMG or FSH	284	25	134	1.9	0.8	3.8
GnRH analogues and hMG or FSH	8,445	2,802	3,144	56.8	92.3	90.2
Other	59	-	3	0.4	-	0.1
Not stated	905	1	3			
All drugs	15,782	3,038	3,488	100.0	100.0	100.0

Table 24: IVF treatment cycle in which conception occurred, 1979–1997

Treatment cycle	Number			Per cent		
	1979–95	1996	1997	1979–95	1996	1997
1	6,522	1,330	1,698	43.5	43.9	48.9
2	3,653	782	839	24.4	25.8	24.2
3	2,072	418	432	13.8	13.8	12.4
4	1,137	222	218	7.6	7.3	6.3
5 or more	1,609	280	283	10.7	9.2	8.2
Not stated	789	6	18			
All cycles	15,782	3,038	3,488	100.0	100.0	100.0

Table 25: Number of oocytes collected by laparoscopy or ultrasound guidance, IVF pregnancies, 1979–1997

Number of oocytes collected	1979–95		1996		1997	
	Number	Per cent	Number	Per cent	Number	Per cent
1–2	860	5.9	95	3.2	96	2.8
3–4	2,192	15.0	223	7.6	231	6.8
5–6	2,699	18.5	365	12.4	363	10.7
7–8	2,824	19.4	420	14.3	467	13.7
9–10	1,522	10.4	360	12.3	474	13.9
11–12	1,243	8.5	349	11.9	427	12.5
13–14	932	6.4	314	10.7	352	10.3
15 or more	2,320	15.9	809	27.6	993	29.2
Not stated	1,190		103		85	
All pregnancies	15,782	100.0	3,038	100.0	3,488	100.0
Mean number of oocytes	9.9 (a)		11.6		12.0	

(a) Data include 1987–1995

Table 26: Number of embryos transferred, IVF pregnancies, 1979–1997

Number of embryos transferred	Number			Per cent		
	1979–95	1996	1997	1979–95	1996	1997
1	1,227	239	265	7.9	7.9	7.7
2	5,649	1,717	2,021	36.3	56.6	58.8
3	6,764	1,001	1,092	43.4	33.0	31.8
4	1,767	73	60	11.3	2.4	1.7
5 or more	167	4	1	1.1	0.1	0.0
Not stated	208	4	49			
All pregnancies	15,782	3,038	3,488	100.0	100.0	100.0
Mean number of embryos	2.6	2.3	2.3			

Table 27: Outcome of pregnancy by number of embryos transferred, IVF pregnancies, 1996–1997

Outcome of pregnancy	Number of embryos transferred					All ^(b) pregnancies
	1	2	3	4	5+	
	Number					
Spontaneous abortion	115	732	427	36	1	1,324
Termination of pregnancy	-	27	6	3	-	37
Ectopic pregnancy	14	107	60	2	-	184
Stillbirth	5	36	19	2	-	63
Live birth ^(a)	370	2,836	1,581	90	4	4,918
All outcomes	504	3,738	2,093	133	5	6,526
	Per cent					
Spontaneous abortion	22.8	19.6	20.4	27.1	20.0	20.3
Termination of pregnancy	-	0.7	0.3	2.3	-	0.6
Ectopic pregnancy	2.8	2.9	2.9	1.5	-	2.8
Stillbirth	1.0	1.0	0.9	1.5	-	1.0
Live birth ^(a)	73.4	75.9	75.5	67.7	80.0	75.4
All outcomes	100.0	100.0	100.0	100.0	100.0	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

(b) Includes 53 pregnancies in which the number of embryos transferred was not stated

Table 28: Number of IVF pregnancies following donor oocytes, sperm or embryos, and frozen embryos or oocytes, 1979–1997

Type of pregnancy	1979–94	1995	1996	1997	1979–97
	359	89	114	121	683
Donor sperm	1,122	135	131	128	1,516
Donor embryos	29	15	22	12	78
Frozen embryos	2,869	915	1,014	1,192	5,990
Frozen oocytes	4	2	3	1	10

Table 29: Outcome of pregnancy after use of donor gametes, donor or frozen embryos, IVF pregnancies, 1979–1997

Outcome of pregnancy	Donor sperm		Donor oocytes		Donor embryos		Frozen embryos	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Spontaneous abortion	293	19.3	175	25.6	27	34.6	1,162	19.4
Termination of pregnancy	8	0.5	6	0.9	-	-	38	0.6
Ectopic pregnancy	45	3.0	12	1.8	2	2.6	165	2.8
Stillbirth	26	1.7	7	1.0	1	1.3	49	0.8
Live birth ^(a)	1,144	75.5	483	70.7	48	61.5	4,576	76.4
All outcomes	1,516	100.0	683	100.0	78	100.0	5,990	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

Table 30: Number and outcome of pregnancies after microinsemination, 1990–1997

Outcome of pregnancy	Year of conception							
	1990–95		1996		1997		1990–97	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Spontaneous abortion	330	19.0	253	20.7	270	17.8	853	19.1
Termination of pregnancy	14	0.8	6	0.5	7	0.5	27	0.6
Ectopic pregnancy	31	1.8	27	2.2	27	1.8	85	1.9
Stillbirth	21	1.2	9	0.7	12	0.8	42	0.9
Live birth ^(a)	1,341	77.2	929	75.9	1,199	79.1	3,469	77.5
All outcomes	1,737	100.0	1,224	100.0	1,515	100.0	4,476	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

Table 31: Drugs used in the luteal phase after embryo transfer, IVF pregnancies, 1979–1997

Drugs	Number			Per cent		
	1979–95	1996	1997	1979–95	1996	1997
Proluton	666	579	700	4.3	19.1	20.1
Human chorionic gonadotrophin (hCG)	7,490	1,367	1,553	48.1	45.0	44.5
Human chorionic gonadotrophin / Proluton	726	232	213	4.7	7.6	6.1
Progestagen	2,221	285	393	14.2	9.4	11.3
Other drugs	87	10	30	0.6	0.3	0.9
None	4,396	565	599	28.2	18.6	17.2
Not stated	196	-	-			
All pregnancies	15,782	3,038	3,488	100.0	100.0	100.0

Table 32: Outcome of pregnancy by maternal age groups, IVF pregnancies, 1979–1997

Outcome of pregnancy	Maternal age (years)					All ages ^(b)
	Less than 25	25–29	30–34	35–39	40 and over	
Number						
Spontaneous abortion	21	208	448	451	196	1,324
Termination of pregnancy	-	3	11	14	9	37
Ectopic pregnancy	1	34	81	51	17	184
Stillbirth	2	13	21	20	7	63
Live birth ^(a)	102	898	2,011	1,565	339	4,918
All outcomes	126	1,156	2,572	2,101	568	6,526
Per cent						
Spontaneous abortion	16.7	18.0	17.4	21.5	34.5	20.3
Termination of pregnancy	-	0.3	0.4	0.7	1.6	0.6
Ectopic pregnancy	0.8	2.9	3.1	2.4	3.0	2.8
Stillbirth	1.6	1.1	0.8	1.0	1.2	1.0
Live birth ^(a)	81.0	77.7	78.2	74.5	59.7	75.4
All outcomes	100.0	100.0	100.0	100.0	100.0	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

(b) Includes 3 pregnancies in which maternal age was not stated

Table 33: Spontaneous abortions, IVF pregnancies, 1979–1997

Outcome of pregnancy	1979–94	1995	1996	1997	1979–97
Spontaneous abortion	2,787	494	643	681	4,605
Stillbirth	182	33	33	30	278
Live birth	9,480	2,010	2,254	2,664	16,408
Total abortions and births	12,449	2,537	2,930	3,375	21,291
Spontaneous abortion rate (%)	22.4	19.5	21.9	20.2	21.6

Table 34: Incidence of spontaneous abortions in maternal age groups, IVF pregnancies, 1979–1997

Maternal age (years)	Number of IVF pregnancies ^(a)	Spontaneous abortions	
		Number	Per cent
	125	21	16.8
25–29	1,119	208	18.6
30–34	2,480	448	18.1
35–39	2,036	451	22.2
40–44	472	171	36.2
45 and over	70	25	35.7
Not stated	3	0	
All ages	6,305	1,324	21.0

(a) Spontaneous abortions and pregnancies of at least 20 weeks' gestation

Table 35: Ectopic pregnancies after IVF, 1979–1997

Outcome of pregnancy	1979–94	1995	1996	1997	1979–97
Ectopic pregnancies	648	64	93	91	896
Clinical pregnancies	13,163	2,619	3,038	3,488	22,308
% ectopic pregnancies	4.9	2.4	3.1	2.6	4.0
Total abortions and births	12,515	2,555	2,945	3,397	21,412
Ectopic pregnancy ratio ^(a)	1:19.3	1:39.9	1:31.7	1:37.3	1:23.9

(a) Ratio of ectopic pregnancies: total abortions and births

Table 36: Heterotopic pregnancies after IVF, 1979–1997

Type of heterotopic pregnancy	Year							1979–97
	1979–91	1992	1993	1994	1995	1996	1997	
	Number							
Abortion	47	5	4	2	5	8	4	75
Birth	20	3	5	4	6	5	2	45
All heterotopic pregnancies	67	8	9	6	11	13	6	120
All pregnancies	7,683	1,513	1,708	2,259	2,619	3,038	3,488	22,308
	Per cent							
Abortion	0.6	0.3	0.2	0.1	0.2	0.3	0.1	0.3
Birth	0.3	0.2	0.3	0.2	0.2	0.2	0.1	0.2
All heterotopic pregnancies	0.9	0.5	0.5	0.3	0.4	0.4	0.2	0.5

Table 37: Reported complications of pregnancy, IVF pregnancies, 1990–1997

Pregnancy complications	Number			Per cent		
	1990–95	1996	1997	1990–95	1996	1997
None	5,829	2,254	2,520	67.4	74.3	74.8
Threatened abortion	471	121	116	5.4	4.0	3.4
Antepartum haemorrhage	163	41	60	1.9	1.4	1.8
Pregnancy-induced hypertension	535	195	208	6.2	6.4	6.2
Placenta praevia	104	32	38	1.2	1.1	1.1
Other complications	1,542	392	425	17.8	12.9	12.6
Not stated	2,007	3	121			
All pregnancies	10,651	3,038	3,488	100.0	100.0	100.0

Table 38: Duration of singleton and multiple IVF pregnancies of at least 20 weeks' gestation, 1996–1997

Gestational age (weeks)	Singleton		Twin		Triplet		All pregnancies ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
20–23	41	1.0	20	2.2	2	2.8	63	1.3
24–27	29	0.7	32	3.6	4	5.6	65	1.3
28–31	59	1.5	82	9.1	23	32.4	167	3.4
32–36	405	10.3	431	47.9	39	54.9	876	17.8
37–41	3,379	85.6	330	36.7	3	4.2	3,712	75.4
42 or more	36	0.9	4	0.4	-	-	40	0.8
20–36	534	13.5	565	62.8	68	95.8	1,171	23.8
Not stated	52		6		-		58	
All gestational ages	4,001	100.0	905	100.0	71	100.0	4,981	100.0

(a) Includes 4 quadruplet pregnancies

Table 39: Duration of singleton and multiple IVF pregnancies of at least 20 weeks' gestation after microinsemination, 1990–1997

Gestational age (weeks)	Singleton		Twin		Triplet		All pregnancies ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
20–23	16	0.6	15	2.4	4	8.5	35	1.0
24–27	17	0.6	29	4.7	1	2.1	47	1.4
28–31	35	1.2	39	6.3	17	36.2	95	2.7
32–36	268	9.6	280	45.5	24	51.1	573	16.5
37–41	2,442	87.0	247	40.2	1	2.1	2,690	77.5
42 or more	28	1.0	5	0.8	-	-	33	1.0
20–36	336	12.0	363	59.0	46	97.9	750	21.6
Not stated	36		2		-		38	
All gestational ages	2,842	100.0	617	100.0	47	100.0	3,511	100.0

(a) Include 5 quadruplet pregnancies

Table 40: Duration of pregnancy of singleton IVF births after use of donor sperm, donor oocytes or frozen embryos, 1996–1997

Gestational age (weeks)	Donor sperm		Donor oocytes		Frozen embryos	
	Number	Per cent	Number	Per cent	Number	Per cent
20–27	4	2.9	4	3.1	22	1.5
28–31	2	1.5	1	0.8	19	1.3
32–36	13	9.6	21	16.0	131	9.1
37–41	117	86.0	105	80.2	1,263	87.3
42 or more	-	-	-	-	11	0.8
Not stated	3		-		17	
All gestational ages	139	100.0	131	100.0	1,463	100.0

Table 41: Maternal age and duration of singleton IVF pregnancies of at least 20 weeks' gestation, 1996–1997

Gestational age (weeks)	Maternal age (years)					All ages ^(a)
	Less than 25	25–29	30–34	35–39	40 and over	
	Number					
20–27	3	11	24	24	8	70
28–31	1	10	16	26	6	59
32–36	11	62	150	148	34	405
37 or more	65	615	1,364	1,109	261	3,415
Not stated	2	14	18	14	3	52
All gestational ages	82	712	1,572	1,321	312	4,001
20–36	15	83	190	198	48	534
	Per cent					
20–27	3.8	1.6	1.5	1.8	2.6	1.8
28–31	1.3	1.4	1.0	2.0	1.9	1.5
32–36	13.8	8.9	9.7	11.3	11.0	10.3
37 or more	81.3	88.1	87.8	84.9	84.5	86.5
All gestational ages	100.0	100.0	100.0	100.0	100.0	100.0
20–36	18.8	11.9	12.2	15.1	15.5	13.5

(a) Includes 2 pregnancies in which maternal age was not stated

Table 42: Causes of infertility and duration of singleton IVF pregnancies of at least 20 weeks' gestation, 1996–1997

Gestational age (weeks)	Causes of infertility					
	Tubal	Male	Endometriosis	Multiple	Unexplained	All causes ^(a)
	Number					
20–27	12	17	4	24	6	70
28–31	7	23	2	10	9	59
32–36	52	130	14	126	44	405
37 or more	405	1,201	170	986	391	3,415
Not stated	6	25	3	7	5	52
All gestational ages	482	1,396	193	1,153	455	4,001
20–36	71	170	20	160	59	534
	Per cent					
20–27	2.5	1.2	2.1	2.1	1.3	1.8
28–31	1.5	1.7	1.1	0.9	2.0	1.5
32–36	10.9	9.5	7.4	11.0	9.8	10.3
37 or more	85.1	87.6	89.5	86.0	86.9	86.5
All gestational ages	100.0	100.0	100.0	100.0	100.0	100.0
20–36	14.9	12.4	10.5	14.0	13.1	13.5

(a) Includes 322 pregnancies with 'other' or 'not stated' causes of infertility

Table 43: Plurality of IVF pregnancies of at least 20 weeks' gestation, 1979–1997

Plurality	Number			Per cent		
	1979–95	1996	1997	1979–95	1996	1997
Singletons	9,424	1,852	2,149	80.5	81.0	79.8
Twins	2,011	399	506	17.2	17.4	18.8
Triplets	259	32	39	2.2	1.4	1.4
Quadruplets	10	4	-	0.1	0.2	-
Quintuplets	1	-	-	0.0	-	-
All pregnancies	11,705	2,287	2,694	100.0	100.0	100.0

Table 44: Plurality of IVF pregnancies of at least 20 weeks' gestation and number of embryos transferred, 1996–1997

Number of embryos transferred	Plurality							
	Singleton		Twin		Triplet		All pregnancies ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
1	371	98.9	3	0.8	1	0.3	375	100.0
2	2,329	81.1	538	18.7	5	0.2	2,872	100.0
3	1,193	74.6	341	21.3	62	3.9	1,600	100.0
4	72	78.3	17	18.5	3	3.3	92	100.0
5 or more	3	75.0	1	25.0	-	-	4	100.0
Not stated	33		5		-		38	
All pregnancies	4,001	80.3	905	18.2	71	1.4	4,981	100.0

(a) Includes 4 quadruplet pregnancies

Table 45: Multiple pregnancies, IVF and GIFT pregnancies, State and Territory, 1996–1997

Plurality	IVF Unit							Australia	New Zealand
	NSW	Vic	Qld	WA	SA/NT	ACT/Tas			
	Number								
Singletons	1,432	1,281	616	395	459	173		4,356	325
Twins	284	291	162	100	116	41		994	88
Triplets	28	22	24	9	2	1		86	9
Quadruplets	1	-	1	3	-	-		5	-
All pregnancies	1,745	1,594	803	507	577	215		5,441	422
	Per cent of viable pregnancies								
Twins	16.3	18.3	20.2	19.7	20.1	19.1		18.3	20.9
Triplets / Quadruplets	1.7	1.4	3.1	2.4	0.3	0.5		1.7	2.1

Table 46: Multiple pregnancies in each IVF unit, IVF and GIFT pregnancies, 1996–1997

Plurality	IVF unit												
	A	B	C	D	E	F	G	H	I	J	K	L	M
Number													
Singletons	671	534	427	416	243	315	228	206	149	126	158	96	81
Twins	120	155	104	105	49	90	47	33	25	16	54	15	16
Triplets	8	18	19	2	4	7	1	1	1	2	3	2	-
Quadruplets	-	-	-	-	-	-	-	-	-	1	-	-	-
All pregnancies	799	707	550	523	296	412	276	240	175	145	215	113	97
Per cent of viable pregnancies													
Twins	15.0	21.9	18.9	20.1	16.6	21.8	17.0	13.8	14.3	11.0	25.1	13.3	16.5
Triplets / Quadruplets	1.0	2.5	3.5	0.4	1.4	1.7	0.4	0.4	0.6	2.1	1.4	1.8	-

Plurality	IVF unit												
	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Number													
Singletons	102	82	67	78	116	75	55	43	20	51	37	43	32
Twins	28	5	13	26	41	20	16	9	2	12	13	11	10
Triplets	8	1	2	1	5	-	3	-	2	3	2	0	1
Quadruplets	-	-	-	-	3	-	1	-	-	0	0	0	0
All pregnancies	138	88	82	105	165	95	75	52	24	66	52	54	43
Per cent of viable pregnancies													
Twins	20.3	5.7	15.9	24.8	24.8	21.1	21.3	17.3	8.3	18.2	25.0	20.4	23.3
Triplets / Quadruplets	5.8	1.1	2.4	1.0	4.8	-	5.3	-	8.3	4.5	3.8	-	2.3

Plurality	IVF unit										Total
	AA	AB	AC	AD	AE	AF	AG	AH	AI		
Number											
Singletons	63	49	12	25	27	17	22	12	3		4,681
Twins	16	9	2	3	7	5	-	4	1		1,082
Triplets	2	3	-	-	-	1	-	-	-		102
Quadruplets	-	-	-	-	-	-	-	-	-		5
All pregnancies	81	61	14	28	34	23	22	16	4		5,870
Per cent of viable pregnancies											
Twins	19.8	14.8	14.3	10.7	20.6	21.7	-	25.0	25.0		18.4
Triplets / Quadruplets	2.5	4.9	-	-	-	4.3	-	-	-		1.8

Table 47: Method of delivery for singleton and multiple IVF pregnancies of at least 20 weeks' gestation, 1996–1997

	Method of delivery				
	Vaginal		Caesarean section		All methods ^(a)
	Number	Per cent	Number	Per cent	Number
Singleton	2,548	64.2	1,421	35.8	4,001
Twin	349	39.0	547	61.0	905
Triplet	9	12.7	62	87.3	71
Quadruplet	-	-	4	100.0	4
All pregnancies	2,906	58.8	2,034	41.2	4,981

(a) Includes 41 pregnancies in which the method of delivery was not stated

Table 48: Sex of infants in singleton and multiple IVF births of at least 20 weeks' gestation, 1979–1997

Plurality	Male			Female			Sex ratio (M:F)		
	1979–95	1996	1997	1979–95	1996	1997	1979–95	1996	1997
Singletons	4,838	960	1,112	4,541	887	1,030	106.5	108.2	108.0
Twins	2,065	404	529	1,937	393	481	106.6	102.8	110.0
Triplets	386	45	62	384	51	55	100.5	88.2	112.7
Quadruplets	23	7	-	17	9	-	135.3	77.8	-
Quintuplets	1	-	-	4	-	-	25.0	-	-
All births	7,313	1,416	1,703	6,883	1,340	1,566	106.2	105.7	108.7

Note. Infant's sex was not stated or indeterminate for 87 births

Table 49: Birthweight of IVF live births and stillbirths, 1996–1997

Birthweight (g)	Live births		Stillbirths		All births ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent
Less than 500	14	0.2	44	57.1	59	1.0
500–999	98	1.7	16	20.8	117	1.9
1000–1499	234	4.1	6	7.8	243	4.0
1500–1999	386	6.8	3	3.9	407	6.8
2000–2499	771	13.6	2	2.6	807	13.4
2500–2999	1,174	20.7	2	2.6	1,233	20.5
3000–3499	1,604	28.2	1	1.3	1,672	27.8
3500–3999	1,049	18.5	2	2.6	1,100	18.3
4000 and over	348	6.1	1	1.3	368	6.1
Not stated	16		12		34	
All birthweights	5,694	100.0	89	100.0	6,040	100.0
Mean birthweight (g)	2,924		816		2,900	

(a) Includes 257 infants with unstated outcome

Table 50: Birthweight of infants in singleton and multiple IVF births of at least 20 weeks' gestation, 1996–1997

Birthweight (g)	Singleton		Twin		Triplet		All births ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Less than 500	29	0.7	26	1.4	2	0.9	59	1.0
500–999	35	0.9	65	3.6	17	8.0	117	1.9
1000–1499	43	1.1	131	7.3	60	28.2	243	4.0
1500–1999	82	2.1	246	13.7	75	35.2	407	6.8
2000–2499	231	5.8	530	29.4	45	21.1	807	13.4
2500–2999	657	16.5	563	31.2	13	6.1	1,233	20.5
3000–3499	1,451	36.5	220	12.2	1	0.5	1,672	27.8
3500–3999	1,079	27.1	21	1.2	-	-	1,100	18.3
4000 and over	368	9.3	-	-	-	-	368	6.1
Less than 2500	420	10.6	998	55.4	199	93.4	1,633	27.2
Not stated	26		8		-		34	
All birthweights	4,001	100.0	1,810	100.0	213	100.0	6,040	100.0
Mean birthweight (g)	3,236		2,312		1,700		2,900	

(a) Includes 16 quadruplet births

Table 51: Birthweight of infants in singleton and multiple births of at least 20 weeks' gestation after microinsemination, 1990–1997

Birthweight (g)	Singleton		Twin		Triplet		All births ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Less than 500	11	0.4	19	1.6	8	5.7	40	1.0
500–999	24	0.8	66	5.4	9	6.4	99	2.4
1000–1499	26	0.9	75	6.1	45	31.9	159	3.8
1500–1999	58	2.1	146	11.9	42	29.8	250	5.9
2000–2499	160	5.7	363	29.7	28	19.9	552	13.1
2500–2999	486	17.2	375	30.7	7	5.0	868	20.6
3000–3499	1,061	37.5	165	13.5	2	1.4	1,228	29.2
3500–3999	737	26.1	13	1.1	-	-	750	17.8
4000 and over	264	9.3	-	-	-	-	264	6.3
Less than 2500	279	9.9	669	54.7	132	93.6	1,100	26.1
Not stated	15		12		-		27	
All birthweights	2,842	100.0	1,234	100.0	141	100.0	4,237	100.0
Mean birthweight (g)	3,248		2,307		1,623		2,911	

(a) Includes 20 quadruplet births

Table 52: Birthweight of infants in singleton IVF births after use of donor sperm, donor oocytes or frozen embryos, 1979–1997

Birthweight (g)	Donor sperm		Donor oocytes		Frozen embryos	
	Number	Per cent	Number	Per cent	Number	Per cent
Less than 500	8	0.9	4	1.0	16	0.4
500–999	10	1.1	5	1.2	40	1.0
1000–1499	12	1.3	8	1.9	34	0.9
1500–1999	15	1.6	9	2.2	57	1.4
2000–2499	51	5.6	29	7.0	157	3.9
2500 or more	814	89.5	361	86.8	3,675	92.4
Not stated	10		4		35	
Less than 2500	96	10.5	55	13.2	304	7.6
All birthweights	920	100.0	420	100.0	4,014	100.0
Mean birthweight (g)	3,236		3,209		3,342	

Table 53: Outcome of infants in singleton and multiple IVF births of at least 20 weeks' gestation, 1996–1997

Outcome	Singleton	Twin	Triplet	Quadruplet	All births ^(a)
Live births	3,948	1,778	211	14	5,951
Stillbirths	53	32	2	2	89
Total births	4,001	1,810	213	16	6,040
Neonatal deaths	18	30	9	-	57
Perinatal deaths	71	62	11	2	146
Stillbirth rate per 1,000 total births	13.2	17.7	9.4	125.0	14.7
Neonatal death rate per 1,000 live births	4.6	16.9	42.7	-	9.6
Perinatal mortality rate per 1,000 total births	17.7	34.3	51.6	125.0	24.2

(a) Live births include 257 births for which birth status was not recorded

Table 54: Major congenital malformations in singleton and multiple IVF births of at least 20 weeks' gestation, 1979–1997

Outcome	Singleton	Multiple	All births ^(a)
Total births	13,487	6,889	20,376
Congenital malformations			
— number	409	120	529
— rate (per cent)	3.0	1.7	2.6

(a) Includes 68 abortions for fetal abnormality at gestational ages of at least 16 weeks

Table 55: Numbers and outcomes of GIFT pregnancies by year of conception, 1985–1997

Outcome of pregnancy	Year of conception							
	1985–95		1996		1997		1985–97	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Spontaneous abortion	1,580	20.7	127	19.4	115	22.8	1,822	20.7
Termination of pregnancy	45	0.6	1	0.2	7	1.4	53	0.6
Ectopic pregnancy	256	3.4	11	1.7	16	3.2	283	3.2
Stillbirth	84	1.1	3	0.5	6	1.2	93	1.1
Live birth ^(a)	5,669	74.3	512	78.3	361	71.5	6,542	74.4
All outcomes	7,634	100.0	654	100.0	505	100.0	8,793	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

Table 56: Place of parental residence, GIFT pregnancies, 1985–1997

Place of usual residence	Number			Per cent		
	1985–95	1996	1997	1985–95	1996	1997
New South Wales	2,469	254	156	32.4	38.8	31.0
Victoria	1,577	101	79	20.7	15.4	15.7
Queensland	2,176	238	221	28.5	36.4	43.8
South Australia	484	25	20	6.3	3.8	4.0
Western Australia	674	23	13	8.8	3.5	2.6
Tasmania	30	2	-	0.4	0.3	-
Australian Capital Territory	51	6	3	0.7	0.9	0.6
Northern Territory	18	2	1	0.2	0.3	0.2
New Zealand	115	2	7	1.5	0.3	1.4
Other countries	29	1	4	0.4	0.2	0.8
Not stated	11	-	1			
All regions	7,634	654	505	100.0	100.0	100.0

Table 57: Maternal ages, GIFT pregnancies, 1985–1997

Age group (years)	Number			Per cent		
	1985–95	1996	1997	1985–95	1996	1997
Less than 20	-	-	-	-	-	-
20–24	199	7	4	2.6	1.1	0.8
25–29	1,833	128	80	24.0	19.6	15.8
30–34	3,306	272	213	43.3	41.6	42.2
35–39	1,896	193	157	24.8	29.5	31.1
40–44	379	53	51	5.0	8.1	10.1
45 and over	19	1	-	0.2	0.2	-
Not stated	2	-	-			
All ages	7,634	654	505	100.0	100.0	100.0

Table 58: Paternal ages, GIFT pregnancies, 1985–1997

Age group (years)	Number			Per cent		
	1985–95	1996	1997	1985–95	1996	1997
Less than 20	2	-	-	0.0	-	-
20–24	38	2	2	0.5	0.3	0.4
25–29	1,033	82	43	14.1	12.6	8.6
30–34	2,801	230	179	38.3	35.3	35.9
35–39	2,085	207	175	28.5	31.8	35.1
40–44	902	86	66	12.3	13.2	13.3
45 and over	448	44	33	6.1	6.8	6.6
Not stated	325	3	7			
All ages	7,634	654	505	100.0	100.0	100.0

Table 59: Previous pregnancies for pregnant women, GIFT pregnancies, 1985–1997

Number of previous pregnancies	Number				Per cent			
	1985–94	1995	1996	1997	1985–94	1995	1996	1997
None	3,707	320	348	275	54.3	49.5	53.2	54.9
One	2,078	203	180	144	30.5	31.4	27.5	28.7
Two	672	76	75	63	9.8	11.7	11.5	12.6
Three	237	29	31	13	3.5	4.5	4.7	2.6
Four or more	129	19	20	6	1.9	2.9	3.1	1.2
Not stated	157	7	-	4				
All women	6,980	654	654	505	100.0	100.0	100.0	100.0

Table 60: Duration of infertility, GIFT pregnancies, 1985–1997

Duration of infertility (years)	Number			Per cent		
	1985–95	1996	1997	1985–95	1996	1997
Less than 2	508	65	50	6.9	10.0	10.2
2–3	3,027	289	226	41.3	44.4	46.1
4–5	1,928	184	142	26.3	28.3	29.0
6–7	932	55	41	12.7	8.4	8.4
8–9	484	31	15	6.6	4.8	3.1
10 or more	449	27	16	6.1	4.1	3.3
Not stated	306	3	15			
All pregnancies	7,634	654	505	100.0	100.0	100.0

Table 61: Outcome of pregnancy by duration of infertility, GIFT pregnancies, 1996–1997

Outcome of pregnancy	Duration of infertility (years)					
	Less than 4		4–7		8 or more	
	Number	Per cent	Number	Per cent	Number	Per cent
Spontaneous abortion	132	21.0	78	18.5	25	28.1
Termination of pregnancy	7	1.1	1	0.2	-	-
Ectopic pregnancy	11	1.7	13	3.1	2	2.2
Stillbirth	2	0.3	7	1.7	-	-
Live birth ^(a)	478	75.9	323	76.5	62	69.7
All outcomes	630	100.0	422	100.0	89	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

Note. The duration of infertility was not stated for 18 pregnancies

Table 62: Causes of infertility, GIFT pregnancies, 1985–1997

Causes of infertility	Number			Per cent		
	1985–95	1996	1997	1985–95	1996	1997
Tubal	366	16	13	4.8	2.4	2.6
Male factor	1,559	111	79	20.5	17.0	15.6
Endometriosis	1,094	82	94	14.4	12.5	18.6
Other stated causes	630	97	62	8.3	14.8	12.3
Multiple causes	1,753	137	104	23.0	20.9	20.6
Unexplained infertility	2,221	211	153	29.1	32.3	30.3
Not stated	11	-	-	-	-	-
All causes	7,634	654	505	100.0	100.0	100.0

Table 63: Outcome of pregnancy by causes of infertility, GIFT pregnancies, 1996–1997

Outcome of pregnancy	Causes of infertility					
	Tubal	Male	Endometriosis	Multiple	Unexplained	All causes ^(b)
Number						
Spontaneous abortion	6	34	33	44	82	242
Termination of pregnancy	-	1	2	-	4	8
Ectopic pregnancy	2	1	1	6	9	27
Stillbirth	-	3	-	2	3	9
Live birth ^(a)	21	151	140	189	266	873
All outcomes	29	190	176	241	364	1,159
Per cent						
Spontaneous abortion	20.7	17.9	18.8	18.3	22.5	20.9
Termination of pregnancy	-	0.5	1.1	-	1.1	0.7
Ectopic pregnancy	6.9	0.5	0.6	2.5	2.5	2.3
Stillbirth	-	1.6	-	0.8	0.8	0.8
Live birth ^(a)	72.4	79.5	79.5	78.4	73.1	75.3
All outcomes	100.0	100.0	100.0	100.0	100.0	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

(b) Includes 159 pregnancies with 'other' or 'not stated' causes of infertility

Table 64: Drugs used to stimulate ovulation, GIFT pregnancies, 1985–1997

Drugs	Number			Per cent		
	1985–95	1996	1997	1985–95	1996	1997
Natural cycles	13	4	7	0.2	0.6	1.4
Clomiphene and hMG or FSH	2,836	9	10	37.5	1.4	2.0
hMG or FSH	155	5	10	2.0	0.8	2.0
GnRH analogues and hMG or FSH	4,548	636	477	60.1	97.2	94.5
Other	11	-	1	0.1	-	0.2
Not stated	71	-	-			
All drugs	7,634	654	505	100.0	100.0	100.0

Table 65: GIFT treatment cycle in which conception occurred, 1985–1997

Treatment cycle	Number			Per cent		
	1985–95	1996	1997	1985–95	1996	1997
1	3,557	350	253	47.2	53.5	50.4
2	1,901	151	122	25.2	23.1	24.3
3	975	76	73	12.9	11.6	14.5
4	506	41	30	6.7	6.3	6.0
5 or more	603	36	24	8.0	5.5	4.8
Not stated	92	-	3			
All cycles	7,634	654	505	100.0	100.0	100.0

Table 66: Number of oocytes collected by laparoscopy or ultrasound guidance, GIFT pregnancies, 1985–1997

Number of oocytes collected	1979–95		1996		1997	
	Number	Per cent	Number	Per cent	Number	Per cent
1–2	376	5.0	31	4.7	38	7.6
3–4	1,531	20.4	110	16.8	64	12.8
5–6	1,663	22.1	139	21.3	96	19.2
7–8	1,628	21.6	113	17.3	99	19.8
9–10	838	11.1	78	11.9	65	13.0
11–12	563	7.5	78	11.9	44	8.8
13–14	346	4.6	41	6.3	33	6.6
15 or more	578	7.7	63	9.6	61	12.2
Not stated	111		1		5	
All pregnancies	7,634	100.0	654	100.0	505	100.0
Mean number of oocytes	7.7 ^(a)		8.4		8.7	

(a) Data include 1987–1995

Table 67: Number of oocytes transferred, GIFT pregnancies, 1985–1997

Number of oocytes transferred	Number			Per cent		
	1985–95	1996	1997	1985–95	1996	1997
1	110	12	10	1.5	1.8	2.0
2	1,474	277	226	19.5	42.5	45.1
3	4,261	319	232	56.3	49.0	46.3
4	1,558	40	31	20.6	6.1	6.2
5 or more	160	3	2	2.1	0.5	0.4
Not stated	71	3	4			
All pregnancies	7,634	654	505	100.0	100.0	100.0
Mean number of oocytes	3.0	2.6	2.6			

Table 68: Outcome of pregnancy by number of oocytes transferred, GIFT pregnancies, 1996–1997

Outcome of pregnancy	Number of oocytes transferred					All ^(b) pregnancies
	1	2	3	4	5+	
Number						
Spontaneous abortion	9	102	104	27	-	242
Termination of pregnancy	1	3	3	-	-	8
Ectopic pregnancy	-	11	14	1	-	27
Stillbirth	-	3	5	1	-	9
Live birth ^(a)	12	384	425	42	5	873
All outcomes	22	503	551	71	5	1,159
Per cent						
Spontaneous abortion	40.9	20.3	18.9	38.0	-	20.9
Termination of pregnancy	4.5	0.6	0.5	-	-	0.7
Ectopic pregnancy	-	2.2	2.5	1.4	-	2.3
Stillbirth	-	0.6	0.9	1.4	-	0.8
Live birth ^(a)	54.5	76.3	77.1	59.2	100.0	75.3
All outcomes	100.0	100.0	100.0	100.0	100.0	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

(b) Includes 7 pregnancies in which the number of oocytes transferred was not stated

Table 69: Drugs used in the luteal phase after embryo transfer, GIFT pregnancies, 1985–1997

Drugs	Number			Per cent		
	1985–95	1996	1997	1985–95	1996	1997
Proluton	131	85	91	1.7	13.0	18.0
Human chorionic gonadotrophin (hCG)	4,943	488	349	65.3	74.6	69.1
Human chorionic gonadotrophin / Proluton	307	24	16	4.1	3.7	3.2
Progestagen	882	28	34	11.6	4.3	6.7
Other drugs	6	22	1	0.1	3.4	0.2
None	1,303	7	14	17.2	1.1	2.8
Not stated	62	-	-			
All pregnancies	7,634	654	505	100.0	100.0	100.0

Table 70: Outcome of pregnancy by maternal age groups, GIFT pregnancies, 1985–1997

Outcome of pregnancy	Maternal age (years)					All ages ^(b)
	Less than 25	25–29	30–34	35–39	40 and over	
Number						
Spontaneous abortion	34	305	718	550	215	1,822
Termination of pregnancy	1	8	17	13	14	53
Ectopic pregnancy	8	68	125	70	12	283
Stillbirth	2	17	37	33	4	93
Live birth ^(a)	165	1,643	2,894	1,580	258	6,542
All outcomes	210	2,041	3,791	2,246	503	8,793
Per cent						
Spontaneous abortion	16.2	14.9	18.9	24.5	42.7	20.7
Termination of pregnancy	0.5	0.4	0.4	0.6	2.8	0.6
Ectopic pregnancy	3.8	3.3	3.3	3.1	2.4	3.2
Stillbirth	1.0	0.8	1.0	1.5	0.8	1.1
Live birth ^(a)	78.6	80.5	76.3	70.3	51.3	74.4
All outcomes	100.0	100.0	100.0	100.0	100.0	100.0

(a) Multiple pregnancies with both stillbirths and live births are included only in the live birth category

(b) Includes 2 pregnancies in which maternal age was not stated

Table 71: Spontaneous abortions, GIFT pregnancies, 1985–1997

Outcome of pregnancy	1985–94	1995	1996	1997	1985–97
Spontaneous abortion	1,463	117	127	115	1,822
Stillbirth	76	8	3	6	93
Live birth	5,162	507	512	361	6,542
Total abortions and births	6,701	632	642	482	8,457
Spontaneous abortion rate (%)	21.8	18.5	19.8	23.9	21.5

Table 72: Incidence of spontaneous abortions in maternal age groups, GIFT pregnancies, 1985–1997

Maternal age (years)	Number of GIFT pregnancies ^(a)	Spontaneous abortions	
		Number	Per cent
Less than 25	201	34	16.9
25–29	1,965	305	15.5
30–34	3,649	718	19.7
35–39	2,163	550	25.4
40–44	457	203	44.4
45 and over	20	12	60.0
Not stated	2	-	-
All ages	8,457	1,822	21.5

(a) Spontaneous abortions and pregnancies of at least 20 weeks' gestation

Table 73: Ectopic pregnancies after GIFT, 1985–1997

Outcome of pregnancy	1985–94	1995	1996	1997	1985–97
Ectopic pregnancies	242	14	11	16	283
Clinical pregnancies	6,980	654	654	505	8,793
% ectopic pregnancies	3.5	2.1	1.7	3.2	3.2
Total abortions and births	6,738	640	643	489	8,510
Ectopic pregnancy ratio ^(a)	1:27.8	1:45.7	1:58.5	1:30.6	1:30.1

(a) Ratio of ectopic pregnancies: total abortions and births

Table 74: Heterotopic pregnancies after GIFT, 1985–1997

Type of heterotopic pregnancy	Year							1985–97
	1985–91	1992	1993	1994	1995	1996	1997	
	Number							
Abortion	19	2	2	2	1	2	4	32
Birth	14	1	1	0	0	1	0	17
All heterotopic pregnancies	33	3	3	2	1	3	4	49
All pregnancies	4,052	1,036	1,022	870	654	654	505	8,793
	Per cent							
Abortion	0.5	0.2	0.2	0.2	0.2	0.3	0.8	0.4
Birth	0.3	0.1	0.1	0.0	0.0	0.2	0.0	0.2
All heterotopic pregnancies	0.8	0.3	0.3	0.2	0.2	0.5	0.8	0.6

Table 75: Reported complications of pregnancy, GIFT pregnancies, 1990–1997

Pregnancy complications	Number			Per cent		
	1990–95	1996	1997	1990–95	1996	1997
None	2,641	480	359	62.6	73.6	74.9
Threatened abortion	277	23	19	6.6	3.5	4.0
Antepartum haemorrhage	107	11	11	2.5	1.7	2.3
Pregnancy-induced hypertension	304	33	16	7.2	5.1	3.3
Placenta praevia	36	7	7	0.9	1.1	1.5
Other complications	852	98	67	20.2	15.0	14.0
Not stated	1,148	2	26			
All pregnancies	5,365	654	505	100.0	100.0	100.0

Table 76: Duration of singleton and multiple GIFT pregnancies of at least 20 weeks' gestation, 1996-1997

Gestational age (weeks)	Singleton		Twin		Triplet		All pregnancies ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
20-23	6	0.9	3	1.7	2	8.3	11	1.3
24-27	5	0.7	4	2.3	3	12.5	12	1.4
28-31	7	1.0	11	6.2	4	16.7	23	2.6
32-36	66	9.8	76	42.9	15	62.5	157	17.9
37-41	582	86.5	83	46.9	-	-	665	76.0
42 or more	7	1.0	-	-	-	-	7	0.8
20 - 36	84	12.5	94	53.1	24	100.0	203	23.2
Not stated	7		-		-		7	
All gestational ages	680	100.0	177	100.0	24	100.0	882	100.0

(a) Includes 1 quadruplet pregnancy

Table 77: Maternal age and duration of singleton GIFT pregnancies of at least 20 weeks' gestation, 1996-1997

Gestational age (weeks)	Maternal age (years)					
	Less than 25	25-29	30-34	35-39	40 and over	All ages
	Number					
20-27	-	3	6	2	-	11
28-31	-	-	4	2	1	7
32-36	1	8	28	23	6	66
37 or more	5	122	236	186	40	589
Not stated	-	1	4	2	-	7
All gestational ages	6	134	278	215	47	680
20-36	1	11	38	27	7	84
	Per cent					
20-27	-	2.3	2.2	0.9	-	1.6
28-31	-	-	1.5	0.9	2.1	1.0
32-36	16.7	6.0	10.2	10.8	12.8	9.8
37 or more	83.3	91.7	86.1	87.3	85.1	87.5
All gestational ages	100.0	100.0	100.0	100.0	100.0	100.0
20-36	16.7	8.3	13.9	12.7	14.9	12.5

Table 78: Causes of infertility and duration of singleton GIFT pregnancies of at least 20 weeks' gestation, 1996–1997

Gestational age (weeks)	Causes of infertility					
	Tubal	Male	Endometriosis	Multiple	Unexplained	All causes ^(a)
	Number					
20–27	-	2	1	3	2	11
28–31	-	-	2	1	2	7
32–36	2	3	9	14	23	66
37 or more	15	112	92	124	183	589
Not stated	1	1	1	3	1	7
All gestational ages	18	118	105	145	211	680
20–36	2	5	12	18	27	84
	Per cent					
20–27	-	1.7	1.0	2.1	1.0	1.6
28–31	-	-	1.9	0.7	1.0	1.0
32–36	11.8	2.6	8.7	9.9	11.0	9.8
37 or more	88.2	95.7	88.5	87.3	87.1	87.5
All gestational ages	100.0	100.0	100.0	100.0	100.0	100.0
20–36	11.8	4.3	11.5	12.7	12.9	12.5

(a) Includes 83 pregnancies with 'other' or 'not stated' causes of infertility

Table 79: Plurality of GIFT pregnancies of at least 20 weeks' gestation, 1985–1997

Plurality	Number			Per cent		
	1985–95	1996	1997	1985–95	1996	1997
Singletons	4,281	391	289	74.4	75.9	78.7
Twins	1,250	108	69	21.7	21.0	18.8
Triplets	205	15	9	3.6	2.9	2.5
Quadruplets	15	1	-	0.3	0.2	-
Quintuplets	2	-	-	0.0	-	-
All pregnancies	5,753	515	367	100.0	100.0	100.0

Table 80: Plurality of GIFT pregnancies of at least 20 weeks' gestation and number of oocytes transferred, 1996–1997

Number of oocytes transferred	Plurality							
	Singleton		Twin		Triplet		All pregnancies ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
1	10	83.3	2	16.7	-	-	12	100.0
2	318	82.2	65	16.8	4	1.0	387	100.0
3	306	71.2	104	24.2	19	4.4	430	100.0
4	37	86.0	6	14.0	-	-	43	100.0
5 or more	4	80.0	-	-	1	-	5	100.0
Not stated	5		-		-		5	
All pregnancies	680	77.1	177	20.1	24	2.7	882	100.0

(a) Includes 1 quadruplet pregnancy

Table 81: Method of delivery for singleton and multiple GIFT pregnancies of at least 20 weeks' gestation, 1996–1997

Plurality	Method of delivery				
	Vaginal		Caesarean section		All methods ^(a)
	Number	Per cent	Number	Per cent	Number
Singleton	451	66.7	225	33.3	680
Twin	60	33.9	117	66.1	177
Triplet	5	20.8	19	79.2	24
Quadruplet	-	-	1	100.0	1
All pregnancies	516	58.8	362	41.2	882

(a) Includes 32 pregnancies in which the method of delivery was not stated

Table 82: Sex of infants in singleton and multiple GIFT births of at least 20 weeks' gestation, 1985–1997

Plurality	Male			Female			Sex ratio (M:F)		
	1985–95	1996	1997	1985–95	1996	1997	1985–95	1996	1997
Singltons	2,216	209	152	2,045	182	135	108.4	114.8	112.6
Twins	1,266	126	72	1,225	90	66	103.3	140.0	109.1
Triples	340	20	12	273	25	15	124.5	80.0	80.0
Quadruplets	33	2	-	27	2	-	122.2	100.0	-
Quintuplets	4	-	-	6	-	-	66.7	-	-
All births	3,859	357	236	3,576	299	216	107.9	119.4	109.3

Note. Infant's sex was not stated or indeterminate for 33 births

Table 83: Birthweight of GIFT live births and stillbirths, 1996–1997

Birthweight (g)	Live births		Stillbirths		All births ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent
Less than 500	6	0.6	8	72.7	14	1.3
500–999	17	1.6	2	18.2	22	2.0
1000–1499	48	4.6	-	0.0	50	4.5
1500–1999	80	7.6	-	0.0	83	7.5
2000–2499	152	14.5	1	9.1	156	14.2
2500–2999	252	24.1	-	0.0	258	23.4
3000–3499	280	26.7	-	0.0	294	26.7
3500–3999	162	15.5	-	0.0	171	15.5
4000 and over	50	4.8	-	0.0	54	4.9
Not stated	2		6		8	
All birthweights	1,049	100.0	17	100.0	1,110	100.0
Mean birthweight (g)	2,842		594		2,824	

(a) Includes 44 infants with unknown outcome

Table 84: Birthweight of infants in singleton and multiple GIFT births of at least 20 weeks' gestation, 1996–1997

Birthweight (g)	Singleton		Twin		Triplet		All births ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Less than 500	4	0.6	6	1.7	4	5.6	14	1.3
500–999	4	0.6	7	2.0	10	14.1	22	2.0
1000–1499	9	1.3	24	6.8	14	19.7	50	4.5
1500–1999	10	1.5	43	12.2	30	42.3	83	7.5
2000–2499	38	5.6	106	30.0	12	16.9	156	14.2
2500–2999	140	20.8	118	33.4	-	-	258	23.4
3000–3499	252	37.4	41	11.6	1	1.4	294	26.7
3500–3999	163	24.2	8	2.3	-	-	171	15.5
4000 and over	54	8.0	-	-	-	-	54	4.9
Less than 2500	65	9.6	186	52.7	70	98.6	325	29.5
Not stated	6		1		1		8	
All birthweights	680	100.0	354	100.0	72	100.0	1,110	100.0
Mean birthweight (g)	3,209		2,367		1,532		2,824	

(a) Includes 4 quadruplet births

Table 85: Outcome of infants in singleton and multiple GIFT births of at least 20 weeks' gestation, 1996–1997

Outcome	Singleton	Twin	Triplet	Quadruplet	All births ^(a)
Live births	673	348	68	4	1,093
Stillbirths	7	6	4	-	17
All births	680	354	72	4	1,110
Neonatal deaths	1	4	5	-	10
Perinatal deaths	8	10	9	-	27
Stillbirth rate per 1,000 total births	10.3	16.9	55.6	-	15.3
Neonatal death rate per 1,000 live births	1.5	11.5	73.5	-	9.1
Perinatal mortality rate per 1,000 total births	11.8	28.2	125.0	-	24.3

(a) Live births include 44 births for which birth status was not recorded

Table 86: Major congenital malformations in singleton and multiple GIFT births of at least 20 weeks' gestation, 1985–1997

Outcome	Singleton	Multiple	All births ^(a)
Total births	4,991	3,617	8,608
Congenital malformations			
— number	137	72	209
— rate (per cent)	2.7	2.0	2.4

(a) Includes 32 abortions for fetal abnormality at gestational ages of at least 16 weeks

6 Bibliography

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Appendix 1: Definitions

Clinical pregnancy: Any type of pregnancy except that diagnosed only by measuring levels of human chorionic gonadotrophin. This definition includes ectopic pregnancy, blighted ovum and spontaneous abortion.

Conception cohort: A designated group of pregnancies resulting from conception in a specified period of time (usually either a single year or several years combined).

Ectopic pregnancy: Pregnancy occurring outside the uterus.

Fetal death (stillbirth): Death prior to the complete expulsion or extraction from its mother of a product of conception of 20 or more completed weeks of gestation or of 400 g or more birthweight; the death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

Heterotopic pregnancy: Heterotopic pregnancies are those in which there is both a uterine and tubal (ectopic) pregnancy simultaneously. The uterine pregnancy may abort or may continue on to a birth.

Live birth: Infant with signs of life after pregnancy of at least 20 weeks' gestation.

Live-birth pregnancy: A pregnancy resulting in one or more live births.

Low birthweight: A liveborn or stillborn infant weighing less than 2500 g at birth.

Neonatal death: A death of a liveborn infant within 28 days of birth (expressed as a rate per 1,000 live births).

Perinatal death: Includes both stillbirths and neonatal deaths (expressed as a rate per 1,000 total births).

Postneonatal death: A death of a liveborn infant more than 28 days after birth but within the first year (expressed as a rate per 1,000 live births).

Preterm birth: A liveborn or stillborn infant of less than 37 weeks' gestation.

Spontaneous abortion: Pregnancy detected clinically or by ultrasound and less than 20 weeks' gestation (from the first day of the last menstrual period).

Stillbirth: See fetal death.

Viable pregnancy: A pregnancy of at least 20 weeks' gestation.

Appendix 2: Notification form

AIHW NATIONAL PERINATAL STATISTICS UNIT / FERTILITY SOCIETY OF AUSTRALIA

REGISTER OF PREGNANCIES AFTER IVF OR RELATED PROCEDURES

Please complete all data items by ticking relevant boxes

IVF Unit/Hospital: _____ Identification number: _____

Usual home address _____		Marital status _____		Date of birth _____		Age _____ yrs	
Suburb/Town _____		: <input type="checkbox"/> Married/De facto		Mother ____/____/____			
State _____ Postcode _____		: <input type="checkbox"/> Single <input type="checkbox"/> Other		Father ____/____/____		_____ yrs	
NUMBER OF PREVIOUS PREGNANCIES:				TYPE OF CONCEPTION IN CURRENT PREGNANCY:			
Current marriage		Previous marriages					
Livebirths _____		Mother:livebirths _____		: <input type="checkbox"/> IVF <input type="checkbox"/> PROST/ZIFT <input type="checkbox"/> TEST			
Abortions _____		other _____		: <input type="checkbox"/> GIFT <input type="checkbox"/> ICSI <input type="checkbox"/> SUZI			
Other _____		Father:livebirths _____		: <input type="checkbox"/> Epididymal sperm <input type="checkbox"/> Assisted hatching			
		other _____		: <input type="checkbox"/> Other (specify) _____			
Did this pregnancy result from use of:							
<input type="checkbox"/> Donor sperm		<input type="checkbox"/> Donor oocyte		<input type="checkbox"/> Frozen embryo			
<input type="checkbox"/> Donor embryos		<input type="checkbox"/> Frozen oocytes					
What was the date of embryo freezing? ---/---/---				: If donor oocyte or embryo, what was			
				: the age of the donor?			
What was the date of embryo transfer? ____/____/____				: _____ yrs			
CAUSE OF INFERTILITY PRIOR TO THIS PREGNANCY <input type="checkbox"/> Unknown cause							
Tubal <input type="checkbox"/> Tubal obstruction		<input type="checkbox"/> Previous ectopic		<input type="checkbox"/> Salpingectomy			
<input type="checkbox"/> Sterilization		<input type="checkbox"/> Pelvic adhesions		<input type="checkbox"/> Pelvic inflammatory disease			
<input type="checkbox"/> Other tubal (specify) _____							
Male factor <input type="checkbox"/> Azoospermia		<input type="checkbox"/> Oligospermia					
<input type="checkbox"/> Increased abnormal sperm		<input type="checkbox"/> Male sperm antibodies					
<input type="checkbox"/> Decreased motility		<input type="checkbox"/> Other male (specify) _____					
<input type="checkbox"/> Endometriosis		<input type="checkbox"/> Ovulation defects		<input type="checkbox"/> Maternal sperm antibodies			
<input type="checkbox"/> 'Hostile' cervical mucus		<input type="checkbox"/> Other cause (specify) _____					
DURATION OF INFERTILITY (before first IVF/GIFT pregnancy) _____ years							
DRUGS USED TO INDUCE OVULATION IN OOCYTE RETRIEVAL CYCLE (specify each separately)							
<input type="checkbox"/> Clomiphene		<input type="checkbox"/> hMG		<input type="checkbox"/> hCG		<input type="checkbox"/> Endogenous LH surge	
<input type="checkbox"/> FSH		<input type="checkbox"/> Recomb DNA FSH		<input type="checkbox"/> Recomb DNA LH			
<input type="checkbox"/> GnRH-agonist (specify) _____		<input type="checkbox"/> short protocol		<input type="checkbox"/> long protocol (previous luteal phase)			
<input type="checkbox"/> None		<input type="checkbox"/> Other (specify) _____					
DRUGS USED DURING CYCLE IN WHICH FROZEN EMBRYOS WERE TRANSFERRED(specify each separately)							
<input type="checkbox"/> None		<input type="checkbox"/> Oestrogen/progesterone		<input type="checkbox"/> Other (specify) _____			

SPECIFY IN WHICH OOCYTE RETRIEVAL CYCLE THE PREGNANCY OCCURRED _____		METHOD OF COLLECTING OOCYTES	
Number of oocytes collected _____		[] Laparoscopy	
IF DONOR OOCYTES WERE USED, IN WHICH INDUCTION CYCLE DID PREGNANCY OCCUR _____		[] Ultrasound-guided transvaginal	
		[] Other (specify) _____	
Date of fertilization (or GIFT, etc) --/--/--		Number of embryos/ova transferred _____	
Was the patient hospitalised for ovarian hyperstimulation syndrome? [] Yes [] No			
DRUGS USED IN LUTEAL PHASE		OBSTETRIC COMPLICATIONS	
[] hCG: specify dose and duration _____		[] None [] Pregnancy-induced hypertension	
[] Progesterone: specify dose and duration _____		[] Threatened abortion	
[] Oestrogen/progesterone (frozen embryo transfer) _____		[] Placenta praevia	
[] Other (specify) _____		[] Antepartum haemorrhage	
[] None		[] Embryo reduction	
		[] Other _____	
NUMBER OF SACS SEEN IN EARLY PREGNANCY ON ULTRASOUND EXAMINATION _____		[] Ultrasound not done	
PREGNANCY OUTCOME		[] Ectopic pregnancy	
[] Spontaneous abortion (date __/__/__)		[] Ovarian pregnancy	
[] Missed abortion (date of curette --/--/--)		[] Blighted ovum	
[] Induced abortion (date __/__/__, specify malformations _____)			
[] Other (e.g. combined pregnancy) _____			
[] Pregnancy of 20 weeks or more		Date of birth __/__/__	
[] Multiple births (number _____)			
METHOD OF DELIVERY		[] Vaginal [] Caesarean section	
LIVEBIRTHS AND STILLBIRTHS	1	2	3
Sex	M F	M F	M F
Birthweight	_____g	_____g	_____g
Condition at birth (delete one)	Live birth/ Stillbirth	Live birth/ Stillbirth	Live birth/ Stillbirth
If baby died, date of death	____/____/____	____/____/____	____/____/____
Any congenital malformations?	[] Yes [] No	[] Yes [] No	[] Yes [] No
Specify malformations or other abnormalities			