Australia's mothers and babies 2004

The Australian Institute of Health and Welfare (AIHW) is Australia's national health and welfare statistics and information agency. The Institute's mission is better health and wellbeing for Australians through better health and welfare statistics and information.

The AIHW National Perinatal Statistics Unit (NPSU) is a collaborating unit of the AIHW, established in 1979. The NPSU aims to improve the health of Australian mothers and babies through the collection, analysis and reporting of information on reproductive, perinatal and maternal health. It maintains national collections on perinatal health, maternal deaths, congenital anomalies and assisted reproduction technology. The NPSU is located at the Sydney Children's Hospital and is part of the School of Women's and Children's Health, Faculty of Medicine, University of New South Wales.

Please note that as with all statistical reports there is the potential for minor revisions of data in *Australia's mothers and babies 2004*. Please refer to the online version at <www.npsu.unsw.edu.au>.

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Paula Laws
Narelle Grayson
Elizabeth A Sullivan

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Any enquiries about or comments on this publication should be directed to:
AIHW National Perinatal Statistics Unit
Sydney Children's Hospital
Level 2, McNevin Dickson Building
Randwick Hospitals Campus
Randwick NSW 2031
AUSTRALIA
Phone: (02) 9382 1014
Fax: (02) 9382 1025
Email: npsu@unsw.edu.au
Website: <http://www.npsu.unsw.edu.au>

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Abbreviations

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ANZNN	Australian and New Zealand Neonatal Network
ASCCSS	Australian Standard Classification of Countries for Social Statistics
ASGC	Australian Standard Geographical Classification
CMIP	Core Maternity Indicator Project
EWG	Expert Working Group (Core Maternity Indicator Project)
g	gram
HDSC	Health Data Standards Committee
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian modification
LMP	First day of the last menstrual period
METeOR	Metadata online registry
MMR	Maternal mortality ratio
NHDD	National Health Data Dictionary
NHIMPC	National Health Information Management Principal Committee
NHMD	National Hospital Morbidity Database
NICU	Neonatal intensive care unit
NMDS	National Minimum Data Set
NPDC	National Perinatal Data Collection
NPDDC	National Perinatal Data Development Committee
NPSU	AIHW National Perinatal Statistics Unit
NSW	New South Wales
NT	Northern Territory
PSANZ-NDC	Perinatal Society of Australia and New Zealand Neonatal Death Classification
PSANZ-PDC	Perinatal Society of Australia and New Zealand Perinatal Death Classification
Qld	Queensland
SA	South Australia
SAASC	South Australian Abortion Statistics Collection
SACC	Standard Australian Classification of Countries
SCN	Special care nursery
SIMC	Statistical Information Management Committee
Tas	Tasmania

UNSW	University of New South Wales
Vic	Victoria
WA	Western Australia
WAANS	Western Australian Abortion Notification System
WHO	World Health Organization

n.a.	Not available
n.p.	Not published
. .	Not applicable

Highlights

Australia's mothers and babies 2004 is the fourteenth annual report on pregnancy and childbirth of women in Australia, and their babies. This section provides an overview of the main findings of the report based primarily on the National Perinatal Data Collection.

Mothers in 2004

- There were 257,205 babies born to 252,871 mothers in 2004 reported to the National Perinatal Data Collection.
- The median age of women who gave birth was 30.0 years, continuing the upward trend seen in maternal age in recent years. There were 49,411 mothers aged 35 years or older (19.5%).
- Women who reported smoking at all during pregnancy accounted for 16.7% of women who gave birth in the five jurisdictions for which data were available. This represents a decrease since 2001 (Figure 1).

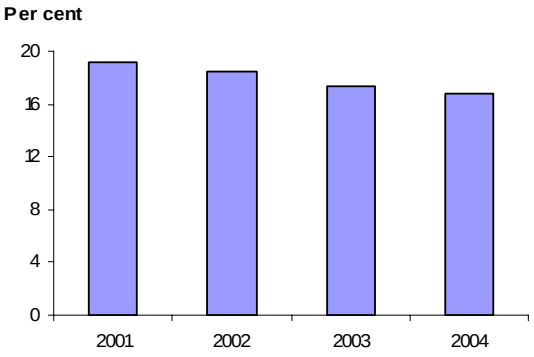


Figure 1: Mothers reporting smoking during pregnancy, 2001–2004 (per cent)

- Of women who gave birth, 59.2% had a spontaneous vaginal birth and 0.4% had a vaginal breech birth. Deliveries using forceps accounted for 3.9% and vacuum extractions for 7.1%.
- The increase in caesarean sections continued with 29.4% of mothers having caesarean section deliveries in 2004, compared with 19.3% in 1995. Over the same period, instrumental deliveries have remained stable at around 11%. Caesarean section rates were higher among older mothers and those who gave birth in private hospitals (Figure 2).

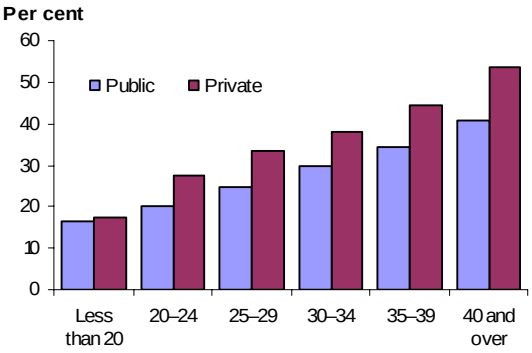


Figure 2: Caesarean sections by maternal age and hospital sector, 2004 (per cent)

- Of multiparous mothers who gave birth, 24.5% had previously had a caesarean section. The proportion of these mothers who had a caesarean section in 2004 was 81.6%.
- Of mothers having an operative delivery, one-third had an epidural or caudal anaesthetic administered, and approximately half had a spinal anaesthetic. A general anaesthetic was administered for 5.5% of operative deliveries.
- There were 8,904 Aboriginal or Torres Strait Islander women who gave birth, making up 3.6% of all mothers in Australia in 2004.
- The average age of Aboriginal or Torres Strait Islander mothers who gave birth was 24.8 years, compared with 29.9 years for non-Indigenous mothers.
- Multiple pregnancies accounted for

1.7% of all pregnancies and included 4,175 twin pregnancies, 75 triplet pregnancies and three quadruplet and quintuplet pregnancies. The twinning rate was 16.5 per 1,000 mothers.

- There were 589 planned homebirths reported, representing 0.2% of women who gave birth in 2004. Of women who gave birth at home, 72.7% were multiparous.
- The estimated number of induced abortions in 2004 was 83,210.

Babies in 2004

- Of the 257,205 births in Australia, 20,999 (8.2%) were preterm (less than 37 weeks gestation). The average gestational age of all babies was 38.8 weeks in 2004.
- Low birthweight (less than 2,500 grams) occurred in 16,336 (6.4%) liveborn babies. The proportion of liveborn babies of Aboriginal or Torres Strait Islander mothers that were low birthweight was 13.2% compared with 6.1% of babies of non-Indigenous mothers.
- Of babies with breech presentations at birth, 87.6% were delivered by caesarean section.
- Male births exceeded female births, accounting for 51.4% of all births. The national sex ratio was 106.0 male live births per 100 female live births.
- Of liveborn babies, 15.6% were admitted to a special care nursery or neonatal intensive care unit.
- In 2004, 5,724 babies were admitted to level III neonatal intensive care units in Australia. This was a rate of 22.4 per 1,000 live births. Of these babies, 46.3% had a gestational age of less than 32 weeks and 39.3% had a birthweight of less than 1,500 grams.
- Using state and territory perinatal data, the fetal death rate was 7.5 per 1,000 births; the neonatal death rate was 3.1 per 1,000 live births; and the perinatal death rate was 10.5 per 1,000 births.
- The main categories of perinatal death, as classified by the Perinatal Society of Australia and New Zealand Perinatal Death Classification, were congenital abnormalities, spontaneous preterm births and unexplained antepartum deaths. These three groups of causes accounted for over half of perinatal deaths.

First-time mothers

- Women who gave birth for the first time in 2004 accounted for 42.2% of all women who gave birth. The average age of first-time mothers was 28.0 years, an increase from 26.5 years in 1995 (Figure 3).

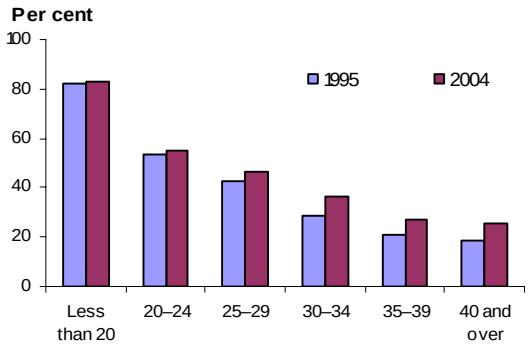


Figure 3: First-time mothers by maternal age, 1995 and 2004 (per cent)

- Compared with multiparous mothers, first-time mothers had higher rates of induction, epidural anaesthesia and caesarean section, and lower rates of smoking during pregnancy.
- Around 9.2% of babies born to first-time mothers were preterm in 2004, compared with 7.4% of babies born to multiparous women.
- Low birthweight occurred in 7.6% of liveborn babies of primiparous women compared with 5.5% for multiparous women.

1 Introduction

Australia's mothers and babies 2004 is the fourteenth in the annual series prepared by the Australian Institute of Health and Welfare's (AIHW) National Perinatal Statistics Unit (NPSU). The report provides national information on the pregnancy and childbirth of mothers, and the characteristics and outcomes of their babies. It is a collaborative effort of the NPSU and states and territories, and is for use by researchers, academics, students, policy makers and health service planners, and those providing services in reproductive health.

The report is primarily based on data from the National Perinatal Data Collection (NPDC). Ongoing data development has led to improvements in data provision and reporting. In this report, several tables are presented for the first time, including data on Remoteness Area of the mother's usual residence, admission to special care nurseries or neonatal intensive care units, and additional information on multiple births. This edition also contains estimated induced abortion figures for 2004, and a special chapter on first-time mothers and their babies.

Purpose of this report

The purpose of *Australia's mothers and babies 2004* is to provide Australia with epidemiological information including statistics on the women who gave birth to liveborn or stillborn babies in 2004, and on their babies.

This is achieved through the following objectives:

- to report against the Perinatal National Minimum Data Set
- to provide national information on women who gave birth in 2004, including demographics, risk factors and characteristics relating to the pregnancy, childbirth and puerperium
- to provide national information on the characteristics and perinatal outcomes of babies born in 2004
- to provide information for state and territory comparison
- to provide information for international comparison.

Structure of this report

This chapter provides background information, describes the major data sources and briefly discusses their overall limitations.

The remainder of this report is divided into the following chapters:

- Chapter 2: Summary

  This chapter contains summary data on the number of women who gave birth and births in 2004 and on key perinatal health measures derived from the NPDC.

- Chapter 3: Mothers

  This chapter contains information on women who gave birth in 2004, including their demographic profile (e.g. maternal age), maternal characteristics (e.g. parity), and characteristics of the labour, birth and puerperium (e.g. onset of labour, method of birth, perineal status).

- Chapter 4: Babies

  This chapter contains information on the characteristics and outcomes of babies born in 2004, including birth status, birthweight, gestational age and sex ratio.

- Chapter 5: First-time mothers

  This chapter presents data on primiparous women who gave birth in 2004, and the outcomes of their babies.

- Chapter 6: Babies in level III neonatal intensive care units

  This chapter contains information from the Australian and New Zealand Neonatal Network on babies admitted to neonatal intensive care units in Australia in 2004.

- Chapter 7: Perinatal mortality

  This chapter includes perinatal data from the Australian Bureau of Statistics (ABS) and NPDC on fetal, neonatal and perinatal deaths. It also presents deaths from six states classified using the Perinatal Society of Australia and New Zealand Perinatal Death Classification (PSANZ-PDC).

Appendix 1 presents the underlying data for the figures in the report. Appendix 2 contains information on pre-existing and pregnancy-related medical conditions, including state and territory data on selected conditions, such as essential hypertension and diabetes mellitus.

The Perinatal National Minimum Data Set

A National Minimum Data Set (NMDS) is a core set of data elements agreed to by the Statistical Information Management Committee (SIMC) and endorsed by the National Health Information Management Principal Committee (NHIMPC) for mandatory collection and reporting at a national level. An NMDS depends on a national agreement to collect uniform data and to supply it as part of a national collection (HDSC 2006). The standards make data collection activities more efficient by reducing duplication of effort by standardising core data items; more effective by ensuring that information to be collected is relevant and appropriate to its purpose; and more comparable and consistent for reporting purposes.

An NMDS includes agreement on specified data elements (discrete items of information or variables) and supporting data element concepts as well as the scope of the application of those data elements and the statistical units for collection. Definitions of all data elements that are included in National Minimum Data Sets are included in the AIHW's online metadata registry, 'METeOR'.

The Perinatal NMDS is a specification for data collected on all births in Australia in hospitals, birth centres and the community. Data are collected from perinatal administrative and clinical record systems and forwarded regularly to the relevant state or territory health authority. Data for the year ending 31 December are then provided annually to the NPSU for national collation.

The Perinatal NMDS was first specified in 1997. It includes data items relating to the mother, including demographic characteristics and factors relating to the pregnancy, labour and birth, and data items relating to the baby, including birth status, sex and birthweight.

Current definitions are available in the *National health data dictionary* (NHDD) Version 13 (HDSC 2006) and on METeOR online at <http://meteor.aihw.gov.au>. A list of the current Perinatal NMDS data elements can be found in Appendix 3. Version 12 of the NHDD was current at the time of collection of the 2004 data (NHDC 2003).

The National Perinatal Data Development Committee

The primary role of the National Perinatal Data Development Committee (NPDDC) is to undertake perinatal data development. The NPSU in consultation with the Committee develops new data items which it submits to the NPDDC for consideration. The Committee recommends changes to definitions for perinatal data items and submits new perinatal data items to the Health Data Standards Committee (HDSC) for inclusion on METeOR, and to SIMC for inclusion in the Perinatal NMDS. The Committee is comprised of representatives from each state and territory health authority, the ABS and the NPSU, with temporary members invited on a transitory basis as their expertise is required. The NPDDC works in consultation with clinical reference groups.

Since completion of the Perinatal NMDS evaluation report (Laws & Sullivan 2004b), a program of perinatal data development has been implemented. The NPDDC met four times in 2006, and will continue with regular meetings and out-of-session work. The program of data development involves revision of existing Perinatal NMDS items, data development work on existing perinatal METeOR items, and the development of new perinatal items. In 2006, agreement has been reached to include data elements on the mother's area of usual residence and presentation at birth in the NMDS.

Key data sources

National Perinatal Data Collection

The 2004 national data on births are based on notifications to the perinatal data collection in each state and territory. Midwives and other staff, using information obtained from mothers and from hospital or other records, complete notification forms for each birth in each jurisdiction. Information is included in the NPDC for all births of at least 400 grams birthweight or at least 20 weeks gestation. Figure 1.1 shows the pathway of perinatal data to the NPSU for national collation.

Each state and territory collects more information than is specified on the Perinatal NMDS, and the NPSU requests some of these additional items. The information includes characteristics of the mother, such as previous pregnancies and perineal status after vaginal birth, and the baby, such as resuscitation and admission to special care nursery or neonatal intensive care unit.

The state and territory health authorities undertake data processing, analysis and publication of reports. Each state and territory provided data in an electronic format to the NPSU. Due to data editing and subsequent updates of state and territory databases, the numbers in this

report may differ slightly from those in reports published by the states and territories. See Appendix 4 for a list of state and territory reports on the 2004 data.

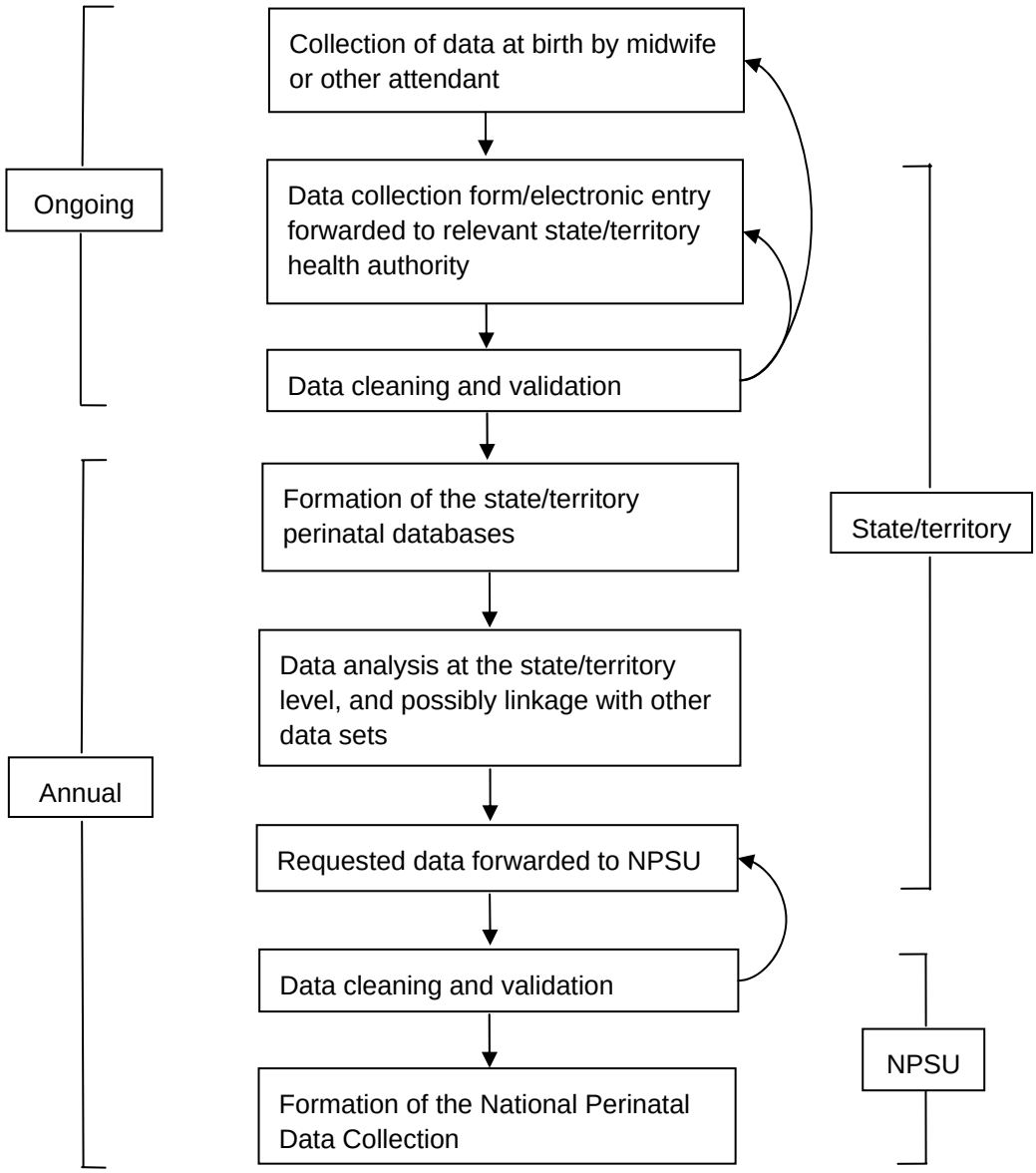


Figure 1.1: Schematic flowchart of perinatal data collection

Australian Bureau of Statistics

The ABS compiles statistics and publishes reports on registrations of live births and perinatal deaths from data made available by the Registrar of Births, Deaths and Marriages in each state and territory. These data are used to compile vital statistics, and are administrative data collections that are routinely reported on year of registration rather than year of birth or year of death.

The ABS reports the perinatal deaths of babies of at least 400 grams birthweight, or 20 weeks gestation where birthweight is unknown. These inclusion criteria differ from the NPDC and the World Health Organization (WHO) definitions. Data obtained from ABS and its published reports (ABS 2005; ABS 2006) were used to analyse trends and variations in perinatal deaths using the criteria of at least 400 grams birthweight, or at least 20 weeks gestation where birthweight is unknown, in the period from 2002 to 2004.

ABS publishes the reports *Births Australia* (e.g. ABS 2005) and *Causes of death Australia* (e.g. ABS 2006) annually.

Australian and New Zealand Neonatal Network

The Australian and New Zealand Neonatal Network (ANZNN) monitors the care of high-risk newborns registered to level III neonatal intensive care units (NICUs). Babies in the ANZNN data set are those who were admitted to a level III NICU at less than 28 days of age and who met at least one of the following criteria: less than 32 weeks gestation, less than 1,500 grams birthweight, required assisted ventilation for at least four hours or underwent major surgery. ANZNN publishes an annual report on these babies and their mothers (e.g. Abeywardana 2006). Further details on the ANZNN can be found in these reports, and Appendix 5 lists contact details for the ANZNN. Chapter 6 presents data on babies admitted to level III NICUs in Australia in 2004.

Explanatory notes

Tabulated data in this report are based on births in each state and territory in 2004, meeting the criteria for inclusion in the NPDC. Notification forms are completed and information is provided to the NPSU for all live births and stillbirths of at least 400 grams birthweight or 20 weeks or more gestation. Each state and territory has developed its own form and/or electronic system for collecting perinatal data, often to maintain compatibility with its other data collections. Unless otherwise stated, the data in this report relate to the state or territory of occurrence of births in 2004 rather than to the state or territory of usual residence of the mother.

Data are presented for all states and territories where available. Although the perinatal collections are based on an NMDS, in some jurisdictions the data are collected in different categories. Where data are not available from all states and territories in the required format, this is indicated in the footnotes of tables or figures.

All states and territories have a data item to record Indigenous status on their perinatal form, although there are some differences among the jurisdictions. According to the NHDD, Indigenous status is a measure of whether a person identifies as being of Aboriginal or Torres Strait Islander origin (NHDC 2003). This separately identifies mothers as those of Aboriginal and Torres Strait Islander origin, and non-Indigenous mothers. No information is collected about the father's or baby's Indigenous status.

The number of babies is marginally higher than the number of mothers because of multiple births. The terms 'mothers' or 'women who gave birth' have been used in this report when referring to maternal characteristics, whereas 'births' refers to babies.

New South Wales data

The number of women who gave birth in 2004 and the number of babies reported in NSW Department of Health publications differ from the numbers in this report. This is due to the inclusion of multiple births occurring across two calendar years.

Australian Capital Territory data

The Australian Capital Territory data contain a high proportion of New South Wales residents who gave birth in the Australian Capital Territory. The proportion of non-residents who gave birth in the Australian Capital Territory was 16.3% in 2004. When interpreting the data it is important to note that a proportion of the higher risk or multiple pregnancies and associated poorer perinatal outcomes may have occurred in these non-residents. Therefore, percentages or rates such as those for preterm birth and perinatal deaths, can appear inflated in relation to the number of births in the Australian Capital Territory.

Data quality

The data received from states and territories are checked for completeness, validity and logical errors. Changes are made as necessary in consultation with the state and territory perinatal data providers.

Quality of Indigenous status data

All jurisdictions are working towards improving the ascertainment of Indigenous status in their perinatal collections. The AIHW's Aboriginal and Torres Strait Islander Health and Welfare Unit is currently working on a project entitled 'Improving identification of Indigenous people in health data collections' including perinatal data collections. The NPSU is collaborating with the AIHW on this project. A report detailing the findings is planned for release in 2007.

Data on Indigenous status for Tasmania are not presented in this report because in the extract provided to the NPSU, the 'Not stated' category for Indigenous status was not able to be distinguished from the 'Neither Aboriginal nor Torres Strait Islander origin' category. In the Council of Obstetric and Paediatric Mortality and Morbidity (Tasmania) annual report for 2004, only 0.7% of mothers were reported as having a 'Not stated' Indigenous status, 97.0% were reported as being of neither Aboriginal nor Torres Strait Islander origin, and 2.4% as Aboriginal or Torres Strait Islander (DHHS 2006:42). The Department of Health and Human Services in Tasmania is actively pursuing improvements in the collection and provision of Indigenous status data. For 2003, 43.6% of mothers had a 'Not stated' Indigenous status (DHHS 2005:47).

Western Australia has supplied Indigenous status data for 2004 from the Western Australian hospital morbidity system in which Indigenous status is collected using the NHDD data element. This differs from 2003, where data provided to the NPSU were collected via the Western Australian perinatal form in the categories of 'Caucasian', 'Aboriginal/Torres Strait Islander' and 'Other'.

There are a small number of Aboriginal and Torres Strait Islander mothers who give birth in the Australian Capital Territory, and the proportion fluctuates from year to year, making this

jurisdiction less comparable to other jurisdictions. In 2004, 54 of the 73 Aboriginal or Torres Strait Islander women who gave birth in the Australian Capital Territory were Australian Capital Territory residents.

Data presentation

This report presents perinatal data that can largely be compared with data presented in *Australia's mothers and babies 2003* (Laws & Sullivan 2005). There are 20 new tables in the Summary, Mothers, Babies and Perinatal mortality chapters, and additional new appendix tables, as well as an analysis of first-time mothers.

Cell sizes of three or less in state and territory tables have not been published. Exceptions to this are small numbers in 'Other' and 'Not stated' categories. Tasmania and the Australian Capital Territory have requested that cells where the number is less than five be suppressed, and this has been implemented throughout the report for these jurisdictions. Where n.p. (not published) has been used to protect confidentiality, the suppressed numbers are included in the totals.

Throughout the report, for totals, percentages may not add up to 100.0, and for subtotals, they may not add up to the sum of the percentages for the categories. This is due to rounding.

For multiple pregnancies, items presented for mothers which may be different for each baby, such as place of birth, are classified according to the characteristics of the first born baby. Where these items are presented for babies, each baby of a multiple birth is assigned the value of the first born baby. The exceptions are gestational age, presentation at birth and method of birth, for which the value for each baby of a multiple birth is presented.

Minor changes to data presentation, including where a jurisdiction has not provided a data item or data have not been published for other reasons, are detailed in the footnotes to the tables.

2 Summary

Women who gave birth and births

There were 252,871 women who gave birth in 2004 reported to the NPDC, resulting in a total of 257,205 births. Of these, 1,919 were fetal deaths (Table 2.1). This showed an increase of 280 births (0.1%) from the 256,925 reported in 2003.

Table 2.1: Women who gave birth and births, by state and territory, 2004

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Mothers	84,289	62,543	50,051	25,111	17,228	5,413	4,799	3,437	252,871
Fetal deaths	561	618	347	188	113	37	33	22	1,919
Live births	85,065	63,082	50,563	25,340	17,408	5,483	4,893	3,452	255,286
All births	**85,626**	**63,700**	**50,910**	**25,528**	**17,521**	**5,520**	**4,926**	**3,474**	**257,205**

There were 255,286 live births in 2004 reported to the NPDC. This was 1,040 more than the 254,246 live births registered in Australia in 2004 (ABS 2005). Reasons for the differences in the national figures on live births between the two collections are being further investigated, but somewhat reflect the different methods and timing of the data collections. The NPDC is an epidemiological dataset collected at birth for the purpose of monitoring pregnancy. In comparison, the birth registration data is a vital statistics collection that relies on reporting by the parents or guardians, with requirements for reporting specified by individual states and territories. The differences between the two collections would be partly due to delays in the registration of, or failure to register, some live births. However, delays in registration would likely be balanced by the late registration of births from the previous year.

Table 2.2 shows the number of live births in the two collections by state and territory, and year of occurrence of the birth. The impact of the timing of registering births is demonstrated in this table, but suggests that even after a one year catch-up, the NPDC is a more timely estimate of the number of live births in Australia.

Data were not available for births that occurred in 2004 but were registered in 2005. Therefore, data are presented for 2000 to 2003 to allow for inclusion of births that occurred late in 2003 and were registered in 2004 and to also include late registrations for births in earlier years. In these years the NPDC has recorded more live births than were registered, overall and in most states and territories. Percentage differences show 2.4% more live births reported to the NPDC for births in 2000, increasing to a difference of 4.9% for births in 2003, the latest year of comparable data on births available (Table 2.2).

The majority of births are registered in the year of occurrence. For example, of births in 2000, 87.5% were registered in that year, 10.6% were registered in 2001, 0.8% in 2002, and 0.5% were registered in each of 2003 and 2004.

Table 2.2: Live births reported to the National Perinatal Data Collection and birth registration data, by state and territory, 2000 to 2003

Year of birth/data collection	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
2000									
NPDC	87,322	62,148	48,958	25,023	17,766	5,839	4,736	3,638	255,430
ABS	85,107	60,547	47,469	24,493	17,509	5,815	4,757	3,665	249,362
% difference	2.6	2.6	3.1	2.2	1.5	0.4	–0.4	–0.7	2.4
2001									
NPDC	85,320	61,690	49,327	24,773	17,584	5,656	4,478	3,744	252,572
ABS	81,994	59,664	47,353	24,031	17,260	5,613	4,458	3,758	244,131
% difference	4.1	3.4	4.2	3.1	1.9	0.8	0.4	–0.4	3.5
2002									
NPDC	85,490	62,681	48,867	24,609	17,623	5,660	4,769	3,689	253,388
ABS	81,932	61,112	46,159	23,637	17,270	5,769	4,716	3,728	244,323
% difference	4.3	2.6	5.9	4.1	2.0	–1.9	1.1	–1.0	3.7
2003									
NPDC	85,891	63,018	50,059	24,497	17,710	5,482	4,821	3,621	255,099
ABS	81,265	60,643	46,781	23,215	17,266	5,579	4,800	3,667	243,216
% difference	5.7	3.9	7.0	5.5	2.6	–1.7	0.4	–1.3	4.9

Note: ABS data based on year of birth and state/territory of registration.

Sources: National Perinatal Data Collection; ABS births database 2000, 2001, 2002, 2003, 2004.

Summary measures of perinatal health

Table 2.3 presents summary perinatal health information for Australia derived from the National Perinatal Data Collection for births in 2004. Data include measures of pregnancy-related interventions, maternal risk factors and birth outcomes.

Table 2.3: Summary measures of perinatal health for Australia, 2004

Variable	Description of measure	Value
Maternal age	Percentage of mothers who were teenagers (less than 20 years)	4.6
Maternal age	Percentage of first-time mothers aged 35 years and older	12.5
Smoking	Percentage of women smoking at all during pregnancy[(a)]	16.7
Indigenous status	Percentage of mothers who identified as Aboriginal or Torres Strait Islander[(b)]	3.6
Maternal country of birth	Percentage of mothers born in Australia	76.9
Hospital sector	Percentage of women who gave birth in hospital who were in public hospitals	69.0
Multiple pregnancy	Multiple pregnancies per 1,000 mothers	16.8
Spontaneous onset of labour	Percentage of mothers who had a spontaneous onset of labour	57.6
Induction of labour	Percentage of mothers who had an induced onset of labour	25.3
Instrumental vaginal deliveries	Percentage of mothers who had an instrumental (forceps or vacuum extraction) delivery[(c)]	11.0
Caesarean section	Percentage of mothers who had a caesarean section[(c)]	29.4
Previous caesarean section	Percentage of multiparous mothers having had previous caesarean sections[(d)]	24.5
Mother's postnatal stay	Median length of stay in hospital of birth (days) for those who were discharged home[(e)]	4.0
Preterm birth	Percentage of all births that were less than 37 weeks gestation	8.2
Low birthweight	Percentage of liveborn babies weighing less than 2,500 grams at birth	6.4
Apgar scores	Percentage of liveborn babies with an Apgar score of less than 7 at 5 minutes	1.3
Assisted reproduction technology	Estimated percentage of births resulting from assisted reproduction technology treatment[(f)]	2.5
Perinatal death rate	Perinatal deaths per 1,000 births	10.5

(a) Excludes Vic, Qld and Tas.

(b) Excludes Tas.

(c) For multiple births, the method of birth of the first born baby was used. For one multiple birth in NSW, the method of birth of the second born baby was used.

(d) Excludes Tas and ACT.

(e) Excludes WA.

(f) The source for the number of babies born following assisted reproduction technology was the Australian and New Zealand Assisted Reproduction Database (ANZARD) held by NPSU.

Core Maternity Indicator Project

One recommendation of the Douglas Inquiry relating to King Edward Memorial Hospital in Western Australia was to develop a set of maternity indicators to enable comparative analyses and benchmarks for obstetric and gynaecological practice and outcomes across Australia. In April 2002, the Australian Health Ministers gave in-principle agreement for a national collaborative project, which Western Australia agreed to coordinate. In March 2005, the National Maternity Services Collaboration also reported to the Australian Health Ministers Advisory Council the benefits of identifying and developing a set of national performance indicators with a view to aligning service and clinical indicators. The Western Australian Department of Health initially conducted a pilot project, building on earlier work undertaken by the Victorian Department of Human Services and elsewhere.

Following a grant from the former Australian Council for Safety and Quality in Health Care, Women's Hospitals Australasia has managed the Core Maternity Indicators Project Plan as developed by a small steering group. An Expert Working Group (EWG) was established to oversee the development of the core maternity indicators, and comprised experts in clinical care, data management and maternity policy, and consumers. Throughout the project the NPSU, represented on the EWG, provided technical expertise and data to inform the indicator development. A broader Reference Group of stakeholders who have an interest in maternal and perinatal health outcomes assisted the work of the EWG. The role of these groups was to ensure a broad level of consultation and consensus was achieved through a series of meetings, teleconferences and electronic correspondence over a period of 15 months.

The main objectives of the project were to:

1. Develop a set of core clinical indicators pertaining to pregnancy and birthing which could be recommended for collection by all maternity services throughout Australia (and possibly New Zealand) and which were:
    - important to clinicians and consumers
    - able to identify a gap between evidence and practice which could be closed
    - able to be compared between maternity services in a meaningful and scientifically valid way.
2. Recommend a governance structure for the timely collection and collation of the core set of indicators and ensure that the process provides relevant and timely information to clinicians that could then be used to improve maternity outcomes.

Table 2.4 presents data by state and territory for 2004 for six of the recommended ten core maternity indicators for which data are currently available through the National Perinatal Data Collection. The purpose of presenting these data is to promote further discussion as to the relevance, robustness and reliability of the proposed indicators in improving maternity health outcomes. When interpreting the indicators it is important to refer to the table footnotes which specify indicator criteria and individual numerator and denominator information. The indicators are being presented at a state and territory level with the aim of development for implementation at a hospital level. Subsequent analyses could include appropriate risk adjustment and comparison across peer groups of maternity services.

For example, the data show that the proportion for the indicator 'Caesarean sections for selected first births' ranged from 21.7% in the Australian Capital Territory to 29.7% in Western Australia, with a national proportion of 25.3%. The total proportion for the indicator

'Episiotomies performed during first births' was 29.5%. State and territory figures ranged from 20.1% in the Northern Territory to 38.4% in Victoria.

Table 2.4: Selected Core Maternity Indicator Project indicators, by state and territory, 2004 (per cent)

Indicator	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Caesarean sections for selected first births[(a)]	22.7	24.7	27.2	29.7	28.7	24.9	21.7	28.7	25.3
Episiotomies performed during first births[(b)]	24.8	38.4	24.5	31.8	33.9	n.a.	25.3	20.1	29.5
Induction of labour for selected first births[(a)]	28.9	33.1	30.1	34.8	34.1	32.9	21.0	27.6	31.1
Major perineal tears during first births[(b)(c)]	3.0	3.3	3.3	2.2	4.2	n.a.	2.8	2.3	3.1
Unassisted vaginal birth following spontaneous onset of labour for selected first births[(a)(d)]	24.9	17.3	16.4	11.7	14.0	n.a.	n.a.	24.2	19.1
Infant wellbeing at birth (low Apgar score at 5 minutes)[(e)]	1.0	0.9	0.9	0.7	0.7	1.1	1.1	2.0	0.9

(a) Denominator includes women who were 20–34 years of age and gave birth for the first time to a singleton baby at 37–41 completed weeks gestation with a vertex presentation at birth.

(b) Denominator includes women who gave birth for the first time and gave birth vaginally.

(c) Numerator includes third and fourth degree tears.

(d) Numerator includes women with spontaneous onset of labour without the following: augmentation, instrumental delivery, epidural, caudal or spinal analgesia/anaesthesia, episiotomy.

(e) Numerator includes babies with an Apgar score of less than 7 at 5 minutes. Denominator includes liveborn babies born at 37–41 completed weeks gestation.

n.a. Perineal status data for Tas not available in the required format. Analgesia/anaesthesia data for ACT not available. Analgesia and augmentation data for Tas not available.

3 Mothers

Demographic profile

Maternal age

Maternal age is an important risk factor for both obstetric and perinatal outcome. Adverse outcomes are more likely to occur in younger and older mothers. The age of mothers ranged from 12 to 56 years in 2004. The average age of women who gave birth in Australia has increased gradually in recent years. The mean age in 2004 was 29.7 years, compared with 28.4 years in 1995, while the median age in 2004 was 30.0 years. The trend in delayed childbearing can be attributed to a number of factors including social, educational and economic, and increased access to assisted reproduction technology (Carolan 2003; van Katwijk & Peeters 1998).

In 2004, mothers in the Australian Capital Territory (30.5 years) and Victoria (30.4 years) were older and those in the Northern Territory younger (27.3 years) than the national average (Table 3.1). Nationally, the number of teenage mothers (less than 20 years) dropped from 13,562 in 1995 to 11,541 in 2004, a decline of 14.9% over the decade. The proportion of teenagers who gave birth in 2004 was 4.6%, and ranged from a low of 2.8% in the Australian Capital Territory to 13.7% in the Northern Territory.

The proportion of mothers aged 20–24 years fell from 19.5% in 1995 to 14.6% in 2004 (36,874 mothers). The proportion of older mothers, aged 35 years and over, has continued to increase from 12.7% in 1995 to 19.5% in 2004.

Table 3.1: Women who gave birth by maternal age and state and territory, 2004

Maternal age (years)	NSW	Vic	Qld	WA	SA[(a)]	Tas	ACT[(b)]	NT	Australia
Mean	29.8	30.4	29.0	29.3	29.3	28.5	30.5	27.3	29.7
					Number				
Less than 20	3,387	1,849	3,003	1,389	904	406	132	471	11,541
20–24	12,095	7,108	8,734	3,943	2,673	1,039	528	754	36,874
25–29	23,113	16,105	14,037	6,861	4,811	1,534	1,279	859	68,599
30–34	28,906	23,488	15,757	8,287	5,762	1,566	1,773	865	86,404
35–39	13,808	11,716	7,094	3,894	2,555	718	896	412	41,093
40 and over	2,963	2,267	1,426	737	523	135	191	76	8,318
Not stated	17	10	—	—	—	15	—	—	42
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**
					Per cent				
Less than 20	4.0	3.0	6.0	5.5	5.2	7.5	2.8	13.7	4.6
20–24	14.3	11.4	17.5	15.7	15.5	19.2	11.0	21.9	14.6
25–29	27.4	25.8	28.0	27.3	27.9	28.3	26.7	25.0	27.1
30–34	34.3	37.6	31.5	33.0	33.4	28.9	36.9	25.2	34.2
35–39	16.4	18.7	14.2	15.5	14.8	13.3	18.7	12.0	16.3
40 and over	3.5	3.6	2.8	2.9	3.0	2.5	4.0	2.2	3.3
Not stated	0.0	0.0	—	—	—	0.3	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) For SA, the mean maternal age presented here may differ from that produced by the Pregnancy Outcome Statistics Unit, who use maternal age to four decimal places for this calculation. The National Perinatal Data Collection contains maternal age in completed years.

(b) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages.

Aboriginal and Torres Strait Islander mothers

The data presented on Indigenous status are influenced by the quality and completeness of Indigenous identification, which may vary among jurisdictions.

In 2004, 8,904 women who identified as being Aboriginal or Torres Strait Islander gave birth in Australia, representing 3.6% of all women who gave birth.[1] Aboriginal or Torres Strait Islander mothers accounted for a much greater proportion of all mothers in the Northern Territory (38.8%) than in other jurisdictions. There were also high proportions of Aboriginal or Torres Strait Islander mothers in Western Australia (6.0%) and Queensland (5.5%). Because of their larger overall populations, there were more Aboriginal or Torres Strait Islander women who gave birth in Queensland (2,767), New South Wales (2,308) and Western Australia (1,505) than in the Northern Territory (1,332) (Table 3.2).

1 All figures in this section exclude Tas.

Table 3.2: Women who gave birth by Indigenous status and state and territory, 2004

Indigenous status	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Total
					Number				
Aboriginal or Torres Strait Islander	2,308	435	2,767	1,505	484	n.a.	73	1,332	8,904
Non-Indigenous	81,949	62,080	47,280	23,606	16,744	n.a.	4,711	2,096	238,466
Not stated	32	28	4	—	—	n.a.	15	9	88
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**n.a.**	**4,799**	**3,437**	**247,458**
					Per cent				
Aboriginal or Torres Strait Islander	2.7	0.7	5.5	6.0	2.8	n.a.	1.5	38.8	3.6
Non-Indigenous	97.2	99.3	94.5	94.0	97.2	n.a.	98.2	61.0	96.4
Not stated	0.0	0.0	0.0	—	—	n.a.	0.3	0.3	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**n.a.**	**100.0**	**100.0**	**100.0**

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, 54 of the 73 Aboriginal or Torres Strait Islander women who gave birth in the ACT in 2004 were ACT residents.

n.a. Data for Tas were not available because the 'Not stated' category for Indigenous status was not able to be distinguished from the 'Neither Aboriginal nor Torres Strait Islander origin' category.

Aboriginal or Torres Strait Islander mothers are more likely to have their babies at a younger age compared with non-Indigenous mothers. The average age of Aboriginal or Torres Strait Islander mothers who gave birth in 2004 was 24.8 years, compared with 29.9 years for non-Indigenous mothers. More than one in five (22.3%) Aboriginal or Torres Strait Islander mothers were teenagers, compared with 3.8% of non-Indigenous mothers.

Geographical location of the mother's usual residence

State and territory of the mother's usual residence

This is the first time that data on the mother's state and territory of usual residence has been included in *Australia's mothers and babies.* Table 3.3 shows that, of women who gave birth in the Australian Capital Territory, 16.3% lived outside of the Australian Capital Territory (16.2% in New South Wales). For the remaining jurisdictions where the state of residence was recorded, this proportion ranged from none in Tasmania to 2.9% in the Northern Territory.

Table 3.3: Women who gave birth by state and territory of usual residence and state and territory of birth, 2004

State/territory of usual residence	State/territory of birth								
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
					Number				
NSW	83,694	1,162	356	<4	22	—	776	n.p.	86,024
Vic	30	61,261	6	<4	41	—	4	<4	61,347
Qld	433	31	49,636	4	n.p.	—	—	<4	50,112
WA	6	24	<4	25,081	n.p.	—	—	29	25,146
SA	5	n.p.	4	<4	17,136	—	—	54	17,214
Tas	<4	16	<4	—	—	5,408	—	—	5,427
ACT	<4	<4	<4	<4	—	—	4,019	—	4,026
NT	91	6	18	5	18	—	—	3,331	3,469
Non-resident[(a)]	n.p.	—	24	—	<4	—	—	—	34
Not stated	19	27	1	13	1	5	—	6	72
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**
					Per cent				
NSW	99.3	1.9	0.7	n.p.	0.1	—	16.2	n.p.	34.0
Vic	0.0	98.0	0.0	n.p.	0.2	—	0.1	n.p.	24.3
Qld	0.5	0.0	99.2	0.0	n.p.	—	—	n.p.	19.8
WA	0.0	0.0	n.p.	99.9	n.p.	—	—	0.8	9.9
SA	0.0	n.p.	0.0	n.p.	99.5	—	—	1.6	6.8
Tas	n.p.	0.0	n.p.	—	—	99.9	—	—	2.1
ACT	n.p.	n.p.	n.p.	n.p.	—	—	83.7	—	1.6
NT	0.1	0.0	0.0	0.0	0.1	—	—	96.9	1.4
Non-resident[(a)]	n.p.	—	0.0	—	n.p.	—	—	—	0.0
Not stated	0.0	0.0	0.0	0.1	0.0	0.1	—	0.2	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Not usually resident in Australia.

n.p. Data not published to maintain confidentiality of small numbers.

Remoteness Area of the mother's usual residence

Data on the geographical location of the usual residence of the mother were provided as state and Statistical Local Area (a small unit within the ABS's Australian Standard Geographical Classification (ASGC)) and/or postcode. These data have been mapped to levels of remoteness using the ASGC remoteness structure.

The distribution of Remoteness Area of mothers varied by state and territory of usual residence. Queensland had just over half of its women who gave birth residing in major cities compared with approximately 70% in the other populous states. The Northern Territory and Australian Capital Territory presented different profiles of Remoteness Area, with the Australian Capital Territory a major city compared with the Northern Territory women who lived mainly in outer regional, remote and very remote areas (Table 3.4).

Table 3.4: Women who gave birth by Remoteness Area of usual residence and state and territory of usual residence, 2004

Remoteness Area	State/territory of usual residence								
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
					Number				
Major cities	63,760	46,422	26,475	17,197	12,104	—	4019	42	170,019
Inner regional	15,926	12,143	12,074	n.p.	2,232	3,472	n.p.	31	48,913
Outer regional	5,615	2,722	9,224	n.p.	2,090	1,831	<5	1,758	25,867
Remote	581	60	1,401	1,412	588	100	—	758	4,900
Very remote	141	—	938	882	200	24	—	880	3,065
Total	**86,023**	**61,347**	**50,112**	**25,146**	**17,214**	**5,427**	**4,026**	**3,469**	**252,764**
					Per cent				
Major cities	74.1	75.7	52.8	68.4	70.3	—	99.8	1.2	67.3
Inner regional	18.5	19.8	24.1	n.p.	13.0	64.0	n.p.	0.9	19.4
Outer regional	6.5	4.4	18.4	n.p.	12.1	33.7	n.p.	50.7	10.2
Remote	0.7	0.1	2.8	5.6	3.4	1.8	—	21.9	1.9
Very remote	0.2	—	1.9	3.5	1.2	0.4	—	25.4	1.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

n.p. Data not published to maintain confidentiality of small numbers.

Note: Excludes mothers not usually resident in Australia and those whose state or territory of usual residence was 'Not stated'.

Remoteness Area of mother's usual residence also varied by Indigenous status (Table 3.5). Of non-Indigenous women who gave birth in 2004, 70.4% lived in major cities, followed by 18.4% in inner regional areas. Aboriginal and Torres Strait Islander women were more evenly spread across Remoteness Areas, with 27.0% living in outer regional areas and 25.2% in major cities. Few non-Indigenous women who gave birth lived in very remote areas compared with Indigenous mothers (0.6% compared with 19.3%).

Table 3.5: Women who gave birth by Remoteness Area of usual residence and Indigenous status, 2004

Remoteness Area	Indigenous	Non-Indigenous	Not stated	Total
		Number		
Major cities	2,245	167,715	59	170,019
Inner regional	1,547	43,887	14	45,448
Outer regional	2,400	21,632	8	24,040
Remote	993	3,806	1	4,800
Very remote	1,716	1,330	4	3,050
Total	**8,901**	**238,370**	**86**	**247,357**
		Per cent		
Major cities	25.2	70.4	68.6	68.7
Inner regional	17.4	18.4	16.3	18.4
Outer regional	27.0	9.1	9.3	9.7
Remote	11.2	1.6	1.2	1.9
Very remote	19.3	0.6	4.7	1.2
Total	**100.0**	**100.0**	**100.0**	**100.0**

Notes

1. Excludes Tas. Data for Tas were not available because the 'Not stated' category for Indigenous status was not able to be distinguished from the 'Neither Aboriginal nor Torres Strait Islander origin' category.
2. Excludes mothers not usually resident in Australia and those whose state or territory of usual residence was 'Not stated'.

Maternal country of birth

The country of birth of the mother may be an important risk factor for outcomes such as low birthweight and perinatal mortality. For 2004, six of the jurisdictions used the four-digit ABS Standard Australian Classification of Countries (SACC) (ABS 1998) to classify countries of birth and two jurisdictions used the ABS Australian Standard Classification of Countries for Social Statistics (ASCCSS).

Of women who gave birth in Australia in 2004, 22.5% were born in countries other than Australia. Mothers born in the United Kingdom constituted 3.0% of all mothers and accounted for a relatively higher proportion of all mothers in Western Australia (6.9%). New Zealand-born mothers constituted 2.5% of all women who gave birth. Mothers born in non-English speaking countries were more likely to give birth in the more populous states, New South Wales and Victoria (Table 3.6).

Table 3.6: Women who gave birth by maternal country of birth and state and territory, 2004

Country of birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Australia	60,962	47,508	41,613	17,595	14,701	5,095	3,945	2,943	194,362
New Zealand	1,989	1,112	2,239	747	187	34	55	50	6,413
United Kingdom	2,229	1,555	1,267	1,726	595	71	123	77	7,643
Former Yugoslavia	351	543	54	80	39	<5	8	<4	1,079
Other Europe and former USSR	2,003	1,528	773	616	383	40	103	60	5,506
Lebanon	1,594	506	18	32	21	<5	n.p.	—	2,186
Other Middle East and North Africa	1,863	1,422	194	235	136	24	n.p.	<4	3,913
China and Hong Kong	1,986	837	235	133	88	10	45	8	3,342
India	888	702	121	114	68	5	39	12	1,949
Philippines	1,083	493	425	140	125	18	33	31	2,348
Vietnam	1,684	1,591	354	270	257	<5	57	n.p.	4,226
Other Asia	3,638	2,439	1,043	936	350	40	176	109	8,731
Northern America	611	381	280	162	62	17	44	18	1,575
South and Central America and the Caribbean	674	371	167	76	59	8	32	7	1,394
Africa (excluding North Africa)	1,141	994	408	536	102	19	38	16	3,254
Other countries	1,581	561	847	79	54	13	47	31	3,213
Not stated	12	—	13	1,634	1	13	6	58	1,737
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**

(continued)

Table 3.6 (continued): Women who gave birth by maternal country of birth and state and territory, 2004

Country of birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Per cent				
Australia	72.3	76.0	83.1	70.1	85.3	94.1	82.2	85.6	76.9
New Zealand	2.4	1.8	4.5	3.0	1.1	0.6	1.1	1.5	2.5
United Kingdom	2.6	2.5	2.5	6.9	3.5	1.3	2.6	2.2	3.0
Former Yugoslavia	0.4	0.9	0.1	0.3	0.2	n.p.	0.2	n.p.	0.4
Other Europe and former USSR	2.4	2.4	1.5	2.5	2.2	0.7	2.1	1.7	2.2
Lebanon	1.9	0.8	0.0	0.1	0.1	n.p.	n.p.	—	0.9
Other Middle East and North Africa	2.2	2.3	0.4	0.9	0.8	0.4	n.p.	n.p.	1.5
China and Hong Kong	2.4	1.3	0.5	0.5	0.5	0.2	0.9	0.2	1.3
India	1.1	1.1	0.2	0.5	0.4	0.1	0.8	0.3	0.8
Philippines	1.3	0.8	0.8	0.6	0.7	0.3	0.7	0.9	0.9
Vietnam	2.0	2.5	0.7	1.1	1.5	n.p.	1.2	n.p.	1.7
Other Asia	4.3	3.9	2.1	3.7	2.0	0.7	3.7	3.2	3.5
Northern America	0.7	0.6	0.6	0.6	0.4	0.3	0.9	0.5	0.6
South and Central America and the Caribbean	0.8	0.6	0.3	0.3	0.3	0.1	0.7	0.2	0.6
Africa (excluding North Africa)	1.4	1.6	0.8	2.1	0.6	0.4	0.8	0.5	1.3
Other countries	1.9	0.9	1.7	0.3	0.3	0.2	1.0	0.9	1.3
Not stated	0.0	—	0.0	6.5	0.0	0.2	0.1	1.7	0.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

n.p. Data not published to maintain confidentiality of small numbers.

Maternal characteristics and risk factors

Parity

Parity is the number of previous pregnancies that resulted in live births or stillbirths. In 2004, 42.2% of mothers had their first baby and 33.8% had their second baby. One in six mothers (15.0%) had given birth twice previously and 9.0% had given birth three or more times (Table 3.7).

Mothers in the Northern Territory were more likely than mothers in the other states and the Australian Capital Territory to have a parity of three or more. In the Northern Territory, 7.7% of mothers had given birth three times previously and 7.7% four or more times, compared with 5.4% and 3.6% respectively for Australia (Table 3.7).

In 2004, 30.9% of Aboriginal or Torres Strait Islander mothers were having their first baby and 69.0% had given birth previously. Mothers who had given birth three or more times previously accounted for 27.6% of Aboriginal or Torres Strait Islander mothers.

Table 3.7: Women who gave birth by parity and state and territory, 2004

Parity	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
None	35,797	26,872	20,356	10,512	7,403	2,229	2,160	1,282	106,611
One	28,324	21,552	16,708	8,424	5,990	1,776	1,655	1,030	85,459
Two	12,628	9,355	7,677	3,773	2,504	841	645	597	38,020
Three	4,548	2,989	3,030	1,359	828	330	221	263	13,568
Four or more	2,869	1,775	2,279	1,043	503	237	118	263	9,087
Not stated	123	—	1	—	—	—	—	2	126
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**
					Per cent				
None	42.5	43.0	40.7	41.9	43.0	41.2	45.0	37.3	42.2
One	33.6	34.5	33.4	33.5	34.8	32.8	34.5	30.0	33.8
Two	15.0	15.0	15.3	15.0	14.5	15.5	13.4	17.4	15.0
Three	5.4	4.8	6.1	5.4	4.8	6.1	4.6	7.7	5.4
Four or more	3.4	2.8	4.6	4.2	2.9	4.4	2.5	7.7	3.6
Not stated	0.1	—	0.0	—	—	—	—	0.1	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

The average age of first-time mothers was 28.0 years in 2004. The proportion of mothers who had given birth at least twice previously increased with maternal age from 1.9% for teenagers to 43.4% for mothers aged 40 years and over (Table 3.8). Detailed information on mothers who gave birth for the first time in 2004 can be found in Chapter 5.

Table 3.8: Women who gave birth by parity and maternal age, 2004

Parity	Less than 20	20–24	25–29	30–34	35–39	40 and over	Not stated	Total
				Number				
None	9,567	20,200	31,908	31,580	11,235	2,104	17	106,611
One	1,759	11,656	22,537	32,071	14,841	2,579	16	85,459
Two	187	3,743	9,219	14,596	8,645	1,626	4	38,020
Three	24	978	3,174	4,920	3,558	910	4	13,568
Four or more	4	294	1,750	3,189	2,772	1,077	1	9,087
Not stated	—	3	11	48	42	22	—	126
Total	**11,541**	**36,874**	**68,599**	**86,404**	**41,093**	**8,318**	**42**	**252,871**
				Per cent				
None	82.9	54.8	46.5	36.5	27.3	25.3	40.5	42.2
One	15.2	31.6	32.9	37.1	36.1	31.0	38.1	33.8
Two	1.6	10.2	13.4	16.9	21.0	19.5	9.5	15.0
Three	0.2	2.7	4.6	5.7	8.7	10.9	9.5	5.4
Four or more	0.0	0.8	2.6	3.7	6.7	12.9	2.4	3.6
Not stated	—	0.0	0.0	0.1	0.1	0.3	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Previous caesarean sections

Data on previous caesarean sections were available for six states and territories: New South Wales, Victoria, Queensland, Western Australia, South Australia and the Northern Territory. In 2004, 24.5% of multiparous women who gave birth in these jurisdictions had a history of previous caesarean section (Table 3.9).

Table 3.9: Multiparous women who gave birth by number of previous caesarean sections and state and territory, 2004

Previous caesarean sections	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
					Number				
None	37,371	26,927	21,790	10,936	7,214	n.a.	n.a.	1,605	105,843
At least one	10,923	8,744	7,902	3,663	2,611	n.a.	n.a.	548	34,391
One	8,865	6,973	6,268	n.a.	2,111	n.a.	n.a.	423	24,640
Two	1,658	1,473	1,297	n.a.	397	n.a.	n.a.	94	4,919
Three or more	400	298	337	n.a.	103	n.a.	n.a.	31	1,169
Not stated	75	—	2	—	—	n.a.	n.a.	—	77
Total	**48,369**	**35,671**	**29,694**	**14,599**	**9,825**	**n.a.**	**n.a.**	**2,153**	**140,311**
					Per cent				
None	77.3	75.5	73.4	74.9	73.4	n.a.	n.a.	74.5	75.4
At least one	22.6	24.5	26.6	25.1	26.6	n.a.	n.a.	25.5	24.5
One	18.3	19.5	21.1	n.a.	21.5	n.a.	n.a.	19.6	17.6
Two	3.4	4.1	4.4	n.a.	4.0	n.a.	n.a.	4.4	3.5
Three or more	0.8	0.8	1.1	n.a.	1.0	n.a.	n.a.	1.4	0.8
Not stated	0.2	—	0.0	—	—	n.a.	n.a.	—	0.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**n.a.**	**n.a.**	**100.0**	**100.0**

n.a. Data not available.

Smoking during pregnancy

Smoking is a risk factor for pregnancy complications, and is associated with poorer perinatal outcomes such as low birthweight, preterm birth, small for gestational age babies and perinatal death (Laws et al. 2006).

There is currently no national data element for the collection of data on smoking during pregnancy. Data were available for five states and territories: New South Wales, Western Australia, South Australia, the Australian Capital Territory and the Northern Territory. The proportion of women who smoked while pregnant ranged from 14.8% in New South Wales to 28.6% in the Northern Territory. Overall, 16.7% of women in the five states and territories smoked during pregnancy (Table 3.10).

Figure 3.1 shows that this represents a decrease over the four years since these data have been available. In 2001, 19.2% of women who gave birth in these jurisdictions reported smoking in pregnancy (Laws et al. 2006).

Table 3.10: Women who gave birth by tobacco smoking status during pregnancy and state and territory, 2004

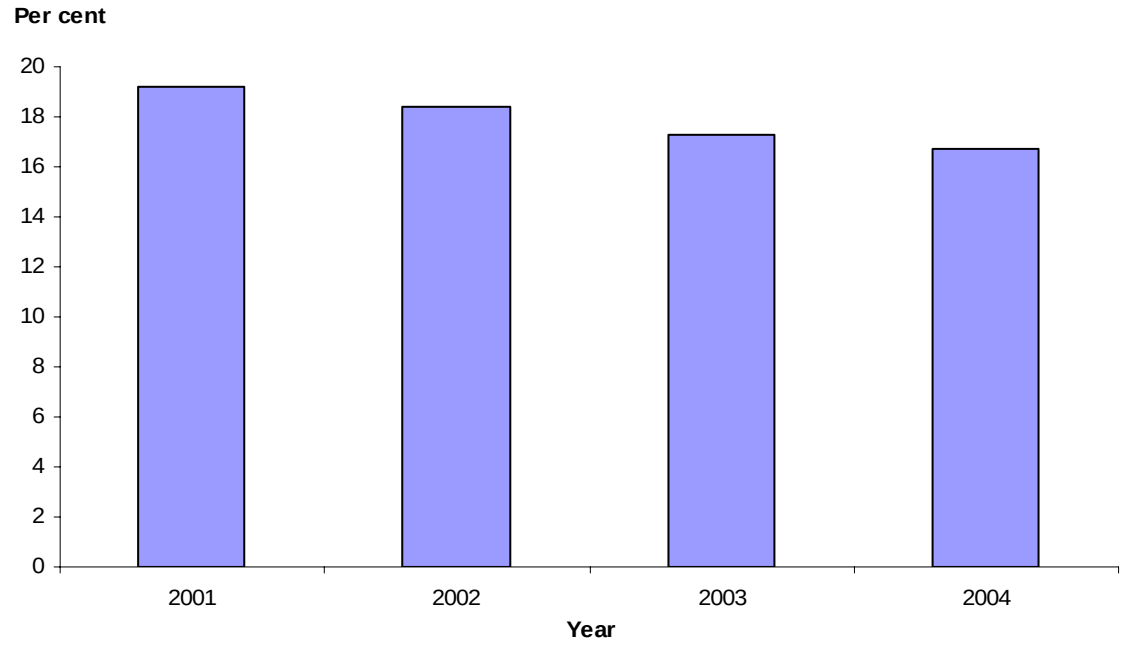
Smoking status	NSW	Vic	Qld	WA	SA[(a)]	Tas	ACT	NT[(b)]	Total
					Number				
Smoked	12,472	n.a.	n.a.	4,308	4,060	n.a.	749	983	22,572
Did not smoke	71,809	n.a.	n.a.	20,803	12,967	n.a.	4,007	2,157	111,743
Not stated	8	n.a.	n.a.	—	201	n.a.	43	297	549
Total	**84,289**	**n.a.**	**n.a.**	**25,111**	**17,228**	**n.a.**	**4,799**	**3,437**	**134,864**
					Per cent				
Smoked	14.8	n.a.	n.a.	17.2	23.6	n.a.	15.6	28.6	16.7
Did not smoke	85.2	n.a.	n.a.	82.8	75.3	n.a.	83.5	62.8	82.9
Not stated	0.0	n.a.	n.a.	—	1.2	n.a.	0.9	8.6	0.4
Total	**100.0**	**n.a.**	**n.a.**	**100.0**	**100.0**	**n.a.**	**100.0**	**100.0**	**100.0**

(a) For SA, 'Smoked' includes women who quit before the first antenatal visit.

(b) For NT, smoking status was recorded at the first antenatal visit.

n.a. Data not available.

Note: Mother's tobacco smoking status during pregnancy is self-reported.



Note: Excludes Vic, Qld and Tas.

Source: Table A1.1.

Figure 3.1: Mothers reporting smoking during pregnancy, 2001–2004 (per cent)

The average age of mothers who smoked during pregnancy was 27.1 years compared with 30.1 years for those who did not smoke. Teenage mothers accounted for 11.6% of all mothers who reported smoking during pregnancy.

Aboriginal or Torres Strait Islander mothers accounted for 12.6% of mothers who smoked during pregnancy in the five jurisdictions which provided smoking data. Half of the Aboriginal and Torres Strait Islander mothers in the five jurisdictions reported smoking during pregnancy (49.7%), compared with 15.3% of non-Indigenous women who gave birth.

Labour and birth characteristics

Place of birth

Actual place of birth

Most births in Australia occur in hospitals, either in conventional labour-ward settings or in hospital birth centres. There were 246,012 women who gave birth in hospitals (97.3%) and 5,079 in birth centres (2.0%) in 2004 (Table 3.11). Planned homebirths and other births, such as those occurring unexpectedly before arrival in hospital or in other settings, are the two categories accounting for the smallest proportion of women who gave birth (1,749 women, 0.7%).

Table 3.11: Women who gave birth by actual place of birth and state and territory, 2004

Place of birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Hospital	81,849	60,925	49,252	24,641	16,194	5,307	4,499	3,345	246,012
Birth centre	1,993	1,184	458	240	920	16	268	—	5,079
Home	93	181	57	150	67	5	25	11	589
Other	340	253	283	80	47	69	7	[(a)]81	1,160
Not stated	14	—	1	—	—	16	—	—	31
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**
					Per cent				
Hospital	97.1	97.4	98.4	98.1	94.0	98.0	93.7	97.3	97.3
Birth centre	2.4	1.9	0.9	1.0	5.3	0.3	5.6	—	2.0
Home	0.1	0.3	0.1	0.6	0.4	0.1	0.5	0.3	0.2
Other	0.4	0.4	0.6	0.3	0.3	1.3	0.1	[(a)]2.4	0.5
Not stated	0.0	—	0.0	—	—	0.3	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) The majority of these births occurred in remote community health centres.

Note: For multiple births, the place of birth of the first born baby was used. For one multiple birth in NSW, the place of birth of the second born baby was used.

Intended place of birth

The jurisdictions collect intended place of birth at different times during the pregnancy. Victoria, South Australia and Tasmania collect this item at the time of booking, while the remaining states and territories collect the intended place of birth at the onset of labour. Care must be taken when comparing data across the jurisdictions.

In 2004, the intended place of birth was hospital for 96.2% of mothers and birth centres for 3.3%. Only 0.5% intended to give birth at home or in other settings (Table 3.12).

Around 3.8% of mothers intended to give birth outside of a conventional labour-ward setting in 2004. Only 2.7% of mothers actually did so, giving birth in places such as birth centres or at home.

Table 3.12: Women who gave birth by intended place of birth and state and territory, 2004

Place of birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Hospital	80,702	60,343	49,395	24,492	15,358	5,153	4,283	3,415	243,141
Birth centre	3,129	1,912	576	454	1,731	216	432	—	8,450
Home	114	227	65	165	83	39	25	15	733
Other	344	—	14	—	56	2	—	[(a)]7	423
Not stated	—	61	1	—	—	3	59	—	124
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**
					Per cent				
Hospital	95.7	96.5	98.7	97.5	89.1	95.2	89.2	99.4	96.2
Birth centre	3.7	3.1	1.2	1.8	10.0	4.0	9.0	—	3.3
Home	0.1	0.4	0.1	0.7	0.5	0.7	0.5	0.4	0.3
Other	0.4	—	0.0	—	0.3	0.0	—	[(a)]0.2	0.2
Not stated	—	0.1	0.0	—	—	0.1	1.2	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Includes remote community health centres.

Note: Intended place of birth at time of booking for Vic, SA and Tas. Intended place of birth at onset of labour for NSW, Qld, WA, ACT and NT.

Duration of pregnancy

Accurate population data on gestational age are difficult to obtain. Different methods may be used for estimating gestational age. Estimates may be made based on the calculated interval between the first day of the last menstrual period (LMP) and the baby's date of birth. These may be imprecise for some women because of uncertainty about the date of LMP, irregular cycles, or delayed ovulation after the use of oral contraceptives. Nevertheless, in the majority of pregnancies, the gestational age derived from the dates provides an appropriate estimate of the duration of pregnancy.

Estimates may also be made using ultrasound, as most pregnant women have at least one ultrasound examination during pregnancy. If more than one ultrasound examination is conducted, the earliest is generally used to date the pregnancy, preferably an ultrasound

carried out between 6 and 10 weeks gestation. Ultrasounds post 24 weeks gestation are not considered reliable.

Preterm birth (less than 37 completed weeks gestation) occurred for 7.4% of all mothers. The average duration of pregnancy in Australia was 38.9 weeks. A minority of mothers gave birth at 20–27 weeks (0.8%) or 28–31 weeks (0.7%), while 5.8% gave birth at 32–36 weeks. There was a higher incidence of preterm birth in the Northern Territory (10.6%) than elsewhere (Table 3.13).

Of women who gave birth in 2004, 91.3% gave birth at 37–41 completed weeks of gestation (term) and 1.4% gave birth at 42 or more weeks gestation (post-term). Post-term births were least common in South Australia (0.5%) and most common in New South Wales (2.1%) (Table 3.13).

These figures are based on the duration of pregnancies of mothers, and so they differ from the figures on gestational age in Chapter 4, which are based on babies. The numbers differ because the gestational age of the first born baby of a multiple birth is used for the duration of pregnancy, while the gestational age of each individual baby in a multiple birth is used for the data presented in Chapter 4.

Table 3.13: Women who gave birth by duration of pregnancy and state and territory, 2004

Duration of pregnancy (weeks)	NSW	Vic	Qld	WA	SA	Tas	ACT[a]	NT	Australia
Mean	39.1	38.9	38.8	38.7	38.8	39.0	38.9	38.6	38.9
					Number				
20–27[b]	548	674	398	202	141	34	38	40	2,075
28–31	563	390	394	198	124	46	52	33	1,800
32–36	4,443	3,480	3,159	1,593	1,090	343	326	290	14,724
37–41	76,970	57,207	45,676	22,912	15,783	4,930	4,307	3,039	230,824
42 and over	1,761	783	417	206	90	58	74	35	3,424
Not stated	4	9	7	—	—	2	2	—	24
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**
					Per cent				
20–27[b]	0.7	1.1	0.8	0.8	0.8	0.6	0.8	1.2	0.8
28–31	0.7	0.6	0.8	0.8	0.7	0.8	1.1	1.0	0.7
32–36	5.3	5.6	6.3	6.3	6.3	6.3	6.8	8.4	5.8
37–41	91.3	91.5	91.3	91.2	91.6	91.1	89.7	88.4	91.3
42 and over	2.1	1.3	0.8	0.8	0.5	1.1	1.5	1.0	1.4
Not stated	0.0	0.0	0.0	—	—	0.0	0.0	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the percentage of 28–31 week duration of pregnancy for ACT residents who gave birth in the ACT was 0.7%.

(b) Includes 3 pregnancies of less than 20 weeks duration.

Note: For multiple births, the gestational age of the first born baby was used. For one multiple birth in NSW, the gestational age of the second born baby was used.

Multiple pregnancy

There has been an overall increasing trend in multiple births in the last two decades, attributed largely to the increased use of fertility drugs and assisted reproduction technology, delay in childbearing, and the growing number of older mothers (Tough et al. 2000; Tough et al. 2002). However, there has been a decrease in the proportion of triplet and higher order multiple births in recent years.

In the perinatal collections, multiple pregnancies are based on the number of fetuses that remain in utero at 20 weeks gestation and are subsequently delivered. In 2004, there were 4,253 multiple pregnancies (1.7% of all mothers) (Table 3.14), consisting of 4,175 twin pregnancies, 75 triplet pregnancies and three quadruplet and quintuplet pregnancies.

There were 16.8 multiple pregnancies per 1,000 mothers in 2004. The twinning rate was 16.5 per 1,000 mothers. In 1995, there were 3,568 multiple pregnancies, accounting for 1.4% of mothers, with a twinning rate of 13.6 per 1,000 mothers. Triplet and higher order multiple pregnancies have decreased from 0.4 per 1,000 mothers in 1995 to 0.3 per 1,000 mothers in 2004.

Table 3.14: Women who gave birth by plurality and state and territory, 2004

Plurality	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Australia
					Number				
Singleton	82,983	61,402	49,210	24,702	16,937	5,309	4,675	3,400	248,618
Multiple	1,306	1,141	841	409	291	104	124	37	4,253
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**
					Per cent				
Singleton	98.5	98.2	98.3	98.4	98.3	98.1	97.4	98.9	98.3
Multiple	1.5	1.8	1.7	1.6	1.7	1.9	2.6	1.1	1.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the percentage of multiple pregnancies for ACT residents who gave birth in the ACT was 2.2%.

Onset of labour

Onset of labour is categorised as spontaneous, induced or no labour. In 2004, the onset of labour was spontaneous for 57.6% of all women who gave birth, and there was no labour for 17.1% of mothers. Labour was induced for 25.3% and augmented for 19.5% of mothers[2] (Table 3.15).

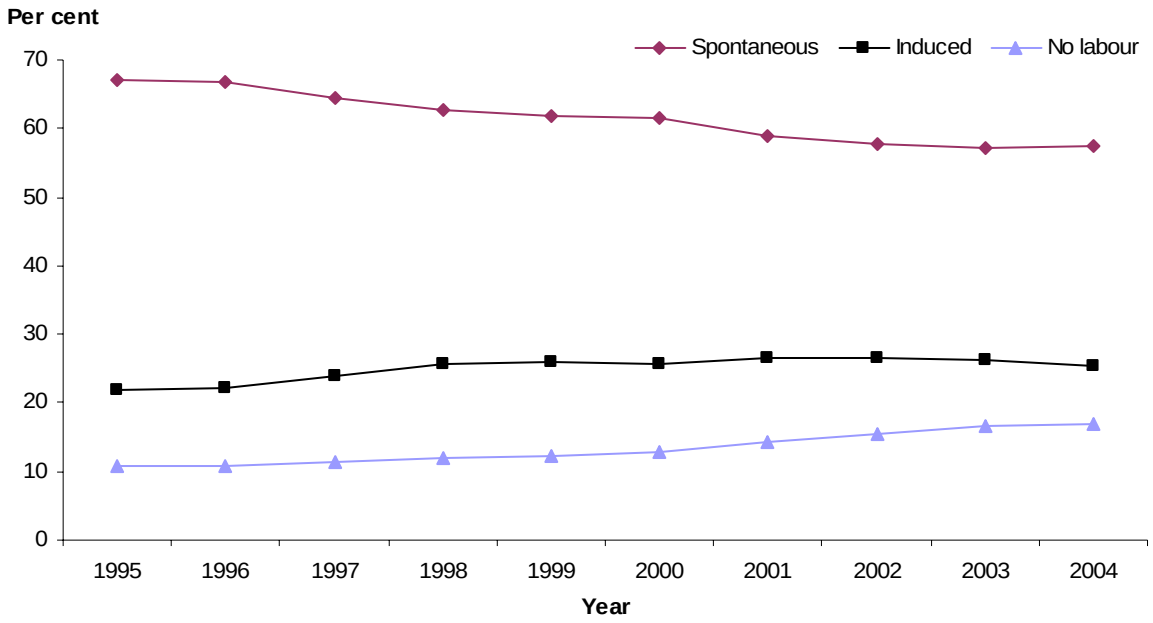
The proportion of mothers with spontaneous onset of labour was highest in the Australian Capital Territory (65.7%) and lowest in Western Australia (50.5%). Western Australia and Queensland reported the highest proportions of mothers with no labour (20.8% and 19.5%, respectively), and Tasmania reported the lowest (11.9%) (Table 3.15).

Induced labour was more likely in Western Australia (28.7%) and South Australia (27.9%) than in the other states and territories. Overall, combined medical and surgical induction of labour was more likely than either type alone. There was considerable variation among the

2 This national figure for augmentation excludes Tas.

states and territories in whether labour was augmented, ranging from 16.2% in New South Wales to 26.7% in the Australian Capital Territory (Table 3.15).

Figure 3.2 presents the type of onset of labour over the period from 1995 to 2004. In line with the increase in caesarean sections, spontaneous onset of labour generally decreased during this time, from 67.2% of all women giving birth in 1995 to 57.3% in 2003, with a slight increase to 57.6% in 2004. The proportion of women giving birth without labour gradually increased, from 10.8% in 1995 to 17.1% in 2004. Induced labour increased from 21.9% in 1995 to 26.0% in 1999, and has remained fairly steady over recent years.



Source: Table A1.2.

Figure 3.2: Onset of labour, all mothers, 1995–2004 (per cent)

Table 3.15: Women who gave birth by onset of labour and state and territory, 2004

Onset of labour/type of augmentation or induction	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Spontaneous	50,808	35,271	28,603	12,678	9,647	3,166	3,155	2,208	145,536
No augmentation	37,104	23,232	16,164	7,321	5,918	n.a.	1,873	1,567	93,179
Medical only[(a)]	4,769	3,622	2,797	1,650	995	n.a.	398	161	14,392
Surgical only	6,088	6,062	8,361	2,590	2,160	n.a.	646	343	26,250
Combined	2,813	2,341	1,266	1,115	574	n.a.	238	137	8,484
Other/not stated	34	14	15	2	—	3,166	—	—	3,231
Induced	20,550	16,748	11,699	7,211	4,801	1,444	873	707	64,033
Medical only[(a)]	6,329	4,821	4,579	1,196	1,614	n.a.	232	252	19,023
Surgical only	1,267	1,067	1,643	423	577	n.a.	78	72	5,127
Combined	12,632	10,859	5,400	5,562	2,610	n.a.	563	380	38,006
Other/not stated	322	1	77	30	—	1,444	—	3	1,877
No labour	12,930	10,524	9,749	5,222	2,780	644	763	522	43,134
Not stated	1	—	—	—	—	159	8	—	168
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**
					Per cent				
Spontaneous	60.3	56.4	57.1	50.5	56.0	58.5	65.7	64.2	57.6
No augmentation	44.0	37.1	32.3	29.2	34.4	n.a.	39.0	45.6	36.8
Medical only[(a)]	5.7	5.8	5.6	6.6	5.8	n.a.	8.3	4.7	5.7
Surgical only	7.2	9.7	16.7	10.3	12.5	n.a.	13.5	10.0	10.4
Combined	3.3	3.7	2.5	4.4	3.3	n.a.	5.0	4.0	3.4
Other/not stated	0.0	0.0	0.0	0.0	—	58.5	—	—	1.3
Induced	24.4	26.8	23.4	28.7	27.9	26.7	18.2	20.6	25.3
Medical only[(a)]	7.5	7.7	9.1	4.8	9.4	n.a.	4.8	7.3	7.5
Surgical only	1.5	1.7	3.3	1.7	3.3	n.a.	1.6	2.1	2.0
Combined	15.0	17.4	10.8	22.1	15.1	n.a.	11.7	11.1	15.0
Other/not stated	0.4	0.0	0.2	0.1	—	26.7	—	0.1	0.7
No labour	15.3	16.8	19.5	20.8	16.1	11.9	15.9	15.2	17.1
Not stated	0.0	—	—	—	—	2.9	0.2	—	0.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Includes use of oxytocin and/or prostaglandins.

n.a. Data for Tas on augmentation and induction not available in the required format.

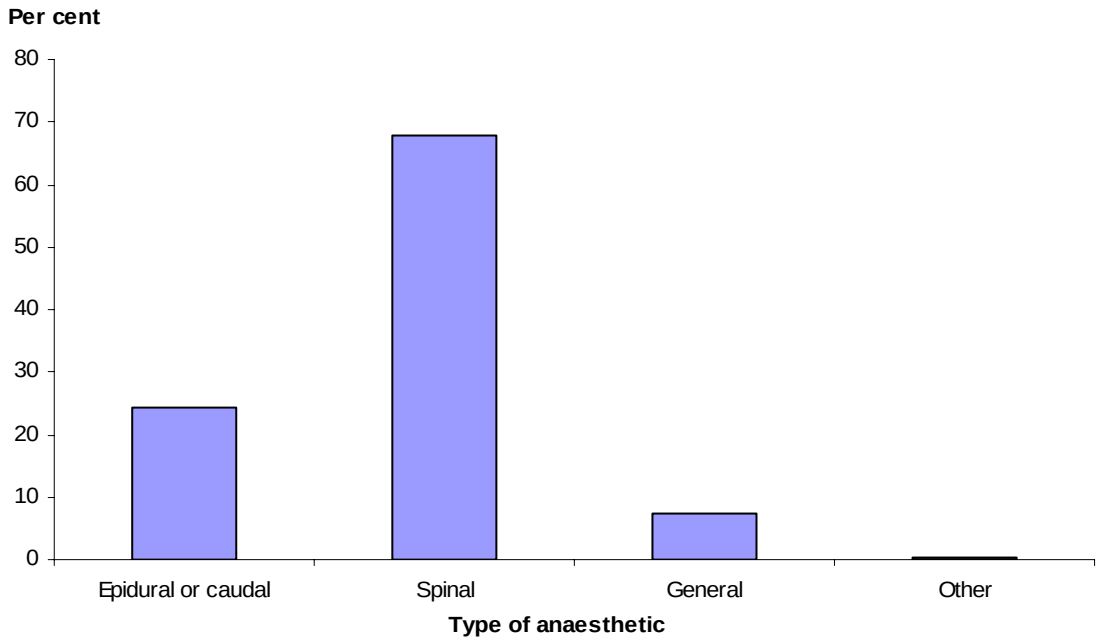
Anaesthetic for operative deliveries

Table 3.16 presents types of anaesthetic administered in 2004 for operative deliveries, including forceps, vacuum extraction and caesarean section deliveries. For these data, the type of anaesthetic administered is coded hierarchically, with local anaesthetic being the lowest order and general anaesthetic being the highest order. If more than one type of

anaesthetic was administered, the highest order type in the hierarchy is coded. Although this data element only includes anaesthetics administered for the birth, some states and territories may include anaesthetics administered for labour under this item, and this may be reflected in the differences reported among the states and territories.

In 2004, at least 31.2% of women having operative deliveries had an epidural or caudal anaesthetic administered, and at least 50.8% had a spinal anaesthetic. A general anaesthetic was administered for 5.5% of operative deliveries (Table 3.16).[3]

General anaesthetic was used in 7.4% of caesarean section deliveries in 2004 (Figure 3.3), compared with 0.2% of instrumental vaginal deliveries. An epidural or caudal anaesthetic was administered for at least 24.3% of caesarean section deliveries and at least 50.1% of instrumental vaginal deliveries. A spinal anaesthetic was administered in at least 67.9% of caesarean section deliveries, and in only 4.0% of instrumental vaginal deliveries. At least 12.8% of women having an instrumental delivery had a local anaesthetic to the perineum, while at least 6.9% had a pudendal administered.



Source: Table A1.3.

Figure 3.3: Type of anaesthetic for caesarean section deliveries, 2004 (per cent)

3 All figures in this section exclude NSW and ACT.

Table 3.16: Women who gave birth and had operative deliveries[(a)] by type of anaesthetic administered and state and territory, 2004

Type of anaesthetic	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
					Number				
None	n.a.	2,271	1,500	324	265	183	n.a.	84	4,627
Local anaesthetic to perineum	n.a.	926	661	403	320	—	n.a.	49	2,359
Pudendal	n.a.	773	144	190	145	—	n.a.	25	1,277
Epidural or caudal	n.a.	7,194	4,762	5,958	2,658	540	n.a.	288	21,400
Spinal	n.a.	14,206	11,425	3,887	3,666	988	n.a.	605	34,777
General	n.a.	1,377	1,178	497	458	130	n.a.	125	3,765
Other	n.a.	1	1	10	11	[(b)]151	n.a.	[(c)]89	263
Not stated	n.a.	3	—	—	—	20	n.a.	—	23
Total	**n.a.**	**26,751**	**19,671**	**11,269**	**7,523**	**2,012**	**n.a.**	**1,265**	**68,491**
					Per cent				
None	n.a.	8.5	7.6	2.9	3.5	9.1	n.a.	6.6	6.8
Local anaesthetic to perineum	n.a.	3.5	3.4	3.6	4.3	—	n.a.	3.9	3.4
Pudendal	n.a.	2.9	0.7	1.7	1.9	—	n.a.	2.0	1.9
Epidural or caudal	n.a.	26.9	24.2	52.9	35.3	26.8	n.a.	22.8	31.2
Spinal	n.a.	53.1	58.1	34.5	48.7	49.1	n.a.	47.8	50.8
General	n.a.	5.1	6.0	4.4	6.1	6.5	n.a.	9.9	5.5
Other	n.a.	0.0	0.0	0.1	0.1	[(b)]7.5	n.a.	[(c)]7.0	0.4
Not stated	n.a.	0.0	—	—	—	1.0	n.a.	—	0.0
Total	**n.a.**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**n.a.**	**100.0**	**100.0**

(a) Operative deliveries include forceps, vacuum extraction and caesarean section.

(b) Includes local anaesthetic to perineum and pudendal anaesthetic.

(c) NT reported that the 'Other' category includes the technique of combined spinal-epidural.

n.a. Data for NSW not available in the required format. Data not available for ACT.

Note: A hierarchical coding system is used for this item, starting with a local anaesthetic, up to a systemic general anaesthetic. If more than one type of anaesthetic was administered, the highest order type in the hierarchy is coded.

Presentation at birth

Data are included in this section by mother; for multiple births, the presentation at birth of the first born baby is used. Table 4.10 provides the presentation for each individual baby by plurality.

In 2004, the predominant presentation at birth was vertex, occurring for 94.7% of all women who gave birth. Breech presentation occurred for 4.4% of mothers, ranging from 4.0% to 4.7% among the jurisdictions. Face or brow presentation occurred for 0.2% of mothers, while other presentations accounted for 0.5% (Table 3.17).

Table 3.17: Women who gave birth by presentation at birth and state and territory, 2004

Presentation	NSW	Vic	Qld	WA	SA	Tas	ACT[a]	NT	Australia
					Number				
Vertex	80,110	58,935	47,497	23,858	16,221	[b]5,135	4,535	3,251	239,542
Breech	3,581	2,922	2,238	1,077	803	219	226	160	11,226
Face	97	121	29	22	16	—	<5	<4	290
Brow	95	93	21	39	27	—	n.p.	<4	287
Other[c]	356	355	251	115	128	54	26	21	1,306
Not stated	50	117	15	—	33	5	—	—	220
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**
					Per cent				
Vertex	95.0	94.2	94.9	95.0	94.2	[b]94.9	94.5	94.6	94.7
Breech	4.2	4.7	4.5	4.3	4.7	4.0	4.7	4.7	4.4
Face	0.1	0.2	0.1	0.1	0.1	—	n.p.	n.p.	0.1
Brow	0.1	0.1	0.0	0.2	0.2	—	n.p.	n.p.	0.1
Other[c]	0.4	0.6	0.5	0.5	0.7	1.0	0.5	0.6	0.5
Not stated	0.1	0.2	0.0	—	0.2	0.1	—	—	0.1
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the percentage of breech presentation for ACT residents who gave birth in the ACT was 4.0%.

(b) Includes face and brow presentations.

(c) Includes shoulder/transverse and compound presentations.

n.p. Data not published to maintain confidentiality of small numbers.

Note: For multiple births, the presentation of the first born baby was used. For one multiple birth in NSW, the presentation of the second born baby was used.

Method of birth

Data are presented in this section by mother; for multiple births, the method of birth of the first born baby is presented. Table 4.11 presents method of birth data for each individual baby by plurality.

Vaginal births

Of all women who gave birth in 2004, 59.2% had a spontaneous vaginal birth. The proportion of spontaneous vaginal births ranged from 54.8% in Western Australia to 62.4% in the Northern Territory (Table 3.18). Vaginal breech birth occurred in 0.4% of mothers in 2004, decreasing over the past 10 years from 0.9% in 1995.

Approximately 1 in 9 mothers (11.0%) had an assisted vaginal delivery where either forceps or vacuum extraction was used. The proportions of these instrumental deliveries varied among the states and territories, from 7.9% in Queensland to 14.5% in the Australian Capital Territory. Forceps delivery occurred for 3.9% of mothers and was most common in Victoria (6.4%). Deliveries by vacuum extraction accounted for 7.1% nationally, ranging from 6.1% in Queensland to 9.7% in Western Australia (Table 3.18).

Caesarean sections

There were 74,300 caesarean sections performed in 2004, accounting for 29.4% of all women who gave birth. This equalled a rate of 293.8 per 1,000 mothers. Of these, 17.1% were without labour, while 12.3% were with labour.

The proportion of caesarean section deliveries varied by state and territory, from 26.6% in Tasmania to 32.4% in Western Australia. Three states, Queensland, Western Australia and South Australia, recorded caesarean section rates (percentage) above 31% (Table 3.18).

Caesarean section rates increase with maternal age. In 2004, caesarean section rates ranged from 16.7% for mothers aged less than 20 years to 46.0% for mothers aged 40 years and older.

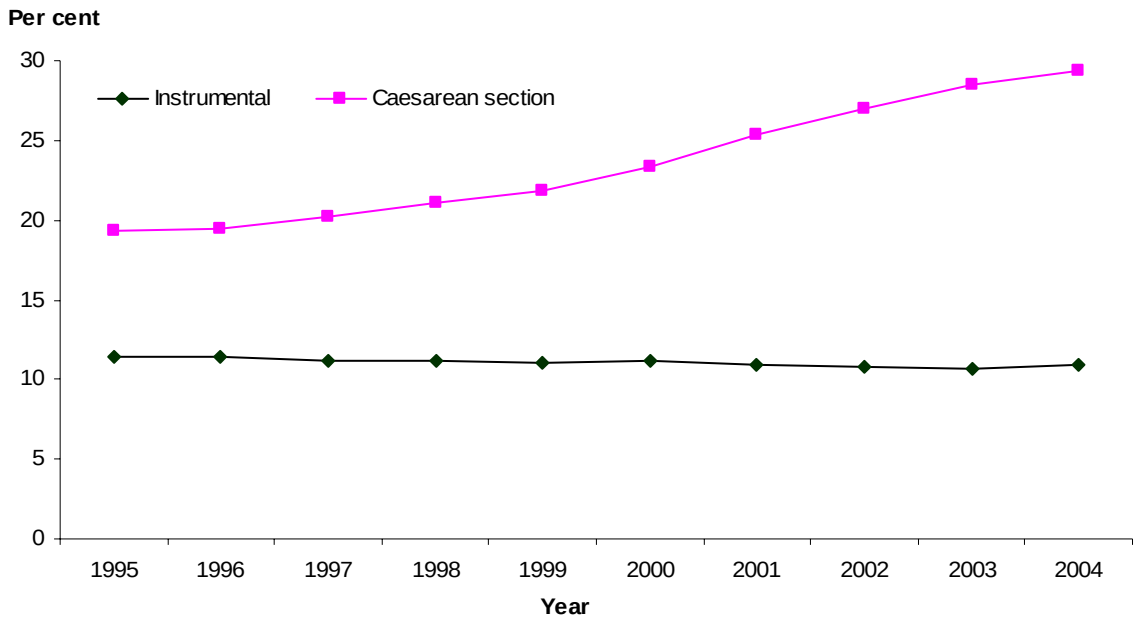
Table 3.18: Women who gave birth by method of birth and state and territory, 2004

Method of birth	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Australia
					Number				
Spontaneous vaginal	52,366	35,483	30,176	13,752	9,631	3,350	2,788	2,146	149,692
Forceps	2,762	4,017	937	697	866	174	237	64	9,754
Vacuum extraction	5,902	4,319	3,037	2,444	1,222	397	457	213	17,991
Vaginal breech	348	302	184	90	74	13	23	26	1,060
Caesarean section	22,902	18,415	15,697	8,128	5,435	1,441	1,294	988	74,300
Labour	9,972	7,891	5,952	2,906	2,655	652	531	466	31,025
No labour	12,929	10,524	9,745	5,222	2,780	643	763	522	43,128
Not stated	1	—	—	—	—	146	—	—	147
Other	—	—	18	—	—	36	—	—	54
Not stated	9	7	2	—	—	2	—	—	20
Total	**84,289**	**62,543**	**50,051**	**25,111**	**17,228**	**5,413**	**4,799**	**3,437**	**252,871**
					Per cent				
Spontaneous vaginal	62.1	56.7	60.3	54.8	55.9	61.9	58.1	62.4	59.2
Forceps	3.3	6.4	1.9	2.8	5.0	3.2	4.9	1.9	3.9
Vacuum extraction	7.0	6.9	6.1	9.7	7.1	7.3	9.5	6.2	7.1
Vaginal breech	0.4	0.5	0.4	0.4	0.4	0.2	0.5	0.8	0.4
Caesarean section	27.2	29.4	31.4	32.4	31.5	26.6	27.0	28.7	29.4
Labour	11.8	12.6	11.9	11.6	15.4	12.0	11.1	13.6	12.3
No labour	15.3	16.8	19.5	20.8	16.1	11.9	15.9	15.2	17.1
Not stated	0.0	—	—	—	—	2.7	—	—	0.1
Other	—	—	0.0	—	—	0.7	—	—	0.0
Not stated	0.0	0.0	0.0	—	—	0.0	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages.

Note: For multiple births, the method of birth of the first born baby was used. For one multiple birth in NSW, the method of birth of the second born baby was used.

The caesarean section rate has continued to show an overall upward trend over the last 10 years. The proportion of women having caesarean sections has increased from 19.3% in 1995 to 29.4% in 2004, and the proportion of instrumental deliveries has remained stable, at around 11% throughout this period (Figure 3.4).



Source: Table A1.4.

Figure 3.4: Caesarean section and instrumental deliveries, 1995–2004 (per cent)

Method of birth and Indigenous status

Mothers who identified as being of Aboriginal or Torres Strait Islander origin were more likely than non-Indigenous mothers to have a spontaneous vaginal birth (70.5% compared with 58.7%) and less likely to have assisted vaginal deliveries (forceps or vacuum extraction). Aboriginal or Torres Strait Islander mothers also had a higher rate of vaginal breech births than non-Indigenous mothers (0.9% compared with 0.4%). The caesarean section rate of 23.3% for mothers who identified as Aboriginal or Torres Strait Islander was less than that for non-Indigenous mothers (29.7%) (Table 3.19).[4]

4 These figures exclude Tas.

Table 3.19: Women who gave birth by Indigenous status, method of birth and state and territory, 2004

Indigenous status[(a)]/ method of birth	NSW	Vic	Qld	WA	SA	Tas	ACT[(c)]	NT	Total
Indigenous					**Number**				
Spontaneous vaginal	1,647	309	1,989	1,070	306	n.a.	46	908	6,275
Assisted vaginal[(b)]	134	n.p.	95	89	n.p.	n.a.	11	69	463
Vaginal breech	16	<4	25	17	n.p.	n.a.	—	17	82
Caesarean section	511	91	653	329	140	n.a.	16	338	2,078
Other	—	—	5	—	—	n.a.	—	—	5
Not stated	—	1	—	—	—	n.a.	—	—	1
Total	**2,308**	**435**	**2,767**	**1,505**	**484**	**n.a.**	**73**	**1,332**	**8,904**
					Per cent				
Spontaneous vaginal	71.4	71.0	71.9	71.1	63.2	n.a.	63.0	68.2	70.5
Assisted vaginal[(b)]	5.8	n.p.	3.4	5.9	n.p.	n.a.	15.1	5.2	5.2
Vaginal breech	0.7	n.p.	0.9	1.1	n.p.	n.a.	—	1.3	0.9
Caesarean section	22.1	20.9	23.6	21.9	28.9	n.a.	21.9	25.4	23.3
Other	—	—	0.2	—	—	n.a.	—	—	0.1
Not stated	—	0.2	—	—	—	n.a.	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**n.a.**	**100.0**	**100.0**	**100.0**
Non-Indigenous					**Number**				
Spontaneous vaginal	50,704	35,173	28,186	12,682	9,325	n.a.	2,730	1,232	140,032
Assisted vaginal[(b)]	8,529	8,281	3,879	3,052	2,054	n.a.	682	207	26,684
Vaginal breech	332	297	159	73	70	n.a.	23	9	963
Caesarean section	22,375	18,323	15,041	7,799	5,295	n.a.	1,276	648	70,757
Other	—	—	13	—	—	n.a.	—	—	13
Not stated	9	6	2	—	—	n.a.	—	—	17
Total	**81,949**	**62,080**	**47,280**	**23,606**	**16,744**	**n.a.**	**4,711**	**2,096**	**238,466**
					Per cent				
Spontaneous vaginal	61.9	56.7	59.6	53.7	55.7	n.a.	57.9	58.8	58.7
Assisted vaginal[(b)]	10.4	13.3	8.2	12.9	12.3	n.a.	14.5	9.9	11.2
Vaginal breech	0.4	0.5	0.3	0.3	0.4	n.a.	0.5	0.4	0.4
Caesarean section	27.3	29.5	31.8	33.0	31.6	n.a.	27.1	30.9	29.7
Other	—	—	0.0	—	—	n.a.	—	—	0.0
Not stated	0.0	0.0	0.0	—	—	n.a.	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**n.a.**	**100.0**	**100.0**	**100.0**

(a) Indigenous status 'Not stated' not included.

(b) Assisted vaginal birth includes forceps and vacuum extraction.

(c) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, 54 of the 73 Aboriginal or Torres Strait Islander women who gave birth in the ACT in 2004 were ACT residents.

n.a. Data for Tas were not available because the 'Not stated' category for Indigenous status was not able to be distinguished from the 'Neither Aboriginal nor Torres Strait Islander origin' category.

n.p. Data not published to maintain confidentiality of small numbers.

Note: For multiple births, the method of birth of the first born baby was used. For one multiple birth in NSW, the method of birth of the second born baby was used.

Method of birth and previous caesarean section

In 2004, 14.6% of mothers who had ever previously had a caesarean section had a spontaneous vaginal birth, and 3.5% had an assisted vaginal birth. Repeat caesarean sections occurred for 81.6% of mothers with a history of caesarean section, and ranged from 74.5% in the Northern Territory to 86.1% in Western Australia[5] (Table 3.20).

Table 3.20: Multiparous mothers who have had a previous caesarean section by current method of birth and state and territory, 2004

Method of birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
					Number				
Spontaneous vaginal	1,814	1,115	1,234	384	351	n.a.	n.a.	121	5,019
Assisted vaginal[(a)]	436	351	185	112	111	n.a.	n.a.	18	1,213
Caesarean section	8,639	7,253	6,457	3,155	2,140	n.a.	n.a.	408	28,052
Other	32	24	26	12	9	n.a.	n.a.	1	104
Not stated	2	1	—	—	—	n.a.	n.a.	—	3
Total	**10,923**	**8,744**	**7,902**	**3,663**	**2,611**	**n.a.**	**n.a.**	**548**	**34,391**
					Per cent				
Spontaneous vaginal	16.6	12.8	15.6	10.5	13.4	n.a.	n.a.	22.1	14.6
Assisted vaginal[(a)]	4.0	4.0	2.3	3.1	4.3	n.a.	n.a.	3.3	3.5
Caesarean section	79.1	82.9	81.7	86.1	82.0	n.a.	n.a.	74.5	81.6
Other	0.3	0.3	0.3	0.3	0.3	n.a.	n.a.	0.2	0.3
Not stated	0.0	0.0	—	—	—	n.a.	n.a.	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**n.a.**	**n.a.**	**100.0**	**100.0**

(a) Assisted vaginal birth includes forceps and vacuum extraction.

n.a. Data not available.

Note: For multiple births, the method of birth of the first born baby was used. For one multiple birth in NSW, the method of birth of the second born baby was used.

Perineal status after vaginal birth

All states and territories collected information on the status of the perineum after birth; however, data from Tasmania were provided in a format that meant they were not able to be published here. In 2004, approximately 1 in 3 mothers (34.3%) had intact perineums following vaginal births. A first or second degree laceration or graze was reported in 44.2% of vaginal births (Table 3.21).

In 1 in 100 vaginal births (1.3%), a third or fourth degree laceration of the perineum was reported. This proportion varied slightly among the states and territories, from 1.1% in Victoria and Queensland to 1.9% in the Australian Capital Territory. An episiotomy was

5 These figures exclude Tas and ACT.

performed for 15.7% of vaginal births, with the highest rate being recorded in Victoria (20.8%). A combined laceration and episiotomy occurred in 1.5% of women who had a vaginal birth, giving a total of 17.2% of women who had a vaginal birth in 2004 having an episiotomy.

Table 3.21: Women who gave birth vaginally by perineal status and state and territory, 2004

Perineal status	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
					Number				
Episiotomy	8,487	9,174	4,248	2,739	2,024	n.a.	438	213	27,323
Intact	16,172	18,231	13,137	6,570	3,594	n.a.	1,153	1,095	59,952
1st degree laceration/ vaginal graze	17,427	6,116	7,044	2,815	1,733	n.a.	577	593	36,305
2nd degree laceration	14,952	9,241	7,309	3,636	4,000	n.a.	1,162	491	40,791
3rd/4th degree laceration	1,027	472	378	206	147	n.a.	66	31	2,327
Combined laceration and episiotomy	515	883	356	430	294	n.a.	108	26	2,612
Other	2,786	—	[(a)]1,862	587	—	n.a.	—	—	5,235
Not stated	12	4	—	—	1	n.a.	1	—	18
Total	**61,378**	**44,121**	**34,334**	**16,983**	**11,793**	**n.a.**	**3,505**	**2,449**	**174,563**
					Per cent				
Episiotomy	13.8	20.8	12.4	16.1	17.2	n.a.	12.5	8.7	15.7
Intact	26.3	41.3	38.3	38.7	30.5	n.a.	32.9	44.7	34.3
1st degree laceration/ vaginal graze	28.4	13.9	20.5	16.6	14.7	n.a.	16.5	24.2	20.8
2nd degree laceration	24.4	20.9	21.3	21.4	33.9	n.a.	33.2	20.0	23.4
3rd/4th degree laceration	1.7	1.1	1.1	1.2	1.2	n.a.	1.9	1.3	1.3
Combined laceration and episiotomy	0.8	2.0	1.0	2.5	2.5	n.a.	3.1	1.1	1.5
Other	4.5	—	[(a)]5.4	3.5	—	n.a.	—	—	3.0
Not stated	0.0	0.0	—	—	0.0	n.a.	0.0	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**n.a.**	**100.0**	**100.0**	**100.0**

(a) Includes cases where the perineum was intact but a graze was reported.

n.a. Data for Tas not available in the required format.

Note: For multiple births, the perineal status after the birth of the first born baby was used. For one multiple birth in NSW, the perineal status after the birth of the second born baby was used.

Women who gave birth in hospitals

Hospitals and birth centres

Hospitals and birth centres were categorised by the number of women who gave birth in them in 2004. The categories vary from those with very few births each year to those with more than 2,000 births, and depend on geographical location, the population of the region, and policies regarding maternity services. Table 3.22 presents the number of hospital or birth

centres in each category by state and territory. In 2004, 37.8% of the hospitals or birth centres had 100 or fewer women who gave birth, and 7.8% had in excess of 2,000 women who gave birth (Table 3.22). There has been a decrease in the number of hospitals or birth centres with 1–100 women who gave birth since 2003, when there were 188 hospitals or birth centres in this group.

Table 3.22: Hospitals and birth centres by number of women who gave birth and state and territory, 2004

Number of women who gave birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
1–100	36	31	60	9	25	3	—	1	165
101–500	37	25	25	18	15	2	—	2	124
501–1,000	22	13	10	10	5	2	1	2	65
1,001–2,000	15	9	11	4	3	2	3	1	48
2,001 and over	13	10	7	2	2	—	—	—	34
Total	**123**	**88**	**113**	**43**	**50**	**9**	**4**	**6**	**436**
					Per cent				
1–100	29.3	35.2	53.1	20.9	50.0	33.3	—	16.7	37.8
101–500	30.1	28.4	22.1	41.9	30.0	22.2	—	33.3	28.4
501–1,000	17.9	14.8	8.8	23.3	10.0	22.2	25.0	33.3	14.9
1,001–2,000	12.2	10.2	9.7	9.3	6.0	22.2	75.0	16.7	11.0
2,001 and over	10.6	11.4	6.2	4.7	4.0	—	—	—	7.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Hospital sector

'Hospital sector' indicates whether a patient was admitted to a public or a private hospital. Of women who gave birth in hospitals in 2004, the proportion in private hospitals was 31.0%, and ranged from 19.2% in the Northern Territory to 41.1% in Western Australia (Table 3.23).

Table 3.23: Women who gave birth in hospital by hospital sector and state and territory, 2004

Hospital sector	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Public	59,912	41,596	33,493	14,509	11,510	3,172	2,770	2,704	169,666
Private	21,937	19,329	15,759	10,130	4,684	2,135	1,729	641	76,344
Not stated	—	—	—	2	—	—	—	—	2
Total	**81,849**	**60,925**	**49,252**	**24,641**	**16,194**	**5,307**	**4,499**	**3,345**	**246,012**
					Per cent				
Public	73.2	68.3	68.0	58.9	71.1	59.8	61.6	80.8	69.0
Private	26.8	31.7	32.0	41.1	28.9	40.2	38.4	19.2	31.0
Not stated	—	—	—	0.0	—	—	—	—	—
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Admitted patient elected accommodation status

'Admitted patient elected accommodation status' is the accommodation chargeable status elected by a patient on admission to hospital. Of women who gave birth in hospitals in 2004, the proportion who elected private status (i.e. elected to be treated as a private patient) was 34.1%, and ranged from 21.6% in the Northern Territory to 41.1% in the Australian Capital Territory (Table 3.24).

Table 3.24: Women who gave birth in hospital by admitted patient elected accommodation status and state and territory, 2004

Admitted patient elected accommodation status	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
					Number				
Public	52,616	38,323	32,267	14,743	10,502	3,548	2,649	2,616	157,264
Private	25,736	22,602	16,985	8,596	5,692	1,755	1,850	724	83,940
Not stated	3,497	—	—	1,302	—	4	—	5	4,808
Total	**81,849**	**60,925**	**49,252**	**24,641**	**16,194**	**5,307**	**4,499**	**3,345**	**246,012**
					Per cent				
Public	64.3	62.9	65.5	59.8	64.9	66.9	58.9	78.2	63.9
Private	31.4	37.1	34.5	34.9	35.1	33.1	41.1	21.6	34.1
Not stated	4.3	—	—	5.3	—	0.1	—	0.1	2.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Method of birth and hospital sector

Method of birth for women who gave birth in hospitals was compared by hospital sector and state and territory (Table 3.25). Women who gave birth in public hospitals reported higher levels of spontaneous vaginal birth than those in private hospitals (63.5% compared with 46.1%). Private hospital patients were more likely than public hospital patients to have vaginal births requiring forceps (5.7% compared with 3.2%) or vacuum extraction (9.5% compared with 6.3%), and less likely to have vaginal breech births (0.2% compared with 0.5%) (Table 3.25).

Of births in both public and private hospitals, the highest rates of forceps deliveries occurred in Victoria (5.1% and 9.9% respectively). Vacuum extraction was most common for public hospitals in the Australian Capital Territory, and for private hospitals in Western Australia.

Of women who gave birth in hospitals in Australia in 2004, 30.2% had a caesarean section delivery. The caesarean section rate of 38.4% for women who were in private hospitals was higher than the rate of 26.5% for those in public hospitals. Of mothers in private hospitals, 42.0% or more had their babies delivered by caesarean section in Queensland (44.8%), Western Australia (42.0%) and South Australia (42.0%) (Table 3.25).

Caesarean section rates were higher in private hospitals compared with public hospitals across all age groups. Figure 3.5 shows the differences by age group and hospital sector. The caesarean section rate for mothers aged 35–39 years who gave birth in private hospitals was 44.3% compared with 34.3% for those in public hospitals. For mothers aged 40 years or more, over half of mothers in private hospitals had a caesarean section (53.7%) compared with 40.9% of those in public hospitals.

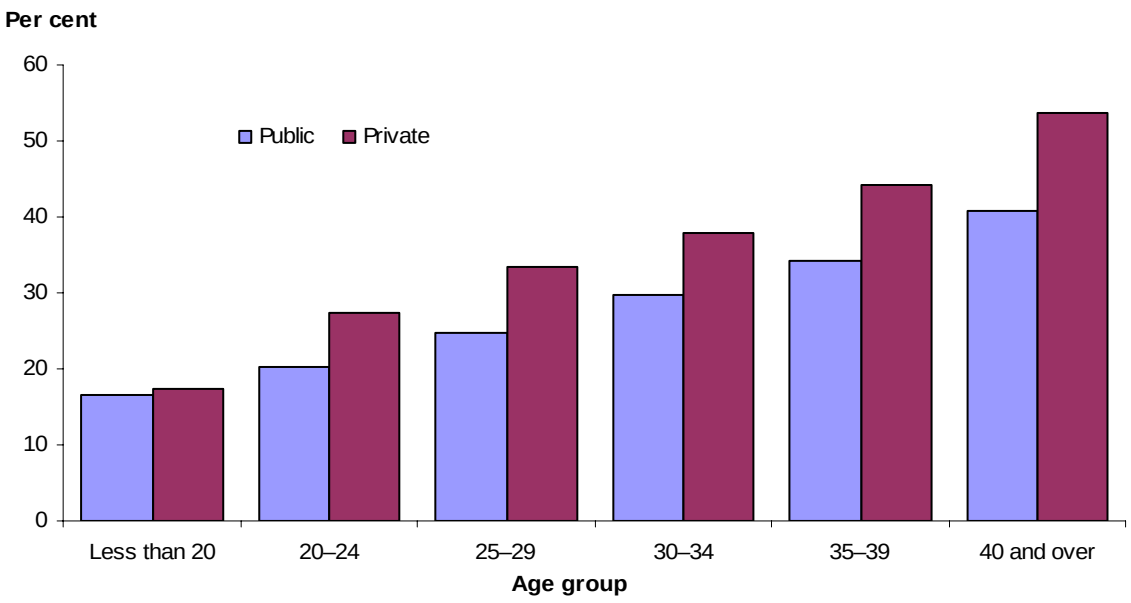
Table 3.25: Women who gave birth in hospital by method of birth, hospital sector and state and territory, 2004

Hospital sector/ method of birth	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Australia
Public					**Number**				
Spontaneous vaginal	38,948	25,088	22,561	9,110	6,575	2,008	1,658	1,779	107,727
Forceps	1,665	2,108	424	431	504	68	132	34	5,366
Vacuum extraction	3,785	2,672	1,712	1,019	901	268	237	137	10,731
Vaginal breech	296	211	150	79	63	7	17	20	843
Caesarean section	15,218	11,516	8,632	3,870	3,467	808	726	734	44,971
Other	—	—	14	—	—	13	—	—	27
Not stated	—	1	—	—	—	—	—	—	1
Total	**59,912**	**41,596**	**33,493**	**14,509**	**11,510**	**3,172**	**2,770**	**2,704**	**169,666**
					Per cent				
Spontaneous vaginal	65.0	60.3	67.4	62.8	57.1	63.3	59.9	65.8	63.5
Forceps	2.8	5.1	1.3	3.0	4.4	2.1	4.8	1.3	3.2
Vacuum extraction	6.3	6.4	5.1	7.0	7.8	8.4	8.6	5.1	6.3
Vaginal breech	0.5	0.5	0.4	0.5	0.5	0.2	0.6	0.7	0.5
Caesarean section	25.4	27.7	25.8	26.7	30.1	25.5	26.2	27.1	26.5
Other	—	—	0.0	—	—	0.4	—	—	0.0
Not stated	—	0.0	—	—	—	—	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Private					**Number**				
Spontaneous vaginal	11,007	8,796	6,825	4,176	2,035	1,252	834	280	35,205
Forceps	1,091	1,907	513	266	359	n.p.	105	n.p.	4,372
Vacuum extraction	2,110	1,636	1,324	1,424	312	126	217	76	7,225
Vaginal breech	38	86	29	7	10	<5	5	<4	180
Caesarean section	7,684	6,899	7,065	4,257	1,968	628	568	254	29,323
Other	—	—	3	—	—	23	—	—	26
Not stated	7	5	—	—	—	1	—	—	13
Total	**21,937**	**19,329**	**15,759**	**10,130**	**4,684**	**2,135**	**1,729**	**641**	**76,344**
					Per cent				
Spontaneous vaginal	50.2	45.5	43.3	41.2	43.4	58.6	48.2	43.7	46.1
Forceps	5.0	9.9	3.3	2.6	7.7	n.p.	6.1	n.p.	5.7
Vacuum extraction	9.6	8.5	8.4	14.1	6.7	5.9	12.6	11.9	9.5
Vaginal breech	0.2	0.4	0.2	0.1	0.2	n.p.	0.3	n.p.	0.2
Caesarean section	35.0	35.7	44.8	42.0	42.0	29.4	32.9	39.6	38.4
Other	—	—	0.0	—	—	1.1	—	—	0.0
Not stated	0.0	0.0	—	—	—	0.0	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages.

n.p. Data not published to maintain confidentiality of small numbers.

Note: For multiple births, the method of birth of the first born baby was used. For one multiple birth in NSW, the method of birth of the second born baby was used.



Source: Table A1.5.

Figure 3.5: Caesarean sections, by maternal age and hospital sector, 2004 (per cent)

Length of stay in hospital

Antenatal length of stay

Two-thirds of women (64.7%) gave birth within a day of admission to hospital (Table 3.26). The proportion of women who gave birth within 2 days of admission was 92.5%. One in 100 mothers were hospitalised for 7 days or more immediately before giving birth (1.0%).

Table 3.26: Women who gave birth in hospital by length of antenatal stay and state and territory, 2004

Length of stay	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Less than 1 day	51,132	42,302	34,007	15,452	10,043	1,590	2,641	2,114	159,281
1 day	22,828	15,564	12,767	6,816	5,133	2,795	1,488	878	68,269
2–6 days	4,108	2,443	2,077	964	787	819	301	302	11,801
7–13 days	535	305	247	136	115	28	34	37	1,437
14 or more days	333	311	154	111	116	15	35	14	1,089
Not stated	2,913	—	—	1,162	—	60	—	—	4,135
Total	**81,849**	**60,925**	**49,252**	**24,641**	**16,194**	**5,307**	**4,499**	**3,345**	**246,012**
					Per cent				
Less than 1 day	62.5	69.4	69.0	62.7	62.0	30.0	58.7	63.2	64.7
1 day	27.9	25.5	25.9	27.7	31.7	52.7	33.1	26.2	27.8
2–6 days	5.0	4.0	4.2	3.9	4.9	15.4	6.7	9.0	4.8
7–13 days	0.7	0.5	0.5	0.6	0.7	0.5	0.8	1.1	0.6
14 or more days	0.4	0.5	0.3	0.5	0.7	0.3	0.8	0.4	0.4
Not stated	3.6	—	—	4.7	—	1.1	—	—	1.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Postnatal length of stay

The length of the mother's postnatal stay in hospital may be influenced by factors such as the method of birth, maternal medical and obstetric complications, neonatal morbidity and specific hospital policies of early discharge. In 2004, the median postnatal hospital stay for mothers was 4.0 days. Queensland and Tasmania reported a shorter median length of stay of 3.0 days (Table 3.27).

The trend towards shorter postnatal stays in hospital is reflected by the higher proportion of mothers who were discharged less than 5 days after giving birth. In 2004, 11.2% of mothers were discharged less than 2 days after giving birth, and 60.5% of mothers were discharged between 2 and 4 days after giving birth. This compares with 4.3% and 30.8% respectively, in 1995. Relatively more mothers in Queensland (78.9%) and Victoria (75.7%) had stays of less than 5 days in 2004. Longer lengths of stay (of 5 or more days) were relatively more common in Western Australia (37.4%).

Table 3.27: Women who gave birth in hospital[(a)] by length of postnatal stay and state and territory, 2004

Length of stay	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Median (days)	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	4.0
					Number				
Less than 1 day	1,634	900	1,442	436	302	168	90	69	5,041
1 day	7,739	3,246	6,893	1,743	1,019	505	332	293	21,770
2 days	12,965	10,130	9,559	3,297	2,222	989	670	520	40,352
3 days	15,767	12,758	9,858	4,099	2,993	1,103	824	619	48,021
4 days	17,530	17,755	10,420	4,687	3,564	1,026	926	592	56,500
5 days	11,644	9,726	6,668	3,957	3,051	660	793	490	36,989
6 days	5,682	3,258	2,318	2,450	1,376	353	423	242	16,102
7–13 days	3,232	1,319	1,194	2,746	1,021	286	326	303	10,427
14 or more days	113	48	33	64	20	31	5	28	342
Not stated	2,738	—	—	1,162	—	100	—	—	4,000
Total	**79,044**	**59,140**	**48,385**	**24,641**	**15,568**	**5,221**	**4,389**	**3,156**	**239,544**
					Per cent				
Less than 1 day	2.1	1.5	3.0	1.8	1.9	3.2	2.1	2.2	2.1
1 day	9.8	5.5	14.2	7.1	6.5	9.7	7.6	9.3	9.1
2 days	16.4	17.1	19.8	13.4	14.3	18.9	15.3	16.5	16.8
3 days	19.9	21.6	20.4	16.6	19.2	21.1	18.8	19.6	20.0
4 days	22.2	30.0	21.5	19.0	22.9	19.7	21.1	18.8	23.6
5 days	14.7	16.4	13.8	16.1	19.6	12.6	18.1	15.5	15.4
6 days	7.2	5.5	4.8	9.9	8.8	6.8	9.6	7.7	6.7
7–13 days	4.1	2.2	2.5	11.1	6.6	5.5	7.4	9.6	4.4
14 or more days	0.1	0.1	0.1	0.3	0.1	0.6	0.1	0.9	0.1
Not stated	3.5	—	—	4.7	—	1.9	—	—	1.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Only includes mothers who were discharged home, except for WA, which includes all women who gave birth in hospital regardless of their mode of separation.

Mothers in private hospitals had a median postnatal length of stay of 5.0 days in 2004, compared with 3.0 days for those in public hospitals. The proportion of women who gave birth in hospital with a postnatal stay of less than 5 days was 54.0% for those in private hospitals, compared with 81.7% in public hospitals.

Mode of separation from hospital

Nearly all women who gave birth in hospital were discharged to their homes (97.1%). Around 2.8% of mothers were transferred to another hospital (Table 3.28).[6] This usually occurs for continuing care in a hospital located nearer to the mother's place of residence or sometimes for further treatment of complications. These transfers between hospitals occurred more in South Australia (3.9%) and New South Wales (3.4%) than in the other jurisdictions.

Table 3.28: Women who gave birth in hospital by mode of separation and state and territory, 2004

Mode of separation	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
					Number				
Discharge home	79,044	59,140	48,385	n.a.	15,568	5,221	4,389	3,156	214,903
Transfer to another hospital	2,800	1,777	862	n.a.	626	13	110	32	6,220
Died	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	16
Other[(a)]	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	215
Not stated	3	—	—	n.a.	—	14	—	—	17
Total	**81,849**	**60,925**	**49,252**	**n.a.**	**16,194**	**5,307**	**4,499**	**3,345**	**221,371**
					Per cent				
Discharge home	96.6	97.1	98.2	n.a.	96.1	98.4	97.6	94.3	97.1
Transfer to another hospital	3.4	2.9	1.8	n.a.	3.9	0.2	2.4	1.0	2.8
Died	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	0.0
Other[(a)]	n.p.	n.p.	n.p.	n.a.	n.p.	n.p.	n.p.	n.p.	0.1
Not stated	0.0	—	—	n.a.	—	0.3	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**n.a.**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Other may include statistical discharges and transfers to health care accommodation other than acute hospitals.

n.a. Data not available for WA.

n.p. Data not published to maintain confidentiality of small numbers.

Homebirths

In 2004, 589 planned homebirths, representing 0.2% of all women who gave birth, were reported nationally. The highest proportion of homebirths occurred in Western Australia (Table 3.11). It is probable that not all homebirths are reported to the perinatal data collections.

The mean age of mothers who gave birth at home in 2004 was 31.9 years (Table 3.29). The proportion of mothers aged less than 20 years was 1.5%, and the proportion aged 35 years and over was 30.9%. The proportion of mothers who gave birth at home who identified as being of Aboriginal or Torres Strait Islander origin was 0.8%. The largest proportion of women who had a homebirth lived in major cities (67.6%).

6 These figures exclude WA.

Of mothers who gave birth at home, 26.8% had their first baby, and 72.7% were multiparous. The average age of first-time mothers who gave birth at home was 29.8 years. The method of birth was spontaneous vaginal for 98.6% of women who gave birth at home (Table 3.29), and the presentation was vertex for 98.6% of women who gave birth at home.

Table 3.29: Selected characteristics of women who gave birth at home, 2004

Characteristic	Number	Per cent
Women who gave birth	589	. .
Mean maternal age	31.9	. .
Parity		
None	158	26.8
One	218	37.0
Two	111	18.8
Three	58	9.8
Four or more	42	7.1
Remoteness Area of mother's usual residence[(a)]		
Major cities	398	67.6
Inner regional	127	21.6
Outer regional	43	7.3
Remote	12	2.0
Very remote	—	—
Method of birth		
Spontaneous vaginal	581	98.6
Other	8	1.4
Births	592	. .
Birth status		
Live births	592	100.0
Fetal deaths	—	0.0
Sex		
Males	278	47.0
Females	311	52.5
Mean birthweight of live births (g)	3,698	. .

(a) Excludes mothers not usually resident in Australia and those whose state or territory of usual residence was 'Not stated'.

. . Not applicable.

Of babies born at home in 2004, all were liveborn. The mean birthweight of these liveborn babies was 3,698 grams (Table 3.29). The proportion of liveborn babies of low birthweight born at home was 1.5%, and the proportion that were preterm births was 0.3%.

Induced abortion estimate

Summary statistics on induced abortion, estimated using the National Hospital Morbidity Database (NHMD) data and the Medicare data (Table 3.30) and information on the characteristics of patients with induced abortion are presented (Tables 3.31–3.33). The methodology for estimating the number of induced abortions is described in Chapter 2 of the report *Use of routinely collected national data sets for reporting on induced abortion in Australia* (Grayson et al. 2005).

In summary, for induced abortions carried out in Queensland, South Australia and the Northern Territory, separations with a diagnosis of *O04.5–O04.9 Medical abortion, complete or unspecified* and an abortion-related procedure reported to the NHMD are included. Induced abortions must be done in hospitals in these jurisdictions.

For induced abortions carried out in New South Wales, Victoria, Tasmania and the Australian Capital Territory, separations with a diagnosis of *O04.5–O04.9 Medical abortion, complete or unspecified* and an abortion-related procedure reported to the NHMD plus non-hospital Medicare services for MBS-item *35643 Evacuation of the contents of the gravid uterus by curettage or suction curettage* reported to the Medicare data are included. The number of non-hospital Medicare services reported in the Medicare data was increased by 13.1% to adjust for patients who do not claim Medicare (Nickson et al. 2004; Grayson et al. 2005). Under state and territory legislation, induced abortions are undertaken in both hospital and non-hospital facilities in these jurisdictions.

To estimate the number of induced abortions carried out in Western Australia, the age-specific rates of induced abortion calculated for the other states and territories were applied to the female population of Western Australia at 30 June 2004. This is because there were differences in the number of induced abortions in Western Australia recorded in the Western Australian Abortion Notification System (WAANS), the NHMD and the Medicare data. In particular, as with the 2003 data, there was a considerable discrepancy between private patient separations in the NHMD and the number of in-hospital services for MBS-item *35643 Evacuation of the contents of the gravid uterus by curettage or suction curettage*. Adding the number of separations with induced abortion from the NHMD to the number of non-hospital services for MBS-item item *35643 Evacuation of the contents of the gravid uterus by curettage or suction curettage* from the Medicare data would result in possible marked double counting of services.

Abortion-related procedures in the NHMD

For 2004, the third and fourth editions of *The International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification* (ICD-10-AM) were used (NCCH 2002; NCCH 2004). The fourth edition includes a new procedure code *35640-03 Suction curettage of uterus* under block *1265 Curettage of uterus*. The notes for this code indicate that suction curettage for retained products of conception following abortion or labour and delivery is excluded. However, this code was included in the list of abortion-related procedures because there were 15 separations with this procedure code and a diagnosis code of *O04.5–O04.9 Medical abortion, complete or unspecified*.

State-based routinely collected data on induced abortion notifications

All induced abortions performed in South Australia are required to be notified under the Criminal Law Consolidation (Medical Termination of Pregnancy) Regulations 1996 and all induced abortions performed in Western Australia are required to be notified under section

335 (5) (b) and (d) of the *Health Act 1911* (Part XIII). In 2004, there were 4,948 induced abortions notified to the South Australian Abortion Statistics Collection (SAASC) (Chan et al. 2006) and 7,847 induced abortions notified to the Western Australian Abortion Notification System (WAANS) (Straton et al. 2005). These data were not used in the estimate of induced abortion presented in this report because this would require a deviation from the methodology developed for routine national reporting of induced abortion in Australia.

Estimated number of induced abortions

Overall, without adjusting for the estimated 13.1% of patients who receive induced abortion services as private patients but do not claim a Medicare benefit, the estimated number of induced abortions in Australia in 2004 was 79,448 (Table 3.30). After adjusting for these patients, the estimated number of induced abortions in Australia in 2003 was 83,210 (Table 3.30). This adjusted estimate will be used in the remainder of this section.

Table 3.30: Estimated number of induced abortions by state and territory of service provider, 2004

	NSW	Vic	Qld	WA[(a)]	SA[(a)]	Tas	ACT	NT	Total
Estimated number of induced abortions[(b)]	30,606	20,474	12,456	7,901	4,905	n.p.	n.p.	973	79,448
Rate per 1,000 women (age-standardised)[(c)]	21.4	18.8	14.8	18.4	15.9	n.p.	n.p.	20.5	18.4
Estimated number of induced abortions adjusted for patients who do not claim Medicare[(d)]	33,518	20,688	12,456	8,275	4,905	n.p.	n.p.	973	83,210
Rate per 1,000 women (age-standardised)[(c)]	23.4	19.0	14.8	19.3	15.9	n.p.	n.p.	20.5	19.3

(a) Induced abortions performed in WA and SA are required to be notified. In WA induced abortions are notified to the WAANS and in SA they are notified to the SAASC. The estimates presented here for WA and SA are different to the number of induced abortions notified to the WAANS and SAASC.

(b) For induced abortions carried out in Qld, SA and the NT the data include separations with a diagnosis of *O04.5–O04.9 Medical abortion, complete or unspecified* and an abortion-related procedure reported to the NHMD.

For induced abortions carried out in NSW, Vic, Tas and the ACT, the data include separations with a diagnosis of *O04.5–O04.9 Medical abortion, complete or unspecified* and an abortion-related procedure reported to the NHMD (30 separations with a diagnosis of *O06.5–O06.9 Unspecified abortion, complete or unspecified* from a private free-standing day hospital facility(ies) in Victoria were also included) plus non-hospital Medicare services for MBS-item *35643 Evacuation of the contents of the gravid uterus by curettage or suction curettage* reported in the Medicare data.

For induced abortions carried out in WA the age-specific rates of induced abortion calculated for the other states and territories were applied to the female population of Western Australia as at 30 June 2004.

(c) Directly age-standardised. The Australian female population aged 15–44 years for 30 June 2001 was used as the population for which expected rates were calculated. The Australian Bureau of Statistics population estimates for 30 June 2004 for females were used for the observed rates.

(d) For induced abortions carried out in NSW, Vic, Tas and the ACT the number of non-hospital Medicare services for MBS-item *35643 Evacuation of the contents of the gravid uterus by curettage or suction curettage* reported in the Medicare data was increased by 13.1% to adjust for patients who do not claim Medicare.

n.p. Not published.

State and territory of service provider

Data are not presented for the Australian Capital Territory and Tasmania because ACT Health did not give permission for the release of data relating to Australian Capital Territory hospitalisations from the NHMD. The data for Tasmania are not presented to maintain confidentiality for the Australian Capital Territory. The data for these jurisdictions are included in the totals.

The estimated number of induced abortions ranged from 973 in the Northern Territory to 33,518 in New South Wales (Table 3.30).

The highest age-standardised rate of induced abortion for the jurisdictions for which data are presented was in New South Wales (23.4 per 1,000 women) and the lowest rate was in Queensland (14.8 per 1,000 women) (Table 3.30). These rates relate to resident populations, and therefore do not take into account interstate and overseas patient flows.

State and territory of usual residence

Data on the state and territory of the usual residence of the patient (from the NHMD and the Medicare data) are presented in Table 3.31. Data for induced abortions carried out in Western Australia were excluded due to data quality concerns, as explained above. Usual residents of New South Wales had the highest age-standardised induced abortion rate (22.1 per 1,000 women) and usual residents of Tasmania had the lowest age-standardised induced abortion rate (13.1 per 1,000 women). Usual residents of the Australian Capital Territory had the largest proportion of separations treated outside their state or territory of usual residence (38.8%) (Table 3.31).

Table 3.31: Estimated number of induced abortions[(a)] by state and territory of usual residence, 2004

	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total[(b)]
Estimated number of induced abortions	31,619	20,772	13,781	115	4,981	1,247	1,380	941	74,873
% not within state of residence	2.1	2.1	11.2	n.a.	1.8	4.7	38.8	3.2	. .
Age-standardised rate per 1,000 females[(c)]	22.1	19.1	16.4	n.p.	16.1	13.1	17.8	19.8	17.3

(a) For induced abortions carried out in Qld, SA and the NT the data include separations with a diagnosis of *O04.5–O04.9 Medical abortion, complete or unspecified* and an abortion-related procedure reported to the NHMD.

For induced abortions carried out in NSW, Vic, Tas and the ACT, the data include separations with a diagnosis of *O04.5–O04.9 Medical abortion, complete or unspecified* and an abortion-related procedure reported to the NHMD (30 separations with a diagnosis of *O06.5–O06.9 Unspecified abortion, complete or unspecified* from a private free-standing day hospital facility(ies) in Victoria were also included) plus non-hospital Medicare services for MBS-item *35643 Evacuation of the contents of the gravid uterus by curettage or suction curettage* reported in the Medicare data. The number of non-hospital services was increased by 13.1% for these jurisdictions to adjust for patients who do not claim Medicare.

Induced abortions carried out in WA were not included due to data quality concerns.

(b) Includes other territories and excludes overseas residents and unknown state of residence.

(c) Directly age-standardised. The Australian female population aged 15–44 years for 30 June 2001 was used as the population for which expected rates were calculated. The Australian Bureau of Statistics population estimates for 30 June 2004 for females were used for the observed rates. For the total, the numerator for the observed rates excluded induced abortions carried out in WA. The denominator for the observed and expected rates included the WA population.

. . Not applicable.

n.a. Not available.

n.p. Not published because induced abortions carried out in WA were not included, so the rate would only represent WA residents who underwent induced abortions in other jurisdictions.

Remoteness Areas

Data on the Remoteness Area of the usual residence of the patient are presented in Table 3.32. Data for induced abortions carried out in Western Australia were excluded because of data quality concerns, as explained above. In 2004, residents of Major cities accounted for the highest number of induced abortions (56,877, 76.0%) and residents of Very remote areas accounted for the lowest number of induced abortions (251, 0.3%) (Table 3.32).

The highest age-standardised induced abortion rate was for usual residents of Major cities (18.9 per 1,000 women). Usual residents of Very remote areas had the lowest age-standardised induced abortion rate (6.2 per 1,000 women) (Table 3.32).

Table 3.32: Estimated number of induced abortions[(a)] by Remoteness Area of usual residence[(b)], 2004

	Major cities	Inner Regional	Outer regional	Remote	Very remote	Total[(c)]
Estimated number of induced abortions	56,877	11,977	5,030	544	251	74,873
Age-standardised rate per 1,000 women[(d)]	18.9	15.1	13.3	8.7	6.2	17.3

(a) For induced abortions carried out in Qld, SA and the NT the data include separations with a diagnosis of *O04.5–O04.9 Medical abortion, complete or unspecified* and an abortion-related procedure reported to the NHMD.

For induced abortions carried out in NSW, Vic, Tas and the ACT, the data include separations with a diagnosis of *O04.5–O04.9 Medical abortion, complete or unspecified* and an abortion-related procedure reported to the NHMD (30 separations with a diagnosis of *O06.5–O06.9 Unspecified abortion, complete or unspecified* from a private free-standing day hospital facility(ies) in Victoria were also included) plus non-hospital Medicare services for MBS-item *35643 Evacuation of the contents of the gravid uterus by curettage or suction curettage* reported in the Medicare data. The number of non-hospital services was increased by 13.1% for these jurisdictions to adjust for patients who do not claim Medicare.

Induced abortions carried out in WA were not included due to data quality concerns.

(b) For the Medicare data, Remoteness Area is based on postcode of enrolment in Medicare. This may differ from the postcode of usual residence.

(c) Includes induced abortion where Remoteness Area of usual residence was unknown or not reported. Excludes overseas residents and unknown state of residence.

(d) Directly age-standardised. The Australian female population aged 15–44 years for 30 June 2001 was used as the population for which expected rates were calculated. The Australian Bureau of Statistics population estimates for 30 June 2004 for females were used for the observed rates. The numerator for the observed rates excluded induced abortions carried out in WA. The denominator for the observed and expected rates included the WA population.

Age group

Data are presented for 5-year age groups from less than 15 years to 45 years and over in Table 3.33. The highest number of induced abortions in 2004 was in the 20–24 year age group (21,504, 25.8%) and the lowest was in the less than 15 year age group (296, 0.4%) (Table 3.33).

Data for the less than 15 year age group is included in the numerator for the age-specific induced abortion rate for the 15–19 year age group, and data for the 45 years and over age group is included in the numerator for the age specific induced abortion rate for the 40–44 year age group. This is because the denominator population was not defined for the less than 15 year age group or the 45 years and over age group. This would inflate the age specific rates for the 15–19 year and 40–44 year age groups. The age-specific induced abortion rate per 1,000 women was highest for the 20–24 year age group (31.3 induced abortions per 1,000 women aged 20–24 years) and lowest for the 40–44 year age group (7.0 induced abortions per 1,000 women aged 40–44 years).

Table 3.33: Estimated number of induced abortions[(a)] by 5-year age group, 2004

	Less than 15	15–19	20–24	25–29	30–34	35–39	40–44	45 and over	Total
Estimated number of induced abortions	296	13,262	21,504	17,072	15,258	10,432	4,889	497	83,210
Rate per 1,000 women aged 15-44 years[(b)]	n.p.	[(c)]20.1	31.3	25.3	20.0	14.2	[(d)]7.0	n.p.	19.3

(a) For induced abortions carried out in Qld, SA and the NT the data include separations with a diagnosis of *O04.5–O04.9 Medical abortion, complete or unspecified* and an abortion-related procedure reported to the NHMD.

For induced abortions carried out in NSW, Vic, Tas and the ACT, the data include separations with a diagnosis of *O04.5–O04.9 Medical abortion, complete or unspecified* and an abortion-related procedure reported to the NHMD (30 separations with a diagnosis of *O06.5–O06.9 Unspecified abortion, complete or unspecified* from a private free-standing day hospital facility(ies) in Victoria were also included) plus non-hospital Medicare services for MBS-item *35643 Evacuation of the contents of the gravid uterus by curettage or suction curettage* reported in the Medicare data. The number of non-hospital services was increased by 13.1% for these jurisdictions to adjust for patients who do not claim Medicare.

For induced abortions carried out in WA the age-specific rates of induced abortion calculated for the other states and territories were applied to the female population of Western Australia as at 30 June 2004.

(b) The Australian Bureau of Statistics population estimates for 30 June 2004 for women aged 15–44 years were used.

(c) Includes separations with induced abortion aged less than 15 years.

(d) Includes separations with induced abortion aged 45 years and over.

n.p. Not published because the denominator population is not defined for these age groups.

Maternal mortality

A maternal death is defined as the death of a woman while pregnant or within 42 days of the termination of the pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes (WHO 1992). Maternal deaths occur infrequently in Australia with approximately 30 deaths per year. In the most recent triennial report for the period 2000–2002, there were 95 maternal deaths reported to the NPSU. These maternal deaths are identified through a number of sources, the primary source being via the state and territory maternal mortality committees.

Maternal deaths are classified into direct deaths (deaths from pregnancy complications such as embolisms and obstetric haemorrhage), indirect deaths (deaths from pre-existing diseases exacerbated by pregnancy such as cardiac disease) and incidental deaths, where the pregnancy was unlikely to have contributed significantly to the death (car accidents, cancers). There were 32 direct maternal deaths (33.7%) and 52 indirect deaths (54.7%) reported in the 2000–2002 cohort. In addition there were 3 incidental deaths (3.2%) and 8 late maternal deaths (8.4%), the latter occurring between 43 and 365 days post termination of the pregnancy.

Maternal mortality ratio

The maternal mortality ratio (MMR), calculated using direct and indirect deaths, was 11.1 deaths per 100,000 women who gave birth. The women who died in the 2000–2002 triennium were aged between 17 and 50 years with the age-specific MMR peaking at 32.8 deaths per 100,000 women who gave birth.

Causes of death

The main causes of the 32 direct maternal deaths were amniotic fluid embolism with 10 deaths, haemorrhage from obstetric causes with 9 deaths, infection (5 deaths) and hypertension (4 deaths). The main causes of the 52 indirect maternal deaths were cardiac disease with 11 deaths, infection with 10 deaths, psychiatric causes with 9 deaths and haemorrhage from other causes accounting for 8 deaths.

Aboriginal and Torres Strait Islander women

In 2000–2002, there were 13 Aboriginal and Torres Strait Islander maternal deaths, of which 12 were classified as direct and indirect deaths. Indigenous status was not ascertained in 11.0% of the maternal death cohort. The MMR was 45.9 per 100,000 Aboriginal and Torres Strait Islander women who gave birth and 8.7 per 100,000 non-Indigenous women in 2000–2002.

Complete reporting of maternal deaths is presented in the AIHW report *Maternal deaths in Australia 2000–2002* (Sullivan & King 2006), available at <http://www.npsu.unsw.edu.au>.

4 Babies

Demographic profile

Birth status

Babies are recorded as liveborn or stillborn (fetal deaths) on perinatal notification forms. A live birth is defined as the complete expulsion or extraction from the mother of a baby which, after such separation, breathes or shows any other evidence of life. A fetal death is defined as a death occurring prior to the complete expulsion or extraction from the mother of a product of conception of 20 or more completed weeks gestation or 400 grams or more birthweight (NHDC 2003). In the NPDC, the same criteria are applied to live births, that is, live births must also be at least 20 weeks gestation or at least 400 grams birthweight.

There were 255,286 live births and 1,919 fetal deaths in Australia in 2004, giving a total of 257,205 births reported to the NPDC (Table 2.1). This equates to a stillbirth rate of 7.5 per 1,000 births.

Sex

Male births exceeded female births in all states and territories, and accounted for 51.4% of all births nationally in 2004 (Table 4.1). This proportion was similar across the states and territories, and has changed very little over the past decade. In 2004, the sex ratio for Australia, defined as the number of male liveborn babies per 100 female liveborn babies, was 106.0.

Table 4.1: Births by sex and state and territory, 2004

Sex	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Australia
					Number				
Males	44,202	32,629	26,226	13,058	8,995	2,892	2,560	1,768	132,329
Females	41,390	31,047	24,672	12,470	8,526	2,628	2,366	1,706	124,805
Indeterminate/ not stated	34	24	12	—	—	—	—	—	71
Total	**85,626**	**63,700**	**50,910**	**25,528**	**17,521**	**5,520**	**4,926**	**3,474**	**257,205**
					Per cent				
Males	51.6	51.2	51.5	51.2	51.3	52.4	52.0	50.9	51.4
Females	48.3	48.7	48.5	48.8	48.7	47.6	48.0	49.1	48.5
Indeterminate/ not stated	0.0	0.0	0.0	—	—	—	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) For the ACT, less than 5 babies where sex was classified as 'indeterminate' have been presented as male.

Babies of Aboriginal and Torres Strait Islander mothers

The mothers reported to the NPDC who identified as being Aboriginal or Torres Strait Islander in 2004 gave birth to 8,905 live births and 99 fetal deaths. There were 242,593 non-Indigenous mothers who gave birth to 240,837 live births and 1,756 fetal deaths (Table 4.2).[7]

There were 8,905 live births born to Aboriginal and Torres Strait Islander mothers in 2004 reported to the NPDC (Table 4.2). This was 3.6% more than the 8,599 live births to Indigenous mothers registered in Australia in 2004 (ABS 2005).

Table 4.2: Births by maternal Indigenous status and state and territory, 2004

Indigenous status[(a)]	NSW	Vic	Qld	WA	SA	Tas	ACT[(b)]	NT	Total
Aboriginal or Torres Strait Islander									
Fetal deaths	20	n.p.	31	18	8	n.a.	<5	13	99
Live births	2,313	n.p.	2,771	1,506	483	n.a.	n.p.	1,326	8,905
All births	**2,333**	**439**	**2,802**	**1,524**	**491**	**n.a.**	**76**	**1,339**	**9,004**
Non-Indigenous									
Fetal deaths	541	586	315	170	105	n.a.	30	9	1,756
Live births	82,720	62,647	47,789	23,834	16,925	n.a.	4,805	2,117	240,837
All births	**83,261**	**63,233**	**48,104**	**24,004**	**17,030**	**n.a.**	**4,835**	**2,126**	**242,593**

(a) Indigenous status 'Not stated' not included.

(b) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting figures. For example, 54 of the 73 Aboriginal or Torres Strait Islander women who gave birth in the ACT in 2004 were ACT residents.

n.a. Data for Tas were not available because the 'Not stated' category for Indigenous status was not able to be distinguished from the 'Neither Aboriginal nor Torres Strait Islander origin' category.

n.p. Data not published to maintain confidentiality of small numbers.

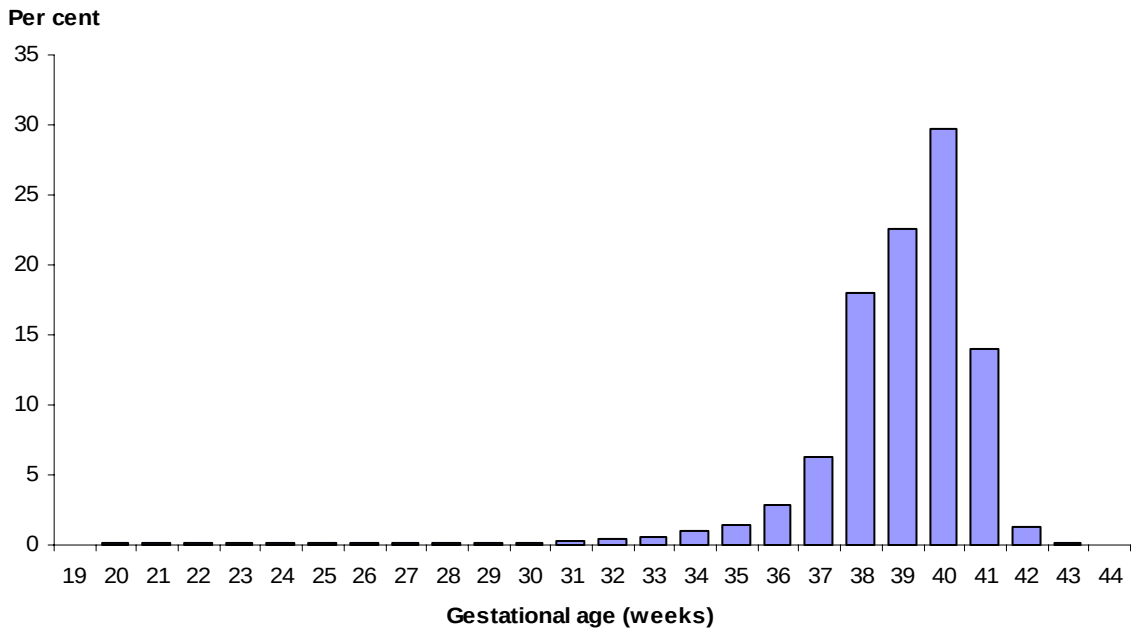
Outcomes

Gestational age

In 2004, the mean gestational age for all babies was 38.8 weeks. The proportion of babies born at term (37–41 weeks gestation) was 90.5%.

Preterm birth (before 37 weeks gestation) is associated with neonatal problems that cause significant morbidity and mortality in newborn babies. Preterm births were classified according to the criteria of the WHO into groups of 20–27 weeks, 28–31 weeks and 32–36 weeks. Of all births in 2004, 8.2% were preterm, with most of the preterm births at 32–36 weeks (Figure 4.1; Table 4.3).

7 These figures exclude Tas.



Source: Table A1.6.

Figure 4.1: Distribution of gestational age, 2004 (per cent)

The mean gestational age of stillborn babies was 27.9 weeks in 2004 compared with 38.9 weeks for liveborn babies. Preterm birth occurred in 80.6% of stillborn babies, compared with 7.6% of liveborn babies (Table 4.3).

Table 4.3: Births by gestational age and birth status, 2004

Gestational age (weeks)	Live births		Fetal deaths		Total	
	Number	Per cent	Number	Per cent	Number	Per cent
20–27[(a)]	1,163	0.5	1,121	58.4	2,284	0.9
28–31	1,921	0.8	174	9.1	2,095	0.8
32–36	16,368	6.4	252	13.1	16,620	6.5
37–41	232,392	91.0	364	19.0	232,756	90.5
42 and over	3,418	1.3	7	0.4	3,425	1.3
Not stated	24	0.0	1	0.1	25	0.0
Total	**255,286**	**100.0**	**1,919**	**100.0**	**257,205**	**100.0**
20–36[(a)]	*19,452*	*7.6*	*1,547*	*80.6*	*20,999*	*8.2*
Mean	38.9	—	27.9	—	38.8	—

(a) Includes 3 babies of less than 20 weeks gestation.

The mean gestational age for all preterm births in 2004 was 33.2 weeks (Table 4.4). Nationally, 0.9% of births were at gestation 20–27 weeks, 0.8% were at 28–31 weeks, and 6.5% were at 32–36 weeks. The Northern Territory had the highest proportion of preterm births, at 10.9% of all births, and New South Wales had the lowest, at 7.3% of all births.

Table 4.4: Preterm births by gestational age and state and territory, 2004

Gestational age (weeks)	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Australia
Mean	33.3	32.9	33.2	33.3	33.3	33.4	33.3	33.3	33.2
					Number				
20–27[(b)]	605	719	453	225	155	39	47	41	2,284
28–31	667	460	453	228	143	53	56	35	2,095
32–36	4,975	3,974	3,575	1,786	1,228	395	384	303	16,620
Total	**6,247**	**5,153**	**4,481**	**2,239**	**1,526**	**487**	**487**	**379**	**20,999**
					Per cent of total births				
20–27[(b)]	0.7	1.1	0.9	0.9	0.9	0.7	1.0	1.2	0.9
28–31	0.8	0.7	0.9	0.9	0.8	1.0	1.1	1.0	0.8
32–36	5.8	6.2	7.0	7.0	7.0	7.2	7.8	8.7	6.5
Total	**7.3**	**8.1**	**8.8**	**8.8**	**8.7**	**8.8**	**9.9**	**10.9**	**8.2**

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the percentage of preterm births among babies of ACT residents who gave birth in the ACT was 8.0%.

(b) Includes 3 babies of less than 20 weeks gestation.

In 2004, 14.3% of babies of Aboriginal and Torres Strait Islander mothers were preterm. This was greater than the proportion of 7.9% in babies of non-Indigenous mothers.[8]

For singletons, the mean gestational age was 39.0 weeks, compared with 35.3 weeks for twins and 30.9 weeks for higher order multiple births. Preterm birth occurred in 53.7% of twins and in almost all higher order multiple births (97.5%), which was much higher than the proportion of 6.5% found among singleton births (Table 4.5). The difference in gestational age distributions between singleton and multiple births is even more pronounced when babies of less than 32 weeks gestation are considered. In this high-risk group were 10.5% of twin births and 40.3% of other multiple births, compared with approximately 1 in 100 (1.4%) for singleton births.

Only 1.3% of babies were born post-term (at 42 weeks or more gestation). The duration of pregnancy by state and territory is detailed in Table 3.13.

8 These figures exclude Tas.

Table 4.5: Births by gestational age and plurality, 2004

Gestational age (weeks)	Singletons		Twins		Other multiple births		Total	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
20–27[(a)]	1,884	0.8	349	4.2	51	21.4	2,284	0.9
28–31	1,523	0.6	527	6.3	45	18.9	2,095	0.8
32–36	12,875	5.2	3,609	43.2	136	57.1	16,620	6.5
37–41	228,890	92.1	3,860	46.2	6	2.5	232,756	90.5
42 and over	3,422	1.4	3	0.0	—	—	3,425	1.3
Not stated	24	0.0	1	—	—	—	25	0.0
Total	**248,618**	**100.0**	**8,349**	**100.0**	**238**	**100.0**	**257,205**	**100.0**
20–36[(a)]	*16,282*	*6.5*	*4,485*	*53.7*	*232*	*97.5*	*20,999*	*8.2*
Mean	39.0	—	35.3	—	30.9	—	38.8	—

(a) Includes 3 babies of less than 20 weeks gestation.

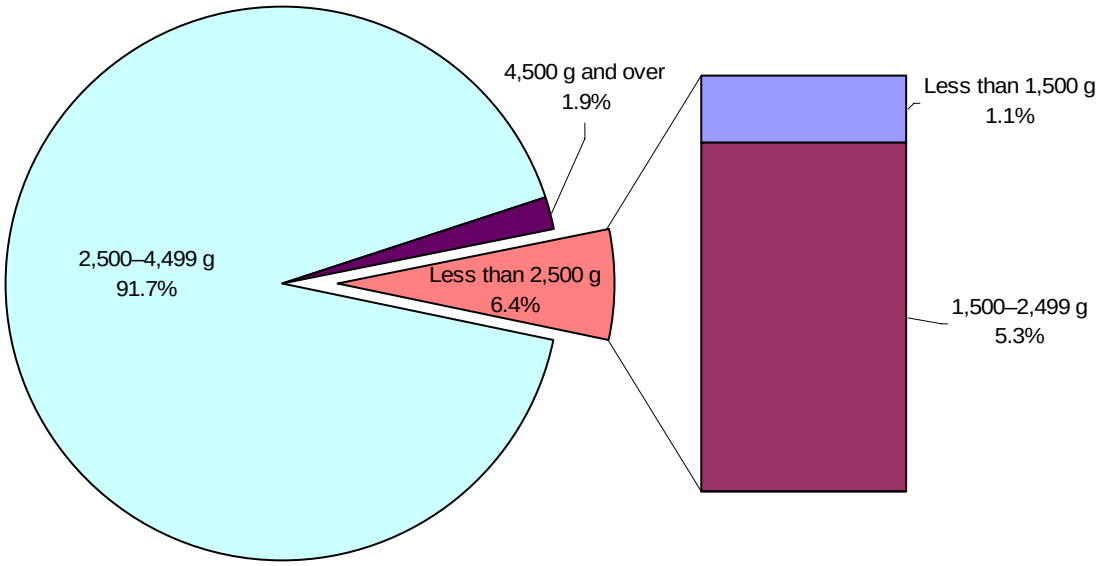
Birthweight

A baby's birthweight is a key indicator of health status. Babies are defined as low birthweight if their weight at birth is less than 2,500 grams. Within this category, those weighing less than 1,500 grams are defined as very low birthweight and those less than 1,000 grams as extremely low birthweight (WHO 1992).

Low birthweight babies have a greater risk of poor health and dying, require a longer period of hospitalisation after birth, and are more likely to develop significant disabilities (Mick et al. 2002; Leeson et al. 2001). A baby may be small due to being born early (preterm), or may be small for its gestational age (intrauterine growth retardation). The factors contributing to low birthweight include socioeconomic status, size of parents, age of mother, number of babies previously born, mother's nutritional status, smoking and alcohol intake, and illness during pregnancy (Horta 1997; Kramer 1998).

In 2004, 91.7% of liveborn babies had a birthweight in the range 2,500–4,499 grams. The average birthweight of liveborn babies in Australia in 2004 was 3,374 grams and ranged from 3,262 grams in the Northern Territory to 3,383 grams in both Tasmania and the Australian Capital Territory (Table 4.6).

In 2004, there were 16,336 (6.4%) liveborn babies of low birthweight (Figure 4.2). The 2,739 very low birthweight babies constituted 1.1% of all live births in 2004, and the 1,181 extremely low birthweight babies constituted 0.5%.



Source: Table 4.6.

Figure 4.2: Live births by birthweight, 2004 (per cent)

Table 4.6: Live births by birthweight and state and territory, 2004

Birthweight (g)	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Australia
Mean	3,382	3,376	3,378	3,352	3,362	3,383	3,383	3,262	3,374
					Number				
Less than 1,000	332	304	279	122	76	15	22	31	1,181
1,000–1,499	506	351	310	157	118	45	40	31	1,558
1,500–1,999	1,013	769	689	352	241	91	97	46	3,298
2,000–2,499	3,187	2,575	2,106	1,038	711	239	229	214	10,299
2,500–2,999	12,749	9,547	7,374	3,924	2,646	790	676	657	38,363
3,000–3,499	30,203	22,250	17,514	9,249	6,187	1,850	1,547	1,220	90,020
3,500–3,999	26,547	19,497	15,950	7,718	5,405	1,704	1,581	909	79,311
4,000–4,499	8,927	6,554	5,358	2,410	1,731	634	584	294	26,492
4,500 and over	1,579	1,233	974	370	293	115	117	50	4,731
Not stated	22	2	9	—	—	—	—	—	33
Total	**85,065**	**63,082**	**50,563**	**25,340**	**17,408**	**5,483**	**4,893**	**3,452**	**255,286**
Less than 1,500	*838*	*655*	*589*	*279*	*194*	*60*	*62*	*62*	*2,739*
Less than 2,500	*5,038*	*3,999*	*3,384*	*1,669*	*1,146*	*390*	*388*	*322*	*16,336*
					Per cent				
Less than 1,000	0.4	0.5	0.6	0.5	0.4	0.3	0.4	0.9	0.5
1,000–1,499	0.6	0.6	0.6	0.6	0.7	0.8	0.8	0.9	0.6
1,500–1,999	1.2	1.2	1.4	1.4	1.4	1.7	2.0	1.3	1.3
2,000–2,499	3.7	4.1	4.2	4.1	4.1	4.4	4.7	6.2	4.0
2,500–2,999	15.0	15.1	14.6	15.5	15.2	14.4	13.8	19.0	15.0
3,000–3,499	35.5	35.3	34.6	36.5	35.5	33.7	31.6	35.3	35.3
3,500–3,999	31.2	30.9	31.5	30.5	31.0	31.1	32.3	26.3	31.1
4,000–4,499	10.5	10.4	10.6	9.5	9.9	11.6	11.9	8.5	10.4
4,500 and over	1.9	2.0	1.9	1.5	1.7	2.1	2.4	1.4	1.9
Not stated	0.0	0.0	0.0	—	—	—	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Less than 1,500	*1.0*	*1.0*	*1.2*	*1.1*	*1.1*	*1.1*	*1.3*	*1.8*	*1.1*
Less than 2,500	*5.9*	*6.3*	*6.7*	*6.6*	*6.6*	*7.1*	*7.9*	*9.3*	*6.4*

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the percentage of live births of ACT residents who gave birth in the ACT where the birthweight was less than 2,500 grams was 6.4%.

The mean birthweight of stillborn babies was 1,245 grams in 2004 compared with 3,374 grams for liveborn babies. Low birthweight occurred in 77.9% of stillborn babies. More than half (58.7%) of the stillborn babies had a birthweight of less than 1,000 grams (Table 4.7).

Male liveborn babies were proportionately less likely to be low birthweight (5.9%) than were female babies (6.9%). The average birthweight of liveborn male babies was 3,433 grams, 122 grams higher than that of females (3,311 grams).

Table 4.7: Births by birthweight and birth status, 2004

	Live births		Fetal deaths		Total	
Birthweight (g)	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Less than 1,000	1,181	0.5	1,126	58.7	2,307	0.9
1,000–1,499	1,558	0.6	142	7.4	1,700	0.7
1,500–1,999	3,298	1.3	110	5.7	3,408	1.3
2,000–2,499	10,299	4.0	116	6.0	10,415	4.0
2,500–2,999	38,363	15.0	116	6.0	38,479	15.0
3,000–3,499	90,020	35.3	125	6.5	90,145	35.0
3,500–3,999	79,311	31.1	76	4.0	79,387	30.9
4,000–4,499	26,492	10.4	20	1.0	26,512	10.3
4,500 and over	4,731	1.9	12	0.6	4,743	1.8
Not stated	33	0.0	76	4.0	109	0.0
Total	**255,286**	**100.0**	**1,919**	**100.0**	**257,205**	**100.0**
Less than 1,500	*2,739*	*1.1*	*1,268*	*66.1*	*4,007*	*1.6*
Less than 2,500	*16,336*	*6.4*	*1,494*	*77.9*	*17,830*	*6.9*
Mean	3,374	—	1,245	—	3,359	—

For liveborn singletons, the mean birthweight was 3,407 grams, compared with 2,412 grams for twins and 1,644 grams for triplets and other multiple births. Low birthweight occurred in half of all twins (49.9%) and in almost all higher order multiple births (94.5%), which was markedly higher than the proportion of 4.9% found among singleton births (Table 4.8).

Table 4.8: Live births by birthweight and plurality, 2004

	Singletons		Twins		Other multiple births		Total	
Birthweight (g)	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Less than 1,000	892	0.4	252	3.1	37	16.8	1,181	0.5
1,000–1,499	1,067	0.4	445	5.4	46	20.9	1,558	0.6
1,500–1,999	2,190	0.9	1,034	12.6	74	33.6	3,298	1.3
2,000–2,499	7,894	3.2	2,354	28.8	51	23.2	10,299	4.0
2,500–2,999	35,439	14.4	2,913	35.6	11	5.0	38,363	15.0
3,000–3,499	88,970	36.0	1,049	12.8	1	0.5	90,020	35.3
3,500–3,999	79,180	32.1	131	1.6	—	—	79,311	31.1
4,000–4,499	26,489	10.7	3	0.0	—	—	26,492	10.4
4,500 and over	4,731	1.9	—	—	—	—	4,731	1.9
Not stated	33	0.0	—	—	—	—	33	0.0
Total	**246,885**	**100.0**	**8,181**	**100.0**	**220**	**100.0**	**255,286**	**100.0**
Less than 1,500	*1,959*	*0.8*	*697*	*8.5*	*83*	*37.7*	*2,739*	*1.1*
Less than 2,500	*12,043*	*4.9*	*4,085*	*49.9*	*208*	*94.5*	*16,336*	*6.4*
Mean	3,407	—	2,412	—	1,644	—	3,374	—

In 2004, the average birthweight of liveborn babies of Aboriginal and Torres Strait Islander mothers was 3,158 grams. This was 224 grams lighter than the average of 3,382 grams for liveborn babies of non-Indigenous mothers.[9] The proportion of low birthweight in liveborn babies of Aboriginal and Torres Strait Islander mothers was 13.2% (Table 4.9), more than twice that of babies of non-Indigenous mothers (6.1%). The mean birthweight of liveborn babies of mothers identified as Aboriginal or Torres Strait Islander, and the proportion with low birthweight, varied markedly among the states and territories.

Table 4.9: Live births of Aboriginal or Torres Strait Islander mothers by birthweight and state and territory, 2004

Birthweight (g)	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Total
Mean	3,197	3,110	3,187	3,129	3,073	n.a.	3,084	3,115	3,158
					Number				
Less than 1,500	45	13	67	36	22	n.a.	6	38	227
1,500–2,499	239	57	252	181	63	n.a.	8	148	948
2,500–2,999	496	101	593	365	110	n.a.	14	327	2,006
3,000–3,499	771	135	990	475	140	n.a.	19	453	2,983
3,500–3,999	569	87	642	330	109	n.a.	19	246	2,002
4,000–4,499	164	n.p.	182	100	33	n.a.	n.p.	98	616
4,500 and over	29	n.p.	45	19	6	n.a.	<5	16	123
Not stated	—	—	—	—	—	n.a.	—	—	—
Total	**2,313**	**n.p.**	**2,771**	**1,506**	**483**	**n.a.**	**n.p.**	**1,326**	**8,905**
Less than 2,500	*284*	*70*	*319*	*217*	*85*	*n.a.*	*14*	*186*	*1,175*
					Per cent				
Less than 1,500	1.9	3.0	2.4	2.4	4.6	n.a.	8.2	2.9	2.5
1,500–2,499	10.3	13.2	9.1	12.0	13.0	n.a.	11.0	11.2	10.6
2,500–2,999	21.4	23.3	21.4	24.2	22.8	n.a.	19.2	24.7	22.5
3,000–3,499	33.3	31.2	35.7	31.5	29.0	n.a.	26.0	34.2	33.5
3,500–3,999	24.6	20.1	23.2	21.9	22.6	n.a.	26.0	18.6	22.5
4,000–4,499	7.1	n.p.	6.6	6.6	6.8	n.a.	n.p.	7.4	6.9
4,500 and over	1.3	n.p.	1.6	1.3	1.2	n.a.	n.p.	1.2	1.4
Not stated	—	—	—	—	—	n.a.	—	—	—
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**n.a.**	**100.0**	**100.0**	**100.0**
Less than 2,500	*12.3*	*16.2*	*11.5*	*14.4*	*17.6*	*n.a.*	*19.2*	*14.0*	*13.2*

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the percentage of liveborn, low birthweight babies for ACT Aboriginal or Torres Strait Islander residents was 17.9% in 2004.

n.a. Data for Tas were not available because the 'Not stated' category for Indigenous status was not able to be distinguished from the 'Neither Aboriginal nor Torres Strait Islander origin' category.

n.p. Data not published to maintain confidentiality of small numbers.

Mothers aged 30–34 years were the group with the lowest proportion of low birthweight liveborn babies (5.7%). The proportion was higher among babies of younger and older

9 These figures exclude Tas.

mothers (8.9% for mothers aged less than 20 years and 16.2% for mothers aged 45 years and older).

Of hospital births, the proportion of low birthweight liveborn babies was higher in babies of mothers who gave birth in public hospitals (7.4%) than in babies of mothers who gave birth in private hospitals (4.5%).

Presentation at birth

In 2004, vertex presentations occurred for 94.0% of all babies. Breech presentation occurred for 5.0% of babies, and other presentations occurred for 0.8% of babies. One third of twins and almost half of higher order multiple babies had non-vertex presentations at birth (34.1% and 47.5%, respectively; Table 4.10).

Table 3.17 shows the presentation at birth for mothers, where the presentation at birth of the first born baby in multiple births is used.

Table 4.10: Births by presentation at birth and plurality, 2004

	Singletons		Twins		Other multiple births		Total	
Presentation	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**	**Number**	**Per cent**
Vertex	236,299	95.0	5,465	65.5	120	50.4	241,884	94.0
Breech	10,311	4.1	2,569	30.8	96	40.3	12,976	5.0
Face	287	0.1	7	0.1	—	—	294	0.1
Brow	276	0.1	22	0.3	—	—	298	0.1
Other[(a)]	1,234	0.5	247	3.0	17	7.1	1,498	0.6
Not stated	211	0.1	39	0.5	5	2.1	255	0.1
Total	**248,618**	**100.0**	**8,349**	**100.0**	**238**	**100.0**	**257,205**	**100.0**

(a) Includes shoulder/transverse and compound presentations.

n.p. Data not published due to small numbers.

Method of birth

Of all births in 2004, 30.0% were delivered by caesarean section and 58.4% of babies were born by spontaneous vaginal birth. Approximately 1 in 9 babies was born by an assisted vaginal delivery (10.9%; Table 4.11). Twins had the highest proportion of vaginal breech births (6.5%), and two-thirds of all twins were born by caesarean section (65.6%). The majority of higher order multiples were delivered by caesarean section (89.1%), with only 6.7% born by spontaneous vaginal birth (Table 4.11).

Table 3.18 presents data for mothers, where the method of birth of the first born baby in multiple births is used.

Table 4.11: Births by method of birth and plurality, 2004

Method of birth	Singletons		Twins		Other multiple births		Total	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Spontaneous vaginal	148,662	59.8	1,629	19.5	16	6.7	150,307	58.4
Assisted vaginal[(a)]	27,359	11.0	694	8.3	4	1.7	28,057	10.9
Vaginal breech	997	0.4	543	6.5	6	2.5	1,546	0.6
Caesarean section	71,526	28.8	5,475	65.6	212	89.1	77,213	30.0
Other	54	0.0	1	0.0	—	—	55	0.0
Not stated	20	0.0	7	0.1	—	—	27	0.0
Total	**248,618**	**100.0**	**8,349**	**100.0**	**238**	**100.0**	**257,205**	**100.0**

(a) Assisted vaginal birth includes forceps and vacuum extraction.

Method of birth for babies with breech presentations

Of babies with breech presentations at birth in 2004, 87.6% were born by caesarean section. This ranged from 81.4% in the Northern Territory to 89.5% in both Queensland and South Australia (Table 4.12). The remaining babies were born vaginally, with or without the use of instruments.

Table 4.12: Babies with breech presentations by method of birth and state and territory, 2004

Method of birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
					Number				
Vaginal[(a)]	510	479	270	148	96	36	38	33	1,610
Caesarean section	3,595	2,927	2,306	1,120	819	219	235	144	11,365
Other/not stated	—	—	1	—	—	—	—	—	1
Total	**4,105**	**3,406**	**2,577**	**1,268**	**915**	**255**	**273**	**177**	**12,976**
					Per cent				
Vaginal[(a)]	12.4	14.1	10.5	11.7	10.5	14.1	13.9	18.6	12.4
Caesarean section	87.6	85.9	89.5	88.3	89.5	85.9	86.1	81.4	87.6
Other/not stated	—	—	0.0	—	—	—	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Includes instrumental vaginal births.

Apgar scores

Apgar scores are clinical indicators of the baby's condition shortly after birth, based on assessment of the heart rate, breathing, colour, muscle tone and reflex irritability. Between 0 and 2 points are given for each of these five characteristics, and the total score is between 0 and 10. An Apgar score of less than 7 at 5 minutes after birth is considered to be an indicator of complications and of compromise for the baby.

In 2004, 1.3% of liveborn babies had a low Apgar score (between 0 and 6) at 5 minutes. Scores of 0–3 were recorded at 5 minutes in 0.3% of all live births nationally, and scores of 4–6 were recorded in 1.0% of live births (Table 4.13). Among the states and territories, the distribution of low Apgar scores at 5 minutes ranged from 1.1% of all live births in Western Australia to 2.7% in the Northern Territory.

Table 4.13: Live births by Apgar score at 5 minutes and state and territory, 2004

Apgar score	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Australia
					Number				
0–3	235	187	191	50	48	5	18	23	757
4–6	969	615	480	216	148	73	59	69	2,629
7–10	83,653	62,214	49,857	25,054	17,184	5,376	4,807	3,357	51,502
Not stated	208	66	35	20	28	29	9	3	398
Total	**85,065**	**63,082**	**50,563**	**25,340**	**17,408**	**5,483**	**4,893**	**3,452**	**255,286**
					Per cent				
0–3	0.3	0.3	0.4	0.2	0.3	0.1	0.4	0.7	0.3
4–6	1.1	1.0	0.9	0.9	0.9	1.3	1.2	2.0	1.0
7–10	98.3	98.6	98.6	98.9	98.7	98.0	98.2	97.2	98.5
Not stated	0.2	0.1	0.1	0.1	0.2	0.5	0.2	0.1	0.2
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages.

Resuscitation at birth

The types of active resuscitation measures given to babies immediately after birth are presented in Table 4.14. For these data, the type of resuscitation used is coded hierarchically, with suction being the lowest order and external cardiac massage and ventilation being the highest order. If more than one type of resuscitation was used, the highest order type in the hierarchy is coded. Suction and oxygen therapy were the most common types of resuscitation used. Ventilatory assistance by intermittent positive pressure respiration (IPPR) through a bag and mask or after intubation was performed for at least 7.3% of all live births in 2004. External cardiac massage was provided for a small proportion of babies (0.2%).

Table 4.14: Live births by active resuscitation measures at birth and state and territory, 2004

Resuscitation type	NSW	Vic	Qld	WA	SA	Tas	ACT[(a)]	NT	Australia
					Number				
None	45,143	38,423	20,930	14,757	8,990	n.a.	2,640	1,535	132,418
Suction	20,451	8,248	12,717	4,226	2,714	n.a.	868	707	49,931
Oxygen therapy	13,474	11,398	12,399	3,998	4,353	n.a.	918	561	47,101
IPPR through bag and mask	4,537	4,533	3,855	1,814	1,173	n.a.	370	267	16,549
Endotracheal intubation and IPPR	577	323	393	258	131	n.a.	71	49	1,802
External cardiac massage and ventilation	220	104	94	56	26	n.a.	26	9	535
Other[(b)]	643	6	160	231	21	n.a.	—	324	1,385
Not stated	20	47	15	—	—	n.a.	—	—	82
Total	**85,065**	**63,082**	**50,563**	**25,340**	**17,408**	**n.a.**	**4,893**	**3,452**	**249,803**
					Per cent				
None	53.1	60.9	41.4	58.2	51.6	n.a.	54.0	44.5	53.0
Suction	24.0	13.1	25.2	16.7	15.6	n.a.	17.7	20.5	20.0
Oxygen therapy	15.8	18.1	24.5	15.8	25.0	n.a.	18.8	16.3	18.9
IPPR through bag and mask	5.3	7.2	7.6	7.2	6.7	n.a.	7.6	7.7	6.6
Endotracheal intubation and IPPR	0.7	0.5	0.8	1.0	0.8	n.a.	1.5	1.4	0.7
External cardiac massage and ventilation	0.3	0.2	0.2	0.2	0.1	n.a.	0.5	0.3	0.2
Other[(b)]	0.8	0.0	0.3	0.9	0.1	n.a.	—	9.4	0.6
Not stated	0.0	0.1	0.0	—	—	n.a.	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**n.a.**	**100.0**	**100.0**	**100.0**

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentag**es.**

(b) Includes tactile stimulation for NSW, Qld and NT.

n.a. Data for Tas not available in the required format.

Note: A hierarchical coding system is used for this item, starting with suction, up to external cardiac massage and ventilation. If more than one type of resuscitation was used, the highest order type in the hierarchy is coded.

Admission to special care nurseries or neonatal intensive care units

This is the first time that data on babies admitted to special care nurseries (SCN) or neonatal intensive care units (NICU) have been included in *Australia's mothers and babies*. Babies are admitted to an SCN or NICU if they require more specialised medical care and treatment than is available on the postnatal ward (Abeywardana 2006). Of liveborn babies in 2004, 15.6% were admitted to an SCN or NICU. This proportion was lowest in Western Australia, where only babies who stayed in an SCN or NICU for one day or more were included. In the other states and territories, this ranged from 11.9% in Tasmania to 18.3% in the Northern Territory (Table 4.15).

Table 4.15: Live births by admission to special care nursery or neonatal intensive care unit and state and territory, 2004

Admission to SCN or NICU	NSW	Vic	Qld	WA[(a)]	SA	Tas	ACT	NT	Australia
					Number				
Admitted	14,153	9,818	8,806	1,956	2,916	652	768	632	39,701
Not admitted	70,912	53,264	41,757	23,384	14,492	4,831	4,116	2,820	215,576
Not stated	—	—	—	—	—	—	9	—	9
Total	**85,065**	**63,082**	**50,563**	**25,340**	**17,408**	**5,483**	**4,893**	**3,452**	**255,286**
					Per cent				
Admitted	16.6	15.6	17.4	7.7	16.8	11.9	15.7	18.3	15.6
Not admitted	83.4	84.4	82.6	92.3	83.2	88.1	84.1	81.7	84.4
Not stated	—	—	—	—	—	—	0.2	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) For WA, babies were recorded as being admitted to an SCN or NICU only if the length of stay was one day or more.

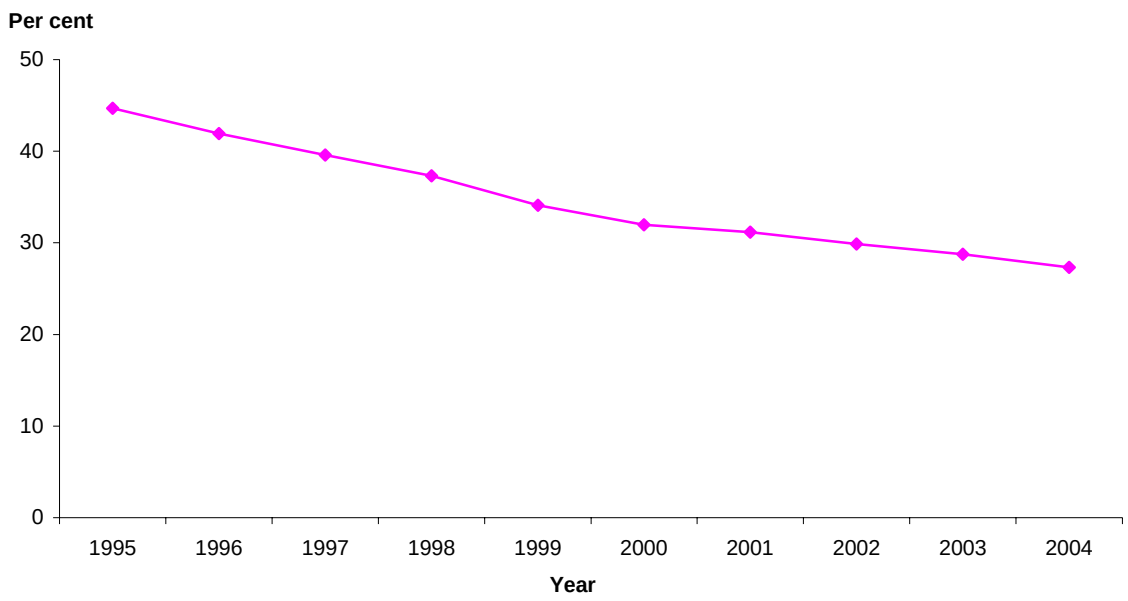
Hospital births

Length of stay in hospital of birth

The majority of babies are discharged from hospital at the same time as their mothers; however, some babies experience morbidity and require hospitalisation. A baby's gestation and birthweight are two factors that influence the duration of hospitalisation. Twins and higher order multiple births usually have longer stays in hospital than singleton babies.

In 2004, the median length of stay in hospital for babies born in hospital who were discharged home was 4.0 days. This varied little among the states and territories. In 2004, the majority of babies remained in their hospital of birth for less than 6 days (85.0%), and almost half stayed in hospital for less than 4 days (46.4%). Relatively more babies born in Queensland had a length of stay of less than 4 days (54.8%), with a median length of stay of 3.0 days. Babies hospitalised for 28 or more days accounted for 0.9% of babies born in hospital in 2004 (Table 4.16). This was related to prematurity, with most of these babies born before 37 weeks gestation (84.1%), and 45.2% born before 32 weeks gestation.

Over the 10-year period from 1995 to 2004, the proportion of hospital-born babies with a length of stay of less than 5 days increased from 53.4% to 69.7%, while the proportion of babies with a length of stay in hospital of 5 days or more decreased from 46.6% in 1995 to 30.3% in 2004. During the same period, term babies (37–41 weeks gestation) born in hospital who had a length of stay of 5 days or more decreased from 44.7% in 1995 to 27.3% in 2004 (Figure 4.3).



Note: Only babies who were discharged home are included.

Source: Table A1.7.

Figure 4.3: Length of stay of 5 days or more for term babies born in hospital, 1995–2004 (per cent)

Table 4.16: Babies born in hospital[(a)] by length of stay and state and territory, 2004

Length of stay (days)	NSW	Vic	Qld	WA	SA	Tas	ACT[(b)]	NT	Australia
Median	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
					Number				
Less than 1 day	1,346	563	1,255	412	253	115	79	65	4,088
1 day	7,076	3,167	6,480	1,562	921	317	301	276	20,100
2 days	12,580	9,793	9,132	3,170	2,131	760	645	498	38,709
3 days	15,935	12,244	9,378	4,063	2,836	1,032	771	578	46,837
4 days	17,788	16,900	10,001	4,665	3,370	1,059	852	551	55,186
5 days	11,598	9,362	6,351	4,008	2,900	875	704	438	36,236
6 days	5,740	3,234	2,213	2,500	1,293	417	379	225	16,001
7–13 days	4,202	2,268	1,794	2,959	1,132	428	351	286	13,420
14–20 days	822	720	566	215	266	79	63	55	2,786
21–27 days	342	315	324	74	122	53	21	27	1,278
28 or more days	543	449	437	221	227	96	39	58	2,070
Not stated	18	—	—	—	—	5	—	—	23
Total	**77,990**	**59,015**	**47,931**	**23,849**	**15,451**	**5,236**	**4,205**	**3,057**	**236,734**
					Per cent				
Less than 1 day	1.7	1.0	2.6	1.7	1.6	2.2	1.9	2.1	1.7
1 day	9.1	5.4	13.5	6.5	6.0	6.1	7.2	9.0	8.5
2 days	16.1	16.6	19.1	13.3	13.8	14.5	15.3	16.3	16.4
3 days	20.4	20.7	19.6	17.0	18.4	19.7	18.3	18.9	19.8
4 days	22.8	28.6	20.9	19.6	21.8	20.2	20.3	18.0	23.3
5 days	14.9	15.9	13.3	16.8	18.8	16.7	16.7	14.3	15.3
6 days	7.4	5.5	4.6	10.5	8.4	8.0	9.0	7.4	6.8
7–13 days	5.4	3.8	3.7	12.4	7.3	8.2	8.3	9.4	5.7
14–20 days	1.1	1.2	1.2	0.9	1.7	1.5	1.5	1.8	1.2
21–27 days	0.4	0.5	0.7	0.3	0.8	1.0	0.5	0.9	0.5
28 or more days	0.7	0.8	0.9	0.9	1.5	1.8	0.9	1.9	0.9
Not stated	0.0	—	—	—	—	0.1	—	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) Only babies who were discharged home are included.

(b) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages.

Mode of separation from hospital

In 2004, 94.6% of babies born in hospital were discharged home, varying from 90.4% in the Northern Territory to 96.7% in Tasmania (Table 4.17). A total of 4.3% of babies were transferred to another hospital from their hospital of birth.

Babies dying at their hospital of birth accounted for 1.0% of separations. These data do not include babies born outside hospital, and may not include all babies who are transferred to another hospital and die, or babies discharged home who subsequently die.

Table 4.17: Babies born in hospital by mode of separation and state and territory, 2004

Mode of separation	NSW	Vic	Qld	WA	SA	Tas	ACT[a]	NT	Australia
					Number				
Discharge home	77,990	59,015	47,931	23,849	15,451	5,236	4,205	3,057	236,734
Transfer to another hospital[b]	4,429	2,241	1,666	966	876	43	365	64	10,650
Fetal or neonatal death	760	769	502	228	159	47	54	36	2,555
Other[c]	—	[d]57	10	14	—	49	—	224	354
Not stated	3	—	—	—	—	38	2	—	43
Total	**83,182**	**62,082**	**50,109**	**25,057**	**16,486**	**5,413**	**4,626**	**3,381**	**250,336**
					Per cent				
Discharge home	93.8	95.1	95.7	95.2	93.7	96.7	90.9	90.4	94.6
Transfer to another hospital[b]	5.3	3.6	3.3	3.9	5.3	0.8	7.9	1.9	4.3
Fetal or neonatal death	0.9	1.2	1.0	0.9	1.0	0.9	1.2	1.1	1.0
Other[c]	—	[d]0.1	0.0	0.1	—	0.9	—	6.6	0.1
Not stated	0.0	—	—	—	—	0.7	0.0	—	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages.

(b) Includes babies who were transferred to another hospital and died.

(c) May include statistical discharges, transfers to health care accommodation other than acute hospitals, and postneonatal deaths.

(d) These cases refer to postneonatal deaths (at 28 days or more after birth), regardless of the mode of separation.

5 Special topic: First-time mothers

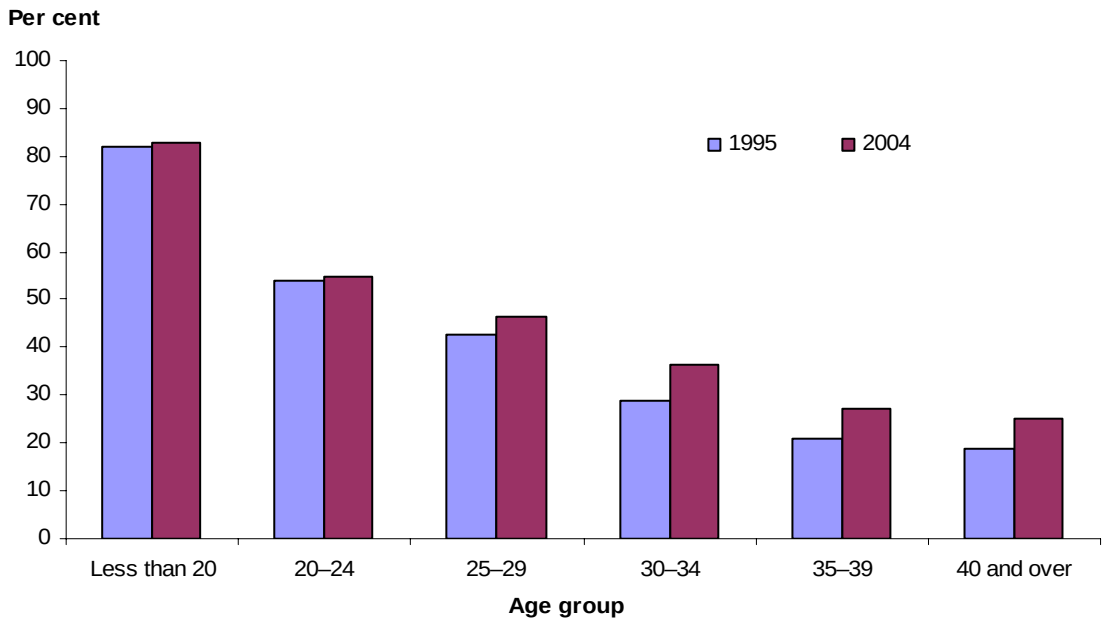
This chapter presents data on primiparous mothers in Australia, and their babies. Mothers are defined as primiparous if the birth episode is the first time they have given birth to one or more babies, either liveborn or stillborn. These women who gave birth can also be referred to as first-time mothers.

Mothers

In 2004, 106,611 women gave birth for the first time, accounting for 42.2% of women who gave birth in that year. Of first-time pregnancies in 2004, 98.2% were singleton pregnancies, while 1.8% were multiple pregnancies.

Maternal age

Data from the National Perinatal Data Collection show that the average age of first-time mothers has increased, from 25.8 years in 1991 to 28.0 years in 2004. The median age of first-time mothers was also 28.0 years in 2004. The average age of first-time mothers was lowest in the Northern Territory (25.2 years) and highest in Victoria and the Australian Capital Territory (28.9 years) (Table 5.1). Figure 5.1 shows the increase in the proportion of first-time mothers in the older age groups between 1995 and 2004. Nevertheless, in 2004 the more than half of primiparous women who gave birth were aged less than 30 years (57.9%). One in 8 of all primiparous women were aged 35 years or older in 2004 (12.5%), compared with 6.9% in 1995. In 1995, the average age of first-time mothers was 26.5 years.



Source: Table A1.8.

Figure 5.1: First-time mothers by maternal age, 1995 and 2004 (per cent)

Table 5.1: Selected characteristics of primiparous mothers and their babies, by state and territory, 2004

Characteristics	NSW	Vic	Qld	WA	SA[a]	Tas	ACT[b]	NT	Total
Women who gave birth	35,797	26,872	20,356	10,512	7,403	2,229	2,160	1,282	106,611
Mean maternal age (years)	28.2	28.9	27.1	27.6	27.6	26.5	28.9	25.2	28.0
					Per cent				
Indigenous	2.1	0.6	3.8	4.4	2.1	n.a.	1.7	30.8	2.6
Smoking[c]	12.4	n.a.	n.a.	15.1	23.0	n.a.	15.3	24.9	14.6
Caesarean section[d]	29.0	31.2	32.8	34.7	34.2	29.4	29.0	30.8	31.3
Public hospital[e]	72.4	66.7	65.7	57.2	68.6	59.6	61.1	78.4	67.5
Births	36,428	27,420	20,732	10,682	7,533	2,273	2,215	1,292	108,575
					Per cent				
Preterm births	8.2	9.6	9.8	9.2	9.1	9.9	12.2	10.5	9.2
Low birthweight[f]	7.0	7.7	7.9	7.6	7.6	8.7	9.4	10.3	7.6
Apgar score of less than 7 at 5 minutes[f]	1.8	1.5	1.7	1.2	1.2	1.7	1.6	3.0	1.6
Admitted to SCN/NICU[f]	19.0	17.9	20.2	8.9	19.3	13.8	17.6	19.5	17.9

(a) For SA, the mean maternal age presented here may differ from that produced by the Pregnancy Outcome Statistics Unit, who use maternal age to four decimal places for this calculation. The National Perinatal Data Collection contains maternal age in completed years.

(b) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages.

(c) For SA, 'Smoked' includes women who quit before the first antenatal visit. For NT, smoking status was recorded at the first antenatal visit. Mother's tobacco smoking status during pregnancy is self-reported.

(d) For multiple births, the method of birth of the first born baby was used. For one multiple birth in NSW, the method of birth of the second born baby was used.

(e) For women who gave birth in hospital.

(f) For live births.

n.a. Data not available.

Indigenous status

Only 2.6% of first-time mothers in 2004 reported being of Aboriginal or Torres Strait Islander origin. This proportion was 30.8% in the Northern Territory, and ranged from 0.6% to 4.4% in the other states and territories (Table 5.1). The average age of Indigenous women who gave birth for the first time was 21.0 years, compared with 28.7 years for non-Indigenous primiparas.

Smoking during pregnancy

Of primiparous women who gave birth in the five states and territories for which smoking in pregnancy data were available, 14.6% reported smoking at all during pregnancy (Table 5.1). This was lower than the proportion of smokers among multiparous women who gave birth in these jurisdictions in 2004 (18.3%). Of smokers in New South Wales, South Australia and the Australian Capital Territory, the average number of cigarettes smoked per day in the second half of pregnancy was 10 or less for more than half of this group (55.4%), greater than 10 for 28.7% and no cigarettes for 11.8% of these women.

Onset of labour

The onset of labour was spontaneous for 59.1% of first-time mothers in 2004. Induction of labour occurred in 29.2% of primiparous women and 11.7% had no labour (Table 5.2). The percentages in multiparous women who gave birth were 56.5%, 22.5% and 21.0% respectively.

Anaesthetic for operative delivery

Of first-time mothers who had an operative delivery in 2004, at least 42.1% had an epidural or caudal anaesthetic administered, and at least 35.6% had a spinal anaesthetic. About 4.6% of the women had a general anaesthetic (Table 5.2). Multiparous mothers in 2004 had a lower percentage of epidural or caudal anaesthetic (18.1%), but higher percentages of spinal (68.2%) and general anaesthetics (6.5%) compared with primiparas.

Method of birth

Almost one third of primiparous women who gave birth in 2004 gave birth by caesarean section (31.3%). This varied from 29.0% in both New South Wales and the Australian Capital Territory to 34.7% in Western Australia. The proportion of multiparous women who had a caesarean section in 2004 was lower, at 28.0%. One in five first-time mothers had either a forceps or vacuum extraction delivery (20.2%) and 48.2% had a spontaneous vaginal birth. For first-time mothers who had a vaginal birth, 29.5% had an episiotomy (Table 5.2).

Women who gave birth in hospital

Over two-thirds of first-time mothers in 2004 gave birth in public hospitals (67.5%). This proportion ranged from 57.2% in Western Australia to 78.4% in the Northern Territory. Of women who gave birth in hospital, 97.3% were discharged home and 2.7% were transferred to another hospital. The median length of stay in hospital was 4.0 days.

Table 5.2: Selected characteristics of primiparous mothers and their babies, 2004

Characteristics	Number	Per cent
Women who gave birth		
Maternal age (years)		
Less than 20	9,567	9.0
20–24	20,200	18.9
25–29	31,908	29.9
30–34	31,580	29.6
35–39	11,235	10.5
40 and over	2,104	2.0
Onset of labour		
Spontaneous	62,965	59.1
Induced	31,140	29.2
No labour	12,456	11.7
Anaesthetic for operative deliveries[(a)]		
None	3,364	9.2
Local anaesthetic to perineum	1,900	5.2
Pudendal	1,021	2.8
Epidural or caudal	15,390	42.1
Spinal	12,988	35.6
General	1,691	4.6
Method of birth[(b)]		
Spontaneous vaginal	51,342	48.2
Forceps	8,050	7.6
Vacuum extraction	13,465	12.6
Vaginal breech	418	0.4
Caesarean section	33,318	31.3
Episiotomies for vaginal births	21,134	29.5
Mode of separation of women who gave birth in hospitals[(b)]		
Discharge home	91,555	97.3
Transferred	2,498	2.7
Other	78	0.1
	Median (days)	
Postnatal length of stay for hospital births[(c)]	4.0	—

(continued)

Table 5.2 (continued): Selected characteristics of primiparous mothers and their babies, 2004

Characteristics	Number	Per cent
Births		
Birth status		
Live birth	107,599	99.1
Fetal death	976	0.9
Sex		
Males	55,893	51.5
Females	52,651	48.5
Gestational age (weeks)		
20–27	1,119	1.0
28–31	1,064	1.0
32–36	7,771	7.2
37–41	96,753	89.1
42 and over	1,861	1.7
	Mean (grams)	
Birthweight for live births	3,316	—
	Median (days)	
Length of stay of babies born in hospitals[(d)]	4.0	—

(a) Operative deliveries include forceps, vacuum extraction and caesarean section. Excludes NSW and ACT. A hierarchical coding system is used for this item, starting with a local anaesthetic, up to a systemic general anaesthetic. If more than one type of anaesthetic was administered, the highest order type in the hierarchy is coded.

(b) For multiple births, the method of birth of the first born baby was used. For one multiple birth in NSW, the method of birth of the second born baby was used.

(c) Only includes mothers who were discharged home. Excludes WA.

(d) Only includes babies who were discharged home.

Babies

In 2004, 108,575 babies were born to first-time mothers. Of these babies, 99.1% were live born. Just over half of babies born to primiparous women in 2004 were male (51.5%) (Table 5.2).

Gestational age

Preterm birth occurred in 9.2% of babies to first-time mothers in 2004. This was higher than the proportion of preterm births to multiparous mothers (7.4%). Term babies accounted for 89.1% and post-term babies for 1.7% to primiparas (Table 5.2).

Birthweight

The mean birthweight of liveborn babies born to first-time mothers was 3,316 grams, 100 grams lower than that of liveborn babies born to multiparous women (3,416 grams). Low birthweight occurred in 7.6% of liveborn babies of primparous women, and ranged from 7.0% in New South Wales to 10.3% in the Northern Territory (Table 5.1). Low birthweight occurred in 5.5% of liveborn babies of multiparous women.

Characteristics of liveborn babies

Babies with an Apgar score at 5 minutes of less than 7 accounted for 1.6% of liveborn babies of primiparous women. The median length of stay in hospital for babies born in hospital was 4.0 days. The proportion of liveborn babies of first-time mothers who were admitted to a special care nursery (SCN) or neonatal intensive care unit (NICU) was 17.9%.

Perinatal deaths

There were 1,329 perinatal deaths among babies born to primiparous mothers in 2004. The fetal death rate was 9.0 per 1,000 births, the neonatal death rate was 3.3 per 1,000 live births and the perinatal death rate was 12.2 per 1,000 births. For babies born to multiparous mothers, the fetal death rate was 6.3 per 1,000 births, the neonatal death rate was 2.9 per 1,000 live births and the perinatal death rate was 9.2 per 1,000 births (Table 7.5).

Summary

In 2004, 42.2% of women who gave birth were first-time mothers. The average age of these mothers was 28.0 years. Compared with multiparous mothers, first-time mothers had higher rates of induction, epidural or caudal anaesthesia and caesarean section, and lower rates of smoking during pregnancy.

Around 9.2% of babies born to first-time mothers were preterm in 2004, compared with 7.4% of babies born to multiparous women. Perinatal mortality was higher in babies of first-time mothers, as was low birthweight (7.6% compared with 5.5%).

6 Babies in level III neonatal intensive care units

Data in this chapter were provided by the Australian and New Zealand Neonatal Network (ANZNN), and describe babies admitted to level III NICUs at less than 28 days of age, meeting at least one of the following criteria: less than 32 weeks gestation, less than 1,500 grams birthweight, required assisted ventilation for at least four hours, or underwent major surgery.

In 2004, there were 5,724 babies admitted to level III NICUs in Australia who met ANZNN's high risk criteria. This equates to a rate of 22.4 per 1,000 live births. Of these babies, 78.6% were preterm (less than 37 weeks gestation) and 46.3% had a gestational age of less than 32 weeks. Babies with a birthweight of less than 1,500 grams accounted for 39.3% of the babies registered to ANZNN. A further 32.0% of babies weighed between 1,500 and 2,500 grams, therefore, 71.2% of those high risk babies were of low birthweight.

Of the babies in the ANZNN cohort, 73.9% were born in a hospital with a level III NICU, 25.6% were born in a hospital without a level III NICU and 0.5% were not born in a hospital. Preterm babies were more likely than term or post-term babies to be born in a hospital with a level III NICU (81.4% compared with 46.3% respectively).

As expected, there were higher proportions of multiple births in the less mature gestational age groups than in the older gestational age groups (Table 6.1). Only 2.8% of babies with a gestational age of 37–44 weeks were multiples, whereas 27.4% of preterm babies were multiples.

Similarly, the lower birthweight groups had higher proportions of multiple births compared with the higher birthweight groups. For example, of babies weighing less than 2,500 grams, 29.4% were twins or higher order multiple births, whereas only 4.1% of babies with birthweights of 2,500 grams or more were multiple births.

Table 6.1: Babies in level III neonatal intensive care units by plurality and gestational age, 2004

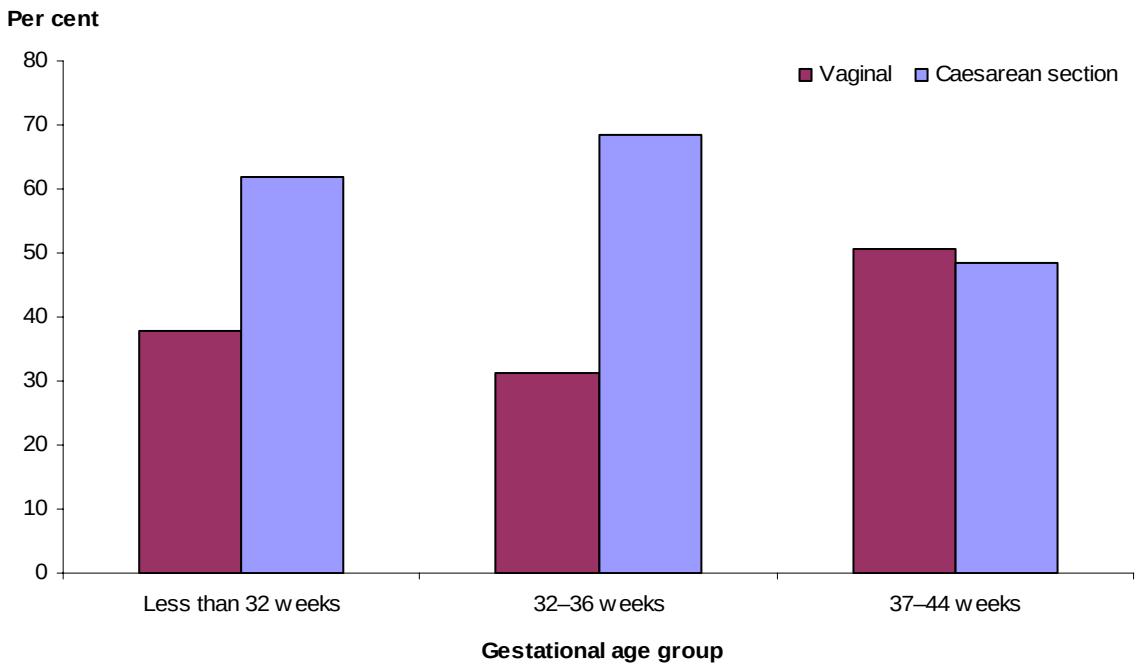
Plurality	20–23 weeks	24–27 weeks	28–31 weeks	32–33 weeks	34–36 weeks	37–44 weeks	Total
				Number			
Singletons	28	561	1261	619	798	1190	4457
Twins	11	197	516	250	145	33	1152
Other multiple births	—	34	44	29	7	1	115
Total	**39**	**792**	**1,821**	**898**	**950**	**1,224**	**5,724**
				Per cent			
Singletons	71.8	70.8	69.2	68.9	84.0	97.2	77.9
Twins	28.2	24.9	28.3	27.8	15.3	2.7	20.1
Other multiple births	—	4.3	2.4	3.2	0.7	0.1	1.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

The largest percentage of mothers of babies admitted to level III NICUs were aged 30–34 years (31.7%), followed by those aged 25–29 years (25.2%) (Table 6.2). Mothers aged less than 20 years and mothers aged 40 years and over were most likely to have a low birthweight baby admitted to a level III NICU.

Table 6.2: Babies in level III neonatal intensive care units by maternal age and gestational age, 2004

Maternal age (years)	20–23 weeks	24–27 weeks	28–31 weeks	32–33 weeks	34–36 weeks	37–44 weeks	Total
				Number			
Less than 20	5	61	115	42	38	83	344
20–24	7	136	275	100	148	181	847
25–29	9	161	466	227	285	293	1,441
30–34	6	238	558	328	275	409	1,814
35–39	10	154	320	166	156	208	1,014
40 and over	2	42	87	35	48	50	264
Total	**39**	**792**	**1,821**	**898**	**950**	**1,224**	**5,724**
				Per cent			
Less than 20	12.8	7.7	6.3	4.7	4.0	6.8	6.0
20–24	17.9	17.2	15.1	11.1	15.6	14.8	14.8
25–29	23.1	20.3	25.6	25.3	30.0	23.9	25.2
30–34	15.4	30.1	30.6	36.5	28.9	33.4	31.7
35–39	25.6	19.4	17.6	18.5	16.4	17.0	17.7
40 and over	5.1	5.3	4.8	3.9	5.1	4.1	4.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Of babies in level III NICUs, 61.2% were born by caesarean section (36.6% with no labour and 24.6% with labour), and 38.5% were born vaginally (34.2% without the use of instruments and 4.2% with instruments). Babies in younger gestational age groups were more likely to be born vaginally than those in the older gestational age groups; however, babies in lower birthweight categories were more likely to be born by caesarean section (64.7% of babies less than 2,500 grams compared with 52.4% of babies 2,500 grams or more). Figure 6.1 shows the proportions of vaginal and caesarean section births by gestational age group.



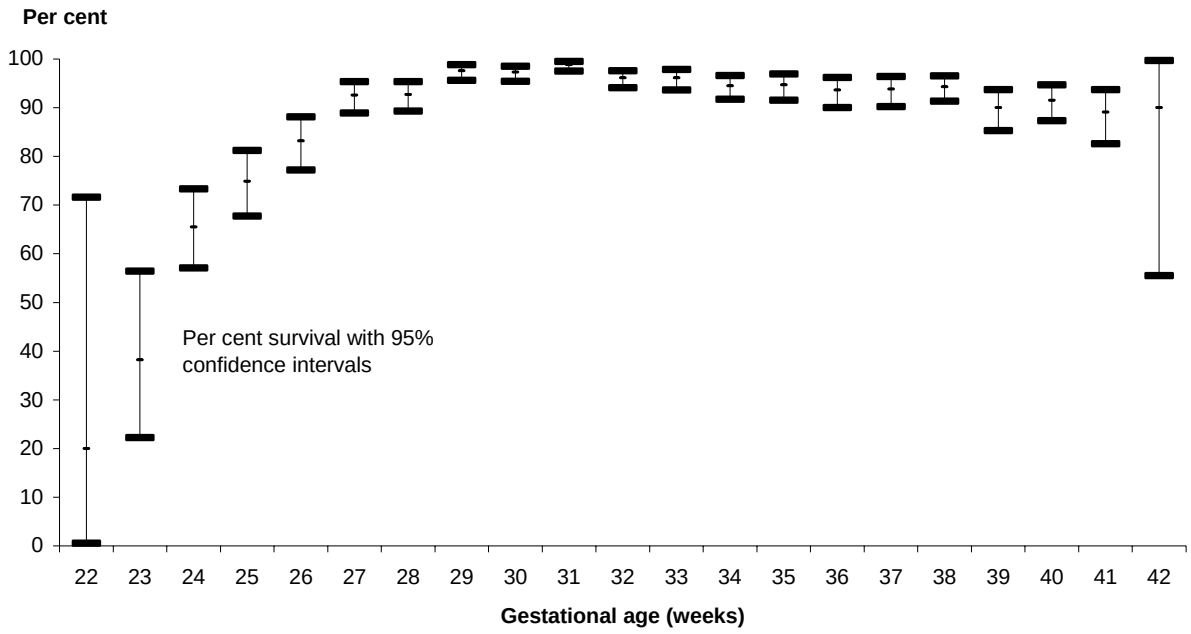
Source: Table A1.9.

Figure 6.1: Babies in level III neonatal intensive care units by method of birth and gestational age, 2004

Babies born at younger gestational ages had lower survival rates at discharge from level III NICUs (Figure 6.2). The proportion of babies surviving generally increased as gestational age increased. Of the 5,724 babies in level III NICUs in 2004, 96.2% were alive seven days after admission, 94.3% were alive after 28 days, and 92.8% were discharged.

Less than 2% of babies admitted were diagnosed with a lethal congenital malformation (1.8%). Of these babies, 84.2% had a gestational age of 32 weeks or more.

Around 56.6% of babies were transferred to a children's hospital, nursery or another NICU. The majority of these babies were transferred to a level II nursery (47.3%). Babies with younger gestational ages were less likely to be transferred (23.1% of babies at 20–23 weeks gestation).



Source: Table A1.10.

Figure 6.2: Babies in level III neonatal intensive care units, survival to discharge, by gestational age, 2004 (per cent)

7 Perinatal mortality

Definitions

There are different definitions in Australia for reporting and registering perinatal deaths (Figure 7.1). The NHDD specifies a definition of perinatal deaths to include all fetal and neonatal deaths of at least 400 grams birthweight or at least 20 weeks gestation (NHDC 2003). This definition is used in the NPDC.

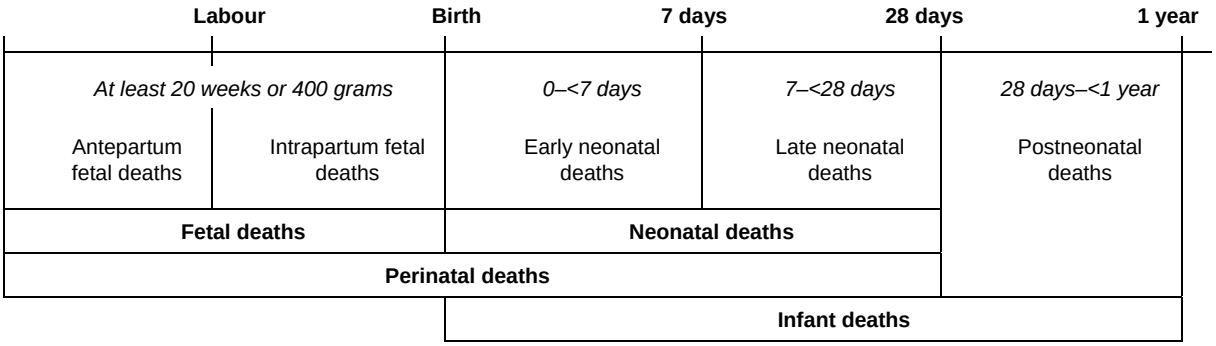
In Australia, all fetal and neonatal deaths of at least 400 grams birthweight or, if birthweight is unavailable, a gestational age of at least 20 weeks are registered (ABS 2006). Further information on these definitions and the issues surrounding the collection of data on perinatal deaths can be found in a previous edition of this report (Laws & Sullivan 2004a).

Figure 7.1: Definitions of perinatal mortality

Institution	Perinatal deaths		
	Fetal deaths		Neonatal deaths
	Birthweight	Gestational age	
WHO – International comparisons	1,000 grams	28 weeks (only if birthweight is unavailable)	< 7 days
– National reporting	500 grams	22 weeks (only if birthweight is unavailable)	< 7 days
ABS	400 grams	20 weeks (only if birthweight is unavailable)	< 28 days
NHDD & NPSU	400 grams	20 weeks	< 28 days

Figure 7.2 shows the definitions of periods of perinatal and infant deaths used by the NPSU. Neonatal deaths are those occurring in live births up to 28 completed days after birth. Infant deaths are those occurring in live births at less than one year of age.

Figure 7.2: Perinatal and infant death periods



Australian Bureau of Statistics data

The ABS definition of perinatal deaths includes birthweight of at least 400 grams or, where birthweight is unknown, a gestational age of at least 20 weeks. Deaths where both the birthweight and gestational age are unknown, are included. The data on perinatal deaths published by the ABS are based on the year of registration rather than on the year of birth or death. This chapter includes data from the *Causes of death Australia* report (e.g. ABS 2006) as well as from the perinatal deaths database as specified.

Fetal deaths

During the period 2002–2004, there were 3,875 fetal deaths registered, giving a fetal death rate of 5.1 per 1,000 births (Table 7.1). Between 1995 and 2004, the national fetal death rate declined from 5.9 to 5.3 per 1,000 births (ABS 2001; ABS 2006). This represents a decrease of 10.2%. Antepartum fetal deaths proportionately accounted for 66.3% of all fetal deaths in 2004 compared with 30.7% for intrapartum fetal deaths.

Table 7.1: Fetal, neonatal and perinatal deaths, 2002–2004

Deaths	2002	2003	2004	2002–2004
		Number		
Fetal	1,240	1,288	1,347	3,875
Neonatal	779	732	701	2,212
Perinatal	**2,019**	**2,020**	**2,048**	**6,087**
		Rate per 1,000 births[(a)]		
Fetal	4.9	5.1	5.3	5.1
Neonatal	3.1	2.9	2.8	2.9
Perinatal	**8.0**	**8.0**	**8.0**	**8.0**

(a) Fetal and perinatal death rates were calculated using all births (live births and stillbirths). Neonatal death rates were calculated using all live births.

Note: Data based on year of registration and definition of 400 grams birthweight (or 20 weeks gestation if birthweight is unknown).

Source: ABS 2006.

Neonatal deaths

The Australian neonatal death rate declined more sharply than the fetal death rate, falling by 20.0% from 3.5 per 1,000 live births in 1995 to 2.8 per 1,000 live births in 2004 (ABS 2001; ABS 2006).

Perinatal deaths

In the period between 1995 and 2004, the national perinatal death rate declined from 9.4 per 1,000 births to 8.0 per 1,000 births (ABS 2001; ABS 2006). In 2004, perinatal death rates were lowest in South Australia and Tasmania (both 6.9 per 1,000 births), and relatively higher in the Australian Capital Territory (11.0 per 1,000 births) and the Northern Territory (11.2 per 1,000 births) (ABS 2006).

Perinatal deaths and plurality

Perinatal death rates are higher for multiple births than for singleton births (Table 7.2). There were 6,087 perinatal deaths registered during the period 2002–2004; 640 (10.5%) occurred in twins and 49 (0.8%) in other multiple births (Table 7.2). On average, for the three-year period, multiple births accounted for 3.3% of all births and 11.3% of all perinatal deaths nationally. The perinatal death rate of twins for the period 2002–2004 was 3.6 times higher, and of other multiple births 9.2 times higher, than that of singleton births.

Table 7.2: Fetal, neonatal and perinatal deaths by plurality, 2002–2004

	Singletons		Twins		Other multiple births		Total	
Year	Number	Rate[(a)]	Number	Rate[(a)]	Number	Rate[(a)]	Number	Rate[(a)]
Fetal deaths								
2002	1,137	4.7	96	11.8	7	27.7	1,240	4.9
2003	1,194	4.9	91	11.4	3	12.9	1,288	5.1
2004	1,252	5.1	84	10.2	11	45.6	1,347	5.3
2002–2004	*3,583*	*4.9*	*271*	*11.1*	*21*	*28.9*	*3,875*	*5.1*
Neonatal deaths								
2002	627	2.6	146	18.1	6	24.4	779	3.1
2003	580	2.4	142	18.0	10	43.5	732	2.9
2004	608	2.5	81	9.9	12	52.2	701	2.8
2002–2004	*1,815*	*2.5*	*369*	*15.3*	*28*	*39.7*	*2,212*	*2.9*
Perinatal deaths								
2002	1,764	7.2	242	29.6	13	51.4	2,019	8.0
2003	1,774	7.3	233	29.1	13	55.8	2,020	8.0
2004	1,860	7.5	165	20.0	23	95.4	2,048	8.0
2002–2004	**5,398**	**7.3**	**640**	**26.2**	**49**	**67.4**	**6,087**	**8.0**

(a) Fetal and perinatal death rates were calculated using all births (live births and stillbirths). Neonatal death rates were calculated using all live births.

Note: Data based on year of registration and definition of 400 grams birthweight (or 20 weeks gestation if birthweight is unknown).

Sources: ABS perinatal deaths database 2002, 2003, 2004; ABS births database 2002, 2003, 2004.

Causes of perinatal deaths

For perinatal deaths, a condition may be reported in the fetus / infant, the mother, or both. Of perinatal deaths registered in 2004, 28.8% did not have a specific cause of death in the fetus / infant assigned. For those where a cause was reported, the category of conditions originating in the perinatal period was the more common cause in all states and territories, and ranged from 65.2% of perinatal deaths in the Australian Capital Territory to 90.0% in the Northern Territory. The variability among the states and territories in terms of cause of death may reflect population differences and variations in certification.

A maternal condition was reported in 60.9% of perinatal deaths in 2004. Complications of placenta, cord and membranes was the most commonly reported category overall (24.0%) and in New South Wales, Queensland, Western Australia and South Australia. Maternal conditions that may be unrelated to the present pregnancy was the next largest category (17.6%), followed by maternal complications of pregnancy (14.5%) (Table 7.3).

Table 7.3: Perinatal deaths by cause of death and state and territory of the mother's usual residence, 2004

Cause of death	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
					Number				
All causes	**617**	**576**	**422**	**189**	**118**	**40**	**46**	**40**	**2,048**
Main condition in fetus/infant									
Certain conditions originating in the perinatal period (P00–P96)	489	450	317	149	93	34	30	36	1,598
Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	116	119	93	38	22	5	12	2	407
Main condition in mother									
Maternal conditions that may be unrelated to present pregnancy (P00)	75	149	54	36	20	11	7	9	361
Maternal complications of pregnancy (P01)	109	62	72	23	7	6	9	9	297
Complications of placenta, cord and membranes (P02)	152	125	107	51	33	8	7	8	491
Complications of labour and delivery (P03)	15	38	10	10	9	—	1	2	85
Noxious influences transmitted via placenta or breast milk (P04)	1	4	3	3	2	—	—	—	13
No maternal condition reported	265	198	176	66	47	15	22	12	801
					Per cent				
Main condition in fetus/infant									
Certain conditions originating in the perinatal period (P00–P96)	79.3	78.1	75.1	78.8	78.8	85.0	65.2	90.0	78.0
Congenital malformations, deformations and chromosomal abnormalities (Q00–Q99)	18.8	20.7	22.0	20.1	18.6	12.5	26.1	5.0	19.9
Main condition in mother									
Maternal conditions that may be unrelated to present pregnancy (P00)	12.2	25.9	12.8	19.0	16.9	27.5	15.2	22.5	17.6
Maternal complications of pregnancy (P01)	17.7	10.8	17.1	12.2	5.9	15.0	19.6	22.5	14.5
Complications of placenta, cord and membranes (P02)	24.6	21.7	25.4	27.0	28.0	20.0	15.2	20.0	24.0
Complications of labour and delivery (P03)	2.4	6.6	2.4	5.3	7.6	—	2.2	5.0	4.2
Noxious influences transmitted via placenta or breast milk (P04)	0.2	0.7	0.7	1.6	1.7	—	—	—	0.6
No maternal condition reported	42.9	34.4	41.7	34.9	39.8	37.5	47.8	30.0	39.1

Note: Data based on year of registration and state/territory of the mother's usual residence, and definition of 400 grams birthweight (or 20 weeks gestation if birthweight is unknown).

Source: ABS perinatal deaths database 2004.

National Perinatal Data Collection data

Fetal deaths

As noted previously, fetal deaths are included in the NPDC if the birthweight is at least 400 grams or the gestational age is 20 weeks or more.

In 2004, there were 1,919 fetal deaths reported to the NPDC, resulting in a fetal death rate of 7.5 per 1,000 births (Table 7.4), higher than the rate of 5.3 per 1,000 reported from the ABS mortality collection. This is partially explained by the use of different reporting practices and inclusion criteria for fetal deaths in the two collections. The state and territory fetal death rates ranged from 6.3 per 1,000 births in the Northern Territory to 9.7 per 1,000 births in Victoria.

Table 7.4: Fetal, neonatal and perinatal deaths by state and territory, 2004

	NSW	Vic	Qld	WA	SA	Tas	ACT[a]	NT	Australia
					Number				
Live births[b]	85,065	63,082	50,563	25,340	17,408	5,483	4,893	3,452	255,286
Fetal deaths	561	618	347	188	113	37	33	22	1,919
Neonatal deaths[c]	212	207	198	61	51	12	23	19	783
Perinatal deaths	*773*	*825*	*545*	*249*	*164*	*49*	*56*	*41*	*2,702*
Total births	85,626	63,700	50,910	25,528	17,521	5,520	4,926	3,474	257,205
					Rate per 1,000 births[d]				
Fetal deaths	6.6	9.7	6.8	7.4	6.4	6.7	6.7	6.3	7.5
Neonatal deaths[c]	2.5	3.3	3.9	2.4	2.9	2.2	4.7	5.5	3.1
Perinatal deaths	*9.0*	*13.0*	*10.7*	*9.8*	*9.4*	*8.9*	*11.4*	*11.8*	*10.5*

(a) 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting rates. For example, for ACT residents who gave birth in the ACT, there were 6.1 fetal deaths per 1,000 births, 4.4 neonatal deaths per 1,000 live births and 10.4 perinatal deaths per 1,000 births.

(b) Includes neonatal deaths.

(c) Except in WA and NT, these may exclude neonatal deaths within 28 days of birth for babies transferred to another hospital or readmitted to hospital and those dying at home.

(d) Fetal and perinatal death rates were calculated using all births (live births and stillbirths). Neonatal death rates were calculated using all live births.

There was variation in fetal and perinatal death rates according to maternal age with higher rates reported for teenage mothers (Table 7.5). The age-group specific fetal death rates ranged from 6.3 per 1,000 births for babies of mothers aged 30–34 years to 14.7 per 1,000 births for babies of mothers aged less than 20 years.

The fetal death rate of babies born to Aboriginal or Torres Strait Islander mothers (excluding Tasmania) was 11.0 per 1,000 births. The rate was 7.2 per 1,000 births for non-Indigenous mothers (Table 7.5).

Fetal death was more likely among babies of first-time mothers (9.0 per 1,000 births) than among babies whose mothers had at least one previous birth (6.3 per 1,000 births). However, for grand multiparous women (women who have had four or more previous pregnancies resulting in a live birth or stillbirth), the fetal death rate was higher at 10.8 per 1,000 births.

The fetal death rate of twins (20.1 per 1,000 births) and other multiple births (75.6 per 1,000 births) was higher than that of singleton babies (7.0 per 1,000 births).

Fetal death rates were higher for babies of mothers who gave birth in public hospitals (7.9 per 1,000 births) than for those of mothers who gave birth in private hospitals (6.8 per 1,000 births) (Table 7.5).

Table 7.5: Fetal, neonatal and perinatal deaths by selected maternal characteristics, 2004

Characteristic	Fetal deaths	Neonatal deaths[(a)(b)]	Perinatal deaths[(a)(b)]
		Rate per 1,000 births[(c)]	
Maternal age			
Less than 20	14.7	5.1	19.7
20–24	8.2	3.5	11.7
25–29	6.9	3.1	10.0
30–34	6.3	2.5	8.8
35 and over	7.8	3.3	11.1
Indigenous status[(d)]			
Aboriginal or Torres Strait Islander	11.0	6.9	17.8
Non-Indigenous	7.2	2.9	10.2
Hospital sector for hospital births			
Public	7.9	3.8	11.7
Private	6.8	1.3	8.1
Parity			
Primipara	9.0	3.3	12.2
Multipara	6.3	2.9	9.2

(a) Excludes neonatal deaths in NT.

(b) Except in WA, these may exclude neonatal deaths within 28 days of birth for babies transferred to another hospital or readmitted to hospital, and those dying at home.

(c) Fetal and perinatal death rates were calculated using all births (live births and stillbirths). Neonatal death rates were calculated using all live births.

(d) Excludes Tas.

Neonatal deaths

There were 783 neonatal deaths reported to the NPDC for 2004, giving a rate of 3.1 per 1,000 live births (Table 7.4). Ascertainment of neonatal deaths within 28 days of birth is likely to be incomplete for deaths occurring among babies transferred to another hospital, readmitted to hospital or dying at home.

Neonatal death rates based on NPDC data varied among the states and territories. The variation in rates may reflect differences in ascertainment practices of deaths by states and territories as well as absolute differences in mortality experienced in the state or territory.

The neonatal death rates ranged from 2.2 per 1,000 live births in Tasmania to 5.5 per 1,000 live births in the Northern Territory (Table 7.4).

Note that a significant proportion of women who gave birth in the Australian Capital Territory were New South Wales residents (16.3% in 2004). Many women from southern New South Wales with high-risk pregnancies gave birth in the Australian Capital Territory (Table 3.3), so death rates are likely to appear higher when based on births in the Australian Capital Territory.

Higher neonatal death rates were reported for younger mothers. The age-group specific neonatal death rate was 5.1 per 1,000 live births for babies of teenage mothers (aged less than 20 years) and 3.5 per 1,000 live births for babies of mothers aged 20–24 years (Table 7.5).

The neonatal death rate of babies born to Aboriginal or Torres Strait Islander mothers was 6.9 per 1,000 live births, noting that the data do not include Tasmania. The neonatal death rate for babies born to non-Indigenous mothers was 2.9 per 1,000 live births.

Neonatal death rates were higher for babies of mothers who gave birth in public hospitals (3.8 per 1,000 live births) than for those of mothers who gave birth in private hospitals (1.3 per 1,000 live births).

Perinatal deaths

In the NPDC there were 2,702 reported perinatal deaths in 2004, resulting in a perinatal death rate of 10.5 deaths per 1,000 births (Table 7.4). Of these perinatal deaths, 71.0% were fetal deaths.

Perinatal death rates were highest in babies of teenage mothers (19.7 per 1,000 births), followed by babies of mothers aged 20–24 years (11.7 per 1,000 births). The perinatal death rate of babies born to Aboriginal or Torres Strait Islander mothers (excluding Tasmania) was 17.8 per 1,000 births. The rate was 10.2 per 1,000 births in babies born to non-Indigenous mothers (Table 7.5).

Perinatal death was more likely among babies of first-time mothers (12.2 per 1,000 births) than among babies whose mothers had at least one previous birth (9.2 per 1,000 births). Perinatal death rates were higher for babies of mothers who gave birth in public hospitals (11.7 per 1,000 births) than for those of mothers who gave birth in private hospitals (8.1 per 1,000 births) (Table 7.5).

Perinatal death rates vary according to which definition is used. According to the ABS definition, there were 2,048 perinatal deaths registered in 2004, resulting in a perinatal death rate of 8.0 deaths per 1,000 births (ABS 2006). Using the criteria of 400 grams or more birthweight or 20 weeks or more gestation for the NPDC data, the 2004 perinatal death rate of 10.5 per 1,000 births was higher.

Causes of perinatal deaths

The majority of states and territories have implemented the Perinatal Society of Australia and New Zealand Perinatal Death Classification (PSANZ-PDC) and the PSANZ Neonatal Death Classification (PSANZ-NDC) to classify causes of perinatal deaths. Further details on these classifications can be found at <http://www.psanzpnmsig.org/>.

For the 2004 data, six jurisdictions provided causes of death according to the PSANZ-PDC (Table 7.6). In New South Wales, only deaths of at least 500 grams birthweight or at least 22 weeks gestation with confidential reports had been classified. This differed from the

400 grams or 20 weeks gestation criteria used by the other five states. Excluding New South Wales because of the different inclusion criteria, the main causes of perinatal deaths in the five states with comparable data for 2004 were congenital abnormalities (23.7%), spontaneous preterm births (17.8%) and unexplained antepartum death (15.5%). These three groups of causes accounted for over half of all perinatal deaths in these states. Death from maternal conditions (13.5%) was also a commonly reported cause of perinatal death. There is considerable variability by jurisdiction in the leading causes of death, most likely the result of differences in the implementation of the classification at a jurisdictional level.

Table 7.7 presents causes of perinatal deaths by gestational age group for five states. The main cause of perinatal death at 20–21 weeks gestation was congenital abnormalities (39.1%). The leading cause of death at 22–27 weeks gestation was the category of spontaneous preterm birth (27.2%). Perinatal deaths of babies at 32–36 weeks gestation or at term were most commonly due to unexplained antepartum death (29.5% and 30.0% respectively).

The most common causes of perinatal death in singletons were congenital abnormalities (25.4%), followed by unexplained antepartum death (16.0%) and spontaneous preterm birth (15.7%) (Table 7.8). Deaths of twins and higher order multiple births were mostly due to spontaneous preterm birth and specific perinatal conditions.

Of perinatal deaths to mothers aged less than 20 years, 44.4% were due to maternal conditions. In mothers aged 40 years or over, 31.5% of perinatal deaths were caused by congenital abnormalities (Table 7.9).

Table 7.6: Perinatal deaths by Perinatal Society of Australia and New Zealand Perinatal Death Classification and state and territory, 2004

Cause of death	NSW[a]	Vic	Qld	WA	SA	Tas	ACT	NT	Total[b]
					Number				
Congenital abnormality	125	193	121	61	54	6	n.a.	n.a.	560
Perinatal infection	n.p.	13	11	11	13	<5	n.a.	n.a.	64
Hypertension	30	29	14	13	6	—	n.a.	n.a.	92
Antepartum haemorrhage (APH)	59	44	45	13	11	8	n.a.	n.a.	180
Maternal conditions	21	213	21	5	n.p.	<5	n.a.	n.a.	269
Specific perinatal conditions	43	47	40	22	n.p.	<5	n.a.	n.a.	172
Hypoxic peripartum death	20	25	14	11	6	5	n.a.	n.a.	81
Fetal growth restriction (FGR)	16	39	16	11	14	8	n.a.	n.a.	104
Spontaneous preterm	121	115	121	65	16	9	n.a.	n.a.	447
Unexplained antepartum death	191	99	128	33	19	5	n.a.	n.a.	475
No obstetric antecedent	<4	8	14	4	<4	—	n.a.	n.a.	31
Not stated	130	—	—	—	—	—	n.a.	n.a.	130
Total	**773**	**825**	**545**	**249**	**164**	**49**	**n.a.**	**n.a.**	**2,605**
					Per cent				
Congenital abnormality	16.2	23.4	22.2	24.5	32.9	12.2	n.a.	n.a.	21.5
Perinatal infection	n.p.	1.6	2.0	4.4	7.9	n.p.	n.a.	n.a.	2.5
Hypertension	3.9	3.5	2.6	5.2	3.7	—	n.a.	n.a.	3.5
Antepartum haemorrhage (APH)	7.6	5.3	8.3	5.2	6.7	16.3	n.a.	n.a.	6.9
Maternal conditions	2.7	25.8	3.9	2.0	n.p.	n.p.	n.a.	n.a.	10.3
Specific perinatal conditions	5.6	5.7	7.3	8.8	n.p.	n.p.	n.a.	n.a.	6.6
Hypoxic peripartum death	2.6	3.0	2.6	4.4	3.7	10.2	n.a.	n.a.	3.1
Fetal growth restriction (FGR)	2.1	4.7	2.9	4.4	8.5	16.3	n.a.	n.a.	4.0
Spontaneous preterm	15.7	13.9	22.2	26.1	9.8	18.4	n.a.	n.a.	17.2
Unexplained antepartum death	24.7	12.0	23.5	13.3	11.6	10.2	n.a.	n.a.	18.2
No obstetric antecedent	n.p.	1.0	2.6	1.6	n.p.	—	n.a.	n.a.	1.2
Not stated	16.8	—	—	—	—	—	n.a.	n.a.	5.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**n.a.**	**n.a.**	**100.0**

(a) For NSW, the Perinatal Outcomes Working Party of the NSW Maternal and Perinatal Committee classified deaths of at least 500 g birthweight and/or at least 22 weeks gestation. 'Not stated' includes perinatal deaths less than 500 g birthweight and less than 22 weeks gestation that were not classified by the Committee and other deaths for which no report was received. For further information see: NSW Department of Health 2005.

(b) Includes NSW which has different inclusion criteria. This may affect the overall distribution of the causes of death.

n.a. Data for ACT and NT were not available.

n.p. Data not published to maintain confidentiality of small numbers.

Note: Data are based on state/territory of death rather than the state/territory of the mother's usual residence.

Table 7.7: Perinatal deaths by Perinatal Society of Australia and New Zealand Perinatal Death Classification and gestational age, 2004

	Gestational age (weeks)							
Cause of death	**20–21**	**22–27**	**28–31**	**32–36**	**37–41**	**42 and over**	**Not stated**	**Total**
				Number				
Congenital abnormality	173	116	31	49	64	1	1	435
Perinatal infection	7	18	6	3	16	—	—	50
Hypertension	1	27	12	10	12	—	—	62
Antepartum haemorrhage (APH)	24	48	4	25	20	—	—	121
Maternal conditions	62	153	8	14	9	2	—	248
Specific perinatal conditions	27	47	12	15	28	—	—	129
Hypoxic peripartum death	—	2	—	7	51	1	—	61
Fetal growth restriction (FGR)	7	18	17	16	30	—	—	88
Spontaneous preterm	121	184	15	5	1	—	—	326
Unexplained antepartum death	19	61	35	62	106	1	—	284
No obstetric antecedent	2	3	2	4	16	—	1	28
Total	**443**	**677**	**142**	**210**	**353**	**5**	**2**	**1,832**
				Per cent				
Congenital abnormality	39.1	17.1	21.8	23.3	18.1	20.0	50.0	23.7
Perinatal infection	1.6	2.7	4.2	1.4	4.5	—	—	2.7
Hypertension	0.2	4.0	8.5	4.8	3.4	—	—	3.4
Antepartum haemorrhage (APH)	5.4	7.1	2.8	11.9	5.7	—	—	6.6
Maternal conditions	14.0	22.6	5.6	6.7	2.5	40.0	—	13.5
Specific perinatal conditions	6.1	6.9	8.5	7.1	7.9	—	—	7.0
Hypoxic peripartum death	—	0.3	—	3.3	14.4	20.0	—	3.3
Fetal growth restriction (FGR)	1.6	2.7	12.0	7.6	8.5	—	—	4.8
Spontaneous preterm	27.3	27.2	10.6	2.4	0.3	—	—	17.8
Unexplained antepartum death	4.3	9.0	24.6	29.5	30.0	20.0	—	15.5
No obstetric antecedent	0.5	0.4	1.4	1.9	4.5	—	50.0	1.5
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note: Excludes NSW, ACT and NT.

Table 7.8: Perinatal deaths by Perinatal Society of Australia and New Zealand Perinatal Death Classification and plurality, 2004

Cause of death	Singletons	Twins	Other multiple births	Total
		Number		
Congenital abnormality	416	19	—	435
Perinatal infection	48	1	1	50
Hypertension	59	3	—	62
Antepartum haemorrhage (APH)	113	7	1	121
Maternal conditions	238	10	—	248
Specific perinatal conditions	75	48	6	129
Hypoxic peripartum death	58	3	—	61
Fetal growth restriction (FGR)	85	3	—	88
Spontaneous preterm	257	64	5	326
Unexplained antepartum death	263	21	—	284
No obstetric antecedent	28	—	—	28
Total	**1,640**	**179**	**13**	**1,832**
		Per cent		
Congenital abnormality	25.4	10.6	—	23.7
Perinatal infection	2.9	0.6	7.7	2.7
Hypertension	3.6	1.7	—	3.4
Antepartum haemorrhage (APH)	6.9	3.9	7.7	6.6
Maternal conditions	14.5	5.6	—	13.5
Specific perinatal conditions	4.6	26.8	46.2	7.0
Hypoxic peripartum death	3.5	1.7	—	3.3
Fetal growth restriction (FGR)	5.2	1.7	—	4.8
Spontaneous preterm	15.7	35.8	38.5	17.8
Unexplained antepartum death	16.0	11.7	—	15.5
No obstetric antecedent	1.7	—	—	1.5
Total	**100.0**	**100.0**	**100.0**	**100.0**

Note: Excludes NSW, ACT and NT.

Table 7.9: Perinatal deaths by Perinatal Society of Australia and New Zealand Perinatal Death Classification and maternal age, 2004

Cause of death	Maternal age (years)							
	Less than 20	20–24	25–29	30–34	35–39	40 and over	Not stated	Total
				Number				
Congenital abnormality	23	72	122	117	70	29	2	435
Perinatal infection	4	16	6	14	5	5	—	50
Hypertension	4	9	9	22	13	5	—	62
Antepartum haemorrhage (APH)	6	16	33	34	26	6	—	121
Maternal conditions	75	63	47	34	14	7	8	248
Specific perinatal conditions	3	13	42	42	26	3	—	129
Hypoxic peripartum death	3	13	10	20	13	2	—	61
Fetal growth restriction (FGR)	5	12	29	22	13	7	—	88
Spontaneous preterm	25	47	77	102	62	13	—	326
Unexplained antepartum death	15	43	77	98	38	13	—	284
No obstetric antecedent	6	3	8	4	5	2	—	28
Total	**169**	**307**	**460**	**509**	**285**	**92**	**10**	**1,832**
				Per cent				
Congenital abnormality	13.6	23.5	26.5	23.0	24.6	31.5	20.0	23.7
Perinatal infection	2.4	5.2	1.3	2.8	1.8	5.4	—	2.7
Hypertension	2.4	2.9	2.0	4.3	4.6	5.4	—	3.4
Antepartum haemorrhage (APH)	3.6	5.2	7.2	6.7	9.1	6.5	—	6.6
Maternal conditions	44.4	20.5	10.2	6.7	4.9	7.6	80.0	13.5
Specific perinatal conditions	1.8	4.2	9.1	8.3	9.1	3.3	—	7.0
Hypoxic peripartum death	1.8	4.2	2.2	3.9	4.6	2.2	—	3.3
Fetal growth restriction (FGR)	3.0	3.9	6.3	4.3	4.6	7.6	—	4.8
Spontaneous preterm	14.8	15.3	16.7	20.0	21.8	14.1	—	17.8
Unexplained antepartum death	8.9	14.0	16.7	19.3	13.3	14.1	—	15.5
No obstetric antecedent	3.6	1.0	1.7	0.8	1.8	2.2	—	1.5
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Note: Excludes NSW, ACT and NT.

Appendix 1: Data used in figures

Table A1.1: Mothers reporting smoking during pregnancy, 2001–2004 (per cent)

	2001	2002	2003	2004
Smoked	19.2	18.4	17.3	16.7

Note: Excludes Vic, Qld and Tas.

Table A1.2: Women who gave birth by onset of labour, 1995–2004 (per cent)

Onset of labour	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Spontaneous	67.2	66.8	64.5	62.6	61.9	61.5	59.0	57.9	57.3	57.6
Induced	21.9	22.3	24.0	25.5	26.0	25.6	26.7	26.6	26.1	25.3
No labour	10.8	10.9	11.4	11.8	12.1	12.9	14.3	15.5	16.5	17.1

Table A1.3: Type of anaesthetic for caesarean section deliveries, 2004 (per cent)

Type of anaesthetic	Per cent
Epidural or caudal	24.3
Spinal	67.9
General	7.4
Other	0.3

Note: Excludes NSW and ACT.

Table A1.4: Women who gave birth by caesarean section and instrumental birth, 1995–2004 (per cent)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Caesarean section	19.3	19.5	20.3	21.1	21.8	23.3	25.4	27.0	28.5	29.4
Instrumental	11.4	11.4	11.2	11.2	11.1	11.2	10.9	10.8	10.7	11.0

Table A1.5: Women who gave birth by caesarean section by maternal age and hospital sector, 2004 (per cent)

Maternal age (years)	Public	Private
Less than 20	16.7	17.3
20–24	20.1	27.4
25–29	24.6	33.4
30–34	29.8	37.8
35–39	34.3	44.3
40 and over	40.9	53.7

Table A1.6: Distribution of gestational age, 2004 (per cent)

Gestational age (weeks)	Per cent
19	0.0
20	0.1
21	0.1
22	0.1
23	0.1
24	0.1
25	0.1
26	0.1
27	0.1
28	0.1
29	0.2
30	0.2
31	0.3
32	0.4
33	0.6
34	1.0
35	1.5
36	2.9
37	6.3
38	18.0
39	22.6
40	29.7
41	14.0
42	1.3
43	0.1
44	0.0

Table A1.7: Length of stay of 5 days or more for term babies born in hospital, 1995–2004 (per cent)

Length of stay	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
5 days and over	44.7	41.9	39.6	37.3	34.1	32.0	31.2	29.9	28.8	27.3

Note: Only babies who were discharged home are included.

Table A1.8: Primiparous women who gave birth by maternal age, 1995 and 2004 (per cent)

Maternal age (years)	1995	2004
Less than 20	82.0	82.9
20–24	53.8	54.8
25–29	42.5	46.5
30–34	28.9	36.5
35–39	21.1	27.3
40 and over	18.6	25.3

Table A1.9: Babies in level III neonatal intensive care units by method of birth and gestational age, 2004 (per cent)

Method of birth	Less than 32 weeks	32–36 weeks	37–44 weeks
Vaginal	37.7	31.4	50.7
Caesarean section	62.0	68.5	48.4

Table A1.10: Babies in level III neonatal intensive care units by survival to discharge and gestational age, 2004 (per cent)

Gestational age (weeks)	Per cent survived to discharge	95% confidence interval
22	20.0	0.5–71.6
23	38.2	22.2–56.4
24	65.5	57.1–73.3
25	74.9	67.7–81.2
26	82.7	77.2–88.1
27	92.6	88.9–95.3
28	92.7	89.3–95.3
29	97.6	95.6–98.8
30	97.3	95.4–98.5
31	98.8	97.5–99.5
32	96.1	94.1–97.6
33	96.1	93.6–97.8
34	94.5	91.7–96.6
35	94.7	91.5–96.9
36	93.6	90.0–96.2
37	93.8	90.2–96.4
38	94.3	91.3–96.5
39	90.0	85.3–93.7
40	91.5	87.3–94.7
41	89.1	82.6–93.7
42	90.0	55.5–99.7

Appendix 2: State and territory pre-existing and pregnancy-related medical conditions data

This Appendix presents state and territory data on selected pre-existing conditions and complications arising in pregnancy. Data are presented on four conditions and complications: essential hypertension, diabetes mellitus, pregnancy-induced hypertension and gestational diabetes.

Comprehensive and reliable information on risk factors and complications arising in pregnancy continues to be a challenging area of data development. The development of a nationally consistent scope, collection methods and classifications of these conditions and complications is progressing in line with the overall priorities of perinatal data development.

The following data are presented to promote discussion and to assist in development of consistency across jurisdictions, so that in the future more comprehensive information will be available on these and other conditions. This is being undertaken by the NPDDC as part of its perinatal data development work program.

Data

Tables A2.1–A2.7 provide information by state and territory. A number of jurisdictions publish these data annually. Data are presented by individual state and territory, as the data are not directly comparable across jurisdictions. No national estimates or totals are provided in these preliminary data.

Data on these conditions and complications are generally collected using a tick box on the perinatal form of each state and territory. However, for some jurisdictions, for some of these conditions and complications a tick box is not available, so the condition or complication may be recorded using free text. The descriptions of these conditions and complications vary among the states and territories, and there are no nationally consistent guidelines for what they include.

It is important when interpreting the data that each state and territory is looked at independently. The scope of the selected conditions may vary—a higher rate may reflect a broader definition of the condition or a lower rate may reflect different practices in collection of the data or different inclusion criteria for the conditions.

New South Wales

Table A2.1: Selected maternal medical conditions and obstetric complications, New South Wales, 2004

	Essential hypertension	Diabetes mellitus	Pregnancy-induced hypertension	Gestational diabetes
Number	940	464	4,606	3,592
Rate per 1,000 women who gave birth	11.2	5.5	54.6	42.6

Victoria

Table A2.2: Selected maternal medical conditions and obstetric complications, Victoria, 2004

	Essential hypertension	Diabetes mellitus	Pregnancy-induced hypertension	Gestational diabetes
Number	799	271	3,410	2,572
Rate per 1,000 women who gave birth	12.8	4.3	54.5	41.1

Queensland

Table A2.3: Selected maternal medical conditions and obstetric complications, Queensland, 2004

	Essential hypertension	Diabetes mellitus	Pregnancy-induced hypertension	Gestational diabetes
Number	371	247	3,161	2,578
Rate per 1,000 women who gave birth	7.4	4.9	63.2	51.5

Western Australia

Table A2.4: Selected maternal medical conditions and obstetric complications, Western Australia, 2004

	Essential hypertension	Diabetes mellitus	Pregnancy-induced hypertension	Gestational diabetes
Number	221	132	1,071	996
Rate per 1,000 women who gave birth	8.8	5.3	42.7	39.7

South Australia

Table A2.5: Selected maternal medical conditions and obstetric complications, South Australia, 2004

	Essential hypertension	Diabetes mellitus	Pregnancy-induced hypertension	Gestational diabetes
Number	217	90	1,344	716
Rate per 1,000 women who gave birth	12.6	5.2	78.0	41.6

Australian Capital Territory

Table A2.6: Selected maternal medical conditions and obstetric complications, Australian Capital Territory, 2004

	Essential hypertension	Diabetes mellitus	Pregnancy-induced hypertension	Gestational diabetes
Number	109	72	336	201
Rate per 1,000 women who gave birth	22.7	15.0	70.0	41.9

Note: 16.3% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting rates. The ACT uses broader inclusion criteria for these conditions and data is collected from multiple sources.

Northern Territory

Table A2.7: Selected maternal medical conditions and obstetric complications, Northern Territory, 2004

	Essential hypertension	Diabetes mellitus	Pregnancy-induced hypertension	Gestational diabetes
Number	29	28	194	217
Rate per 1,000 women who gave birth	8.4	8.1	56.4	63.1

Appendix 3: Perinatal National Minimum Data Set items

Data element name	METeOR identifier
Birth—Apgar score (at 5 minutes), code NN	289360
Birth—birth order, code N	269992
Birth—birth status, code N	269949
Birth—birth weight, total grams NNNN	269938
Birth event—birth method, code N	295349
Birth event—birth plurality, code N	269994
Birth event—birth presentation, code N	269945
Birth event—labour onset type, code N	269942
Birth event—setting of birth (actual), code N	269937
Birth event—state / territory of birth, code N	270151
Episode of admitted patient care—separation date, DDMMYYYY	270025
Establishment—organisation identifier (Australian), NNX[X]NNNNN	269973
Female (pregnant)—estimated gestational age, total weeks NN	269965
Person—area of usual residence, geographical location code (ASGC 2005) NNNNN	329147
Person—country of birth, code (SACC 1998) NNNN	270277
Person—date of birth, DDMMYYYY	287007
Person—Indigenous status, code N	291036
Person—person identifier, XXXXXX[X(14)]	290046
Person—sex, code N	287316

Appendix 4: State and territory perinatal reports

Individual state and territory health authorities publish reports based on their state or territory perinatal collection either annually or periodically. For the 2004 data, the following state and territory reports have been published:

New South Wales

NSW Department of Health 2005. New South Wales mothers and babies 2004. NSW Public Health Bulletin Supplement, 16 (S-4). Sydney: NSW Department of Health.

Victoria

Riley M, Davey M-A & King J 2005. Births in Victoria, 2003–2004. Melbourne: Victorian Government Department of Human Services.

The Consultative Council on Obstetric and Paediatric Mortality and Morbidity 2005. Annual report for the year 2004, incorporating the 43rd survey of perinatal deaths in Victoria. Melbourne.

Queensland

Queensland Health 2006. Perinatal statistics Queensland 2004. Brisbane: Queensland Health.

Western Australia

Gee V & Godman K 2006. Perinatal statistics in Western Australia, 2004: twenty-second annual report of the Western Australian Midwives' Notification System. Perth: Department of Health, Western Australia.

South Australia

Chan A, Scott J, Nguyen A-M & Sage L 2006. Pregnancy outcome in South Australia 2004. Adelaide: South Australian Department of Health.

Maternal, Perinatal and Infant Mortality Committee 2006. Maternal, perinatal and infant mortality in South Australia 2004, including the South Australian protocol for the investigation of stillbirths. Adelaide: South Australian Department of Health.

Tasmania

DHHS (Department of Health and Human Services) 2006. Council of Obstetric and Paediatric Mortality and Morbidity, Tasmania: annual report for 2004. Hobart: DHHS.

Appendix 5: Data collection contacts

State and territory perinatal data

New South Wales

Dr Lee Taylor
Manager
Surveillance Methods
Centre for Epidemiology and Research
NSW Department of Health
Locked Bag No. 961
North Sydney NSW 2059
Phone: 02 9391 9223
Fax: 02 9391 9232
Email: ltayl@doh.health.nsw.gov.au
Website: <http://www.health.nsw.gov.au/public-health/epi/>

Victoria

Ms Odette Taylor
Health Information Manager
Perinatal Data Collection Unit
Department of Human Services
GPO Box 4003
Melbourne Vic 3001
Phone: 03 9096 2692
Fax: 03 9096 2700
Email: odette.taylor@dhs.vic.gov.au
Website: <http://www.health.vic.gov.au/perinatal/>

Queensland

Ms Sue Cornes
Data Services Manager
Data Services Unit
Health Information Centre
Queensland Department of Health
GPO Box 48
Brisbane Qld 4001
Phone: 07 3234 0889
Fax: 07 3234 0564
Email: suzanne_cornes@health.qld.gov.au
Website: <http://www.health.qld.gov.au/hic/>

Western Australia

Ms Vivien Gee
Manager
Maternal and Child Health Unit
Health Data Collections
Information Collection and Management
Department of Health, Western Australia
189 Royal Street
East Perth WA 6004
Phone: 08 9222 4262
Fax: 08 9222 4236
Email: vivien.gee@health.wa.gov.au
Website: <http://www.population.health.wa.gov.au/HealthInfo/>

South Australia

Dr Annabelle Chan
Senior Medical Consultant
Pregnancy Outcome Statistics Unit
Department of Health
PO Box 6, Rundle Mall
Adelaide SA 5000
Phone: 08 8226 6357
Fax: 08 8226 6291
Email: annabelle.chan@health.sa.gov.au
Website: <http://www.dh.sa.gov.au/pehs/pregnancyoutcome.htm>

Tasmania

Mr Peter Mansfield
Manager
Clinical Data Services
Hospitals and Ambulance Service
Department of Health and Human Services
Level 2, 10 Murray Street
Hobart Tas 7000
Phone: 03 6233 2173
Fax: 03 6233 3550
Email: peter.mansfield@dhhs.tas.gov.au
Website: <http://www.dhhs.tas.gov.au/>

Australian Capital Territory

Ms Maureen Bourne
Data Manager
Population Health Research Centre
Population Health
ACT Health
Building 5, Level 1
The Canberra Hospital
PO Box 11
Woden ACT 2606
Phone: 02 6205 2612
Fax: 02 6244 4138
Email: maureen.bourne@act.gov.au
Website: <http://www.health.act.gov.au/healthinfo/>

Northern Territory

Ms Sonya McNellee
Perinatal Data Business Analyst
Acute Care Information Services
Department of Health and Community Services
Building 6, Royal Darwin Hospital
PO Box 41326
Casuarina NT 0810
Phone: 08 8922 7779
Fax: 08 8922 7787
Email: sonya.mcnellee@nt.gov.au
Website: <http://www.health.nt.gov.au/>

Australian and New Zealand Neonatal Network data

Ms Samanthi Abeywardana
Project Officer
Australian and New Zealand Neonatal Network
Building DO2, Blackburn Circuit
University of Sydney NSW 2006
Phone: 02 9351 7681
Fax: 02 9351 7742
Email: samanthi@perinatal.usyd.edu.au

Glossary

Antepartum fetal death: fetal death occurring before the onset of labour.

Apgar score: numerical score used to indicate the baby's condition at 1 minute and 5 minutes after birth.

Assisted vaginal/instrumental delivery: vaginal delivery using forceps or vacuum extraction.

Augmentation of labour: intervention after the onset of labour to assist the progress of labour.

Baby's length of stay: number of days between date of birth and date of separation from the hospital of birth (calculated by subtracting the date of birth from the date of separation).

Birth status: status of the baby immediately after birth.

Birthweight: the first weight of the baby (stillborn or liveborn) obtained after birth (usually measured to the nearest 5 grams and obtained within one hour of birth).

Caesarean section: operative birth by surgical incision through the abdominal wall and uterus.

Confidence interval: a range of values for a variable of interest with a specified probability of including the true value of the variable.

Early neonatal death: death of a liveborn baby within seven days of birth.

Epidural: injection of anaesthetic agent into the epidural space of the spinal cord.

Episiotomy: an incision of the perineum and vagina to enlarge the vulval orifice.

Extremely low birthweight: birthweight of less than 1,000 grams.

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

Forceps: assisted birth using a metallic obstetric instrument.

Gestational age: the duration of pregnancy in completed weeks calculated from the date of the first day of a woman's last menstrual period and her baby's date of birth, or via ultrasound, or derived from clinical assessment during pregnancy or from examination of the baby after birth.

Grand multipara: pregnant woman who has had four or more previous pregnancies resulting in a live birth or stillbirth.

Induction of labour: intervention to stimulate the onset of labour.

Intrapartum fetal death: fetal death occurring during labour.

Late neonatal death: death of a liveborn baby after seven completed days and before 28 completed days.

Live birth: 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 the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered liveborn (WHO definition).

Low birthweight: birthweight of less than 2,500 grams.

Maternal age: mother's age in completed years at the birth of her baby.

Mode of separation: status at separation of patient (discharge / transfer / death) and place to which patient is released (where applicable).

Mother's length of stay: number of days between admission date (during the admission resulting in a birth) and separation date (from the hospital where birth occurred). The interval is calculated by subtracting the date of admission from the date of separation.

Multipara: pregnant woman who has had at least one previous pregnancy resulting in a live birth or stillbirth.

Neonatal care levels: Level I care is for normal healthy term babies, some of whom may need short-term observation during the first few hours of life.

Level II refers to a nursery that generally has babies born at 32–36 weeks gestation weighing around 1,500 to 2,500 grams at birth. It includes care for babies who require intravenous therapy or antibiotics, and / or those who are convalescing after intensive care, and / or those who need their heart rate or breathing monitored, and / or those who need short-term oxygen therapy.

Level III or intensive care refers to the care of newborn infants who require more specialised care and treatment. It includes most babies born at less than 32 weeks gestation or less than 1,500 grams birthweight, and others who may require such interventions as intravenous feeding, and / or surgery, and / or cardiorespiratory monitoring for management of apnoea or seizures, and / or require assisted ventilation, and / or supplemental oxygen over 40% or long-term oxygen (Abeywardana 2006).

Neonatal death: death of a liveborn baby within 28 days of birth.

Neonatal morbidity: any condition or disease of the baby diagnosed after birth and before separation from care.

Parity: number of previous pregnancies resulting in live births or stillbirths, excluding the current pregnancy.

Perinatal death: a fetal or neonatal death of at least 20 weeks gestation or at least 400 grams birthweight.

Perineal status: status of the perineum after the birth. May involve surgical suturing of perineal laceration or episiotomy incision.

Plurality: the number of births resulting from a pregnancy.

Postneonatal death: death of a liveborn baby after 28 days and within one year of birth.

Post-term birth: birth at 42 or more completed weeks of gestation.

Presentation at birth: presenting part of the fetus at birth.

Preterm birth: birth before 37 completed weeks of gestation.

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

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

Spontaneous vaginal: birth without intervention in which the baby's head is the presenting part.

Stillbirth: see Fetal death (stillbirth).

Teenage mother: mother aged less than 20 years at the birth of her baby.

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

Vaginal breech: vaginal birth in which the baby's buttocks or lower limbs are the presenting parts.

Very low birthweight: birthweight of less than 1,500 grams.

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