

Health Series
Number 18

Maternal and Perinatal Status
ACT
1994-96

Maureen Bourne
Carol Kee

Epidemiology Unit
Population Health Group
ACT Department of Health and Community Care

September 1998

ACKNOWLEDGEMENTS

This publication has drawn on the expertise and knowledge of several individuals and sections within the Department of Health and Community Care, The Canberra Hospital, Calvary Hospital, John James Memorial Hospital, Community Health Services, the Australian Bureau of Statistics, and the Australian Institute of Health.

The authors are particularly grateful to colleagues in the Department of Health and Community Care including Dr Bruce Shadbolt (for ensuring the time for the vigorous data cleaning and encouragement during the process), Susan Vousden (for the many hours spent data cleaning and preparing tables for presentation) and Dr Doris Zonta. We are also very grateful to the Medical Records Departments in each hospital for their timely responses to data cleaning queries and to the Communications and Marketing Section for publishing assistance.

Many thanks to the midwives within the ACT for providing most of the information contained in this report by completing the ACT Midwives Data Collection Form and to Jane Thompson for her generosity in sharing her research findings.

The ACT Maternal Perinatal Status Working Group were invaluable in their support and expert advice throughout the development of the report. The Group comprised: Professor David Ellwood, Dr Graham Reynolds, Ms Rosemary O'Donnell, Ms Bernadette Brady, Ms Kaye Richardson, Ms Lydia Lea, Ms Sue Andrews, Ms Shane Marsh, Ms Mary Kirk, Mr Brett Griffiths, Ms Emma Baldock and Ms Cheryl Mayes.



ÓAustralian Capital Territory, Canberra 1998

ISSN 1325-1090

This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced without written permission from the Director, Publications and Public Communication, Department of Urban Services, ACT Government, GPO Box 158, Canberra ACT 2601.

Published by Publications and Public Communication for the ACT Department of Health and Community Care's Epidemiology Unit and printed by the Authority of the ACT Government Printer.

200 - 9/98 A4 ()

Suggested citation: Bourne M, Kee C (1998), *Maternal and Perinatal Status, ACT, 1994-96*, Epidemiology Unit, ACT Dept of Health and Community Care: Health Series No 18, ACT Government Printer, ACT

The ACT Government Homepage address is: <http://www.act.gov.au/>

This publication is on the Internet at: <http://www.act.gov.au/health>

Contents

SUMMARY	7
1. INTRODUCTION.....	10
2. CONFINEMENTS AND BIRTHS IN THE ACT.....	10
2.1 CONFINEMENTS AND BIRTHS.....	10
2.2 BIRTHS BY PLURALITY.....	11
3. MOTHER'S CHARACTERISTICS	11
3.1 ACT FERTILITY RATES.....	11
3.2 MATERNAL AGE AT BABY'S BIRTH.....	13
3.3 COUNTRY OF BIRTH.....	13
3.4 INDIGENOUS STATUS.....	14
3.5 USUAL AREA OF RESIDENCE.....	15
3.6 MARITAL STATUS.....	17
3.7 MATERNAL LENGTH OF STAY IN HOSPITAL	18
3.7.1 <i>Maternal antenatal length of stay in hospital</i>	18
3.7.2 <i>Maternal postnatal length of stay in hospital</i>	18
4. PREGNANCY PROFILE.....	20
4.1 PREVIOUS PREGNANCIES.....	20
4.2 ANTENATAL CARE	20
4.2.1 <i>Antenatal visits</i>	20
4.2.2 <i>Responsibility for antenatal care</i>	21
4.2.3 <i>Antenatal procedures</i>	23
4.3 MATERNAL MEDICAL STATUS.....	23
4.4 OBSTETRIC COMPLICATIONS.....	25
4.5 PREGNANCY OUTCOME.....	26
5. LABOUR AND BIRTH.....	27
5.1 ONSET OF LABOUR.....	27
5.2 TYPE OF LABOUR.....	27
5.3 TYPE OF BIRTH.....	28
5.4 COMPLICATIONS OF LABOUR AND BIRTH.....	29
5.5 PROCEDURES DURING BIRTHING.....	30
6. THE PUERPERIUM.....	31
6.1 BREAST FEEDING.....	31
6.2 COMPLICATIONS DURING THE PUERPERIUM	32
6.2.1 <i>Postnatal depression</i>	32
6.2.2 <i>Other health problems in the puerperium</i>	32
6.3 SUPPORT PROGRAMS AND FACILITIES.....	33
6.3.1 <i>Midcall</i>	33
6.3.2 <i>Child, Family & Youth Health Program & Queen Elizabeth II Family Centre</i>	34
6.3.3 <i>Family Planning ACT</i>	36
6.3.4 <i>Nursing Mothers' Association of Australia</i>	36
6.3.5 <i>Other</i>	37
7. BABY CHARACTERISTICS.....	37
7.1 SEX.....	37
7.2 BIRTHWEIGHT	37
7.3 GESTATIONAL AGE	38
7.4 APGAR SCORE	38
7.5 RESUSCITATION PROCEDURES.....	39
7.6 USUAL AREA OF RESIDENCE.....	39

7.7	LENGTH OF STAY IN HOSPITAL.....	39
8.	BIRTH FACILITY PROFILE.....	40
8.1	ACT HOSPITALS.....	40
8.1.1	<i>The Canberra Hospital (TCH) Delivery Suite & associated services</i>	<i>40</i>
	<i>The Canberra Hospital Birth Centre</i>	<i>41</i>
8.1.2	<i>Calvary Public Hospital.....</i>	<i>42</i>
8.1.3	<i>Calvary Private Hospital.....</i>	<i>42</i>
8.1.4	<i>John James Memorial Hospital.....</i>	<i>42</i>
8.2	HOME BIRTHS IN THE ACT	42
8.3	PLACE OF BIRTH FOR HOSPITAL AND BIRTH CENTRE DELIVERIES	42
8.4	ACCOMMODATION STATUS.....	43
8.5	DISCHARGE STATUS.....	44
9.	CONGENITAL ANOMALIES AND PERINATAL MORTALITY.....	45
9.1	NEONATAL MORBIDITY	45
9.2	CONGENITAL ANOMALIES.....	45
9.3	PERINATAL MORTALITY.....	45
9.3.1	<i>Babies Characteristics.....</i>	<i>46</i>
9.3.2	<i>Maternal characteristics.....</i>	<i>47</i>
9.3.3	<i>Conditions associated with perinatal death.....</i>	<i>49</i>
10.	ACT INITIATIVES.....	50
10.1	STRATEGIC FRAMEWORK FOR MATERNITY SERVICES IN THE ACT 1995-98.....	50
10.2	COMMUNITY MIDWIVES PILOT PROJECT (CMPP).....	51
11.	GLOSSARY.....	52
11.1	DEFINITIONS.....	52
12.	APPENDIX 1: ACT MATERNAL PERINATAL DATA COLLECTION.....	56
12.1	DATA SOURCES.....	56
12.1.1	<i>ACT Deaths Data</i>	<i>56</i>
12.1.2	<i>ACT Midwives Collection Form.....</i>	<i>56</i>
12.1.3	<i>ACT Hospital Morbidity Data Collection.....</i>	<i>58</i>
12.2	RECORD LINKAGE	58
12.2.1	<i>Comparison of linked and unlinked records.....</i>	<i>58</i>
12.3	DATA ITEMS.....	59
12.3.1	<i>Current data items.....</i>	<i>59</i>
12.3.2	<i>Minimum data items set</i>	<i>60</i>
12.4	THE DATABASE.....	61
12.5	DATA QUALITY	62
12.6	DATA LIMITATIONS.....	62
13.	APPENDIX 2: ADDITIONAL GRAPHS AND TABLES	63
13.1	CONFINEMENTS BY REGION OF MOTHER'S BIRTH BY AGE GROUP, ACT, 1996-94.....	63
13.2	RESPONSIBILITY FOR ANTENATAL CARE BY ACCOMMODATION STATUS, ACT, 1995-94 ..	66
13.3	RESPONSIBILITY FOR ANTENATAL CARE GROUP BY TOWN CENTRE, ACT, 1996-94.....	67
13.4	MOTHERS AGE GROUP BY PLACE OF BIRTH, ACT, 1996-94.....	68
14.	APPENDIX 3: THE ACT EXPERIENCE: A SURVEY OF MOTHERS	70
14.1	THE PROJECT	70
14.2	EARLY FINDINGS OF THE STUDY.....	70
15.	REFERENCES.....	73

Tables

Table 1: Confinements and births, ACT, 1994-96	10
Table 2: Births by plurality, ACT, 1994-96	11
Table 3: Age specific fertility rates & total fertility rates for all live births, ACT residents, 1994-96	12
Table 4: Confinements by maternal age group, ACT, 1994-96	13
Table 5: Confinements by region of mother's birth, ACT, 1994-96	14
Table 6: Mothers, Indigenous status, ACT, 1994-96.....	14
Table 7: Indigenous mothers, maternal age, ACT, 1994-96	15
Table 8: Indigenous mothers, marital status, ACT, 1994-96.....	15
Table 9: Indigenous mothers, by statistical subdivision, ACT residents, 1994-96.....	15
Table 10: Mothers, ACT and Non ACT residents, ACT, 1994-96.....	16
Table 11: Mothers, usual place of residence by subdivision, ACT, 1994-96.....	16
Table 12: Confinements & births in NSW by State/Territory of residence, 1994-96.....	17
Table 13: Mothers, marital status, ACT, 1994-96.....	17
Table 14: Mothers, antenatal stay in hospital, ACT, 1994-96	18
Table 15:: Length of postnatal stay, hospital confinements, ACT & Australia, 1995.....	19
Table 16:: Mothers, postnatal stay in hospital (excluding transfers), ACT, 1994-96.....	19
Table 17: Mothers, previous pregnancies, ACT, 1994-96.....	20
Table 18: Mothers, antenatal visits, ACT, 1994-96.....	20
Table 19: Mothers, responsibility for antenatal care, ACT, 1994-96	21
Table 20: Mothers, responsibility for antenatal care by accommodation status, ACT, 1996.....	21
Table 21: Responsibility for antenatal care group by mothers age group, ACT, 1996	23
Table 22: Mothers, antenatal procedures, ACT, 1994-96	23
Table 23: Mothers, selected medical conditions during pregnancy, ACT, 1994-96.....	24
Table 24: Mothers, No. of medical conditions during pregnancy, ACT, 1994-96.....	24
Table 25: Selected medical conditions in pregnancy during hospitalisation, ACT, 1995-96.....	24
Table 26(a): Obstetric complications, mothers during hospitalisation, ACT, 1995-96.....	25
Table 27(b): Obstetric complications, mothers during hospitalisation, ACT, 1995-96.....	25
Table 28: Previous livebirths for multips, ACT, 1994-96	26
Table 29: Previous stillbirths for multips, ACT, 1994-96	26
Table 30: Previous spontaneous abortions for multips, ACT, 1994-96.....	26
Table 31: Previous ectopic pregnancies for multips, ACT, 1994-96.....	26
Table 32: Previous neonatal deaths for multips, ACT, 1994-96.....	27
Table 33: Mothers, onset of labour, ACT, 1994-96.....	27
Table 34: Mothers, type of labour, ACT, 1994-96.....	28
Table 35: Confinements, birth type, ACT, 1994-96.....	28
Table 36: Caesarean rates by selected characteristics, ACT & Australia, 1995.....	29
Table 37: Confinements by selected birth type, by ACT hospital, % (3 yr average), 1994-96.....	29
Table 38: Complications of labour and birth for mothers, ACT, 1995-96.....	30
Table 39: Complications of labour and birth for mothers, ACT, 1995-96.....	30
Table 40: Perineal repair for vaginal deliveries, ACT, 1995-96.....	31
Table 41: Percentage of children (0-3 years): whether ever breastfed & time breastfed, ACT & Australia, 1995	32
Table 42: Self reported physical health problems in the puerperium, ACT, 1997	33
Table 43: Midcall usage in the ACT, 1995-96	34
Table 44: No. of admissions at QEII Family Centre, ACT, July 1997-March 1998.....	35
Table 45: Presenting problems, QEII Family Centre, ACT, July 1997-March 1998.....	35
Table 46: Babies, sex for all births, ACT, 1994-96	37
Table 47: Babies, birthweight for all births, ACT, 1994-96	37
Table 48: Babies, gestational age for all births, ACT, 1994-96.....	38
Table 49: Babies, apgar score at 1 minute for all live births, ACT, 1994-96	38
Table 50: Babies, apgar score at 5 minute for all live births, ACT, 1994-96	38
Table 51: Babies, resuscitation active measures for all live births, ACT, 1994-96.....	39
Table 52: Babies, ACT & non ACT residents for all live births, ACT, 1994-96	39
Table 53: Babies stay in hospital for livebirths (excluding transfers), ACT, 1994-96	40
Table 54: Births, place of birth, ACT, 1994-96.....	43
Table 55: Confinements, place of birth, ACT, 1994-96.....	43
Table 56: Mothers, accommodation status, ACT, 1994-96.....	43

Table 57: Mothers, accommodation status by hospital, ACT, 1994-96.....	44
Table 58: Mothers hospital discharge status, ACT, 1994-96.....	44
Table 59: Babies hospital discharge status for live births, ACT, 1994-96.....	44
Table 60: Congenital anomalies, ACT, 1995-96.....	45
Table 61: Birth status, ACT, 1994-96.....	46
Table 62: Babies characteristics for mortality, ACT, 1996.....	46
Table 63: Babies Characteristics for mortality, ACT, 1995.....	47
Table 64: Characteristics of mothers experiencing a perinatal death, ACT, 1996.....	48
Table 65: Characteristics of mothers experiencing a perinatal death, ACT, 1995.....	49
Table 66: No. of CMPP clients, by place of birth, ACT, August 1995-October 1996.....	51
Table 67: Current list of data items from ACT Midwives Data Collection Form.....	59
Table 68: Minimum Perinatal Data Set.....	61
Table 69: Confinements by region of mother's birth by age group, ACT, 1996.....	63
Table 70: Confinements by region of mother's birth by age group, ACT, 1995.....	64
Table 71: Confinements by region of mother's birth by age group, ACT, 1994.....	65
Table 72: Mothers, responsibility for antenatal care by accommodation status, ACT, 1995.....	66
Table 73: Mothers, responsibility for antenatal care by accommodation status, ACT, 1994.....	66
Table 74: Mothers, responsibility for antenatal care by Town Centre, ACT, 1996.....	67
Table 75: Mothers, responsibility for antenatal care by Town Centre, ACT, 1995.....	67
Table 76: Mothers, responsibility for antenatal care by Town Centre, ACT, 1994.....	68
Table 77: Mothers age group by place of birth, ACT, 1996.....	68
Table 78: Mothers age group by place of birth, ACT, 1995.....	69
Table 79: Mothers age group by place of birth, ACT, 1994.....	69



Figures

Figure 1: Births by plurality, ACT, 1994-96.....	11
Figure 2: Age specific fertility rates for all livebirths, ACT residents per 1,000 women, 1994-96.....	12
Figure 3: Mothers age group by responsibility for antenatal care group, ACT, 1996.....	22
Figure 4: Responsibility for antenatal care group by mother's age group, ACT, 1996.....	22
Figure 5: ACT Midwives Data Collection Form.....	57
Figure 6: Confinements by region of mother's birth by age group, ACT, 1996.....	63
Figure 7: Confinements by region of mother's birth by age group, ACT, 1995.....	64
Figure 8: Confinements by region of mother's birth by age group, ACT, 1994.....	65



Summary

Confinements

There were 4,701 women who gave birth resulting in 4,788 babies being born in the ACT in 1996. This represents slightly less confinements and births than in 1995, but a similar number to 1994. In 1995, the ACT matched the Australian average of 98.6 per cent of confinements being singletons.

Time of childbearing

In the ACT, age specific fertility rates (ASFR) for women in the 20-24 and 25-29 year age groups have remained constant over the three period from 1994 to 1996. However a trend has emerged suggesting that women are delaying childbearing till the later part of their reproductive years

In 1995 the ACT had the second lowest proportion of teenage mothers having confinements (4% compared to 5.3% for Australia), the highest proportion of women having confinements between 35-39 years (13.0% compared to 11.4% for Australia) and equal highest (with NSW and Victoria) proportion of women having confinements between 40-44 years (2% compared to 1.8 for Australia)

Mothers' country of origin

Most confinements in the ACT were for women born in the Oceania, and this proportion is increasing slowly over time. In 1996, this group comprised 79.7% (3746) Australian, 1.5% (70) New Zealanders and 1.1% (55) other Oceanian mothers. The proportion of confinements to European women is slowly declining.

Indigenous mothers

There was an increase in Indigenous confinements over the three years 1994-96. It is not known whether this is a real increase or merely an increase in the number of women who disclose their Indigenous status. The Australian mean age of Indigenous mothers having confinements was 24.0 years in 1995. The ACT mean age was the highest of all states and territories at 28.3 years. The proportion of Indigenous mothers less than 20 years rose considerably in 1996 (to 20%) and should be monitored.

Non-ACT mothers

The breakdown between ACT and non-ACT residents having confinements in the ACT remains fairly static over time, with approximately 11 per cent of confinements being for women usually residing outside the ACT in 1996.

Mothers' characteristics

There were more women having babies living in the South of Canberra than the North. The majority of women having babies were married or in a defacto relationship. The proportions have not changed significantly over time. Single mothers accounted for 8.8 per cent of confinements in the ACT in 1995, compared to 11.5 per cent in Australia generally. The ACT had the lowest proportion of single mothers of all states and territories.

Nearly all women having confinements had no history of stillbirths, neonatal deaths or ectopic pregnancies, but some history of spontaneous (approximately 30%) or induced (approximately 17%) abortions. Over four fifths of them had already had at least one live birth in the past.

Antenatal visits

The number of antenatal visits per woman is not changing over time. Most women birthing in the ACT report 7 or more antenatal visits. Nearly half of all women receive antenatal care from an obstetrician, although this has decreased from 53.6 per cent in 1994 to 45.4 per cent in 1996. Sole antenatal care by the GP has decreased slightly, although they are likely to be involved in shared care with other clinicians. Utilisation of the antenatal clinics has risen considerably from 7.4 per cent in 1994 to 16.4 per cent in 1996. There is also an increase in the use of registered midwives due to the Community Midwives Program, from 0.4 per cent in 1994 to 1.5 per cent in 1996. Women under 20 years of age tend to use the Antenatal Clinic, shared care and GPs, whereas older women progressively use obstetrician services.

Antenatal procedures

The use of x-ray during pregnancy decreased by 50 per cent from 1995 to 1996. Ultrasound is routinely used during pregnancy with 93.3 per cent (4387) of pregnant women in 1996 having at least one. There has been a gradual increase in the use of ultrasound and cardiotocography over the three years.

Type of hospital used

The majority of women receiving care from obstetricians have their babies in private hospital. Nearly 90 per cent of private hospital beds are used by women under the care of obstetricians. Nearly 30 per cent of women having shared antenatal care use public hospital beds. The proportion of mothers with private accommodation status for their hospital stays decreased over the three years 1994-96 in accord with national trends.

TCH accounted for over half of the births (although this proportion is decreasing), with a small increase in usage at the Birth Centre and a subsequent decrease in Delivery Suite. With the opening of maternity beds at John James Memorial Hospital (JJMH) and an increase in maternity beds at Calvary Private Hospital in 1995, the 20 per cent decrease in births at the public hospitals were redistributed to JJMH (18.6%) and Calvary Private Hospital (1.9%).

The birth

Approximately one fifth of mothers hospitalised for confinement had at least one obstetric complication. Over a quarter of these were mild or unspecified pre-eclampsia.

The onset of labour was spontaneous in 67.2 per cent of all confinements in Australia in 1995. In the ACT it was higher at 72.5 per cent. Since 1992 there has been a slight reduction in forceps deliveries and a slight increase in 'normal' deliveries. Caesarean sections continue to be high.

There was fluctuation in proportions for complications of labour and birth over the two years. There were considerable increases in the proportion of mothers experiencing long labour, uterine inertia, cord entanglement, second degree perinatal laceration and postpartum haemorrhage, in 1996. There has been an increase of 2.3 per cent of women not requiring perineal repair from 1995 to 1996, episiotomy rates have decreased (8.1%) and sutured

perineal laceration have increased (5.9%). This situation will be monitored to ascertain if fluctuations are significant over time.

Early indications suggest that at least 93 per cent of ACT babies are breast fed from birth (compared to more than 86% for Australia).

In the ACT, women tended to be discharged from hospital earlier than the Australian average in 1995. (mean length of stay for ACT women was 4.3 days compared to 4.5 days for Australian women). There was a gradual increase in the number of mothers staying in hospital 3 days or less (40.9% in 1994 to 43.8% in 1996). The introduction of Midcall and community support has assisted this increase.

Baby characteristics

There were slightly more male babies born than female babies over the three years, 1994-96. This follows a usual trend. Most babies were born between 37 and 41 weeks after conception. There were progressively less babies requiring resuscitation from 1994 to 1996. The majority of babies (86% in 1996) did not require any form of resuscitation.

Most babies born are discharged to their homes, although a small proportion are transferred to other care. This proportion is slowly increasing over time and will need to be monitored

Neonatal morbidity

Major conditions recorded from the Hospital Morbidity Data Collection include respiratory conditions, disorders relating to short gestation and low body weight, and perinatal jaundice.

Congenital abnormalities were reported for per cent of babies born in 1996. Major anomalies were certain musculoskeletal deformities, those pertaining to the integument, the urinary system or limbs.

Perinatal mortality

The ACT had the lowest stillbirth and neonatal death rates of all Australian states and territories in the 3 year period 1992-94 (4.1 per 1,000 births compared to Australian rate of 5.0). Nearly half (46.2%) of perinatal deaths occurred at the gestational age of 20-27 weeks. There were 2 stillbirths to Indigenous mothers in 1996 (none in 1995).

The main conditions in the baby associated with neonatal and post neonatal deaths in the ACT for 1995 were extreme immaturity (6 or 0.12%) and congenital anomalies (6 or 0.12%). The main conditions in the mother associated with neonatal and post neonatal deaths in the ACT for 1995 were antepartum haemorrhage (4 or 0.08%), fetal distress (2 or 0.04%), premature rupture of membranes (2 or 0.04%), and preterm labour (2 or 0.04%).



1. Introduction

The experience of birthing - from conception to the first few weeks after the birth - is a major milestone in the lives of most women and their families. Which women are becoming pregnant, how the pregnancy and resulting birth are accomplished, where and what services are available, which services are used during the time, and how accessible are services, are all issues which impact on future service delivery and the health of individuals, their families and the society in which they live.

This publication is the eighteenth in the Health Series of publications produced by the Epidemiology Unit of the Department of Health and Community Care. It outlines the findings derived from the ACT Maternal and Perinatal Data Collection which includes information from the ACT Midwives Data Collection, the Hospital Morbidity Data Collection and the ACT Deaths Data, for the period 1994-96. It aims to inform service providers, policy makers, researchers and consumers of the maternal and perinatal health status in the ACT and allows them to compare ACT status with that of Australia as a whole. It is expected that the findings will assist the ACT government and in particular, the ACT Department of Health and Community Care in its commitment to maximising 'both community and individual health and well-being' by developing an overview of maternal and perinatal health status and the services provided.

There are several birthing options for women in the ACT. These include using a public or private hospital, attending the Birth Centre at The Canberra Hospital, or having a homebirth (refer Section 8). Both public hospitals offer women the choice of *shared care* (with women visiting both their private GP and the antenatal clinic run by midwives at the hospital) or *whole care* (where women receive care at the hospital from midwives, visiting medical officers, registrars and specialists if necessary).



2. Confinements and births in the ACT

2.1 Confinements and births

There were 4,701 women who gave birth resulting in 4,788 babies being born in the ACT in 1996. This represents slightly less confinements and births than in 1995, but a similar number to 1994.

Table 1: Confinements and births, ACT, 1994-96

Confinements and Births	1994		1995		1996	
	No.	%	No.	%	No.	%
Total Confinements	4731	33.2	4830	33.9	4701	33.0
Total Births	4784	33.1	4899	33.9	4788	33.1

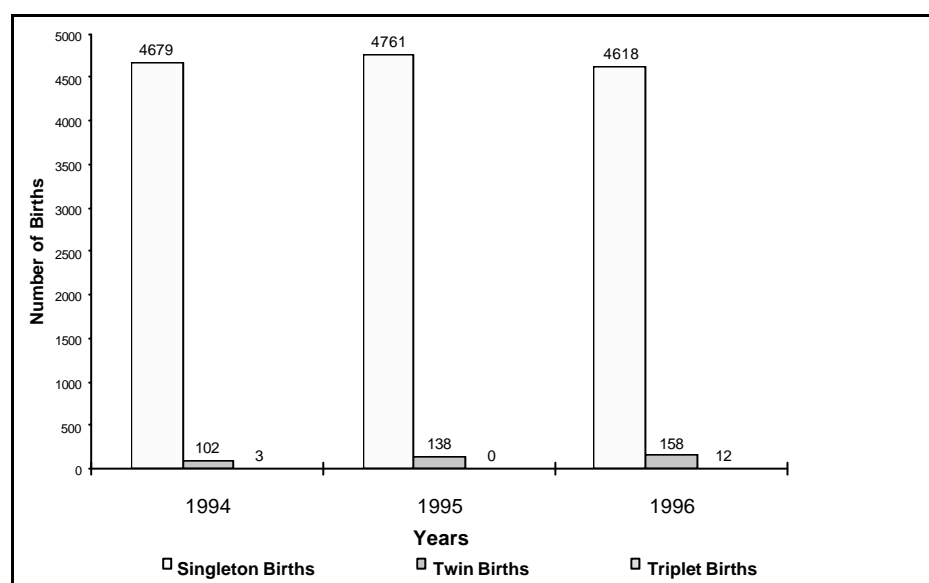
Source: ACT Maternal/Perinatal Data Collection

2.2 Births by plurality

The ACT is consistent with the rest of Australia in that most births are singleton births. In 1995, the ACT matched the Australian average of 98.6 per cent of confinements being singletons¹.

There were very few multiple births in the ACT, although the number rose substantially over the three year period 1994-96. The main increase has been a direct result of the reduction of obstetric services in Cooma, Batemans Bay and Moruya, with the resultant referral of multiple pregnancies for antenatal care and delivery to The Canberra Hospital (eg. an increase of 1.1% in twins born to NSW mothers). A marginal increase could also be due to the improved access to invitro-fertilisation options in recent years.

Figure 1: Births by plurality, ACT, 1994-96



Source: ACT Maternal/Perinatal Data Collection

Table 2: Births by plurality, ACT, 1994-96

Births	1994		1995		1996	
	No.	%	No.	%	No.	%
Singleton Births	4679	97.8	4761	97.2	4618	96.4
Twin Births	102	2.1	138	2.8	158	3.3
Triplet Births	3	0.1	0	0.0	12	0.3
Total Births	4784	100.0	4899	100.0	4788	100.0

Source: ACT Maternal/Perinatal Data Collection



3. Mother's characteristics

3.1 ACT fertility rates

In the ACT, age specific fertility rates (ASFR) for women in the 20-24 and 25-29 year age groups have remained constant over the three period from 1994 to 1996. However, in the 15-19 and 30-34 year age groups, rates have decreased and for the 35-40 years age group, the number of births

has steadily increased; a trend that suggests women are delaying childbearing till the later part of their reproductive years. (refer to Glossary for definitions).

The median age of mothers having their first baby remained at 27.0 years for each of the 3 years, 1994-96.

Table 3: Age specific fertility rates & total fertility rates for all live births, ACT residents, 1994-96

Age Group	1994		1995		1996	
	No.	ASFR	No.	ASFR	No.	ASFR
15 - 19*	162	13.36	173	14.49	159	10.64
20 - 24	765	49.52	777	49.79	674	48.61
25 - 29	1417	113.55	1438	114.07	1443	114.86
30 - 34	1362	106.41	1358	106.05	1285	101.16
35 - 39	502	40.79	570	45.93	620	52.15
40 - 44	34	2.81	29	2.43	47	3.89
45 - 49**	2	0.18	1	0.09	5	0.55
Total	4246	326.63	4346	332.81	4232	331.98
TFR per 1,000 women		1633		1664		1660

ASFR - Age Specific Fertility Rates

TFR - Total Fertility Rates

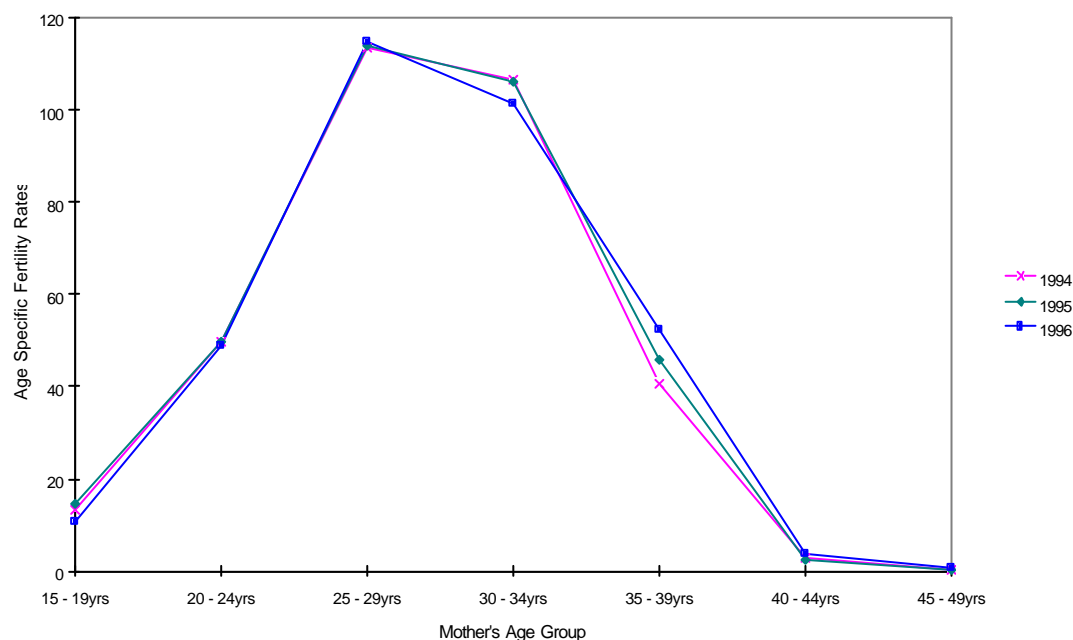
* All births for mothers aged less than 15 years are included in the 15-19 age group

** All births for mothers aged 50 years or more are included in the 45-49 age group

All births where the age of the mother was not stated have been proportionately distributed

Source: ACT Maternal/Perinatal Data Collection & Estimated Residential Population by sex and age, 1994-96, ABS Cat. No: 3201.0

Figure 2: Age specific fertility rates for all livebirths, ACT residents per 1,000 women, 1994-96



Source: ACT Maternal/Perinatal Data Collection & Estimated Residential Population by sex and age, 1994-96, ABS Cat. No: 3201.0

3.2 Maternal age at baby's birth

Maternal age is an important risk factor for perinatal outcome². The risks become greater at each extreme of the child-bearing age range.

Table 4 confirms that there continue to be very few women under 20 years, and a declining proportion aged 20-24 years, having confinements. ACT women are delaying their pregnancies to the later years of 35-39 years and beyond. This conforms with the national trend.

In 1995 the ACT had the second lowest (after Victoria) proportion of teenage mothers having confinements (4% compared to 5.3% for Australia), the highest proportion of women having confinements between 35-39 years (13.0% compared to 11.4% for Australia) and equal highest (with NSW and Victoria) proportion of women having confinements between 40-44 years (2% compared to 1.8 for Australia)³.

Table 4: Confinements by maternal age group, ACT, 1994-96

Maternal age group	1994		1995		1996	
	No.	%	No.	%	No.	%
Less than 20 yrs	184	3.9	195	4.0	175	3.7
20-24 yrs	819	17.4	832	17.2	721	15.4
25-29 yrs	1564	33.1	1586	32.8	1568	33.4
30-34 yrs	1492	31.6	1493	30.9	1448	30.8
35-39 yrs	556	11.8	626	13.0	673	14.3
40 yrs plus	103	2.2	97	2.0	112	2.4
Total	4718	100.0	4829	99.9	4697	100.0

Note: There were 18 missing observations

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

The median age of mothers remained constant at 29.0 years for all three years. For Indigenous mothers it fluctuated from 27.0 to 28.0 to 26.0 in the 3 years 1994-96.

3.3 Country of birth

Cultural factors may be relevant to certain perinatal outcomes such as birth weight and perinatal mortality. Where a mother comes from a non-English speaking country or one where the culture is significantly different to the Australian culture, care needs to be taken in the planning of appropriate services to ensure that these risk factors are reduced.

Most confinements in the ACT were for women born in the Oceania region (refer Table 5), and this proportion is increasing slowly over time (Oceania in this case refers to Australia, Australian External Territories, New Zealand, Melanesia, Micronesia, Polynesia excluding Hawaii). In 1996, this group comprised 79.7% (3746) Australians, 1.5% (70) New Zealanders and 1.1% (55) other Oceanian mothers. The proportion of confinements to European women is slowly declining.

Interestingly, around 8 percent of multiple births were to European mothers and around 5 percent to Asian mothers.

Table 5: Confinements by region of mother's birth, ACT, 1994-96

Major region of birth	1994		1995		1996	
	No.	%	No.	%	No.	%
Australia only	3652	77.2	3809	78.9	3747	79.7
Oceania (excluding Australia)	145	3.1	130	2.7	124	2.6
Oceania includes Australia	3797	80.3	3939	81.6	3871	82.3
Europe and former USSR	429	9.1	394	8.2	327	7.0
Middle East & North Africa	37	0.8	39	0.8	33	0.7
Southeast Asia	191	4.0	186	3.9	196	4.2
Northeast Asia	68	1.4	89	1.8	74	1.6
Southern Asia	70	1.5	68	1.4	69	1.5
Northern America	42	0.9	40	0.8	64	1.4
Sth & Central America	38	0.8	31	0.6	29	0.6
Africa (excluding Nth Africa)	17	0.4	34	0.7	27	0.6
Not stated	42	0.9	10	0.2	11	0.2
Total	4731	100.1	4830	100.0	4701	100.1

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

For an age breakdown by the mother's region of birth, refer Appendix 2.

3.4 Indigenous status

With regard to Indigenous status, the ACT Midwives Data Collection form (filled out by midwives) only has an option for Aboriginal or Non Aboriginal status. Identification of Torres Strait Islander status will be included on the new form.

Table 6 shows an increase in Indigenous confinements over the three years 1994-96. It is not known whether this is a real increase or merely an increase in the number of women who disclose their Indigenous status.

Table 6: Mothers, Indigenous status, ACT, 1994-96

Indigenous status	1994		1995		1996	
	No.	%	No.	%	No.	%
Aboriginal / Torres Strait						
Other	4636	98.0	4749	98.3	4594	97.7
Not Stated	40	0.8	18	0.4	27	0.6
Total	4731	100.0	4830	100.0	4701	100.0

Source: ACT Maternal/Perinatal Data Collection

The Australian mean age of Indigenous mothers having confinements was 24.0 years in 1995. The ACT mean age was the highest of all states and territories at 28.3 years⁴. The median age of Indigenous mothers fluctuated from 27.0 years (1994) to 28.0 years (1995) and 26.0 years (1996). This compares to a median age of 29 years for each of the three years for all ACT mothers.

The ages at which Indigenous women had babies are set out in Table 7. The proportion of mothers less than 20 years rose considerably in 1996 (to 20%) and should be monitored. (The

ACT proportion of all mothers under 20 years was 3.7%). Fewer Indigenous women had babies after 34 years than the ACT proportion (5% compared to 16.7% in 1996).

Table 7: Indigenous mothers, maternal age, ACT, 1994-96

Maternal age	1994		1995		1996	
	No.	%	No.	%	No.	%
Less than 20	6	10.9	2	3.2	16	20.0
20-24 yrs	13	23.6	14	22.2	16	20.0
25-29 yrs	19	34.5	25	39.7	26	32.5
30-34 yrs	12	21.8	15	23.8	18	22.5
35-39 yrs	3	5.5	7	11.1	4	5.0
40 yrs or more	2	3.6	0	0.0	0	0.0
Total	55	99.9	63	100.0	80	100.0

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

Fewer Indigenous women having babies were married or in a defacto relationship than ACT women having babies generally (between 68.8% and 77.6% compared to at least 89.1% in 1996).

Table 8: Indigenous mothers, marital status, ACT, 1994-96

Marital status	1994		1995		1996	
	No.	%	No.	%	No.	%
Married (includes defacto)	40	72.7	53	84.1	55	68.8
Single	13	23.6	9	14.3	18	22.5
Other or Not Stated	2	3.6	1	1.6	7	8.8
Total	55	99.9	63	100	80	100.1

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

A comparison of the proportion of Indigenous women living in each statistical subdivision (town centre)⁵ with the proportion having babies, shows the spread is roughly in accord with those proportions with two exceptions: Woden Valley and Tuggeranong have slightly more Indigenous births than their female proportion of Indigenous women would suggest. This is probably due to the number of young women of child bearing age living in these areas.

Table 9: Indigenous mothers, by statistical subdivision, ACT residents, 1994-96

Subdivision	1994		1995		1996	
	No.	%	No.	%	No.	%
North Canberra	9	18.4	6	10.3	7	10.6
Belconnen	10	20.4	14	24.1	12	18.2
Gungahlin - Hall	0	0.0	0	0.0	4	6.1
Total Northside	19	38.8	20	34.4	23	34.9
South Canberra	10	20.4	1	1.7	6	9.1
Woden Valley	5	10.2	8	13.8	9	13.6
Weston Creek	3	6.1	6	10.3	3	4.5
Tuggeranong	12	24.5	23	39.7	25	37.9
Total Southside	30	61.2	38	65.5	43	65.1
Total Indigenous confinements	49	100.0	58	99.9	66	100.0

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

3.5 Usual area of residence

The breakdown between ACT and non-ACT residents having confinements in the ACT has remained fairly static over time, with approximately 11 per cent of confinements in 1996 being for

women usually residing outside the ACT (refer Table 10). Most of these came from NSW, in particular from Queanbeyan. In 1996 for example, there were 482 confinements to NSW women.

Table 10: Mothers, ACT and Non ACT residents, ACT, 1994-96,

Usual area of Residents	1994		1995		1996	
	No.	%	No.	%	No.	%
ACT residents	4235	89.5	4324	89.5	4191	89.2
Non ACT residents	486	10.3	500	10.4	503	10.7
Not stated/Overseas	10	0.2	6	0.1	7	0.1
Total	4731	100.0	4830	100.0	4701	100.0

Source: ACT Maternal/Perinatal Data Collection

With regard to women who usually reside in the ACT, the following table shows area of residence by statistical subdivision (town centre). It can be seen that there are more women having babies living in the South of Canberra than the North.

Table 11: Mothers, usual place of residence by subdivision, ACT, 1994-96

Subdivision	1994		1995		1996	
	No.	%	No.	%	No.	%
North Canberra	427	10.1	399	9.2	362	8.6
Belconnen	1085	25.6	1079	25.0	1058	25.2
Gungahlin - Hall	148	3.5	227	5.2	292	7.0
Total Northside	1660	39.2	1705	39.4	1712	40.8
South Canberra	277	6.5	188	4.3	198	4.7
Woden Valley	375	8.9	443	10.2	426	10.2
Weston Creek	274	6.5	291	6.7	236	5.6
Tuggeranong	1649	38.9	1697	39.2	1619	38.6
Total Southside	2575	60.8	2619	60.4	2479	59.1
Total	4235	100.0	4324	99.8	4191	99.9

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

When considering births by ACT women, it is important to ascertain whether any ACT women are birthing outside the ACT. The proportion who do so is very small, and probably due to unexpected birthing rather than by choice.

The percentage of NSW confinements and births for ACT residents has remained stable (0.1%) over the three years from 1994-96 (Refer Table 12 for NSW figures).

The percentage of ACT residents birthing in NSW in 1995 and 1994 was 1.8 per cent and 2.2 per cent respectively. In 1996 it was 2.1 per cent.

The calculation of the percentage of ACT residents birthing in NSW was made using the following formula:

$$\% \text{ of ACT residents birthing in NSW} = \frac{\text{No. NSW Confinements to ACT residents}}{\text{No. ACT residents birthing in ACT} + \text{No. NSW Confinements to ACT residents}}$$

Another numerator that could be used is the total number of ACT residents birthing, anywhere in Australia. This is expected to only marginally vary the rate as the numbers of ACT residents birthing in states other than NSW are very low.

Table 12: Confinements & births in NSW by State/Territory of residence, 1994-96

State /Territory of Residence	1994		1995		1996	
	No.	%	No.	%	No.	%
Confinements						
NSW	86031	99.2	85526	99.1	84582	99.2
Victoria	157	0.2	144	0.2	161	0.2
Queensland	355	0.4	471	0.5	417	0.5
South Australia	7	0.0	-	0.0	6	0.0
Western Australia	-	0.0	5	0.0	-	0.0
Tasmania	-	0.0	-	0.0	-	0.0
Northern Territory	-	0.0	-	0.0	-	0.0
ACT	94	0.1	79	0.1	89	0.1
Overseas	-	0.0	5	0.0	12	0.0
Other	84	0.1	26	0.0	27	0.0
Total	86738	100.0	86263	100.0	85302	100.0
Births						
NSW	87270	99.2	86650	99.2	85701	99.2
Victoria	157	0.2	145	0.2	162	0.2
Queensland	359	0.4	472	0.5	420	0.5
South Australia	7	0.0	-	0.0	6	0.0
Western Australia	-	0.0	5	0.0	-	0.0
Tasmania	-	0.0	-	0.0	-	0.0
Northern Territory	-	0.0	-	0.0	-	0.0
ACT	96	0.1	80	0.1	90	0.1
Overseas	-	0.0	5	0.0	14	0.0
Total	87984	100.0	87391	100.0	86429	100.0

Note: Numbers less than 5 not shown.

Source: NSW Midwives Data Collection, Epidemiology and Surveillance Branch, NSW Health Department

3.6 Marital status

The majority of women having babies were married or in a defacto relationship. These proportions have not changed significantly over time, but non reporting of marital status on the Midwives Data Collection form has increased over the three years. In future data sets (1997 onwards) where marital status is not reported, the information will be obtained from the hospital morbidity data by linking to the midwives collection (provided privacy considerations are not breached).

Of the 3.7 percent of mothers who were 20 years or under in 1996, 48 percent were single. Single mothers tended to have their babies when they were 29 years or under (84%). Only 49.6 percent of married/defacto mothers on the other hand had their babies at 29 years or younger.

Table 13: Mothers, marital status, ACT, 1994-96

Marital Status	1994		1995		1996	
	No.	%	No.	%	No.	%
Never married	392	8.3	420	8.7	356	7.6
Widowed	4	0.1	1	0.0	3	0.1
Divorced	18	0.4	17	0.4	18	0.4
Separated	53	1.1	47	1.0	35	0.7
Married, de facto	4236	89.5	4287	88.8	4187	89.1
Not Stated	28	0.6	58	1.2	102	2.2
Total	4731	100.0	4830	100.1	4701	100.1

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

Single mothers accounted for 8.8 (8.7 if 'not stated' is included in the calculation) per cent of confinements in the ACT in 1995, compared to 11.5 per cent in Australia generally. The ACT had the lowest proportion of single mothers of all states and territories⁶.

3.7 Maternal length of stay in hospital

3.7.1 Maternal antenatal length of stay in hospital

Most mothers (90.5% in 1996) give birth on the day of admission to hospital or the next day. Those requiring longer periods of observation or treatment before the birth are women at known high risk or those with major complications or conditions.

Table 14: Mothers, antenatal stay in hospital, ACT, 1994-96

Antenatal stay	1994		1995		1996	
	No.	%	No.	%	No.	%
Less than 1 day	2896	61.8	2871	60.0	2819	60.3
1 day	1468	31.3	1489	31.1	1413	30.2
2-6 days	205	4.4	311	6.5	306	6.5
7-13 days	64	1.4	63	1.3	77	1.6
14-20 days	24	0.5	30	0.6	36	0.8
21-27 days	6	0.1	11	0.2	15	0.3
28 plus	6	0.1	10	0.2	8	0.2
Not stated	15	0.3	0	0.0	2	0.0
Total	4684	99.9	4788	99.9	4676	99.9

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

The average length of antenatal stay in hospital for mothers has slowly increased from 0.81 days (1994) to 0.86 days (1995) and 0.93 days (1996).

3.7.2 Maternal postnatal length of stay in hospital

The length of hospital stay that a woman experiences after the birth of her child depends on such factors as type and difficulty of labour, neonatal and maternal morbidity, medical complications and the availability of home support (refer to Section 6). In the ACT, women tended to be discharged from hospital earlier than the Australian average in 1995⁷. The Australian Institute of Health and Welfare reports that the mean length of stay for ACT women was 4.3 days whereas for Australian women it was 4.5 days.

Table 15:: Length of postnatal stay, hospital confinements, ACT & Australia, 1995

Length of stay	ACT		Australia
	No.	%	%
Less than 1 day	93	2.0	1.3
1 day	435	9.2	5.7
2 days	565	11.9	10.9
3 days	733	15.5	17.6
4 days	772	16.3	18.8
5 days	770	16.2	17.6
6 days	637	13.4	12.1
7-13 days	723	15.2	15.5
14-20 days	12	0.3	0.3
21-27 days	0	0.0	0.1
28 or more days	2	0.0	0.0
All hospital confinements	4743	100.0	100.0

Note: Since NSW data was unavailable, NSW is not included in the Australian percentages . One ACT case not stated.
Source: AIHW, *Australian Mothers & Babies* 1995

The average length of postnatal stay in hospital for mothers was 4.0 days for each year 1994-96.

As Table 16 shows, there is a gradual increase in the number of mothers staying in hospital 3 days or less (40.9% in 1994 to 43.8% in 1996). The introduction of Midcall and community support has assisted this increase.

Table 16:: Mothers, postnatal stay in hospital (excluding transfers), ACT, 1994-96

Postnatal stay	1994		1995		1996	
	No.	%	No.	%	No.	%
Less than 1 day	84	1.8	86	1.8	112	2.5
1 day	403	8.7	428	9.1	415	9.1
2 days	597	12.9	560	11.9	629	13.8
3 days	808	17.5	730	15.5	840	18.4
4 days	914	19.8	765	16.3	752	16.5
5 days	744	16.1	764	16.3	646	14.2
6 days	558	12.1	634	13.5	540	11.8
7 to 13 days	509	11.0	720	15.3	611	13.4
14 to 20 days	1	0.0	10	0.2	17	0.4
21 to 27 days	1	0.0	0	0.0	2	0.0
28 or more days	2	0.0	2	0.0	0	0.0
Not stated	5	0.1	1	0.0	1	0.0
Total	4626	100.0	4700	100.0	4565	100.1

Note: Due to the rounding of percentages some totals may not equal 100.0

Differences between the data presented in Tables 16 & 17 are as a result of additional data cleaning, especially related to

mother" transfers between publications.

Transfers are excluded because when patients transfer or move to another hospital their postnatal care is continued at the

new hospital.

Source: ACT Maternal/Perinatal Data Collection



4. Pregnancy profile

4.1 Previous pregnancies

The number of previous pregnancies can impact on the progress and outcome of the current pregnancy. There has been a slight decrease in the proportion of first pregnancies with concomitant increases in the proportion of women having three or more pregnancies. Although the numbers are too small for complete analysis, the reason for decline in first pregnancy is probably due to less women deciding to have a family.

Table 17: Mothers, previous pregnancies, ACT, 1994-96

Previous pregnancies	1994		1995		1996	
	No.	%	No.	%	No.	%
No Previous	1572	33.2	1529	31.7	1422	30.3
One Previous	1484	31.4	1548	32.0	1566	33.3
Two Previous	881	18.6	893	18.5	871	18.5
Three Previous	424	9.0	455	9.4	457	9.7
Four or more Previous	370	7.8	405	8.4	384	8.2
Total	4731	100.0	4830	99.9	4700*	99.9

Note: Due to the rounding of percentages some totals may not equal 100.0

* There was one missing case

Source: ACT Maternal/Perinatal Data Collection

4.2 Antenatal care

The aim of antenatal care is to safeguard the health of the pregnant woman and fetus by monitoring the pregnancy from as early a stage as possible (preferably from 8 weeks after conception). Early detection and treatment of maternal diseases and emotional stress ensures the optimum results for a pregnancy.

4.2.1 Antenatal visits

Table 18 shows that the number of antenatal visits per woman is not changing over time. Most women birthing in the ACT report 7 or more antenatal visits.

Some women are receiving in excess of 10 to 12 visits. This level of care is only regarded as appropriate for high risk pregnancies⁸. This situation should be monitored to ensure that over-servicing of normal pregnancies is not an issue especially when related to shared care. Additional information would need to be collected on the number and nature of antenatal visits to be able to report on this issue in more detail.

Table 18: Mothers, antenatal visits, ACT, 1994-96

Antenatal Visits	1994		1995		1996	
	No.	%	No.	%	No.	%
No visits	14	0.3	14	0.3	6	0.1
One to three visits	61	1.3	63	1.3	53	1.1
Four to six visits	333	7.0	337	7.0	320	6.8
Seven plus visits	4026	85.1	4141	85.7	4028	85.7
Not stated	297	6.3	275	5.7	294	6.3
Total	4731	100.0	4830	100.0	4701	100.0

Source: ACT Maternal/Perinatal Data Collection

Refer Section 8 for descriptions of available services.

4.2.2 Responsibility for antenatal care

As can be seen from Table 19, nearly half of all women receive antenatal care from an obstetrician. Antenatal care by obstetrician has decreased from 53.6 per cent in 1994 to 45.4 per cent in 1996. Sole antenatal care by the GP has decreased slightly, although GPs are likely to be involved in shared care with other clinicians. Utilisation of the antenatal clinics has risen considerably from 7.4 per cent in 1994 to 16.4 per cent in 1996. There is also an increase in the use of registered midwives due to the implementation of the Community Midwives Program, from 0.4 per cent in 1994 to 1.5 per cent in 1996.

Table 19: Mothers, responsibility for antenatal care, ACT, 1994-96

Antenatal Care Responsibility	1994		1995		1996	
	No.	%	No.	%	No.	%
GP	762	16.1	813	16.8	634	13.5
Obstetrician	2536	53.6	2333	48.3	2132	45.4
Midwife	20	0.4	29	0.6	72	1.5
Antenatal clinic*	351	7.4	587	12.2	773	16.4
Shared Care	964	20.4	908	18.8	983	20.9
Not Stated	98	2.1	160	3.3	107	2.3
Total	4731	100.0	4830	100.0	4701	100.0

* Women receive care from registrars, residents, midwives or a combination of these. Women with high risk pregnancies receive care from obstetricians and the above.

Source: ACT Maternal/Perinatal Data Collection

Shared care (in Table 19 and other related tables) is any care where more than one professional clinician or clinic has been involved in the antenatal care. Improvements to this data element to more accurately reflect the primary carer during the antenatally period are planned for the 1999 collection.

The majority of women receiving care from obstetricians have their babies in private hospital beds (refer Table 20). Nearly 90 per cent of private hospital beds are used by women under the care of obstetricians. Nearly 30 per cent of women having shared antenatal care use public hospital beds.

Table 20: Mothers, responsibility for antenatal care by accommodation status, ACT, 1996

Responsibility for Care	Private		Public	
	No.	%	No.	%
General Practitioner	69	4.2	562	18.6
Obstetrician	1464	88.1	667	22.1
Midwife	7	0.4	62	2.1
Antenatal Clinic	13	0.8	760	25.2
Shared Care	89	5.4	885	29.3
Not Stated	20	1.2	85	2.8
Total	1662	100.1	3021	100.1

Note: There were 18 records not presented above, where accommodation status was not stated

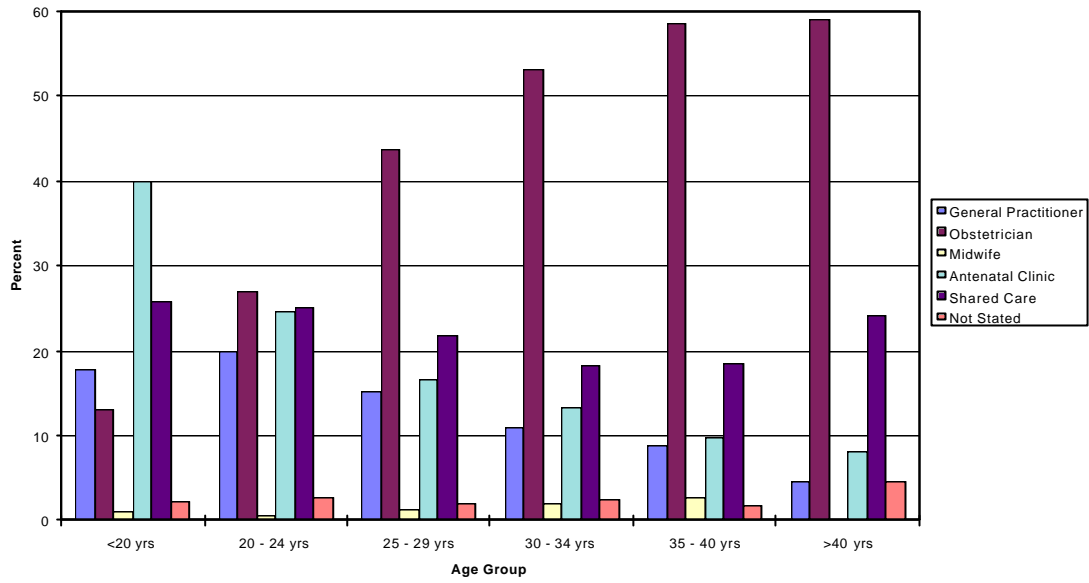
Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

Refer Appendix 2 for 1995 and 1994 tables on the responsibility for antenatal care by accommodation status in ACT.

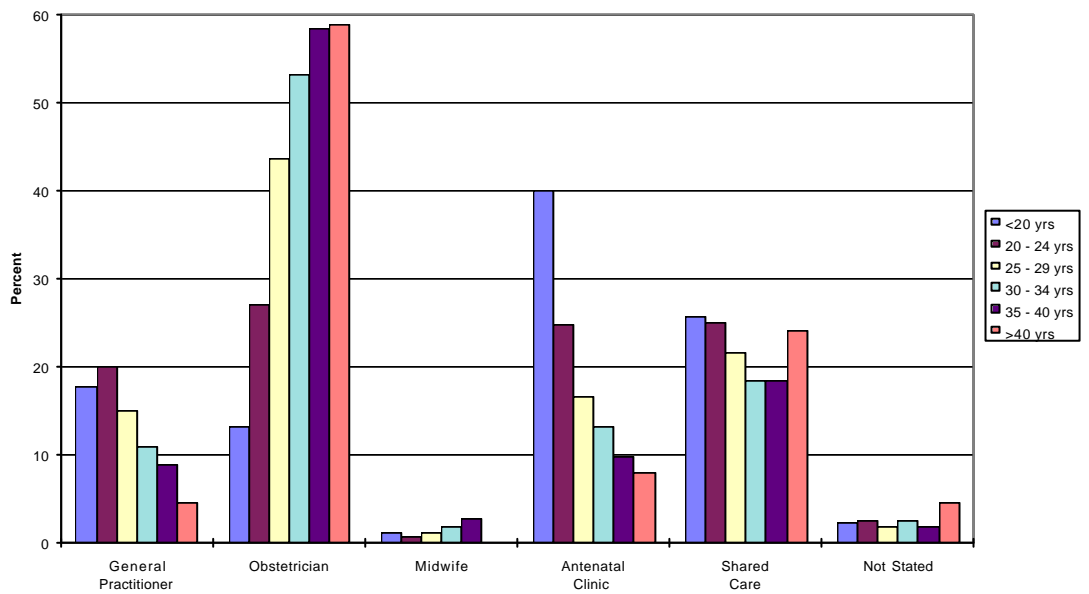
Women under 20 years of age tend to use the antenatal clinic, shared care and GPs, whereas women in older age groups are progressively more likely to use obstetrician services.

Figure 3: Mothers age group by responsibility for antenatal care group, ACT, 1996



Source: ACT Maternal/Perinatal Data Collection

Figure 4: Responsibility for antenatal care group by mother's age group, ACT, 1996



Source: ACT Maternal/Perinatal Data Collection

Table 21: Responsibility for antenatal care group by mothers age group, ACT, 1996

Responsibility for Ca	<20 yrs	20 - 24 yr	25 - 29 yr	30 - 34 yr	35 - 40 yrs	>40 yrs
General Practitioner	31	144	236	159	59	5
Obstetrician	23	195	685	769	394	66
Midwife	2	4	19	28	18	
Antenatal Clinic	70	178	258	191	66	9
Shared Care	45	181	340	265	124	27
Not Stated	4	19	30	36	12	5
Total	175	721	1568	1448	673	112
Percent						
General Practitioner	17.7	20.0	15.1	11.0	8.8	4.5
Obstetrician	13.1	27.0	43.7	53.1	58.5	58.9
Midwife	1.1	0.6	1.2	1.9	2.7	
Antenatal Clinic	40.0	24.7	16.5	13.2	9.8	8.0
Shared Care	25.7	25.1	21.7	18.3	18.4	24.1
Not Stated	2.3	2.6	1.9	2.5	1.8	4.5
Total	99.9	100.0	100.1	100.0	100.0	100.0

Note: There were 4 records not presented above, where age group was not stated

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

Refer Appendix 2 for 1994 and 1995 tables on the responsibility for antenatal care by mothers age group in ACT.

4.2.3 Antenatal procedures

The types of antenatal procedures performed give an indication of the antenatal care delivered.

Table 22 shows that x-ray during pregnancy decreased by 50 per cent from 1995 to 1996.

Ultrasound is a routine procedure during pregnancy with 93.3 per cent (4387) of pregnant women in 1996 having a least one. Mothers of advanced maternal age, whose gestation is longer than 40-41 weeks, who is expecting multiple births or who is experiencing any difficulties during pregnancy may have more than one ultrasound. There has been a gradual increase in the use of ultrasound and cardiocography over the three years.

Table 22: Mothers, antenatal procedures, ACT, 1994-96

Antenatal procedures	1994		1995		1996	
	No.	%	No.	%	No.	%
Cervical suture	13	0.3	13	0.3	16	0.3
X-ray	72	1.5	66	1.4	35	0.7
Cardiotocograph (CTG)	1061	22.4	1621	33.6	1606	34.2
CT Scan	61	1.3	58	1.2	30	0.6
Ultrasound	4251	89.9	4482	92.8	4387	93.3
Chorionic Villus Sampling	45	1.0	66	1.4	59	1.3
Amniocentesis <20 weeks	117	2.5	142	2.9	152	3.2
Amniocentesis >20 weeks	19	0.4	20	0.4	20	0.4

Note: Some procedures are possibly underestimated

Source: ACT Maternal/Perinatal Data Collection

4.3 Maternal medical status

Most women do not experience serious or chronic medical conditions during pregnancy. There has been a marginal increase over time in reporting of gestational diabetes. This is probably due to the introduction of more rigorous routine screening of pregnant women for this condition.

Table 23: Mothers, selected medical conditions during pregnancy, ACT, 1994-96

Medical Conditions	1994		1995		1996	
	No.	%	No.	%	No.	%
Gestational Diabetes	90	1.9	89	1.8	97	2.1
Diabetes Mellitus	30	0.6	19	0.4	24	0.5
Chronic Renal Disease	9	0.2	11	0.2	13	0.3
Epilepsy	18	0.4	13	0.3	15	0.3
Cardiac Disease	19	0.4	11	0.2	12	0.3
Essential Hypertension	36	0.8	39	0.8	43	0.9

Note: Figures for these medical conditions are from notifications on Midwives Data Collection Form - possibly

Refer Table 27 for other conditions such as pre eclampsia.

Source: ACT Maternal/Perinatal Data Collection

Medical conditions during the time of pregnancy reported in the above table have been summarised in Table 24 to give an overview the number of reported medical conditions during pregnancy. In 1996 there were 4 per cent of mothers for whom one or more conditions were reported.

Table 24: Mothers, No. of medical conditions during pregnancy, ACT, 1994-96

No. of Medical Conditions	1994		1995		1996	
	No.	%	No.	%	No.	%
No reported conditions	4536	95.9	4655	96.4	4512	96.0
One reported condition	189	4.0	168	3.5	180	3.8
Multiple reported conditions	6	0.1	7	0.1	9	0.2
Total	4731	100.0	4830	100.0	4701	100.0

Note: Figures for these medical condition are from notifications on Midwives Data Collection Form. The medical conditions may be caused by or be incidental to, the pregnancy.

Source: ACT Maternal/Perinatal Data Collection

Additional medical conditions occurring during a hospital episode that are not collected on the Midwives Data Collection have been extracted from the hospital morbidity data collection and are presented in Table 25. The proportion of records which could be linked for 1995 (93.8%) and 1996 (99.0%) shows a difference of 5.2 per cent; this anomaly should be taken into account when reviewing the data (refer to Section 12.2 for more information on record linkage).

Table 25: Selected medical conditions in pregnancy during hospitalisation, ACT, 1995-96

Medical Conditions	1995		1996	
	No.	%	No.	%
Diabetes Mellitus	21	0.43	19	0.40
Genital herpes	6	0.12	5	0.11
Asthma, unspecified	22	0.46	45	0.96
Infections of genitourinary tract in pregnancy	99	2.05	130	2.77
Anaemia	24	0.50	42	0.89

Note: Figures for these medical condition have been extracted from hospital morbidity data

Source: ACT Maternal/Perinatal Data Collection

4.4 Obstetric complications

Approximately one fifth of hospitalisations during pregnancy were the result of obstetric complications. Over a quarter of these were mild or unspecified pre-eclampsia.

Table 26(a): Obstetric complications, mothers during hospitalisation, ACT, 1995-96

	1995	1996	1995 & 1996
No complication	3627	3638	7265 (76.2%)
One complication	736	882	1618 (17.0%)
Multiple complications	166	136	302 (3.2%)
Records not linked	301	45	346 (3.6%)
Total	4830	4701	9531 (100.0%)

Note: 1994 data was not linked, so is not included

Source: ACT Maternal/Perinatal Data Collection

Table 27(b): Obstetric complications, mothers during hospitalisation, ACT, 1995-96

Obstetric Complications	1995		1996	
	No	%	No	%
Threatened abortion	13	0.3	5	0.1
Placenta praevia without haemorrhage	6	0.1	15	0.3
Haemorrhage from placenta praevia	24	0.5	18	0.4
Premature separation of placenta	17	0.4	15	0.3
Antepartum haemorrhage associated with coagulation defects	1	0.0	2	0.0
Other antepartum haemorrhage	14	0.3	12	0.2
Unspecified antepartum haemorrhage	87	1.8	83	1.7
Benign essential hypertension	14	0.3	15	0.3
Hypertension secondary to renal disease	2	0.0	2	0.0
Other pre-existing hypertension	6	0.1	1	0.0
Transient hypertension of pregnancy	86	1.8	73	1.5
Mild or unspecified pre-eclampsia	236	4.9	274	5.7
Severe pre-eclampsia	38	0.8	61	1.3
Eclampsia	1	0.0	2	0.0
Pre-eclampsia or eclampsia superimposed on pre-existent hypertension	5	0.1	9	0.2
Unspecified hypertension	59	1.2	31	0.6
Other threatened labour	147	3.0	137	2.8
Cervical incompetence	17	0.4	14	0.3
Premature rupture of membranes	173	3.6	255	5.3
Total of complications	946	19.6	1,024	21.0

Note: Figures for these obstetric complications have been extracted from hospital morbidity data.

Figures are based on patients not separations, that is if a woman has more than one admission for the same condition only one condition is counted. The linked records for 1995 (93.8%) and 1996 (99.0%) show a difference of 5.2%, this should be taken into account when reviewing the figures.

Source: ACT Maternal/Perinatal Data Collection

4.5 Pregnancy outcome

The following tables show that most women having confinements had no history of stillbirths, neonatal deaths or ectopic pregnancies, but about 30% had a history of spontaneous abortion and about 17% had a history of induced abortions. The proportion of women who had had an induced abortion had not changed during 1994-96. Over four fifths had already had at least one live birth in the past.

Table 28: Previous livebirths for multips, ACT, 1994-96

Previous livebirths	1994		1995		1996	
	No.	%	No.	%	No.	%
No previous livebirths	500	15.8	527	16.0	512	15.6
One previous livebirth	1610	51.0	1709	51.8	1698	51.8
Two previous livebirths	694	22.0	714	21.6	736	22.5
Three previous livebirths	236	7.5	212	6.4	232	7.1
Four or more prev livebirths	119	3.8	139	4.2	100	3.1
Total	3159	100.1	3301	100.0	3278	100.1

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

Table 29: Previous stillbirths for multips, ACT, 1994-96

Previous stillbirths	1994		1995		1996	
	No.	%	No.	%	No.	%
No previous stillbirths	3083	97.6	3215	97.4	3202	97.7
One previous stillbirth	67	2.1	75	2.3	69	2.1
Two or more prev stillbirths	9	0.3	11	0.3	7	0.2
Total	3159	100.0	3301	100.0	3278	100.0

Source: ACT Maternal/Perinatal Data Collection

Table 30: Previous spontaneous abortions for multips, ACT, 1994-96

Spontaneous abortions	1994		1995		1996	
	No.	%	No.	%	No.	%
No prev spon abortions	2240	70.9	2329	70.6	2300	70.2
One prev spon abortion	683	21.6	701	21.2	720	22.0
Two prev spon abortions	152	4.8	190	5.8	180	5.5
Three prev spon abortions	47	1.5	58	1.8	45	1.4
Four or more spon abortions	37	1.2	23	0.7	33	1.0
Total	3159	100.0	3301	100.1	3278	100.1

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

Table 31: Previous ectopic pregnancies for multips, ACT, 1994-96

Previous ectopic pregnancies	1994		1995		1996	
	No.	%	No.	%	No.	%
No prev ectopic pregnancies	3112	98.5	3245	98.3	3212	98.0
One prev ectopic pregnancy	44	1.4	52	1.6	63	1.9
Two prev ectopic pregnancies	3	0.1	4	0.1	3	0.1
Total	3159	99.8	3301	100.0	3278	100.0

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

Table 32: Previous neonatal deaths for multiples, ACT, 1994-96

Previous neonatal deaths	1994		1995		1996	
	No.	%	No.	%	No.	%
No previous neonatal death	3121	98.8	3265	98.9	3250	99.1
One prev neonatal death	36	1.1	34	1.0	23	0.7
Two prev neonatal deaths	2	0.1	2	0.1	5	0.2
Total	3159	100.0	3301	100.0	3278	100.0

Source: ACT Maternal/Perinatal Data Collection



5. Labour and birth

5.1 Onset of labour

There was an improvement in the accuracy of recording of onset of labour details in 1995-96. The onset of labour was spontaneous in 67.2 per cent of all confinements in Australia in 1995. In the ACT it was higher at 72.5 per cent⁹.

Table 34 shows details of onset of labour from the ACT Maternal/Perinatal Data Collection. Percentages differ slightly to that of the AIHW findings because the 'not stated' values are included in the calculation of the percentages.

Table 33: Mothers, onset of labour, ACT, 1994-96

Onset of labour	1994		1995		1996	
	No.	%	No.	%	No.	%
Spontaneous Onset	n/a	n/a	3433	71.1	3271	69.6
Induced	n/a	n/a	734	15.2	817	17.4
No Labour	n/a	n/a	570	11.8	594	12.6
Not Stated	n/a	n/a	93	1.9	19	0.4
Total	n/a	n/a	4830	100.0	4701	100.0

Note: 'No labour' refers to elective caesarians.

Source: ACT Maternal/Perinatal Data Collection

5.2 Type of labour

Tables 34 and 35 suggest that there may have been a slight reduction in spontaneous labour with a consequent slight increase in medically induced labour. However, the large number of 'not stated' in 1995 (Table 34) makes comparison difficult. Large reductions in the number of 'not stated' cases in 1996 was due to the improved data cleaning by linking with the hospital morbidity data.

Table 34: Mothers, type of labour, ACT, 1994-96

Type of labour	1994		1995		1996	
	No.	%	No.	%	No.	%
Spontaneous	n/a		2536	52.5	2387	50.8
Augmentation	n/a		756	15.7	864	18.4
Induction	n/a		658	13.6	817	17.4
No Labour	n/a		571	11.8	594	12.6
Not Stated	n/a		309	6.4	39	0.8
Total	n/a		4830	100.0	4701	100.0

Note: Insufficient data cleaning was done on the 1994 labour variables, reliable figures not available

Source: ACT Maternal/Perinatal Data Collection

5.3 Type of birth

Table 35 outlines the types of interventions at birth. Since 1992 there has been a slight reduction in forceps deliveries (from 12%) and a slight increase in 'normal' deliveries (from 63%).

Caesarean sections continue to be high.

Table 35: Confinements, birth type, ACT, 1994-96

Birth type	1994		1995		1996	
	No.	%	No.	%	No.	%
Spontaneous Cephalic - 'normal'	3014	63.7	3057	63.3	3070	65.3
Elective Caesarean	496	10.5	588	12.2	574	12.2
Emergency Caesarean	497	10.5	390	8.1	411	8.7
Forceps	507	10.7	434	9.0	362	7.7
Vaginal Breech	24	0.5	42	0.9	38	0.8
Vacuum extraction	193	4.1	310	6.4	243	5.2
Not Stated	0	0.0	9	0.2	3	0.1
Total	4731	100.0	4830	100.0	4701	100.0

Note: If a multiple birth occurred only the first birth is reported on in this table to reflect the number of confinements not births

Source: ACT Maternal/Perinatal Data Collection

Nationally in 1995, the proportion of caesarean deliveries was generally higher as maternal age increased, higher for a mother's first baby, higher for women with private health insurance rather than public status, higher for multiple pregnancies and higher for other factors such as breech presentation and infant's low gestational age¹⁰. The ACT followed the same trend. ACT caesarean percentages were slightly higher than the Australian average (refer Table 36).

Table 36: Caesarean rates by selected characteristics, ACT & Australia, 1995

Characteristic	ACT		Australia
	Number	per cent	per cent
<i>Parity</i>			
Primipara	451	22.2	20.6
Multipara	528	18.9	18.4
All parity	979	20.3	19.3
<i>Plurality</i>			
Singleton	953	20.0	19.0
Twin	26	37.7	42.9
All confinements	979	20.3	19.3
<i>Breech presentation (singleton births)</i>	152	78.4	77.2
<i>Birthweight (singleton births)</i>			
500-999 g	9	37.5	32.0
1000-1499 g	15	68.2	54.9
1500-1999 g	21	46.7	47.6
2000-2499 g	41	32.5	28.8
2500-g and over	852	19.1	18.2
- Public (3 not stated, not included)	453	16.8	15.3
- Private	396	23.2	23.6
<i>All singleton births</i>	953	20.0	19.0

Source: AIHW, *Australian Mothers & Babies 1995*

There are major differences in the use of caesarean section between hospitals, as outlined in Table 37.

Table 37: Confinements by selected birth type, by ACT hospital, % (3 yr average), 1994-96

Type of birth	The Canberra Hospital	Calvary Hospitals		John James
	Public	Public	Private	Private
Normal	64.0	72.7	58.9	50.1
Caesarean *	20.6	17.6	23.5	27.0

* Includes elective and emergency caesarean sections

Source: ACT Maternal/Perinatal Data Collection

The Canberra Hospital (TCH) has a birthing centre within the Maternity Unit (refer to Section 8.1.2 for details). If the confinements in the birth Centre are excluded, the 3 year averages for TCH were 60.9 per cent for normal deliveries and 23.0 per cent for caesareans. The Birth Centre's 3 year averages were 87.2 per cent for normal deliveries and 2.4 per cent for caesareans.

5.4 Complications of labour and birth

Information on the complications of labour and birth have been extracted from the hospital morbidity data. The linked records for 1995 (93.8%) and 1996 (99.0%) show a difference of 5.2%, which should be taken into account when reviewing the following figures (refer to Section 12.2 for more information on record linkage).

Table 38 shows the complications by year. 1994 is not included as records for that year were not linked.

Table 38: Complications of labour and birth for mothers, ACT, 1995-96

	1995	1996	Total
No complication	2189	2103	4292 (45.0%)
One complication	1767	1849	3616 (37.9%)
Multiple complications	573	704	1277 (13.4%)
Records not linked	301	45	346 (3.6%)
Total	4830	4701	9531 (100%)

Source: ACT Maternal/Perinatal Data Collection

Table 39 shows considerable differences in proportions for some complications of labour and birth over the two years. There were increases in the proportion of mothers experiencing long labour, uterine inertia, cord entanglement, second degree perineal laceration and postpartum haemorrhage, in 1996.

Table 39: Complications of labour and birth for mothers, ACT, 1995-96

Complication for labour, birth and puerperium	1995		1996	
	No	%	No	%
Obstructed labour	270	5.6	278	5.9
Uterine inertia	164	3.4	220	4.7
Precipitate labour	21	0.4	33	0.7
Hypertonic, incoordinate, or prolonged uterine	31	0.6	38	0.8
Long labour	397	8.2	584	12.4
Prolapse of cord	6	0.1	3	0.1
Cord entanglement with or without mention of compression	123	2.5	186	4.0
Other umbilical cord complications	13	0.3	21	0.4
Fetal distress	302	6.3	369	8.0
First-degree perineal laceration	733	15.2	625	13.3
Second-degree perineal laceration	669	13.9	858	18.3
Third-degree perineal laceration	24	0.5	20	0.4
Fourth-degree perineal laceration	2	0.0	2	0.0
Other trauma to perineum and vulva during delivery	28	0.6	12	0.3
Other obstetrical trauma	53	1.1	51	1.1
Postpartum haemorrhage	342	7.2	384	8.2
Retained placenta or membranes, without haemorrhage	23	0.5	22	0.5
Retained placenta or membranes, without haemorrhage	40	0.8	28	0.6

Note: Figures for these complications of labour and birth have been extracted from hospital morbidity data

Source: ACT Maternal/Perinatal Data Collection

5.5 Procedures during birthing

The majority of procedures during labour and birthing have been reported in their own section. For example, there are sections on type of labour and type of birth.

Table 40 shows an increase of 2.3 per cent in women not requiring perineal repair from 1995 to 1996. Episiotomy rates have decreased (8.1%) and sutured perineal laceration have increased (5.9%) during the same period.

Table 40: Perineal repair for vaginal deliveries, ACT, 1995-96

Perineal Repair	1994		1995		1996	
	No.	%	No.	%	No.	%
No repair	n/a	n/a	1383	35.9	1421	38.2
Sutured perineal laceration	n/a	n/a	1246	32.3	1417	38.2
Episiotomy	n/a	n/a	1223	31.7	876	23.6
Total	n/a	n/a	3852	99.9	3714	100.0

Note: Figures for these procedures have been extracted from hospital morbidity data

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

In 1996, 0.7 per cent of women (6) had an episiotomy or sutured laceration followed by an emergency Caesarean Section. In 1995 the percentage was 0.4 (5 women).

Manual removal of a retained placenta was performed for 1.9 per cent and 2.1 per cent of vaginal deliveries during 1995 and 1996 respectively (source: ACT hospital morbidity data).

No repairs following delivery were undertaken on women having homebirths in 1995 or 1996.



6. The Puerperium

6.1 Breast feeding

The method of feeding babies on discharge has been a poorly completed text item on the Midwives Data Collection form and has therefore not been entered into the database. Consequently information is not available at this stage. However, a research project known as *The ACT Experience: A survey of mothers* (Thompson et al, 1997. Refer Appendix 3 for details) gives some insight. Project results so far showed that 93 per cent of their sample were breastfeeding (either fully, partially or feeding their baby expressed breast milk) at the time of completion of the first questionnaire (approx 4 days after childbirth). 80 per cent were breastfeeding at 8 weeks and 68 per cent at 16 weeks and 59 per cent at 24 weeks postpartum.

The National Health Survey 1995 (refer Glossary) indicated that the ACT had the highest proportion of children under 3 years who had been breastfed. The percentage of those who had been breastfed for 6 months or longer was 52 per cent. This compares with 47 per cent for Australia¹¹.

Table 41: Percentage of children (0-3 years): whether ever breastfed & time breastfed, ACT & Australia, 1995

	ACT	Aust.
Currently being breastfed	14.9	14.0
Previously been breastfed		
Period breastfed		
Less than one week	*2.8	2.2
1 week to less than 1 month	5.5	7.1
1 month to less than 3 months	14.8	13.2
3 months to less than 6 months	13.8	15.3
6 months to less than 9 months	14.2	12.1
9 months to less than 1 year	10.0	8.7
1 year or more	16.8	12.9
Child is less than one month old	**0.5	**0.1
Not stated	-	0.7
Total previously breastfed	78.4	72.2
Total no. of children breastfed	93.2	86.2
Total no. of children never breastfed	6.8	13.8
Total	100.0	100.0

* Subject to sampling variability of 25-50%

** Subject to high relative standard error

Source: ABS National Health Survey (1995) Summary Results: Australian States & Territories Catalogue No. 4368.0

6.2 Complications during the puerperium

6.2.1 Postnatal depression

The ACT Experience: A survey of mothers (refer Appendix 3) reports postnatal depression to be one of the most frequent complications following childbirth affecting 10 to 15 per cent of mothers. It has negative consequences for the mother and her functioning in the family and for her child's cognitive and behavioural development. It is clearly an important issue for both its personal and public health impact.

Early analysis of the data from the study indicates that the point prevalence of postnatal depression in the sample (ie scores >12 on the Edinburgh Postnatal Depression Scale) was 10.4 per cent (n=130) at 8 weeks, 7.1 per cent (n=87) at 16 weeks and 7.3 per cent (n=86) at 24 weeks postpartum. The cumulative incidence over 6 months was 17.4 per cent (n=219).

6.2.2 Other health problems in the puerperium

The project found that most of the self reported physical health problems improved from 8 to 24 weeks postnatally. However exhaustion or extreme tiredness and backache were frequently reported over the entire six month period.

Table 42: Self reported physical health problems in the puerperium, ACT, 1997

Self reported physical health problems (women may report more than one problem)	8 weeks (n=1251)	16 weeks (n=1208)	24 weeks (n=1192)
	%	%	%
Exhaustion/extreme tiredness	60.2	47.4	49.1
Backache	52.5	46.4	44.9
Bowel problems	37.0	21.9	17.3
Lack of sleep-baby crying	30.5	15.2	15.2
Haemorrhoids	29.9	17.4	13.3
Sore perineum	22.1	6.5	4.1
Problems with sex	21.0	22.2	19.5
Excessive/prolonged bleeding	20.1	4.7	2.2
Urinary incontinence	18.9	12.2	10.8
Frequent headaches/migraines	18.8	17.4	16.6

Source: Preliminary data from *The ACT Experience: A survey of mothers*

6.3 Support programs and facilities

A number of support programs and facilities are available to women after the birth of a child. These include: Midcall; Child, Family and Youth Health Program; Queen Elizabeth II Family Centre; Family Planning ACT; Nursing Mothers' Association of Australia; and others.

6.3.1 Midcall

An early discharge program titled Midcall was developed and established at The Canberra Hospital (TCH, formally Woden Valley Hospital) in November 1989. It was also later established at Calvary Hospital in 1991.

Midcall provides postnatal home visiting for the women living in the area who deliver at TCH and Calvary Hospital, or any women referred to the team for care irrespective of where they delivered. The TCH Midcall service cares for women on the Southside and the Calvary Hospital Midcall service cares for women on the Northside of Canberra. Each birthing facility refers the women requiring care to the appropriate Midcall service depending on the woman's place of residence.

Queanbeyan and John James Memorial Hospitals are also involved in referring women to either of the Midcall services. NSW residents who birth in the ACT are referred to the Queanbeyan Midcall service.

Midcall also provides antenatal home visiting for selected women. The model allows a woman, if she wishes and her health allows, to leave the hospital within 72 hours after the birth and receive supportive home visits and care from a midwife for 7 to 10 days. If further care is needed the woman is referred to Community Nursing.

Table 43 outlines Midcall usage over two years. It can be seen that more mothers used the service in 1996 than in 1995. In fact, of all confinements in the ACT in 1996, 39.5 per cent of women used Midcall compared to 33.8 per cent in 1995.

Table 43: Midcall usage in the ACT, 1995-96

Midcall statistics	1995				1996			
	The Canberra Hospi		Calvary Hospitals		The Canberra Hospi		Calvary Hospitals	
	No.	%	No.	%	No.	%	No.	%
Patients recruited onto midcall	894	97.4	470	65.9	944	92.8	579	69.1
Referred to Midcall	24	2.6	243	34.1	73	7.2	260	30.9
Total on midcall	918	100.0	713	100.0	1017	100.0	839	100.0
Referred from	225	24.5	27	3.8	302	29.7	36	4.3
Referred to ongoing care	n/a	n/a	49	6.9	n/a	n/a	64	7.6
Readmission	n/a	n/a	14	2.0	n/a	n/a	11	1.3
Postnatal Visits	3831	86.7	2147	81.7	3502	88.1	2747	87.2
Antenatal visits	91	2.1	279	10.6	214	5.4	301	9.6
Booking visits	497	11.2	201	7.6	260	6.5	104	3.3
Total number of visits	4419	100.0	2627	100.0	3976	100.0	3152	100.0

Source: Midcall at The Canberra Hospital and Calvary Hospital

The decline in visits for booking in patients to Midcall is a result of a policy change. As the program is now well established the booking in visit has been replaced with the ability to offer extended postnatal visits.

6.3.2 Child, Family & Youth Health Program & Queen Elizabeth II Family Centre

The Child, Family and Youth Health Program of ACT Community Care offers a multidisciplinary, integrated and coordinated system of services at the primary, secondary and tertiary levels of care. The Maternal and Child Health nurses offer antenatal education, postnatal home visits, maternal and child health checks, immunisations, breastfeeding advice and interventions and parenting groups for new parents. Secondary services include extended or day stay services, lactation consultants, family support and counselling and specialised counselling for postnatal depression. These services are provided at child health clinics, homes, health centres and Family Care Centres. There are four Family Care Centres in the ACT, at Monash, Kippax and two new centres at Conder (The Lanyon FCC) and Ngunnawal.

The Queen Elizabeth II Family Centre (QEII), administered by the Canberra Mothercraft Society Inc., is the tertiary level service of the Program. It provides residential programs of support and guidance for families with children up to 3 years of age who are experiencing a range of complex difficulties following the birth of a baby and/or difficulties adjusting to parenthood and raising young children. Approximately 35 per cent of all admissions to the Centre are clients residing outside the ACT (mainly from the South East region which includes: Queanbeyan; Cooma; Yass; Goulburn; and other rural/coastal areas).

The Centre moved premises from Civic to Curtin in late June 1997 and changed its focus at that time to a family centred model of care. It has 10 family units.

Reasons for referral include baby failure to thrive, unsettled babies, maternal postnatal depression, children at risk, special needs families, respite care and emergency admissions. Details of admissions are outlined in Table 44 below. Since the Centre changed its focus in late July 1997, data from that time only are presented.

Table 44: No. of admissions at QEII Family Centre, ACT, July 1997-March 1998

Month	Mothers	%	Babies/toddlers	%	Total	%
July	61	49.2	63	50.8	124	100.0
August	59	49.2	61	50.8	120	100.0
September	46	47.9	50	52.1	96	100.0
October	55	49.5	56	50.5	111	100.0
November	50	49.0	52	51.0	102	100.0
December	37	47.4	41	52.6	78	100.0
January	61	48.8	64	51.2	125	100.0
February	60	50.0	60	50.0	120	100.0
March	62	47.3	69	52.7	131	100.0
Total	491	48.8	516	51.2	1007	100.0

Source: QEII data collection

The average length of stay for admissions during the nine months from July 1997 to March 1998 was 4.42. days.

The reasons for admissions were many and varied. Feeding problems (25.0%) and sleep disorders (33.8%) were the two most common reasons for admission to the Centre during the nine month period. Details are outlined in Table 45.

Table 45: Presenting problems, QEII Family Centre, ACT, July 1997-March 1998

Presenting problem	Jul-Sep¹	%	Oct-Dec⁹	%	Jan-Mar¹	%	Total	%
Baby medical condition	3	1.4	1	0.6	9	3.6	13	2.1
Behaviour problem	12	5.6	11	6.6	9	3.6	32	5.1
Child at risk	2	0.9	1	0.6	4	1.6	7	1.1
Down's Syndrome	0	0.0	1	0.6	0	0.0	1	0.2
Feeding problems	54	25.4	41	24.6	63	24.9	158	25.0
Mothercrafting	6	2.8	3	1.8	9	3.6	18	2.8
Maternal distress	15	7.0	11	6.6	17	6.7	43	6.8
Maternal medical condition	3	1.4	4	2.4	5	2.0	12	1.9
Maternal mental health	2	0.9	4	2.4	0	0.0	6	0.9
Postnatal depression	15	7.0	19	11.4	10	4.0	44	7.0
Baby sleep disorder	76	35.7	47	28.1	91	36.0	214	33.8
Baby reflux	21	9.9	16	9.6	25	9.9	62	9.8
Failure to thrive	4	1.9	6	3.6	6	2.4	16	2.5
Family illness	0	0.0	1	0.6	3	1.2	4	0.6
Baby weaning	0	0.0	1	0.6	2	0.8	3	0.5
Total	213	100.0	167	100.0	253	100.0	633	100.0

Note: Mothers may be admitted for multiple reasons

Source: QEII data collection

All referrals to the secondary services and to the QEII Family Centre are through a single point of intake the Postnatal, Parenting Information and Referral Service (PPIRS phone: 6205 2000) which is staffed by a group of professionals from the Program. It provides initial assessment, information, co ordination of care and appropriate referral to all Program services as well as to a wide range of government and non government agencies. It provides continuity and quality of care through the involvement of program staff, hospital maternity units, the Birthing Centre, Midcall community midwives, GP's, specialists, and many other service providers in the region.

The Child, Family and Youth Health Program and QEII Family Centre were jointly accredited through the Community and Health Service Program (CHASP) in March 1998.

6.3.3 Family Planning ACT

Family Planning ACT (ACT FP) is a member of Family Planning Australia and the International Planned Parenthood Federation. Its mission encompasses the provision of accessible, accountable, non-discriminatory and confidential clinical and education services. It aims to advocate for reproductive and sexual health issues and communities with special needs and to contribute extensively to government and community committees and working parties in areas of expertise.

It provides a range of services supported by information resources. These services encompass:

❖ Clinical services:

- A range of services related to *pregnancy* both planned and unplanned including testing, counselling, emergency contraception, post-termination medical checks, an antenatal practice supported by a formal shared care arrangement with Canberra obstetricians.
- A *counselling service* covering subfertility, menopause, premenstrual syndrome (PMS), sexuality, STDs etc.
- Information on *contraception options*.
- *Sexual and reproductive health management* including menstrual problems, breast checks, vaccinations etc.
- A *pathology service* including pap smears, bacterial and viral swabs, hormone levels etc supported by follow-up information, counselling and treatment.
-

❖ Educational services include:

- National certificated training in sexual and reproductive health, for health and education professionals
- Nationally accredited training for community workers
- Train the trainer
- Professional consultations
- Community seminars

6.3.4 Nursing Mothers' Association of Australia

The Nursing Mothers' Association of Australia (NMAA) is a large community based self-help group. It aims to provide counselling and support services to the community and health sector throughout Australia. The Association is supported by health authorities and specialists in infant and child health and nutrition, including a panel of honorary advisers. NMAA purports to be recognised internationally as a source of information about breastfeeding management and research. With the support of the Lactation Resource Centre (LRC) nationally and within the ACT, NMAA provides information to its counsellors and educates the wider community, from preschools to universities and professional organisations.¹²

The Association has an ACT group which offers advice to nursing mothers. Their information telephone number is 6258 8928.

6.3.5 Other

Other important support groups include¹³ the Parent Support Service, the Postnatal Depression support groups (ph. 62910418), SANDS and SIDS support groups, Freecall 24 hour Parent help Line, parenting education groups and other specialised support groups.

7. Baby characteristics

7.1 Sex

There were slightly more male babies born than female babies over the three years, 1994-96. This follows a usual trend.

Table 46: Babies, sex for all births, ACT, 1994-96

Sex	1994		1995		1996	
	No.	%	No.	%	No.	%
Male	2426	50.7	2540	51.8	2469	51.6
Female	2355	49.2	2355	48.1	2318	48.4
Not Stated or Indeterminate	3	0.1	4	0.1	1	0.0
Total	4784	100.0	4899	100.0	4788	100.0

Source: ACT Maternal/Perinatal Data Collection

7.2 Birthweight

There is little fluctuation in birthweight over the three years 1994-96, although there may be a slight trend towards an increase in the 1500-2499 and 4,500 gram categories, and a slight decrease in the 2500-2999 gram category. It will be interesting to monitor the situation over coming years.

Table 47: Babies, birthweight for all births, ACT, 1994-96

Birthweight	1994		1995		1996	
	No.	%	No.	%	No.	%
Less than 500	8	0.2	12	0.2	12	0.3
500 to 999	27	0.6	25	0.5	32	0.7
1000 to 1499	33	0.7	26	0.5	33	0.7
1500 to 1999	45	0.9	67	1.4	68	1.4
2000 to 2499	163	3.4	163	3.3	190	4.0
2500 to 2999	659	13.8	633	13.5	634	13.2
3000 to 3499	1634	34.2	1768	36.1	1634	34.1
3500 to 3999	1568	32.8	1533	31.3	1540	32.2
4000 to 4499	523	10.9	529	10.8	523	10.9
4500 plus	91	1.9	82	1.7	100	2.1
Not Stated	33	0.7	31	0.6	22	0.5
Total	4784	100.1	4899	99.9	4788	100.0

Note: Due to the rounding of percentages some totals may not equal 100.0

There has been a slight improvement in 'not stated' category

Source: ACT Maternal/Perinatal Data Collection

7.3 Gestational age

As would be expected, most babies are born between 37 and 41 weeks after conception. There is little fluctuation in other categories of gestational age over consecutive years although there may be a slight trend towards an increase in the premature 32 to 36 weeks category. This will be monitored over the next few years.

Table 48: Babies, gestational age for all births, ACT, 1994-96

Gestational Age in weeks	1994		1995		1996	
	No.	%	No.	%	No.	%
20 to 27	49	1.0	43	0.9	42	0.9
28 to 31	42	0.9	39	0.8	55	1.1
32 to 36	245	5.1	312	6.4	298	6.2
37 to 41	4180	87.4	4318	88.1	4211	87.9
42 plus	142	3.0	147	3.0	135	2.8
Not stated	126	2.6	40	0.8	47	1.0
Total	4784	100.0	4899	100.0	4788	99.9

Note: Due to the rounding of percentages some totals may not equal 100.0

There has been a slight improvement in 'not stated' category

Source: ACT Maternal/Perinatal Data Collection

In 1995, the mean gestational age in the ACT was equal to the Australian mean (39.1 weeks)¹⁴.

7.4 Apgar score

The APGAR score is a method for determining an infant's condition at birth (refer to Glossary for definition). As can be seen from Tables 49 and 50, most babies have scores of 7 or more (and therefore are in good condition) at one minute after birth and increase their scores further, 5 minutes after birth.

Table 49: Babies, apgar score at 1 minute for all live births, ACT, 1994-96

Apgar Score	1994		1995		1996	
	No.	%	No.	%	No.	%
0	2	0.0	1	0.0	6	0.1
1 to 3	185	3.9	159	3.3	152	3.2
4 to 6	560	11.8	568	11.7	523	11.0
7 to 10	3979	83.8	4081	84.1	4009	84.4
Not stated	22	0.5	44	0.9	61	1.3
Total	4748	100.0	4853	100.0	4751	100.0

Source: ACT Maternal/Perinatal Data Collection

Table 50: Babies, apgar score at 5 minute for all live births, ACT, 1994-96

Apgar Score	1994		1995		1996	
	No.	%	No.	%	No.	%
0	7	0.1	6	0.1	6	0.1
1 to 3	22	0.5	13	0.3	18	0.4
4 to 6	77	1.6	77	1.6	67	1.4
7 to 10	4624	97.4	4709	97.0	4603	96.9
Not stated	18	0.4	48	1.0	57	1.2
Total	4748	100.0	4853	100.0	4751	100.0

Source: ACT Maternal/Perinatal Data Collection

7.5 Resuscitation procedures

Progressively fewer babies required resuscitation from 1994 to 1996. The majority of babies did not require any form of resuscitation.

Table 51: Babies, resuscitation active measures for all live births, ACT, 1994-96

Resuscitation	1994		1995		1996	
	No.	%	No.	%	No.	%
No assisted ventilation	3923	82.6	4105	84.6	4084	86.0
Bag and Mask IPP	728	15.3	678	14.0	573	12.1
Intubation	31	0.7	28	0.6	42	0.9
Bag & Mask & Intubation	66	1.4	42	0.9	52	1.1
Total	4748	100.0	4853	100.1	4751	100.0

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

Two other resuscitation procedures that were reported for live births on the ACT Midwives Data collection form are viewing the cords with a laryngoscope (251 or 5.3% in 1994; 186 or 3.8% in 1995; and 160 or 3.4% in 1996) and the administering of a narcotic antagonist by injection (277 or 5.8% in 1994; 241 or 5.0% in 1995; and 159 or 3.3% in 1996). Both procedures have decreased significantly during the three year period.

7.6 Usual area of residence

Almost 11 per cent of babies born in the ACT have mothers living outside the ACT (refer Table 52 and to Section 3 for mother's usual area of residence).

Table 52: Babies, ACT & non ACT residents for all live births, ACT, 1994-96

ACT & Non ACT residents	1994		1995		1996	
	No.	%	No.	%	No.	%
ACT residents	4246	89.4	4346	89.6	4232	89.1
Non ACT residents	492	10.4	502	10.3	513	10.8
Not stated	10	0.2	5	0.1	6	0.1
Total	4748	100.0	4787	99.9	4666	100.0

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

7.7 Length of stay in hospital

Babies tend to stay in hospital for the same period of time as their mothers (refer to Table 15 for details on the mother's length of stay). The average length of stay was 4.0 days for each year 1994-96.

Table 53: Babies stay in hospital for livebirths (excluding transfers), ACT, 1994-96

Babies stay	1994		1995		1996	
	No.	%	No.	%	No.	%
Less than 1 day	72	1.6	93	2.1	99	2.2
1 day	382	8.5	416	9.2	403	9.1
2 days	581	12.9	541	11.9	616	14.0
3 days	785	17.4	720	15.9	823	18.7
4 days	872	19.3	730	16.1	705	16.0
5 days	701	15.5	705	15.6	587	13.3
6 days	523	11.6	577	12.7	482	10.9
7 to 13 days	501	11.1	646	14.3	584	13.2
14 to 20 days	29	0.6	44	1.0	41	0.9
21 to 27 days	22	0.5	20	0.4	20	0.5
28 or more days	40	0.9	24	0.5	48	1.1
Not stated	7	0.2	17	0.4	1	0.0
Total	4515	100.1	4533	100.0	4409	99.9

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

As can be seen from the table above, there was a gradual increase in the number of babies staying only 1-3 days in hospital after their birth, with a similar decrease in the number staying for 4-6 days.



8. Birth facility profile

8.1 ACT hospitals

8.1.1 The Canberra Hospital (TCH) Delivery Suite & associated services

Antenatal Clinic

The antenatal clinic provides public outpatient services to the Canberra community. This includes routine antenatal clinics incorporating high risk clinics in consultation with the Fetal Medicine Unit. Parenting education is also provided and it incorporates special need groups such as adolescents, non English speaking background (NESB) and disadvantaged groups.

Antenatal Ward

The antenatal ward provides antenatal inpatient services to the Canberra community and high risk antenatal inpatient services for the surrounding region. With the advent of Midcall and the development of the Fetal Medicine Unit at TCH (1996) the general trend is for more outpatient care for high risk pregnancies. This has resulted in a decrease in the need for inpatient beds.

Delivery Suite

The Delivery Suite has a facility of 9 birthing and 2 assessment rooms. The midwifery staffing is 22.26 full time equivalents. At the beginning of the period 1994-96, there were 14 visiting obstetricians and 9 GP obstetricians providing care. At the end of the period the medical staffing had changed to 10 visiting obstetricians, 5 GP obstetricians and 2 academic salaried specialists.

The Suite provides women and their families with holistic, professional midwifery and obstetric care. Women are informed of their choices and supported in their choice. Although most people using the Suite are Canberra residents, referrals are received from the South East NSW Region for high risk women.

Postnatal

Up until 1996 TCH had 2 postnatal ward areas each with 25 beds. Due to the lowering of the length of stay and the opening of maternity beds at John James Memorial Hospital, these 2 areas were consolidated into one postnatal area of 25 beds. It provides inpatient services to women who have delivered at TCH. Women referred from surrounding areas who may have newborns in the Centre for Newborn Care or the Paediatric Unit can be accommodated in this area. The postnatal area can also provide accommodation and lactation advice to breastfeeding women who are admitted to TCH.

The Canberra Hospital Birth Centre

The Birth Centre in the Maternity Building of the hospital was established in 1992. It was envisaged as the first step in widening low risk women's options for birthing. The staffing is 7.79 FTE for the Birth Centre and 7.27 FTE for the Community Midwives Program (CMP) which, after the initial pilot program, is to be integrated into main stream services within TCH. The staff are all registered midwives and have the assistance of TCH obstetric team as required.

The Birth Centre and Community Midwives Program (CMP) provide women and their families with holistic, professional midwifery care. Women are informed of their choices and supported in their choice. Care is provided from the antenatal period through to labour and birth and, in the case of the CMP, postnatal services are provided in the community.

Women choose the model of care which best suits their needs. As most women and their families believe in the natural process of birthing, they wish to have or participate in active birth with minimal intervention. Education is provided as an integral aspect of care.

It is anticipated that in 1998 the two units will be formally incorporated into one and provide a service which encompasses team midwifery with community based antenatal care. The combined care will be called the 'Canberra Midwifery Program'. Birthing facilities will be at The Canberra Hospital Birth Centre in the first instance. It is predicted that the service will provide services to approximately 540 women in 1998-99.

Postnatal

Up until 1996 TCH had two postnatal ward areas each with 25 beds. Due to the lowering of the length of stay and the opening of maternity beds at John James Memorial Hospital, these two areas were consolidated into one postnatal area of 25 beds. This area provides inpatient services to women who have delivered at TCH. Women referred from surrounding areas who may have newborns in the Centre for Newborn Care or the Paediatric Unit can be accommodated in this area. The postnatal area can also provide accommodation and lactation advice to breastfeeding women who are admitted to TCH.

8.1.2 Calvary Public Hospital

Calvary Public Maternity Unit has 20 beds with a 5 bed delivery suite and a 12 cot Level 2 nursery. The delivery suite also serves Calvary Private Hospital. During the time covered by this report the Unit was serviced by 5 visiting obstetricians, 3 visiting general practitioners and an antenatal clinic. The antenatal clinic opened in November 1993.

8.1.3 Calvary Private Hospital

Calvary Private Hospital's Maternity Unit opened in November 1994. This unit provides 10 rooms for antenatal and postnatal women. Women currently give birth in the public hospital's birthing rooms. The unit provides Parent Preparation Sessions and preadmission appointments to ensure women and families are supported for their birthing and postnatal care choices.

8.1.4 John James Memorial Hospital

The John James Maternity Centre opened in September 1994. It has a 26 bed antenatal/ postnatal ward, 4 bed delivery suite and an accredited Level 2 neonatal nursery. The centre also provides antenatal and educational opportunities.

The Maternity Centre is staffed by a team of midwives in conjunction with services provided by private obstetricians, paediatricians and allied health professionals involved in maternal and child health care. Staff endeavour to provide family centred care, involving a greater involvement of all the family members with the preparation for birth, the birth and ongoing care of the new child.

8.2 Homebirths in the ACT

ACT homebirths from 1994 to 1996 were attended by 2 general practitioners and 6 independent midwives, who provided antenatal, birthing and postnatal care. Three of the midwives were accredited with the Australian College of Midwives as independently practising midwives.

Women choose to give birth at home for many reasons. For most women, important aspects of birthing at home include the opportunity for choice, having personal responsibility, and a close and trusting relationship with their primary care giver, who shares their philosophy of birth as a healthy life event, and respects their right to choose where and with whom they give birth.

In 1998, there are three midwives in independent practice who contribute to the ACT Maternal and Perinatal Data Collection. Two of these midwives are accredited with the Australian College of Midwives as Independent Practitioners. Both the general practitioners have retired from attending homebirths. All women planning to birth at home see a medical practitioner for their antenatal screening tests: this may be their own GP or a Family Planning doctor. Midwives are the primary care givers who provide referral to other specialist care through the antenatal clinic at TCH or the women's GP as needed during pregnancy, birthing or postnatally.

8.3 Place of birth for hospital and birth centre deliveries

Table 54 details where babies were born in the ACT over the three year period 1994-96. TCH accounted for over half of the births (although this proportion is decreasing), with a small increase in usage at the Birth Centre and a subsequent decrease in the Delivery Suite. With the opening of maternity beds at John James Memorial Hospital (JJMH) and an increase in maternity beds at

Calvary Private Hospital in 1995, the 20 per cent decrease in births at the public hospitals was redistributed to JJMH (18.6%) and Calvary Private Hospital (1.9%).

Table 54: Births, place of birth, ACT, 1994-96

Place of birth	1994		1995		1996	
	No.	%	No.	%	No.	%
TCH-Delivery suite	2785	58.2	2283	46.6	2099	43.8
TCH-Birth Centre	288	6.0	276	5.6	364	7.6
Calvary Public	1409	29.5	1023	20.9	1001	20.9
Calvary Private	261	5.5	362	7.4	349	7.3
John James Memorial	----	----	913	18.6	950	19.8
Homebirth	41	0.9	35	0.7	24	0.5
Other	0	0.0	7	0.1	1	0
Total	4784	100.1	4899	99.9	4790	100.0

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

With regard to confinements (refer Glossary), Table 55 shows similar numbers and trends.

Table 55: Confinements, place of birth, ACT, 1994-96

Place of birth	1994		1995		1996	
	No.	%	No.	%	No.	%
TCH-Delivery suite	2785	58.2	2283	46.6	2099	43.8
TCH-Birth Centre	288	6.0	276	5.8	364	7.6
Calvary Public	1398	29.6	1018	21.1	990	21.1
Calvary Private	257	5.4	356	7.4	345	7.3
Homebirth	41	0.9	35	0.7	24	0.5
John James Memorial	----	----	904	18.7	930	19.8
Other	0	0.0	7	0.1	1	0
Total	4731	100.0	4830	100.0	4701	99.9

Note: The John James Memorial Hospital maternity section did not open until September 1994 - No records - 4th Quarter 1994

There were 30 known unreported cases from this hospital for 1996

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

8.4 Accommodation status

Table 56 shows that the proportion of mothers with private accommodation status for their hospital stays decreased over the three years 1994-96 (accommodation status reflects, but is not a measurement of, hospital insurance status). This is in accord with national trends.

Table 56: Mothers, accommodation status, ACT, 1994-96

Accommodation status	1994		1995		1996	
	No.	%	No.	%	No.	%
Private	2024	42.8	1824	37.8	1662	35.4
Public	2598	54.9	2961	61.3	3021	64.3
Not stated	109	2.3	45	0.9	18	0.4
Total	4731	100.0	4830	100.0	4701	100.1

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

Data for specific hospitals shows that the decline of private status is evenly distributed between both Calvary Public Hospital and The Canberra Hospital. With a decrease in the 'not stated' sub-category, firmer indications of accommodation status can be anticipated in the future.

Table 57: Mothers, accommodation status by hospital, ACT, 1994-96

Accommodation status	1994		1995		1996	
	No.	%	No.	%	No.	%
Private:						
The Canberra Hospital	1077	35.5	409	16.3	283	11.7
Calvary Public Hospital	677	48.4	149	14.6	95	9.6
Calvary Private Hospital	257	100.0	356	100.0	345	100.0
John James Memorial Hospital			904	100.0	930	100.0
Public:						
The Canberra Hospital	1886	62.1	2086	83.1	2123	88.1
Calvary Public Hospital	710	50.8	865	85.0	894	90.3

Note: Accommodation status presented for Hospital admissions only

Note: 'Not stated' values have been omitted from this table as they are not relevant

Source: ACT Maternal/Perinatal Data Collection

8.5 Discharge status

Most mothers who are discharged from hospital return to their homes. Over a quarter of mothers took advantage of the Midcall service in 1996 (the first full year of recording data). It is anticipated that this proportion will increase over time.

Table 58: Mothers hospital discharge status, ACT, 1994-96

Mothers Discharge status	1994		1995		1996	
	No.	%	No.	%	No.	%
Discharged	4606	98.3	4682	97.8	3275	70.0
Transferred	58	1.2	88	1.8	111	2.4
Midcall	N/a	N/a	N/a	N/a	1284	27.5
Not stated	20	0.4	18	0.4	6	0.1
Total	4684	99.9	4788	100.0	4676	100.0

Note: Midcall figures were collected for the first time in May 1995, therefore not reported on until 1996

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

Most babies born are discharged to their homes, although a small proportion are transferred to other care. This proportion is slowly increasing over time and will need to be monitored

Table 59: Babies hospital discharge status for live births, ACT, 1994-96

Babies Discharge status	1994		1995		1996	
	No.	%	No.	%	No.	%
Discharged	4490	95.5	4512	93.7	3140	66.4
Transferred	191	4.1	278	5.8	317	6.7
Midcall	n/a	N/a	n/a	N/a	1253	26.5
Died	20	0.4	15	0.3	14	0.3
Not stated	0	0.0	6	0.1	2	0.0
Total	4701	100.0	4811	9.99	4726	99.9

Note: Midcall figures were collected for the first time in May 1995, therefore not reported on until 1996

Note: Due to the rounding of percentages some totals may not equal 100.0

Source: ACT Maternal/Perinatal Data Collection

9. Congenital anomalies and Perinatal mortality

9.1 Neonatal morbidity

Data from the Hospital Morbidity Data Collection suggests that major conditions recorded include respiratory conditions, disorders relating to short gestation and low body weight, and perinatal jaundice. Details will be presented in future publications.

9.2 Congenital anomalies

Congenital anomalies or birth defects were reported for approximately 5% per cent of babies born in 1996 (suspected or known cases in the case of stillbirths). Major anomalies were certain musculoskeletal deformities, those pertaining to the skin, the urinary system or limbs.

Table 60: Congenital anomalies, ACT, 1995-96

Congenital Anomalies	1995 & 1996		1995		1996	
	No.	Rate per 10,000	No.	Rate per 10,000	No.	Rate per 10,000
Spina bifida (741)	3	3.1	1	2.0	2	4.2
Other congenital anomalies of nervous system (742)	9	9.3	3	6.1	6	12.5
Congenital anomalies of eye (743)	13	13.4	6	12.2	7	14.6
Congenital anomalies of ear, face, and neck (744)	15	15.5	9	18.4	6	12.5
Bulbus cordis anomalies and anomalies of cardiac septal closure (745)	42	43.4	20	40.8	22	45.9
Other congenital anomalies of heart (746)	21	21.7	12	24.5	9	18.8
Other congenital anomalies of circulatory system (747)	42	43.4	20	40.8	22	45.9
Congenital anomalies of respiratory system (748)	14	14.5	8	16.3	6	12.5
Cleft palate and cleft lip (749)	14	14.5	5	10.2	9	18.8
Other congenital anomalies of upper alimentary tract (750)	17	17.5	7	14.3	10	20.9
Other congenital anomalies of digestive system (751)	5	5.2	0	0.0	5	10.4
Congenital anomalies of genital organs (752)	67	69.2	45	91.9	22	45.9
Congenital anomalies of urinary system (753)	52	53.7	25	51.0	27	56.4
Certain congenital musculo-skeletal deformities (754)	113	116.7	46	93.9	67	139.9
Other congenital anomalies of limbs (755)	47	48.5	21	42.9	26	54.3
Other congenital musculo-skeletal anomalies (756)	25	26.8	14	30.6	11	23.0
Congenital anomalies of the integument (757)	66	69.2	39	79.6	27	58.5
Chromosomal anomalies (758)	15	15.5	4	8.2	11	23.0

Note: Figures for these congenital anomalies have been extracted from hospital morbidity data with duplicated codes for the same

baby not counted

The ICD-9-CM 3 digit code is presented in parenthesis

The 1st column shows combined data for 1995 and 1996

For chromosomal anomalies (758), 3 in 1995 and 9 in 1996 were for Downs Syndrome

Source: ACT Maternal/Perinatal Data Collection

9.3 Perinatal mortality

The ACT had the lowest stillbirth and neonatal death rates of all Australian states and territories in the 3 year period 1992-94 (4.1 per 1,000 births compared to Australian rate of 5.0)¹⁵.

Table 61 shows that nearly all births in the ACT resulted in livebirths in 1994-96. The number of stillbirths and neonatal deaths is very small, with little change over the 3 year period.

Table 61: Birth status, ACT, 1994-96

Birth Status	1994		1995		1996	
	No.	%	No.	%	No.	%
Livebirth - Survived	4728	98.8	4829	98.6	4731	98.8
Livebirths - Neonatal Deaths	20	0.4	19	0.4	14	0.3
Livebirth - Post Neonatal Deaths	N/a	N/a	5	0.1	5	0.1
Total Livebirths	4748	99.2	4853	99.1	4750	99.2
Stillbirths	36	0.8	46	0.9	38	0.8
Total	4784	100.0	4899	100.0	4788	100.0

Note: Post neonatal deaths where not identified in 1994.

Source: ACT Maternal/Perinatal Data Collection

9.3.1 Babies Characteristics

In Australia for the period 1992-94, the perinatal death rate for males exceeded that of females by 21 per cent¹⁶. The ACT however, appears to be different in 1996 at least, in that the male death rate was slightly below that of females (47.1% compared with 52.9%). Nearly half (46.2%) of the perinatal deaths occurred at the gestational age of 20-27 weeks.

Table 62: Babies characteristics for mortality, ACT, 1996

Babies characteristics	Stillbirth		Neonatal Deaths		Post Neonatal Death	
	No.	%	No.	%	No.	%
Plurality						
Singleton	34	89.5	9	64.3	4	80.0
Multiple	4	10.5	5	35.7	1	20.0
Sex						
Male	19	50.0	5	35.7	3	60.0
Female	18	47.4	9	64.3	2	40.0
Indeterminate	1	2.6	0	0.0	0	0.0
Birthweight						
Less than 1000	15	39.5	9	64.3	3	60.0
1000 - 1500 grams	2	5.3	0	0.0	0	0.0
1500 - 2499 grams	6	15.8	3	21.4	1	20.0
2500 grams or more	10	26.3	2	14.3	1	20.0
Not stated	5	13.2	0	0.0	0	0.0
Gestational Age						
20 - 27 weeks	15	39.5	9	64.3	3	60.0
28 - 31 weeks	4	10.5	1	7.1	0	0.0
32 - 36 weeks	8	21.1	2	14.3	0	0.0
37 - 41 weeks	8	21.1	2	14.3	2	40.0
42 weeks or more	0	0.0	0	0.0	0	0.0
Not stated	3	7.9	0	0.0	0	0.0
Type of birth						
Normal birth	23	60.5	5	35.7	2	40.0
Vaginal Breech	11	28.9	5	35.7	1	20.0
Instrumental birth	3	7.9	0	0.0	0	0.0
Caesarean Section	1	2.6	4	28.6	2	40.0

Source: ACT Maternal/Perinatal Data Collection

For comparative purposes, 1995 results are detailed below. It can be seen that the male to female ratio is higher than that of 1996. The number of perinatal deaths was higher than for 1996. The proportion of perinatal deaths occurring between 20-27 weeks gestation was also higher in 1995

(50.8% compared to 46.2%). These results may indicate a slight improvement in outcome from 1995 to 1996, but given the small numbers, assumptions should be treated with caution.

Table 63: Babies Characteristics for mortality, ACT, 1995

Babies characteristics	Stillbirth		Neonatal Deaths		Post Neonatal Death	
	No.	%	No.	%	No.	%
Plurality						
Singleton	38	82.6	18	94.7	5	100.0
Multiple	8	17.4	1	5.3	0	0.0
Sex						
Male	27	58.7	9	47.4	0	0.0
Female	17	37.0	10	52.6	5	100.0
Not stated	2	4.3	0	0.0	0	0.0
Birthweight						
Less than 1000	17	37.0	10	52.6	1	20.0
1000 - 1500 grams	3	6.5	2	10.5	0	0.0
1500 - 2499 grams	9	19.6	0	0.0	1	20.0
2500 grams or more	10	21.7	7	36.8	3	60.0
Not stated	7	15.2	0	0.0	0	0.0
Gestational Age						
20 - 27 weeks	22	47.8	11	57.9	1	20.0
28 - 31 weeks	2	4.3	1	5.3	0	0.0
32 - 36 weeks	10	21.7	0	0.0	1	20.0
37 - 41 weeks	11	23.9	7	36.8	3	60.0
42 weeks or more	0	0.0	0	0.0	0	0.0
Not stated	1	2.2	0	0.0	0	0.0
Type of birth						
Normal birth	26	56.5	9	47.4	4	80.0
Vaginal Breech	11	23.9	4	21.1	0	0.0
Instrumental birth	1	2.2	3	15.8	0	0.0
Caesarean Section	8	17.4	3	15.8	1	20.0

Source: ACT Maternal/Perinatal Data Collection

9.3.2 Maternal characteristics

The AIHW reported that in 1994, the fetal death rate of infants born to Indigenous mothers in Australia was 14.1 per 1,000 births, which was more than twice the rate of 6.5 per 1,000 in the non-Indigenous population¹⁷. Given the small numbers in the ACT, it is difficult to calculate a meaningful ACT rate, but the ACT situation should continue to be monitored. There were 2 stillbirths to Indigenous mothers in 1996 (none in 1995).

Most women experiencing a perinatal death were born in Australia. Asian women accounted for approximately 11 per cent of these women in 1996, a dramatic rise from 1995 (1.6%) – refer Tables 64 and 65. The level of rise is probably due to the small numbers.

Of mothers residing in the ACT experiencing perinatal deaths, 65.5 per cent lived in the southside of Canberra and 34.5 per cent in the northside in 1996. Slightly less lived in the southside in 1995 (60.6%). Of the total number of women having confinements in the ACT, roughly 60 per cent lived in the Southside in 1995 and 1996 (refer Section 3.5).

Table 64: Characteristics of mothers experiencing a perinatal death, ACT, 1996

Mothers Characteristics	Stillbirth		Neonatal Deaths		Post Neonatal Deaths	
	No.	%	No.	%	No.	%
Maternal Age Group						
Less than 20yrs	2	5.6	0	0.0	1	25.0
20 - 24 yrs	7	19.4	2	20.0	1	25.0
25 - 29 yrs	11	30.6	4	40.0	0	0.0
30 - 34 yrs	10	27.8	2	20.0	2	50.0
35 - 39 yrs	3	8.3	0	0.0	0	0.0
40 yrs plus	3	8.3	2	20.0	0	0.0
Parity						
No previous	16	44.4	4	40.0	2	50.0
One previous	10	27.8	1	10.0	2	50.0
Two previous	7	19.4	2	20.0	0	0.0
Three previous	2	5.6	2	20.0	0	0.0
Four or more previous	1	2.8	1	10.0	0	0.0
Indigenous Status						
Aboriginal / Torres Strait Islander	2	5.6	0	0.0	0	0.0
Other	34	94.4	10	100.0	4	100.0
Marital Status						
Never married	2	5.6	2	20.0	1	25.0
Married, de facto	31	86.1	8	80.0	3	75.0
Other (includes Not stated)	3	8.3	0	0.0	0	0.0
Region of Birth						
Australia	29	80.6	8	80.0	4	100.0
Balance of Oceania	1	2.8	0	0.0	0	0.0
Europe	1	2.8	0	0.0	0	0.0
Asia	4	11.1	1	10.0	0	0.0
America	0	0.0	0	0.0	0	0.0
Africa	1	2.8	1	10.0	0	0.0
Usual area of Residence						
Northside	10	27.8	1	10.0	0	0.0
Southside	19	52.8	8	80.0	3	75.0
All ACT Resident	29	80.6	9	90.0	3	75.0
Non ACT Resident	7	19.4	1	10.0	1	25.0

Source: ACT Maternal/Perinatal Data Collection

Table 65: Characteristics of mothers experiencing a perinatal death, ACT, 1995

Mothers Characteristics	Stillbirth		Neonatal Deaths		Post Neonatal Deaths	
	No.	%	No.	%	No.	%
Maternal Age Group						
Less than 20yrs	3	7.0	1	5.6	0	0.0
20 - 24 yrs	6	14.0	5	27.8	2	40.0
25 - 29 yrs	14	32.6	4	22.2	1	20.0
30 - 34 yrs	12	27.9	7	38.9	1	20.0
35 - 39 yrs	7	16.3	1	5.6	1	20.0
40 yrs plus	1	2.3	0	0.0	0	0.0
Parity						
No previous	22	51.2	12	66.7	1	20.0
One previous	14	32.6	2	11.1	2	40.0
Two previous	5	11.6	1	5.6	2	40.0
Three previous	1	2.3	0	0.0	0	0.0
Four or more previous	1	2.3	3	16.7	0	0.0
Indigenous Status						
Aboriginal / Torres Strait Islander	0	0.0	0	0.0	0	0.0
Other	43	100.0	18	100.0	5	100.0
Marital Status						
Never married	4	9.3	5	27.8	1	20.0
Married, de facto	35	81.4	13	72.2	4	80.0
Other (includes Not stated)	4	9.3	0	0.0	0	0.0
Region of Birth						
Australia	38	88.4	16	88.9	3	60.0
Balance of Oceania	1	2.3	0	0.0	0	0.0
Europe	2	4.7	1	5.6	0	0.0
Asia	0	0.0	1	5.6	2	40.0
America	1	2.3	0	0.0	0	0.0
Africa	1	2.3	0	0.0	0	0.0
Usual area of residence						
Northside	13	30.2	4	22.2	4	80.0
Southside	21	48.8	10	55.6	1	20.0
All ACT Resident	33	79.0	14	77.8	5	100.0
Non ACT Resident	9	20.9	4	22.2	0	0.0

Source: ACT Maternal/Perinatal Data Collection

9.3.3 Conditions associated with perinatal death

The main conditions in the baby associated with neonatal and post neonatal deaths in the ACT for 1995 were extreme immaturity (6 or 0.12%), congenital anomalies (6 or 0.12%), infection (4 or 0.08%), Sudden Infant Death Syndrome (3 or 0.06%), fetal distress (2 or 0.04%), and others including meconium aspiration syndrome, severe birth asphyxia, cerebral haemorrhage and motor vehicle accident (5 or 0.10%).

The main conditions in the mother associated with neonatal and post neonatal deaths in the ACT for 1995 were antepartum haemorrhage (4 or 0.08%), premature rupture of membranes (2 or 0.04%), and preterm labour (2 or 0.04%).



10. ACT initiatives

10.1 Strategic Framework for Maternity Services in the ACT 1995-98

The Framework¹⁸ was developed by a Maternity Services Working Party as a result of recommendations made by the ACT Maternity Services Review (1993) and extensive consultations with consumers and providers.

Its primary focus is on the development and implementation of maternity services which meet the needs of pregnant women and their families. It emphasises provision of care, primarily in community settings, providing continuity of care between hospitals, community health centres, community agencies and support groups.

The goal of the Framework is 'to provide women giving birth in the ACT with high quality maternity services'. Its philosophy of care recognises that pregnancy and birth are normal life events for most women, requiring minimal intervention and states that women should be involved as active partners in the birth process. The four aims of the Framework are:

- To provide accessible and relevant maternity information;
- To provide appropriate maternity services which offer a choice of carer, type of care and birth setting;
- To provide maternity services which are equitable and accessible to all women; and
- To ensure effectiveness and efficiency of maternity services.

Within the context of this framework the ACT Department of Health and Community Care has implemented several initiatives to implement these aims. Some of these initiatives include:

- Successful implementation of the Community Midwives Pilot Project, funded under the Commonwealth's Alternative Birthing Services Program (1993/94-1996/97). This project offered women a midwife or small team of midwives for their antenatal, intrapartum and postnatal care providing continuity of care and carer. The midwife cared for the women in their homes or community settings and attended their birth in the hospital or Birth Centre. As a result of its successful evaluation, this model of care has now been incorporated into services provided by the Birth Centre at The Canberra Hospital (refer 10.2).
- Improved integration and coordination of postnatal services through the Early Childhood, Youth and Family Services Program, ACT Community Care. The new QE II Family Centre was opened in 1997 providing tertiary level services for women needing more intensive support, particularly in relation to postnatal depression (Refer to Section 6.3.2). Two new Family Care Centres have also been built in the last twelve months to provide improved access to secondary level services for women needing support in eg parenting, breastfeeding.
- The Canberra Hospital now has a genetic counselling service as well as a specialist Fetal Medicine Unit.

As a consequence of the development of the Framework and subsequent consultations, the ACT Department of Health and Community Care continues to develop initiatives to address the issues raised.

10.2 Community Midwives Pilot Project (CMPP)

This project was funded by the Commonwealth in 1993-94 for a four year period, to provide a more comprehensive range of birthing services and midwife assisted homebirths to supplement existing hospital programs. The model of care chosen provided for a midwife or small team of midwives to provide antenatal and postnatal care in a community setting, and to attend the birth in either the home, hospital delivery suite or birthing centre. The first client was accepted onto the program in August 1995.

Table 66: No. of CMPP clients, by place of birth, ACT, August 1995-October 1996

Birthplace	Number	%	Number	%
TCH Birth Centre	47	64		
TCH Delivery Suite	11	15		
TCH operating theatre	5	7		
Calvary Hospital Delivery Suite	3	4		
Calvary Hospital operating theatre	1	1		
At home	6	8		
Total	73	100		

Source: Hambly M, *Community Midwives Pilot Project Evaluation 1997*



11. Glossary

11.1 Definitions

Abortion is a common term used to mean induced abortion.

Age-sex standardisation is a demographic technique for adjusting for the effects of age and sex between populations which allows comparisons between populations (ABS definition).

Age-sex standardised death rate is the overall death rate that would have prevailed in a standard population (eg the 1991 Australian population) if it had experienced at each stage the death rates of the population being studied (ABS definition).

Age-sex standardised ratio refers to the expected number of events which are given by calculating the number of events which would have occurred if the rates for each age/sex group in a given population (the standard) were applied to the population of interest.¹⁹

Age-specific birth rates are the no. of live births registered during the calendar year, according to the age of the mother, per 1,000 of the female estimated resident population of the same age as estimated for 30 June. For calculating these rates, births to mothers under 15 years of age are included in the 15-19 age group, and births to mothers over 50 years are included in 45-49 age group. Prorata adjustments are made in respect of births for which age of mother is not given (ABS defn.)

Age specific fertility rates are live births registered during a specific calendar year according to the age of mother expressed per 1,000 of the estimated female resident population of the same age.

Amniocentesis is the sampling of the amniotic fluid to help determine fetal maturity or disease, by aspiration of the fluid through the mother's abdomen.²⁰

Anomaly is a deviation from what is regarded as normal. An example would be a congenital malformation.

Antenatal refers to the time period of pregnancy before birth.

Apgar Score is a numerical scoring system (1-10) applied after birth to evaluate the condition of the baby (usually at one minute and five minutes). It is based on the clinical assessment of heart rate, respiration, muscle tone, reflex irritability and colour of baby. A low apgar score indicates poor adaptation to extrauterine life.

Augmentation is the artificial rupturing of membranes and/or use of oxytocin or other drugs to progress labour after spontaneous onset of labour.

Birth refers to the delivery of a child.

Birth status is the condition of the baby immediately after birth. The status may be a live birth or stillbirth.

Birthweight is the first weight of the baby (stillborn or live born) obtained after birth (Usually measured to the nearest five grams and obtained within one hour of labour).

Caesarean Section is an operative birth through an abdominal incision.

Chorionic villus sampling (CVS) is the aspiration of a sample of chorionic tissue for biochemical and chromosome analysis.²¹

Confinement refers to a pregnancy resulting in at least one birth. The outcome of a multiple pregnancy will be one confinement with more than one birth.

Congenital abnormalities are those which are present at and existing from, the time of birth.

Congenital malformations is the structural or anatomical abnormalities that are present at birth, usually resulting from abnormal development in the first trimester of pregnancy.

Crude birth rate is the number of live births per 1,000 population (unless otherwise stated) in a given year (ABS definition).

Crude death rate is the number of deaths per 1,000 population (unless otherwise stipulated) in a given year (ABS definition).

Elective Caesarean Section refers to an operative birth through an abdominal incision performed before the onset of labour.

Emergency Caesarean Section refers to an operative birth through an abdominal incision performed after the onset of labour.

Episiotomy is an incision into the perineum and vagina to enlarge the vaginal opening for delivery.

Fertility rate refers to the number of children one woman would expect to bear if the age-specific rates of the year shown continued during her child-bearing lifetime (ABS definition).

First degree tear or graze is a perineal graze or laceration or tear involving one of the following: the fourchette, hymen, labia, skin, vagina or vulva.

Fourth degree tear is a perineal laceration or tear involving the anal mucosa or rectal mucosa.

Gestation is the period of development of a baby from the time of conception (fertilisation of the ovum) to birth. In humans, this time is usually 37 weeks.

Gestational age is the duration of the pregnancy in completed weeks from the first day of the last normal menstrual period. This is estimated from clinical assessment (including ultrasound) when accurate information on the last menstrual period is not available.

ICD-9 (or ICD-9-CM) refers to the International Classification of Diseases, ninth revision as developed by the World Health Organisation.

Incidence refers to the number of instances of illness commencing, or of persons falling ill, during a given period in a specified population.²²

Indigenous status refers to a person of Aboriginal or Torres Strait Islander descent who self-identifies as an Aboriginal or Torres Strait Islander and is accepted as such by the community with which he or she is associated.

Induced abortion refers to a procedure to terminate a pregnancy, before the completion of 20 weeks gestation.

Induction of labour refers to an intervention undertaken to stimulate the onset of labour by pharmacological or other means.

Instrumental birth refers to an assisted vaginal birth using forceps or vacuum extraction.

Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta attached, each product of such a birth is considered live born (WHO definition).

Median is a measure of central tendency. It refers to the point between the upper and lower halves of the set of measurements.

Miscarriage is a common term used to mean spontaneous abortion.

Morbidity is the proportion of sickness in a locality.

Mortality is the relative number of deaths, or death rate, as in a district or community.

Multigravida refers to a woman who has been pregnant more than once.

Multipara refers to pregnant women who has had at least one previous pregnancy resulting in a live birth or stillbirth.

Neonatal death is the death of a live born infant within 28 days of birth.

Neonatal morbidity refers to any condition or disease of the infant diagnosed after birth and before separation from care.

Parity refers to the number of children a woman has borne (live or stillbirth).

Perinatal death refers to a stillbirth or a neonatal death.

Perinatal refers to the period from 20 weeks gestation to within 28 days after birth.

Perineal repair is the surgical suturing of a perineal laceration or episiotomy.

Plurality refers to the number of fetuses or babies from the pregnancy. On this basis pregnancy may be classified as single or multiple.²³

Post neonatal death refers to the death of a infant between 28 and 365 days of age.

Preterm birth refers to a birth before 37 completed weeks of gestation. Extremely preterm refers to births 20-27 weeks gestation; moderately preterm refers to births 28-31 weeks gestation; and mildly preterm refers to births 32-36 weeks gestation.

Prevalence refers to the number of instances of a given disease or other condition in a given population at a designated time.

Primigravida refers to a woman pregnant for the first time.

Primipara refers to a pregnant woman who has had no previous pregnancy resulting in a live birth or stillbirth.

Prolonged rupture of membranes refers to the spontaneous rupture of membranes for at least 24 hours prior to the onset of regular contractions with cervical dilation.

Puerperium is the period from the end of the third stage of labour until the uterus returns to its normal size (approximately 6 weeks).

Resuscitation of a baby refers to active measures taken shortly after birth to assist the baby's ventilation and heart beat, or to treat depressed respiratory effort and to correct metabolic disturbances.

Second degree tear is a perineal laceration or tear involving the pelvic floor or perineal muscles or vaginal muscles.

Separation (from hospital) refers to when a patient is discharged from hospital, transferred to another hospital or other health care accommodation, or dies in hospital following formal admission (ABS definition).

Sex differentials are the differences in rates between males and females.

Singleton birth refers to a pregnancy resulting in one birth.

Spontaneous abortion refers to the spontaneous death of a fetus of less than 400 grams birthweight or less than 20 weeks gestation.

Spontaneous cephalic refers to a birth without intervention in which the baby's head is the presenting part.

Standardised death rate is the overall death rate that would have prevailed in a standard population, in this case the 1991 Australian population, if it had experienced at each stage the death rates of the population being studied (ABS definition).

Statistically significant infers that it can be concluded on the basis of statistical analysis that it is highly probable.

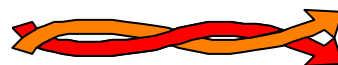
Stillbirth or Fetal death refers to death prior to the complete expulsion or extraction from its mother of a product of conception of 20 or more completed weeks of gestation or of 400g or more of birthweight; the death is indicated by the fact that after such separation the fetus does not breathe or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

Third degree tear is a perineal laceration or tear involving the anal sphincter or recto vaginal septum.

Total fertility rate is the number of children 1,000 women would bear during their lifetime if they experienced the age specific fertility rates of the year shown. The rate is obtained by summing the 5 year age specific fertility rates and multiplying by 5.

Vacuum extraction refers to an assisted vaginal birth using a suction cap applied to the baby's head.

Vaginal breech refers to a birth in which the baby's buttocks or lower limbs are the presenting parts.



12. Appendix 1: ACT Maternal Perinatal Data Collection

The Clinical Health Outcomes Centre, Epidemiology Unit assumed responsibility for The ACT Maternal Perinatal Data Collection (MPDC) from the Performance Information Section in August 1996. The MPDC is one of the responsibilities of the unit's Data Manager.

Computerisation of the collection is one of the major goals of the Clinical Health Outcomes Centre. The Canberra Hospital has computerised their collection using OBICARE, an Access database and Visual Basic application. Commencing data entry in October 1996 with a stand alone system and progressing to multiple site entry at point of service delivery in August 1997.

A main goal is to produce publications (this is the first in the series) in consultation with the key stakeholders in the area. During the development of this publication a series of three meetings were held with ACT Maternal Perinatal Status Work Group. An outcome of the ACT Maternal Perinatal Status Work Group was to initiate an ACT Maternal Perinatal Information Network which is expected to hold its first meeting in August/September 1998.

12.1 Data sources

ACT Maternal and Perinatal Data Collection (MPDC) includes data from the ACT Midwives Data Collection Form, the ACT Hospital Morbidity Data Collection and the ACT Deaths Data.

12.1.1 ACT Deaths Data

ACT Death Data, obtained from Births, Deaths and Marriages, is linked to the collection on date of birth and suburb to identify and provide information on ACT infant deaths. Babies born in the ACT, who die outside the ACT are not identified at present. Linking to the National Death Index may be possible in the future to identify these deaths.

12.1.2 ACT Midwives Collection Form

The ACT Midwives Data Collection Form is completed by the midwives in all the ACT birth facilities (Refer to Section 8 for details on birth facilities). The form is usually filled in by the midwives caring for the mother and baby, at initial admission, birthing and discharge. On discharge the forms are sent to the Medical Records Department who send them on to the Department. In 1995 a Maternity Audit Midwife at The Canberra Hospital checked the forms before sending them to the Medical Records Department, to improve data quality.

Two different forms were used during the three year period. The differences on the form that was introduced in May 1995 were:

- Place of birth (baby) - to include John James Memorial Hospital (JJMH) and to change from Woden Valley Hospital (WVH) to The Canberra Hospital (TCH);
- Discharge status - to include Midcall as an option; and
- Baby transferred to - to include Queen Elizabeth II Hospital (QEII).

Figure 5: ACT Midwives Data Collection Form

12.1.3 ACT Hospital Morbidity Data Collection

Data from the ACT Hospitals Morbidity Data Collection is obtained from the Department's Information Management Section. This data is converted into an Access database and linked to the data from the ACT Midwives Data Collection Forms.

The purposes of linking the data are fourfold:

- to correct Personal Identifier Numbers (PIN or UR Numbers) in the original data;
- to identify missing records in the collection (each hospital is requested to resubmit a ACT Midwives Data Collection Form for the missing records to ensure that the collection is as complete as possible);
- to extract information on congenital anomalies, maternal and perinatal morbidity and mortality, and procedures occurring during hospitalisation;
- to improve data completeness by replacing missing or not stated data values in the collection with values in the same or similar data item (field) from the ACT Hospitals Morbidity Data.

The availability of the complete ACT Hospitals Morbidity Data for the calendar year is dependant on the provision of Private Hospital Morbidity Data to the Department. Public Hospital Morbidity Data is usually available in February or March of the following year. Data cleaning of the collection is not able to commence until the complete data is available. To date this has not been a problem, as the collection has been catching up with a backlog of data. It is an issue that will need to be addressed as the collection becomes more current.

12.2 Record Linkage

Record linkage of the Maternal Perinatal Data Collection and Hospital Morbidity Data Collection is managed in an Access database. The key linking field is the Personal Identifying Number (PIN) combined with the Hospital Identification Number. Thus the combined fields give a unique identifying number for linking across hospitals.

Extensive checking and data cleaning was done on the PIN to improve accurate linking. Exclusions from the linking of mothers records are homebirths. Baby exclusions are homebirths and stillbirth (details of stillbirths are held in mother's record). Comparisons between the linked and unlinked records filter for these exclusions.

Improvements to the data cleaning of the PIN in 1995 and 1996 resulted in a greater percentage of linked records. Linked baby records in 1995 was 94.6 per cent of the available records. The linkage of baby records improved in 1996 to 99.8 per cent. A similar improvement occurred with linked mothers records with 94.5 per cent in 1995 to 99.5 per cent in 1996.

12.2.1 Comparison of linked and unlinked records

Comparing the percentages of linked and unlinked records by sex of the baby in 1995 showed that a similar percentage for each sex with 54.1% of males unlinked compared to 51.7% of linked records. By 1996 there were only 3 unlinked males giving a wider difference in the percentage. Unlinked females in 1995 were 45.2% and 48.3% of the linked female records. Similar to unlinked males in 1996, there were only 5 unlinked female records.

Result : There is no significant bias caused by sex between the linked and unlinked records.

12.3 Data Items

12.3.1 Current data items

Current data items from ACT Midwives Data Collection Form are listed below in Table 68. About 20 per cent of the data items require recoding and a few data items have to be combined to produce a new item (eg onset of labour, type of labour) before sending to the National Perinatal Statistics Unit (NPSU). Also data items that required ICD-9-CM coding on the forms are extracted where possible from the Hospital Morbidity Data Collection, for example congenital anomalies.

Table 67: Current list of data items from ACT Midwives Data Collection Form

No.	Data Item	Comment
1	Month Count, used with POBB and month of birth	To identify the form
2	Mother's PINS (Personal Identifier Number)	
3	Admission Date of mother	
4	Suburb	Will be used to provide SLA's
5	Postcode	Used as Region for NPSU
6	Class of Patient	Recoded for NPSU
7	Language spoken at home - English	
8	Language spoken at home - Other	
9	Place of Baby's birth	Recoded for NPSU
10	Intended or emergency admission	Recoded for NPSU
11	Marital Status of Mother	Recoded for NPSU
12	Birth date of Mother	
13	Country of Birth of Mother	
14	Indigenous status of Mother	Recoded for NPSU
15	Previous Pregnancies	
16	Total Number of Previous: Livebirths	Recoded for NPSU
17	Total Number of Previous: Stillbirths	Recoded for NPSU
18	Total Number of Previous: Spontaneous Abortions	Recoded for NPSU
19	Total Number of Previous: Induced Abortions	Recoded for NPSU
20	Total Number of Previous: Ectopic Pregnancies	
21	Total Number of Previous: Neonatal Deaths	Recoded for NPSU
22	Total Number of Previous: Others	Recoded for NPSU
23	Completion date of Last Pregnancy	
24	Outcome of Last Pregnancy	
25	Date of Last Menstrual Period	
26	Clinically Estimated Gestation	
27	Maternal Medical Condition while pregnant 1	
28	Maternal Medical Condition while pregnant 2 Chronic Re	
29	Maternal Medical Condition while pregnant 3	
30	Maternal Medical Condition while pregnant 4	
31	Maternal Medical Condition while pregnant 5	
32	Maternal Medical Condition while pregnant 6	
33	Obstetric Complication 1 APH	
34	Obstetric Complication 2 Premature Rupture of membran	
35	Obstetric Complication 3 PIH / PE	
36	Procedures and Operations 1 Cervical Suture	
37	Procedures and Operations 2 X-Ray	
38	Procedures and Operations 3 CTG	
39	Procedures and Operations 4 CT Scan	
40	Procedures and Operations 5 Ultrasound	
41	Procedures and Operations 6 CVS	

No. Data Item	Comment
42 Procedures and Operations 7 Amniocentesis <20 wks	
43 Procedures and Operations 8 Amniocentesis >20 wks	
44 Number of Antenatal Visits	
45 Duration of Pregnancy at First Visit	
46 Responsibility for Antenatal Care	
47 Labour 1 - Prostin	Combined to produce new item
48 Labour 2 - Syntocin	Combined to produce new item
49 Labour 3 - ARM	Combined to produce new item
50 Labour 4 - Spontaneous	Combined to produce new item
51 Labour 5 - No Labour	Combined to produce new item
52 Labour 6 - Augmented	Combined to produce new item
53 Labour 7 - Induced	Combined to produce new item
54 Presentation	Recorded for NPSU
55 Other Procedures 1 - Epidural Block	
56 Other Procedures 2 - Pudendal Block	
57 Other Procedures 3 - Episiotomy	
58 Type of Birth / Delivery	Recorded for NPSU
59 Complications of Labour, Birth or Puerperium 1 Perineal	
60 Complications of Labour, Birth or Puerperium 2 Postpart	
61 Date of Discharge - Mother	
62 Date of Discharge - Baby	
63 Discharge Status - Mother	Recorded for NPSU
64 Discharge Status - Baby	Recorded for NPSU
65 Baby Transferred to:	
66 Baby's PINS (Personal Identifier Number)	
67 Birth date of Baby	
68 Sex of Baby	
69 Plurality	
70 Rank	
71 Birth Condition or Status	Recorded for NPSU
72 Birthweight	
73 Head Circumference	
74 Apgar at 1 minute	
75 Apgar at 5 minutes	
76 Time to Establish Respirations Minutes	
77 Time to Establish Respirations Seconds	
78 Resuscitation 1 Endotracheal Intubation	Combined to produce new item
79 Resuscitation 2 Laryngoscopy	
80 Resuscitation 3 Narcotic Antagonist Injection	
81 Resuscitation 4 Bag and Mask	Combined to produce new item
82 Autopsy	

Source: ACT Maternal Perinatal Collection, Data specifications 1995

12.3.2 Minimum data items set

Listed below in Table 69 is the minimum perinatal data items set, agreed to by the National Perinatal Data Advisory Committee, April 1998 in Alice Springs. Currently the ACT provides data to the NPSU on the majority of these data items. There are 6 data items (Min data set 29 - 34 in the following table) due to commence in January 2000 that are not currently collected. They will be included on the new form which is due to be implemented in January 1999.

Table 68: Minimum Perinatal Data Set

Min data se	Data element numbe	Start Date for all state	NPSU Description
1	30	Jan-1997	Establishment Identifier
2	36	Jan-1996	Personal Identifier
3	39	Jan-1997	Sex of Baby
4	40	Jan-1996	Birth date of Baby
5	40	Jan-1996	Date of Birth of Baby
6	44	Jan-1997	Country of Birth of Mother
7	261	Jan-1997	Indigenous status of Mother
8	47	Jan-1998	Marital Status of Mother
9	259	Jan-1998	Area of usual residence
10	74	Jan-1999	Admission Date of mother
11	277	Jan-1999	Date of Discharge - Mother
12	277	Jan-1996	Date of Discharge - Baby
13	94	Jan-1997	Discharge Status - Mother
14	278	Jan-1996	Birthweight
15	164	Jan-1996	State or territory of birth
16	166	Jan-1996	Actual place of birth
17	170	Jan-1996	Date of Last Menstrual Period
18	171	Jan-1996	Gestational age
19	174	Jan-1997	Onset of labour
20	179	Jan-2000	Presentation
21	180	Jan-1997	Method of Birth
22	181	Jan-2000	Perineal status
23	184	Jan-1997	Plurality
24	185	Jan-1996	Birth Order
25	186	Jan-1996	Birth Condition or Status
26	306	Jan-1998	Apgar at 1 minute
27	307	Jan-1998	Apgar at 5 minutes
28	188	Jan-2000	Resuscitation of baby
29	165	Jan-1996	Intended place of birth
30	175	Jan-2000	Type of induction
31	176	Jan-2000	Type of induction
32	177	Jan-2000	Analgesia administered
33	178	Jan-2000	Anaesthesia administered
34	190	Jan-2000	Admission to SCN/NICU
35	192	Jan-2000	Congenital malformations

Source: National Perinatal Data Advisory Committee

The data element number in the above table is a reference number for the data item in the National Health Data Dictionary (NHDD) Version 6. All codes and definitions from the NHDD will apply to data items from 1997 data.

12.4 The Database

The MPDC is managed in an Access database. Data entry is done quarterly, 6 to 8 weeks after the quarter. All data linkage and data quality issues are also managed in the individual years

databases. An overall database combines records from multiple years to facilitate reporting on the data over time. Records were exported from Access and analysed in SPSS for this report.

12.5 Data quality

Data quality is controlled at the data entry stage by data validation on each item.

There are two problems with the forms; the readability of the form and the layout of certain data items. The Department's copy of the form is the last page of a triple carbonated form, which can make the form very difficult to read. Any data items that are illegible are coded as 'not stated' or missing depending on the item. The layout of some items on the current form leads to missing data. Both these issues will be addressed when developing the new process for 1999.

Extensive data cleaning of both mother's and baby's personal identifier numbers dramatically improves linkages.

When data are extracted from the ACT Hospitals Morbidity Collection, duplicate conditions for the one person are deleted from the extracted records. This ensures that figures are based on patients not hospital separations.

Missing data is where ever possible, obtained from ACT Hospitals Morbidity Data or by direct request to the medical record departments or home midwife. One data item that has improved considerable by linking the data is 'type of labour' (Refer Table 32).

12.6 Data limitations

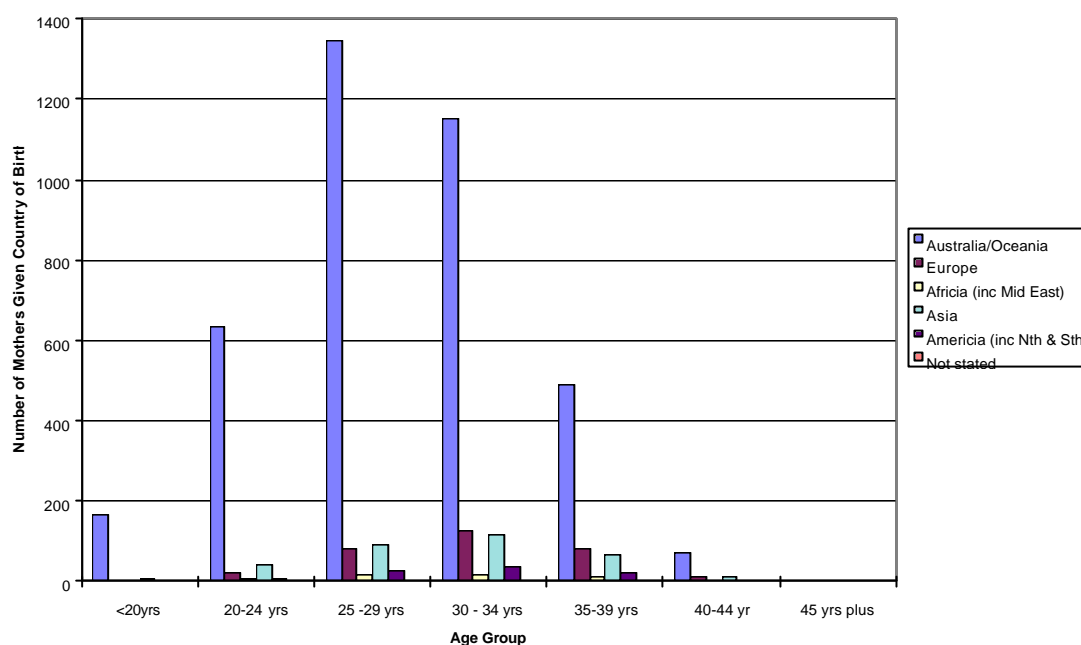
The completeness of the records is dependent on notification of births to the collection. Identification and retrieval of missing records is extensive. There is no guarantee that all records have been received, although it is estimated that the vast majority of ACT births for 1994-96 are held in this collection.



13. Appendix 2: Additional graphs and tables

13.1 Confinements by region of mother's birth by age group, ACT, 1996-94

Figure 6: Confinements by region of mother's birth by age group, ACT, 1996



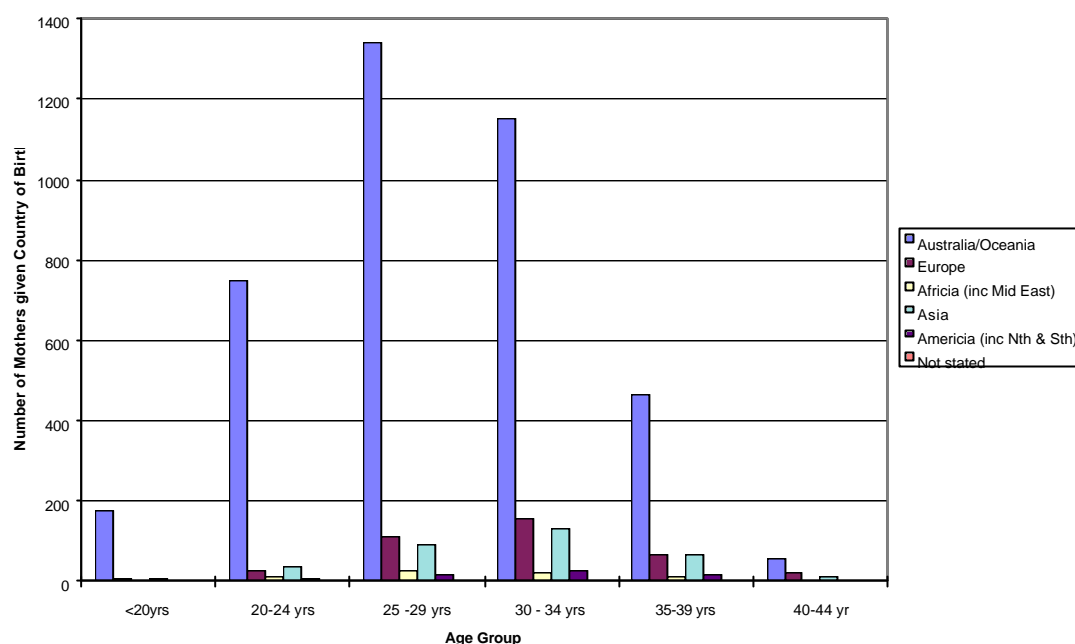
Source: ACT Maternal/Perinatal Data Collection

Table 69: Confinements by region of mother's birth by age group, ACT, 1996

Country region	<20 yr	20 - 24 yr	25 - 29 yr	30 - 34 yr	35 - 40 yr	40 - 44 yr	45 yrs>
Number							
Oceania	166	637	1349	1151	488	74	4
Europe	1	21	84	127	80	14	
Africa	1	9	17	15	14	4	
Asia	5	44	92	118	65	14	1
America	2	7	25	35	23	1	
Not Stated		3	1	2	3		
Total	175	721	1568	1448	673	107	5
Percent							
Oceania	94.9	88.3	86.0	79.5	72.5	69.2	80.0
Europe	0.6	2.9	5.4	8.8	11.9	13.1	
Africa	0.6	1.2	1.1	1.0	2.1	3.7	
Asia	2.9	6.1	5.9	8.1	9.7	13.1	20.0
America	1.1	1.0	1.6	2.4	3.4	0.9	
Not Stated		0.4	0.1	0.1	0.4		
Total	100.1	99.9	100.1	99.9	100.0	100.0	100.0

Source: ACT Maternal/Perinatal Data Collection

Figure 7: Confinements by region of mother's birth by age group, ACT, 1995



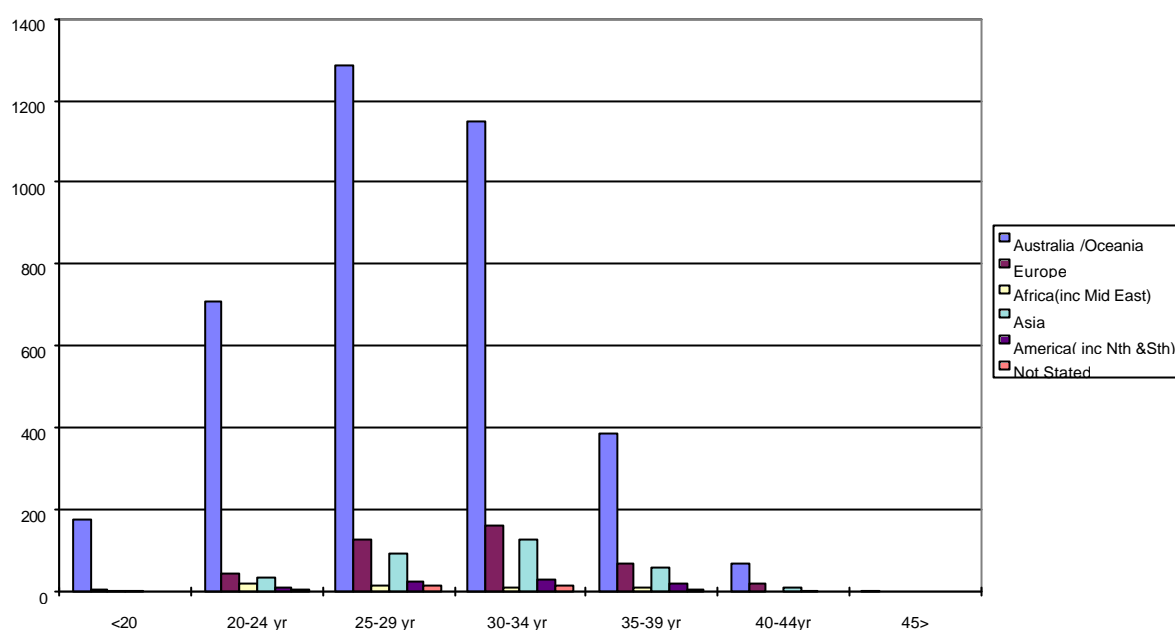
Source: ACT Maternal/Perinatal Data Collection

Table 70: Confinements by region of mother's birth by age group, ACT, 1995

Country region	<20 yrs	20 - 24 yr	25 - 29 yr	30 - 34 yr	35 - 40 yr	40 - 44 yr	45 yrs>
Number							
Oceania	177	747	1340	1152	463	58	1
Europe	7	29	111	159	66	22	
Africa	3	10	26	22	11	1	
Asia	6	35	94	130	68	10	
America	1	7	15	27	17	4	
Not Stated	1	4		3	1	1	
Total	195	832	1586	1493	626	96	1
Percent							
Oceania	90.8	89.8	84.5	77.2	74.0	60.4	100.0
Europe	3.6	3.5	7.0	10.6	10.5	22.9	
Africa	1.5	1.2	1.6	1.5	1.8	1.0	
Asia	3.1	4.2	5.9	8.7	10.9	10.4	
America	0.5	0.8	0.9	1.8	2.7	4.2	
Not Stated	0.5	0.5		0.2	0.2	1.0	
Total	100.0	100.0	99.9	100.0	100.1	99.9	100.0

Source: ACT Maternal/Perinatal Data Collection

Figure 8: Confinements by region of mother's birth by age group, ACT, 1994



Source: ACT Maternal/Perinatal Data Collection

Table 71: Confinements by region of mother's birth by age group, ACT, 1994

Country region	<20 yrs	20 - 24 yr	25 - 29 yr	30 - 34 yr	35 - 40 yr	40 - 44 yr	45 yrs>
Numbers							
Oceania	175	708	1287	1152	386	68	2
Europe	5	45	130	159	68	21	
Africa	2	17	15	11	9		
Asia	2	36	93	126	61	11	
America		8	25	29	17	1	
Not Stated		5	14	15	5		
Total	184	819	1564	1492	556	101	2
Percent							
Oceania	95.1	86.4	82.3	77.2	71.2	67.3	100.0
Europe	2.7	5.5	8.3	10.7	12.2	20.8	
Africa	1.1	2.1	1.0	0.7	1.6		
Asia	1.1	4.4	5.9	8.4	11.0	10.9	
America		1.1	1.6	1.9	3.1	1.0	
Not Stated		0.6	0.9	1.0	0.9		
Total	100.0	100.0	100.0	99.9	100.0	100.0	100.0

Note: Number of missing observations: 18

Source: ACT Maternal/Perinatal Data Collection

13.2 Responsibility for antenatal care by accommodation status, ACT, 1995-94

Table 72: Mothers, responsibility for antenatal care by accommodation status, ACT, 1995

Responsibility for Care	Private		Public		Not stated	
	No.	%	No.	%	No.	%
General Practitioner	89	4.9	721	24.3	3	6.7
Obstetrician	1580	86.6	748	25.3	5	11.1
Midwife	5	0.3	14	0.5	10	22.2
Antenatal Clinic	13	0.7	569	19.2	5	11.1
Shared Care	113	6.2	775	26.2	20	44.4
Not Shared	24	1.3	134	4.5	2	4.4
Total	1824	100.0	2961	100.0	45	99.9

Source: ACT Maternal/Perinatal Data Collection

Table 73: Mothers, responsibility for antenatal care by accommodation status, ACT, 1994

Responsibility for Care	Private		Public		Not stated	
	No.	%	No.	%	No.	%
General Practitioner	133	6.6	613	23.6	16	14.7
Obstetrician	1689	83.4	816	31.4	31	28.4
Midwife	4	0.2	9	0.3	7	6.4
Antenatal Clinic	9	0.4	335	12.9	7	6.4
Shared Care	157	7.8	764	29.4	43	39.4
Not Shared	32	1.6	61	2.3	5	4.6
Total	2024	100.0	2598	99.9	109	99.9

Source: ACT Maternal/Perinatal Data Collection

13.3 Responsibility for Antenatal Care Group by Town Centre, ACT, 1996-94

Table 74: Mothers, responsibility for antenatal care by Town Centre, ACT, 1996

Responsibility for Care	North Canberra	Belconnen	Woden Valley	Weston Creek	Tuggeranong	South Canberra	Gungahlin - H
Number							
GP	35	149	46	22	253	14	25
Obstetrician	155	513	188	92	682	107	150
Midwife	12	10	13	4	22	5	4
Antenatal Clinic	59	224	68	43	230	30	69
Shared Care	92	140	99	66	401	37	42
Not Shared	9	22	12	9	31	5	2
Total	362	1058	426	236	1619	198	292
Percent							
GP	9.7	14.1	10.8	9.3	15.6	7.1	8.6
Obstetrician	42.8	48.5	44.1	39.0	42.1	54.0	51.4
Midwife	3.3	0.9	3.1	1.7	1.4	2.5	1.4
Antenatal Clinic	16.3	21.2	16.0	18.2	14.2	15.2	23.6
Shared Care	25.4	13.2	23.2	28.0	24.8	18.7	14.0
Not Stated	2.5	2.1	2.8	3.8	1.9	2.5	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	99.7

Source: ACT Maternal/Perinatal Data Collection

Table 75: Mothers, responsibility for antenatal care by Town Centre, ACT, 1995

Responsibility for Care	North Canberra	Belconnen	Woden Valley	Weston Creek	Tuggeranong	South Canberra	Gungahlin - F
Number							
GP	43	168	52	48	377	16	24
Obstetrician	181	587	229	126	738	90	113
Midwife	9	6	2	3	6	2	
Antenatal Clinic	59	169	52	26	175	28	46
Shared Care	93	121	90	80	346	43	36
Not Stated	14	28	18	8	55	9	8
Total	399	1079	443	291	1697	188	227
Percent							
GP	10.8	15.6	11.7	16.5	22.2	8.5	10.6
Obstetrician	45.4	54.4	51.7	43.3	43.5	47.9	49.8
Midwife	2.3	0.6	0.5	1.0	0.4	1.1	
Antenatal Clinic	14.8	15.7	11.7	8.9	10.3	14.9	20.3
Shared Care	23.3	11.2	20.3	27.5	20.4	22.9	15.9
Not Stated	3.5	2.6	4.1	2.7	3.2	4.8	3.5
Total	100.1	100.1	100.0	99.9	100.0	100.1	100.1

Source: ACT Maternal/Perinatal Data Collection

Table 76: Mothers, responsibility for antenatal care by Town Centre, ACT, 1994

Responsibility for Care	North Canberra	Belconnen	Woden Valley	Weston Creek	Tuggeranong	South Canberra	Gungahlin - 1
Number							
GP	65	153	39	36	331	29	15
Obstetrician	197	674	178	140	818	147	106
Midwife	8	4	2	2	1	2	1
Antenatal Clinic	42	84	36	22	116	22	12
Shared Care	100	151	108	68	360	70	12
Not Stated	15	19	12	6	23	7	2
Total	427	1085	375	274	1649	277	148
Percent							
GP	15.2	14.1	10.4	13.1	20.1	10.5	10.1
Obstetrician	46.1	62.1	47.5	51.1	49.6	53.1	71.6
Midwife	1.9	0.4	0.5	0.7	0.1	0.7	0.7
Antenatal Clinic	9.8	7.7	9.6	8.0	7.0	7.9	8.1
Shared Care	23.4	13.9	28.8	24.8	21.8	25.3	8.1
Not Stated	3.5	1.8	3.2	2.2	1.4	2.5	1.4
Total	99.9	100.0	100.0	99.9	100.0	100.0	100.0

Source: ACT Maternal/Perinatal Data Collection

13.4 Mothers Age Group by Place of Birth, ACT, 1996-94

Table 77: Mothers age group by place of birth, ACT, 1996

Age group	Canberra Hospital	Calvary Public	Calvary Private	John James Memorial	Other including HomeBirth
Number					
<20 yrs	128	42	2	3	
20-24 yrs	449	192	19	57	4
25-29 yrs	803	352	101	309	3
30-34 yrs	672	267	142	362	5
35-39 yrs	307	118	69	170	9
>40 yrs	50	19	12	29	2
Not stated	2				2
Total	2411	990	345	930	25
Percent					
<20 yrs	5.3	4.2	0.6	0.3	
20-24 yrs	18.6	19.4	5.5	6.1	16.0
25-29 yrs	33.3	35.6	29.3	33.2	12.0
30-34 yrs	27.9	27.0	41.2	38.9	20.0
35-39 yrs	12.7	11.9	20.0	18.3	36.0
>40 yrs	2.1	1.9	3.5	3.1	8.0
Not stated	0.1				8.0
Total	100.0	100.0	100.1	99.9	100.0

Source: ACT Maternal/Perinatal Data Collection

Table 78: Mothers age group by place of birth, ACT, 1995

Age group	Canberra Hospital	Calvary Public	Calvary Private	John James Memorial	Other includin HomeBirth
Number					
<20 yrs	129	58	3	3	2
20-24 yrs	536	201	26	66	3
25-29 yrs	851	332	106	289	8
30-34 yrs	677	291	143	369	13
35-39 yrs	278	120	68	147	13
>40 yrs	39	16	10	30	2
Not stated					1
Total	2510	1018	356	904	42
Percent					
<20 yrs	5.1	5.7	0.8	0.3	4.8
20-24 yrs	21.4	19.7	7.3	7.3	7.1
25-29 yrs	33.9	32.6	29.8	32.0	19.0
30-34 yrs	27.0	28.6	40.2	40.8	31.0
35-39 yrs	11.1	11.8	19.1	16.3	31.0
>40 yrs	1.6	1.6	2.8	3.3	4.8
Not stated					2.4
Total	100.1	100.3	100.0	100.0	100.1

Source: ACT Maternal/Perinatal Data Collection

Table 79: Mothers age group by place of birth, ACT, 1994

Age group	Canberra Hospital	Calvary Public	Calvary Private	John James Memorial	Other includin HomeBirth
Number					
<20 yrs	125	59			
20-24 yrs	563	236	15		5
25-29 yrs	1041	418	96		9
30-34 yrs	895	481	98		18
35-39 yrs	347	166	37		6
>40 yrs	61	33	7		2
Not stated	3	5	4		1
Total	3035	1398	257		41
Percent					
<20 yrs	4.1	4.2			
20-24 yrs	18.6	16.9	5.8		12.2
25-29 yrs	34.3	29.9	37.4		22.0
30-34 yrs	29.5	34.4	38.1		43.9
35-39 yrs	11.4	11.9	14.4		14.6
>40 yrs	2.0	2.4	2.7		4.9
Not stated	0.1	0.4	1.6		2.4
Total	100.0	100.1	100.0		100.0

Note: John James Memorial Hospital opened its maternity unit in late 1994, so no data are available for that year.

Source: ACT Maternal/Perinatal Data Collection

14. Appendix 3: The ACT Experience: A survey of mothers

14.1 The project

In 1997 a research project titled *The ACT Experience: A survey of mothers* commenced. The research team included Dr Jane Thompson, Ms Marian Currie and Professor David Ellwood (Women's and Children's Health, The Canberra Hospital) with collaboration from Dr Christine Roberts (formerly of NCEPH, ANU) and Dr Jeff Cubis (former Director, Psychiatric Services, Calvary Hospital).

This project is a large population based, prospective cohort study of ACT residents giving birth over a 7 month period (March to October 1997). The source population included women who gave birth in all possible birth sites -The Canberra Hospital (Delivery Suite and Birth Centre), Calvary Private Hospital, Calvary Public Hospital, John James Memorial Hospital and at home (planned and unplanned homebirths). Women were enrolled during the first four days postpartum and completed questionnaires on Day 4 and then at 8, 16, and 24 weeks postpartum. The study sample included 1295 women proportionally sampled from each of the birth sites. 92% of the participants agreeing to take part in the survey completed all four questionnaires.

The broad aim of the survey is to identify risk factors for postnatal depression in a population based sample of Australian women. Postnatal depression is one of the most frequent complications following childbirth affecting 10 to 15% of mothers. It has negative consequences for the mother and her functioning in the family and for her child's cognitive and behavioural development. It is clearly an important issue for both its personal and public health impact. In particular, the study is examining the possible association of postnatal depression with early discharge from hospital after childbirth and with obstetric intervention. These factors have been found to be related to postnatal depression in some but not all previous studies.

Postnatal depression is assessed using the 10-item Edinburgh Postnatal Depression Scale, a validated screening instrument designed specifically for assessment of possible depression in mothers after birth. A score of >12 on the scale is assumed to be clinically significant. Mother's satisfaction with antenatal, intrapartum and postnatal care has also been assessed as part of the survey and will provide invaluable data for an evaluation of maternity services in the ACT.

Data collection for the study was completed in April 1998. Analysis of this unique dataset will continue until the end of January 1999 and, subject to continued funding, further more detailed analyses will be undertaken.

14.2 Early findings of the study

Postnatal depression

Early analysis of the data indicates that the point prevalence of postnatal depression in the sample (ie scores >12 on the Edinburgh Scale) was 10.4% (n=130) at 8 weeks, 7.1% (n=87) at 16 weeks and 7.3% (n=86) at 24 weeks postpartum. The cumulative incidence was 17.4% (n=219).

Length of postnatal stay

Data on length of postnatal stay indicate that 36.6% of the sample were discharged from hospital within 72 hours of giving birth. 16.3% stayed for 4 days, 15.7% for 5 days and 31.4% for 6 days or more.

Breast feeding

93% of the sample were breastfeeding (either fully, partially or feeding their baby expressed breast milk) at the time of completion of the first questionnaire. 80% were breastfeeding at 8 weeks and 68% at 16 weeks and 59% at 24 weeks postpartum.

Mothers Health

The following tables show self reported physical health problems experienced by mothers at 8, 16 and 24 weeks postpartum.

Most commonly reported physical health problems at 8 weeks (n=1254) (women may report more than one problem)

• Exhaustion/extreme tiredness	60.2%
• Backache	52.5%
• Bowel problems	37.0%
• Lack of sleep-baby crying	30.5%
• Haemorrhoids	29.9%
• Sore perineum	22.1%
• Problems with sex	21.0%
• Excessive/prolonged bleeding	20.1%
• Urinary incontinence	18.9%
• Frequent h/aches/migraine	18.8%

Most commonly reported physical health problems at 16 weeks (n=1208) (women may report more than one problem)

• Exhaustion/extreme tiredness	47.4%
• Backache	46.3%
• Problems with sex	22.4%
• Bowel problems	21.9%
• Frequent headaches/migraines	17.4%
• Haemorrhoids	17.3%
• Lack of sleep-baby crying	15.2%
• Urinary incontinence	12.2%
• Sore perineum	6.5%
• Mastitis	6.2%

Most commonly reported physical health problems at 24 weeks (n=1192) (women may report more than one problem)

• Exhaustion/extreme tiredness	49.1%
• Backache	44.9%
• Problems with sex	19.5%
• Bowel problems	17.3%
• Frequent headaches/migraines	16.6%
• Haemorrhoids	13.3%
• Lack of sleep-baby crying	15.2%
• Urinary incontinence	10.8%
• Sore perineum	4.1%
• Mastitis	3.4%

Acknowledgment

This research project was supported by donations by the Salaried Specialists at The Canberra Hospital (The Canberra Hospital Private Practice Fund Research Project Grant 1996-9), grants from the Canberra Hospital Auxiliary, Nurse's Board of the ACT and non recurrent funding from the ACT Department of Health & Community Care.

15. References

- ¹ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ² Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ³ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ⁴ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ⁵ Kee C, Bodilsen G, (1998), *Health Status of the ACT by statistical subdivisions*, Epidemiology Unit, ACT Dept of Health & Community Care: Health Series No. 14, ACT Govt Printer, ACT
- ⁶ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ⁷ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ⁸ McDuffie et al, JAMA 275(11):847-51, March 20, 1996
- ⁹ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ¹⁰ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ¹¹ Kee C, Petersen M, Rockpool K, *Health Risk Factors in the ACT*, Epidemiology Unit, ACT Dept of Health & Community Care: Health Series No. 19, ACT Govt Printer, ACT (in press)
- ¹² Nursing Mother's Association, Internet home page: <http://home.vicnet.net.au/~nmaa/>
- ¹³ Hambly M, *Community Midwives Pilot Project Evaluation*, Alternative Birthing Services Program in the ACT, for Dept of Health & Community Care, March 1997
- ¹⁴ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ¹⁵ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ¹⁶ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ¹⁷ Day P, Lancaster P, Huang J, 1997, *Australia's mothers and babies 1995*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 6, Sydney
- ¹⁸ Dept of Health & Community Care, *Strategic Framework for Maternity Services in the ACT*, 1995-98, May 1995
- ¹⁹ Glover J, Woolacott T, *A Social Health Atlas*, ABS Cat No. 4385.0, 1992
- ²⁰ Taylor L, Pym M, *New South Wales Data Collection 1995*, Vol 7/No. S-1
- ²¹ Taylor L, Pym M, *New South Wales Data Collection 1995*, Vol 7/No. S-1
- ²² Last J, *A Dictionary of Epidemiology*, IEA, 1988
- ²³ Taylor L, Pym M, *New South Wales Data Collection 1995*, Vol 7/No. S-1



Health Series publications

The Epidemiology Unit of the Department of Health and Community Care has developed an on-going health series of publications to inform health professionals, policy developers and the community on health status in the Territory. Information contained therein will assist in the development of appropriate policy and service delivery models, the evaluation of programs, and an understanding of how the ACT compares with Australia as a whole with regard health status.

- Number 1: *ACT's Health: A report on the health status of ACT residents*
Carol Gilbert, Ursula White, October 1995
- Number 2: *The Epidemiology of Injury in the ACT*
Carol Gilbert, Chris Gordon, February 1996
- Number 3: *Cancer in the Australian Capital Territory 1983-1992*
Norma Briscoe, April 1996
- Number 4: *The Epidemiology of Asthma in the ACT*
Carol Gilbert, April 1996
- Number 5: *The Epidemiology of Diabetes Mellitus in the ACT*
Carol Gilbert, Chris Gordon, July 1996
- Number 6: *Developing a Strategic Plan for Cancer Services in the ACT*
Kate Burns, June 1996
- Number 7: *The First Year of The Care Continuum and Health Outcomes Project*
Bruce Shadbolt, June 1996
- Number 8: *The Epidemiology of Cardiovascular Disease in the ACT*
Carol Gilbert, Ursula White, January 1997
- Number 9: *Health Related Quality of Life in the ACT: 1994-95*
Darren Gannon, Chris Gordon, Brian Egloff, Bruce Shadbolt, February 1997
- Number 10: *Disability and Ageing in the ACT: An Epidemiological Review*
Carol Gilbert, April 1997
- Number 11: *Mental Health in the ACT*
Ursula White, Carol Gilbert, May 1997
- Number 12: *Aboriginal and Torres Strait Islander Health in the ACT*
Norma Briscoe, Josie McConnell, Michelle Petersen, July 1997
- Number 13: *Health Indicators in the ACT: Measures of health status and health services in the ACT*
Carol Kee (Gilbert), George Johansen, Ursula White, Josie McConnell
January 1998
- Number 14: *Health status of the ACT by statistical sub-divisions*
Carol Kee, George Bodilson (Johansen), April 1998
- Number 15: *Results from the 1996 ACT Secondary School Students' Survey*
Hai Phung, George Bodilsen, Allison Webb, Norma Briscoe
June 1998
- Number 16: *Childhood immunisation and preventable diseases in the ACT 1993-1997*
Hai Phung, Michelle Petersen, June 1998
- Number 17: *Health Related Quality of Life in the ACT 1994-97*
Hai Phung, Ursula White, Brian Egloff
June 1998
- Number 18: *Maternal and Perinatal Status, ACT, 1994-96,*
Maureen Bourne, Carol Kee,
September 1998

