



Australian Government

Australian Institute of
Health and Welfare



UNSW
AUSTRALIA

Australia's mothers and babies 2011





Australian Government

**Australian Institute of
Health and Welfare**

*Authoritative information and statistics
to promote better health and wellbeing*

PERINATAL STATISTICS SERIES

Number 28

Australia's mothers and babies

2011

Z. Li, R. Zeki, L. Hilder & E. A. Sullivan

Australian Institute of Health and Welfare
Canberra

Cat. no. PER 59

The Australian Institute of Health and Welfare is a major national agency which provides reliable, regular and relevant information and statistics on Australia's health and welfare. The Institute's mission is authoritative information and statistics to promote better health and wellbeing.

© Australian Institute of Health and Welfare and University of New South Wales 2013



This product, excluding the AIHW logo, Commonwealth Coat of Arms, UNSW logo and any material protected by a trademark, has been released under a Creative Commons BY 3.0 (CC-BY 3.0) licence. Excluded material owned by third parties may include, for example, design and layout, images that we have obtained under licence from third parties and signatures. We have made all reasonable efforts to identify and label material owned by third parties.

You may distribute, remix and build upon this work. However, you must attribute the AIHW and UNSW as the joint copyright holders of the work and use the standard attribution provided in compliance with the AIHW attribution policy available at <link to AIHW policy>. The full terms and conditions of this licence are available at <<http://creativecommons.org/licenses/by/3.0/au/>>.

Enquiries relating to copyright should be addressed to the Head of the Media and Strategic Engagement Unit, Australian Institute of Health and Welfare, GPO Box 570, Canberra ACT 2601.

This publication is part of the Australian Institute of Health and Welfare's Perinatal Statistics series. A complete list of the Institute's publications is available from the Institute's website <www.aihw.gov.au>.

ISSN 1321-8336

ISBN 978-1-74249-532-3

Suggested citation

Li Z, Zeki R, Hilder L & Sullivan EA 2013. Australia's mothers and babies 2011. Perinatal statistics series no. 28. Cat. no. PER 59. Canberra: AIHW National Perinatal Epidemiology and Statistics Unit.

Australian Institute of Health and Welfare

Board Chair

Director

Dr Andrew Refshauge

David Kalisch

Any enquiries about or comments on this publication should be directed to:

Media and Strategic Engagement Unit

Australian Institute of Health and Welfare

GPO Box 570

Canberra ACT 2601

Tel: (02) 6244 1032

Email: info@aihw.gov.au

Published by the Australian Institute of Health and Welfare

Please note that there is the potential for minor revisions of data in this report. Please check the online version at <www.aihw.gov.au> for any amendments.

Contents

Acknowledgments.....	iv
Abbreviations.....	v
Summary	vii
1 Introduction.....	1
Purpose of this report	1
National Perinatal Data Collection	1
Which births are counted	3
Data quality, presentation and interpretation issues	3
2 Summary of births and women who gave birth.....	6
3 Mothers	8
Demographic profile.....	8
Maternal characteristics.....	17
Antenatal period.....	22
Labour and birth characteristics.....	29
Women who gave birth in hospitals.....	57
Homebirths	65
4 Babies	67
Demographic profile.....	67
Outcomes.....	71
Hospital births	84
5 Perinatal mortality	88
Definitions	88
Fetal deaths	89
Neonatal deaths.....	92
Perinatal deaths	93
Causes of perinatal deaths	93
Appendix A: State and territory perinatal data collections, contacts and recent reports....	103
Appendix B: Collection and collation of data for the National Perinatal Data Collection	107
Appendix C: Perinatal National Minimum Data Set items.....	108
Appendix D: Data quality statement National Perinatal Data Collection for 2011.....	110
Appendix E: Data used in figures	114
Glossary.....	116
List of tables	120
List of figures	123
Related publications	124
References	125

Acknowledgments

The Australian Institute of Health and Welfare (AIHW) National Perinatal Epidemiology and Statistics Unit (NPESU) is a formally affiliated institution of the University of New South Wales (UNSW), School of Women's and Children's Health, Faculty of Medicine.

The NPESU values the time, effort and expertise contributed by all states and territories in the collection and provision of the data used in this report. We would like to acknowledge the staff members of the state and territory health authorities who provided data and reviewed the tables:

Lee Taylor, Jason Bentley, Patricia Correll and Kim Lim, Centre for Epidemiology and Evidence, NSW Ministry of Health.

Kate Gibson, Danielle Cosgriff and Diana Stubbs, Clinical Councils Unit, Health Service Program, Department of Health, Victoria.

Sue Cornes, Joanne Ellerington, Vesna Dunne, Neil Gardiner and Ben Wilkinson, Health Statistics Centre, Queensland Health.

Maureen Hutchinson, Alan Joyce and Tony Satti, Maternal and Child Health Unit, Data Integrity Directorate, Department of Health, Western Australia.

Wendy Scheil, Kevin Priest and Joan Scott, Pregnancy Outcome Unit, Department of Health, South Australia.

Peter Mansfield, Cynthia Rogers and Peter Russell, Data Standards and Integrity Unit, Department of Health and Human Services, Tasmania.

Rosalind Sexton, Louise Freebairn, Wayne Anderson and Leah Newman, Epidemiology Branch, ACT Health.

Leanne O'Neil and Karen Dempsey, Department of Health and Families, Northern Territory. Within the NPESU, Jishan Dean assisted in database management.

Within the AIHW, Kathy Southgate and Laura Pritchard assisted in database management.

Abbreviations

ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
ART	assisted reproductive technology
APH	anteartum haemorrhage
ASGC	Australian Standard Geographical Classification
BMI	body mass index
FGR	fetal growth restriction
g	gram
IPPV	intermittent positive pressure ventilation
kg	kilogram
LMP	first day of the last menstrual period
METeOR	Metadata Online Registry
NHDD	<i>National health data dictionary</i>
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
NPESU	AIHW National Perinatal Epidemiology and Statistics Unit
NSW	New South Wales
NT	Northern Territory
PSANZ- PDC	Perinatal Society of Australia and New Zealand Perinatal Death Classification
Qld	Queensland
SA	South Australia
SACC	Standard Australian Classification of Countries
SCN	special care nursery

Tas	Tasmania
UNSW	University of New South Wales
Vic	Victoria
WA	Western Australia
WHO	World Health Organization

Symbols

–	nil or rounded to zero
..	not applicable
n.a.	not available
n.p.	Data not published to maintain confidentiality of small numbers or other concerns about the quality of the data
n.r.	data not received at the time of publication

Summary

Australia's mothers and babies 2011 is the twenty-first annual report on pregnancy and childbirth in Australia. In 2011, a total of 297,126 women gave birth to 301,810 babies. There was a 0.8% increase in the total number of births compared with 2010.

Mothers

The average maternal age in 2011 was 30.0 years compared with 29.4 years in 2002. Approximately 43.0% of women were having their first baby and the average age for first-time mothers was 28.3. Of all first-time mothers in 2011, 14.2% were aged 35 or older, compared with 11.2% in 2002. Assisted reproductive technology (ART) was used by 3.8% of women who gave birth in the five jurisdictions for which data on ART were available.

Antenatal factors

Smoking while pregnant was reported by 13.2% of all mothers and by 35.8% of teenage mothers. About one-fifth (20.4%) of women who reported smoking during the first 20 weeks of pregnancy did not report smoking during the second 20 weeks. Two-thirds (65.7%) of women attended at least one antenatal visit before 14 weeks gestation, although 13.8% of women did not receive antenatal care until after 20 weeks.

Indigenous mothers

About 3.9% of women who gave birth during 2011 identified as Aboriginal and Torres Strait Islander. Indigenous mothers were younger than non-Indigenous mothers; their average age in 2011 was 25.3 years, compared with 30.2 years for non-Indigenous mothers. Smoking during pregnancy was reported by half (50.0%) of Indigenous mothers. Of Aboriginal and Torres Strait Islander mothers who reported smoking during the first 20 weeks of pregnancy, 10.6% did not report smoking during the second 20 weeks, which was half that of non-Indigenous mothers (22.1%).

Labour and delivery

Onset of labour was spontaneous for 54.8% of women giving birth. Most women (67.7%) had a vaginal birth and, of these, 82.1% did not involve the use of instruments. Overall, 32.3% of women gave birth by caesarean section in 2011, a 0.7% rise from 2010. The caesarean section rate among first-time mothers was 33.2% in 2011. Among women who had already given birth at least once, 28.8% had had a previous birth by caesarean section.

Baby outcomes

In 2011, 8.3% of babies were born preterm (before 37 completed weeks of gestation) and 0.7% post-term (42 weeks gestation or more). Overall, 6.3% of liveborn babies were of low birthweight (less than 2,500 grams) and this nearly doubled (11.2%) among mothers who smoked during pregnancy. One-quarter (24.3%) of babies required some form of resuscitation at birth, although 64.9% of these required only suction or oxygen therapy. The perinatal death rate was 9.9 per 1,000 births in 2011, with 7.4 fetal deaths per 1,000 births and 2.6 neonatal deaths per 1,000 live births.

1 Introduction

Australia's mothers and babies 2011 is the twenty-first in the annual series prepared by the Australian Institute of Health and Welfare's (AIHW) National Perinatal Epidemiology and Statistics Unit (NPESU). 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 NPESU and states and territories. The report is based on data from the National Perinatal Data Collection (NPDC).

Purpose of this report

The purpose of the report is to provide national information on births, the women who gave birth and the babies who were born in 2011. The report provides information to support the first of seven long-term objectives identified by Commonwealth and state and territory governments that Australians are born healthy and remain healthy (COAG 2012). It presents national statistics about births in Australia for the community, governments, non-government organisations, clinicians, researchers, students and policy makers. This is achieved through:

- annual reporting against the Perinatal National Minimum Data Set (NMDS)
- supplementary reporting from the additional data provided for the NPDC
- generating relevant national statistics about women who gave birth in 2011, including their sociodemographic characteristics, known risk factors and characteristics relating to the pregnancy and childbirth
- providing national information on the characteristics and perinatal outcomes of babies born in 2011
- providing information for state and territory comparison
- providing information for international comparison.

National Perinatal Data Collection

Collection of perinatal data by states and territories

Perinatal data are collected after each birth by midwives or other staff from clinical and administrative records and information systems, including records of antenatal care, the care provided during labour, and the delivery and care provided after the birth. Each state and territory has its own form and/or electronic system for collecting data which are forwarded to the relevant state and territory health department to form the state or territory perinatal data collection. The final data are used in reports about births in the respective jurisdictions. See Appendix A for state and territory contact details and the most recent published reports, which contain more detailed information about the data collection and validation practices in each jurisdiction.

Collation of national perinatal data

A standardised extract of electronic data from each state and territory collection was requested by NPESU for all births from 1 January 2011 to 31 December 2011 inclusive. Records received from states and territories are anonymous; that is, they do not include any

names or addresses, but do include a unique set of identification numbers so that the source record can be identified. Data are checked for completeness, validity and logical errors before inclusion in the national collection. Changes are made in consultation with the state and territory perinatal data providers. Further details about the collection and collation of national perinatal data are in Appendix B.

Structure of National Perinatal Data Collection

Data supplied for the NPDC consist of the Perinatal National Minimum Data Set (NMDS) and a series of additional data items (Figure 1.1).

The Perinatal NMDS was first specified in 1997 and remains an agreed data set for national reporting (COAG 2012). An NMDS is an agreed set of standardised data elements for mandatory supply by states and territories to support national reporting. Standardisation ensures that there is consistent meaning to data collected at different times or in different places. A list of the items supplied for the NPDC from the Perinatal NMDS is in Appendix C. Compliance of data provided for the Perinatal NMDS is evaluated intermittently to assess data quality and adherence to standards (Donnolley & Li 2012).

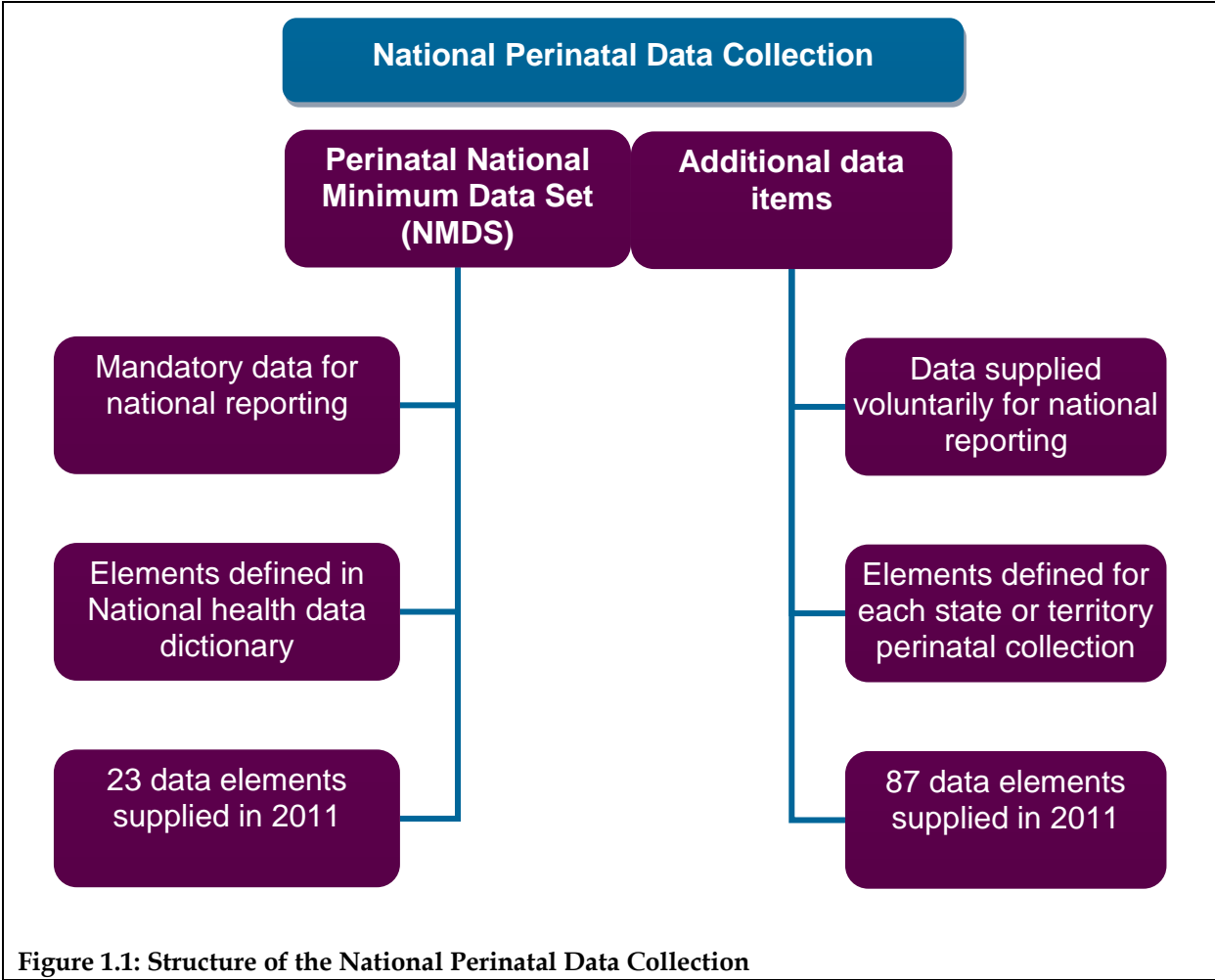


Figure 1.1: Structure of the National Perinatal Data Collection

Each state and territory collects more information than is specified in the NMDS, and the NPESU requests some of these additional items. These data items are at different stages in the process of standardisation. Some items such as parity (Metadata Online Registry

(METeOR) item 302013) and postpartum perineal status (METeOR item 269939) have had national data standards developed, but have not been included as data elements in the Perinatal NMDS because they could not be implemented immediately in all jurisdictions. In contrast, there are other data items for which there are no common definitions or categories for collecting the data, or which are not collected in all jurisdictions, that are provided to inform the development of nationally standardised data.

Which births are counted

This report presents information from the NPDC about all births in Australia, including births in hospitals, in birth centres and in the community. The Perinatal NMDS and the NPDC apply the definition in the Australian *National health data dictionary* (NHDD) where a birth is defined as the complete expulsion or extraction from its mother of a baby of at least 20 weeks gestation or weighing at least 400 grams at birth (the weight expected of a baby at 20 weeks gestational age) whether born alive or stillborn, except in Western Australia, where the births included were at least 20 weeks gestation or, if gestation was unknown, the birthweight was at least 400 grams. Live births and stillbirths may include termination of pregnancy after 20 weeks, including fetus papyraceous. Babies not weighed at birth and whose gestational age and birthweight were not recorded were not included in the NPDC, but may have been included in jurisdictional perinatal collections.

Care is needed when comparing Australian birth statistics with those from other countries that have different gestational ages included in the scope of the collection or definitions of live birth and stillbirth. In many other countries, pregnancies must continue to 22, 24 or even 28 completed weeks gestational age for a fetal death to be counted as a stillbirth. The inclusion in Australia of more births at lower gestations will affect the distributions of several key baby outcomes, in particular rates of perinatal mortality, low birthweight, low Apgar scores (a measure of a baby's wellbeing at birth) and admission to a special care nursery (SCN) or neonatal intensive care unit (NICU). For live births, the Perinatal NMDS and NPDC definition (above) is more restrictive than the World Health Organization (WHO) definition that specifies a live birth as a baby born showing signs of life irrespective of gestation (WHO 1992).

Data quality, presentation and interpretation issues

Detailed information on completeness, accuracy and other aspects of data quality for the NPDC is in the data quality statement in Appendix D.

This report presents perinatal data that can largely be compared with data in *Australia's mothers and babies 2010* (Li et al. 2012). Tabulated data in this report are based on births in each state and territory in 2011 meeting the criteria for inclusion in the Perinatal NMDS. Due to data editing and subsequent updates of state and territory databases, the numbers may differ slightly from those in reports published by the states and territories.

Unless otherwise stated, the data in this report relate to the state or territory of occurrence of births in 2011 rather than to the state or territory of usual residence of the mother. Where data are not available from all states and territories in the required format or data have not been published for other reasons, this is indicated in the footnotes of tables and figures.

Due to rounding, percentage totals in this report may not add up to 100.0 and subtotals may not sum to the percentages for the categories. Some percentages in the tables appear as 0.0% where numbers are small.

Unless otherwise stated, the age-standardised rate is calculated by the direct age-standardised method using the Australian female population who gave birth in 2011 as the standard population.

The terms 'mothers' or 'women who gave birth' have been used when referring to maternal characteristics, whereas 'births' refers to babies.

Small numbers

Cell values of less than five in tables have not been published, in line with guidelines for protecting the privacy of individuals (SIMC 2007). Exceptions to this are small numbers in 'Other' and 'Not stated' categories. The cell with small numbers and at least one other cell in the same row and column are suppressed to prevent back calculation. Where n.p. (not published) has been used to protect confidentiality, the suppressed numbers are included in the totals.

Quality of data for reporting Indigenous status

Indigenous status is a measure of whether a person identifies as being of Aboriginal and Torres Strait Islander origin (AIHW 2012). Indigenous status of the mother has been a mandatory data item for the Perinatal NMDS since its inception in 1997, but application of the data item to the baby was only introduced to the NMDS for collection in the 2012-13 reference year. For 2011, data on the baby's Indigenous status were obtained from New South Wales, Victoria, Queensland, Tasmania, the Australian Capital Territory and the Northern Territory. Data quality issues have been identified that require further investigation. Indigenous status of the baby has therefore not been included in this report.

Australian Capital Territory births include mothers resident in New South Wales

The Australian Capital Territory data contain a relatively high proportion of New South Wales residents who gave birth in the Australian Capital Territory. The proportion of mothers who gave birth in the Australian Capital Territory who were residents elsewhere was 14.6% in 2011. When interpreting the data it is important to note that these births to non-residents may include a disproportionate number of high-risk and multi-fetal pregnancies associated with poorer perinatal outcomes. This is because women with high-risk pregnancies may be more likely to be transferred from smaller centres in New South Wales that do not have the facilities to manage such births safely to the Australian Capital Territory to give birth. Therefore, percentages or rates such as those for preterm births and perinatal deaths may be inflated for births that occur in the Australian Capital Territory. Reporting by state or territory of usual residence of the mother helps to address this issue.

Neonatal deaths data may be incomplete

Additional data items about neonatal deaths collected as part of the NPDC may be incomplete. In some jurisdictions, neonatal deaths for babies transferred to another hospital after birth or readmitted to hospital and those dying at home may not be included. Neonatal deaths for the Victoria are considered to be incomplete and provisional for 2011 as data do not include deaths occurring outside the hospital of birth. Differences in mortality rates may be due to the small number of deaths which result in statistical fluctuations, under-ascertainment, or actual differences in mortality experience.

Maternal information about multiple births

The number of babies is higher than the number of mothers because of multiple births. For multiple pregnancies, the data may be different for each baby, such as place of birth. Data on multiple births are presented 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.

The National Perinatal Data Development Committee

The National Perinatal Data Development Committee (NPDDC) has a key role in improving data quality. The committee comprises representatives from each state and territory health authority, the Australian Bureau of Statistics (ABS), the AIHW and the NPESU, with temporary members invited as their expertise is required. The NPDDC works in consultation with clinical reference groups. The NPDDC improves data provision, revises existing Perinatal NMDS items, develops existing perinatal METeOR items and contributes to the development of new perinatal data items.

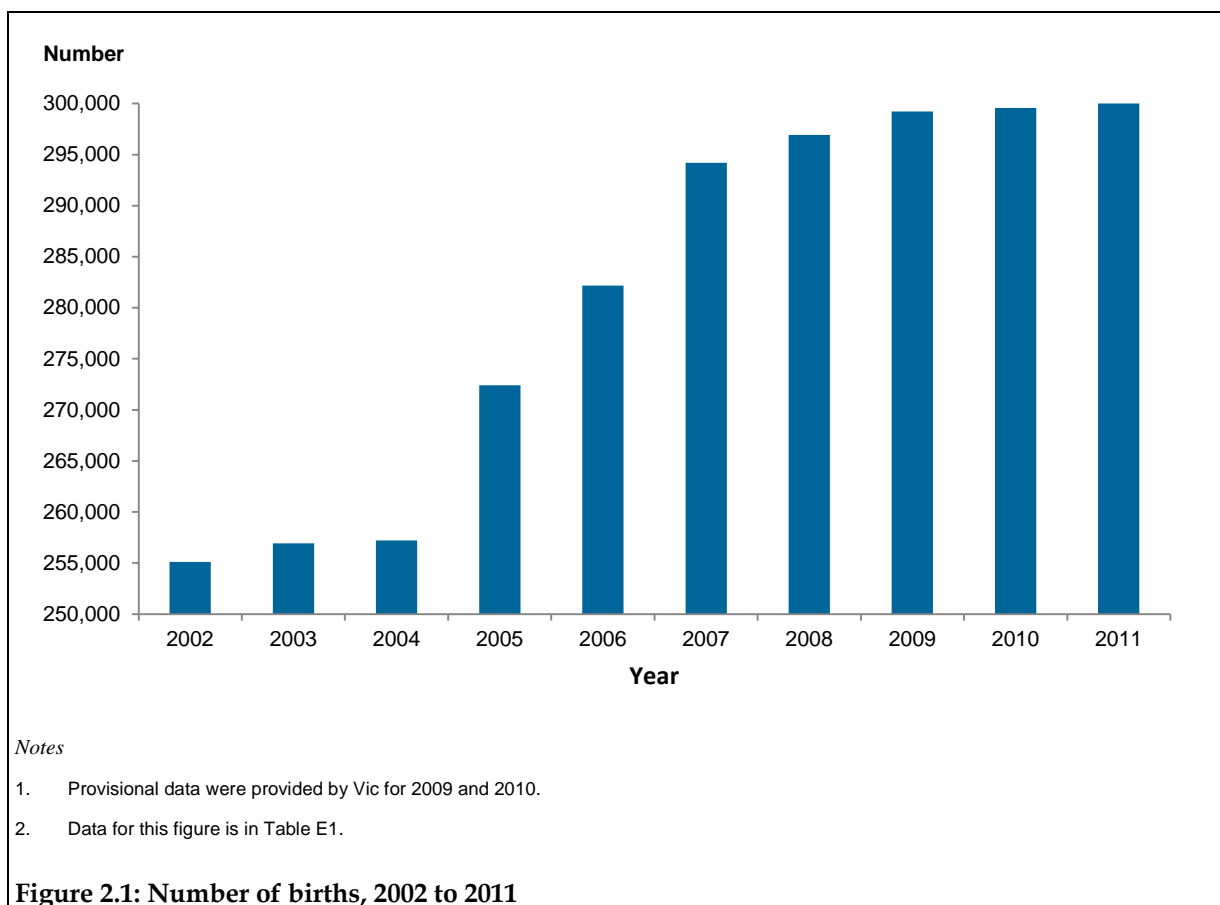
2 Summary of births and women who gave birth

There were 297,126 women who gave birth in 2011 as reported to the NPDC. There were a total of 301,810 births, of which, 2,220 were stillbirths (Table 2.1). This was an increase of 2,247 births (0.8%) from the 299,563 births reported in 2010, and a total increase of 18.3% since 2002.

Table 2.1: Births and women who gave birth, by state and territory, 2011

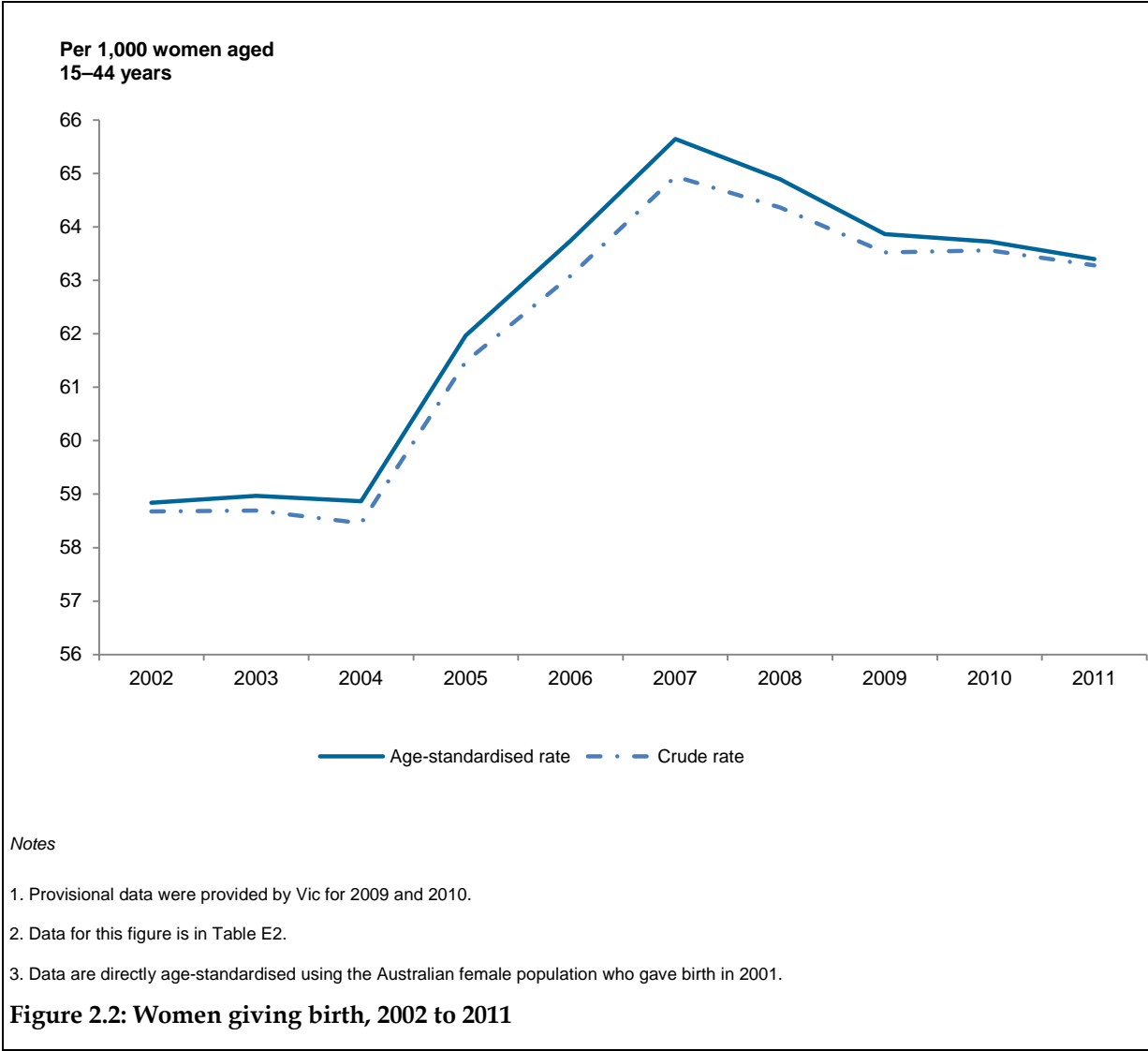
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Mothers	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
Fetal deaths	572	723	400	269	150	34	44	28	2,220
Live births	96,664	73,183	61,766	31,935	20,194	6,289	5,658	3,899	299,588
Not stated	2	—	—	—	—	—	—	—	2
All births	97,238	73,906	62,166	32,204	20,344	6,323	5,702	3,927	301,810

The number of births has been increasing since 2002, when the lowest number of births during the past decade was reported (255,095) (Figure 2.1).



There were 299,588 live births in 2011 reported to the NPDC (Table 2.1). This was 2,029 less than the 301,617 live births registered in Australia in 2011 (ABS 2012). The differences in national figures on live births between the two collections reflect the different methods, timing and reporting of the data collections (Laws et al. 2007).

As a proportion of females of reproductive age (15–44 years) in the population, the crude rate of women who gave birth in 2011 was 63.3 per 1,000. This rate has decreased from a high of 64.9 per 1,000 females aged 15–44 in 2007, when the ‘baby boom’ peaked. There is a similar pattern for the age-standardised rates (Figure 2.2).



3 Mothers

Demographic profile

Maternal age

Maternal age is an important risk factor for both obstetric and perinatal outcomes. Adverse outcomes are more likely to occur in younger and older mothers. In 2011, the age of mothers ranged from less than 15 to 55 years.

The average age of women who gave birth in Australia has increased by 7.5% since 1991. The mean age in 2011 was 30.0 years, compared with 29.4 years in 2002, while the median age in 2011 was 30.0.

In 2011, the average age of mothers was higher in women who gave birth in Victoria and the Australian Capital Territory (30.7 and 30.9 years respectively) and lower in the Northern Territory (28.0) when compared with the national average of 30.0 (Table 3.1).

Nationally, the proportion of teenage mothers (younger than 20) declined slightly from 3.9% in 2010 to 3.7% in 2011, compared with 4.9% in 2002. The proportion of women who gave birth and were teenagers in 2011 varied by place of residence, ranging from a low of 2.3% in the Australian Capital Territory to 9.3% in the Northern Territory (Table 3.1).

The proportion of mothers aged 20–24 fell from 15.2% in 2002 to 13.8% in 2011. The proportion of older mothers, aged 35 and over, increased from 18.1% in 2002 to 22.5% in 2011.

Mothers aged 40 and over made up 4.3% of women giving birth in 2011 compared with 3.0% in 2002 (Table 3.1). There were 630 women aged 45 and over who gave birth in 2011, accounting for 0.2% of women who gave birth.

Table 3.1: Women who gave birth, by maternal age and state and territory, 2011

Maternal age (years)	State/territory of birth								
	NSW	Vic	Qld	WA	SA ^(a)	Tas	ACT ^(b)	NT	Australia
Mean	30.3	30.7	29.3	29.7	29.7	28.9	30.9	28.0	30.0
	Number								
Less than 20	3,023	1,788	3,120	1,369	809	381	127	362	10,979
20–24	12,391	7,994	10,303	4,751	2,923	1,178	569	847	40,956
25–29	26,359	19,183	17,832	9,078	5,959	1,798	1,484	1,084	82,777
30–34	31,305	24,252	17,685	9,908	6,229	1,704	1,978	957	94,018
35–39	18,441	14,559	9,952	5,392	3,306	933	1,148	495	54,226
40 and over	4,274	3,503	2,220	1,249	817	226	277	129	12,695
Not stated	26	1,448	—	—	—	—	1	—	1,475
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
	Per cent								
Less than 20	3.2	2.5	5.1	4.3	4.0	6.1	2.3	9.3	3.7
20–24	12.9	11.0	16.9	15.0	14.6	18.9	10.2	21.9	13.8
25–29	27.5	26.4	29.2	28.6	29.7	28.9	26.6	28.0	27.9
30–34	32.7	33.3	28.9	31.2	31.1	27.4	35.4	24.7	31.6
35–39	19.2	20.0	16.3	17.0	16.5	15.0	20.6	12.8	18.3
40 and over	4.5	4.8	3.6	3.9	4.1	3.6	5.0	3.3	4.3
Not stated	0.0	2.0	—	—	—	—	0.0	—	0.5
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 that uses maternal age to four decimal places for this calculation. The National Perinatal Data Collection contains maternal age in completed years.

(b) 14.6% 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 mothers are influenced by the quality and completeness of Indigenous identification, which may vary among jurisdictions. In 2011, 11,729 women who identified as being Aboriginal and Torres Strait Islander gave birth in Australia, representing 3.9% of all women who gave birth (Table 3.2). Aboriginal and Torres Strait Islander mothers accounted for a much greater proportion of all mothers in the Northern Territory (36.5%) than in other jurisdictions. There were also higher proportions of Aboriginal and Torres Strait Islander mothers who gave birth in Queensland and Western Australia (6.0% and 5.3% respectively). Because of their larger overall populations, there were more Aboriginal and Torres Strait Islander women who gave birth in Queensland (3,646), New South Wales (2,974) and Western Australia (1,685) than in the Northern Territory (1,414) (Table 3.2).

Table 3.2: Women who gave birth, by Indigenous status and state and territory, 2011

Indigenous status	NSW	Vic	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia
Number									
Aboriginal and Torres Strait Islander	2,974	920	3,646	1,685	693	294	103	1,414	11,729
Non-Indigenous	92,604	71,505	57,453	30,062	19,350	5,802	5,479	2,456	284,711
Not stated	241	302	13	—	—	124	2	4	686
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
Per cent									
Aboriginal and Torres Strait Islander	3.1	1.3	6.0	5.3	3.5	4.7	1.8	36.5	3.9
Non-Indigenous	96.6	98.3	94.0	94.7	96.5	93.3	98.1	63.4	95.8
Not stated	0.3	0.4	0.0	—	—	2.0	0.0	0.1	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, 28.2% of Aboriginal and Torres Strait Islander women who gave birth in the ACT in 2011 were non-ACT residents.

Proportionately, more Aboriginal and Torres Strait Islander mothers have their babies at a younger age than non-Indigenous mothers. The average age of Aboriginal and Torres Strait Islander women who gave birth in 2011 was 25.3 years, compared with 30.2 years for non-Indigenous mothers. About one in 5 (18.6%) Aboriginal and Torres Strait Islander mothers were teenagers, compared with 3.1% of non-Indigenous mothers. In contrast, 9.2% of Aboriginal and Torres Strait Islander mothers were aged 35 and older, compared with 23.1% of non-Indigenous mothers (Table 3.3).

Table 3.3: Women who gave birth, by maternal age and Indigenous status, 2011

Maternal age (years)	Indigenous	Non-Indigenous	Not stated	Total
Mean	25.3	30.2	29.8	30.0
	Number			
Less than 20	2,185	8,765	29	10,979
20–24	3,810	37,050	96	40,956
25–29	2,904	79,673	200	82,777
30–34	1,734	92,091	193	94,018
35–39	872	53,226	128	54,226
40 and over	206	12,460	29	12,695
Not stated	18	1,446	11	1,475
Total	11,729	284,711	686	297,126
	Per cent			
Less than 20	18.6	3.1	4.2	3.7
20–24	32.5	13.0	14.0	13.8
25–29	24.8	28.0	29.2	27.9
30–34	14.8	32.3	28.1	31.6
35–39	7.4	18.7	18.7	18.3
40 and over	1.8	4.4	4.2	4.3
Not stated	0.2	0.5	1.6	0.5
Total	100.0	100.0	100.0	100.0

Geographical location of the mother's usual residence

State and territory of the mother's usual residence

Most women give birth in the state or territory where they live (Table 3.4). However, 14.6% of women who gave birth in the Australian Capital Territory lived elsewhere. For the remaining jurisdictions, the proportion of women who gave birth outside their state or territory of usual residence ranged from less than 0.1% in Western Australia and Tasmania to 2.0% in Victoria and the Northern Territory (Table 3.4).

Table 3.4: Women who gave birth, by state and territory of usual residence and state and territory of birth, 2011

State/ territory of usual residence	State/territory of birth								Total
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	
	Number								
NSW	94,873	1,276	488	<5	36	<5	806	<5	97,484
Vic	20	71,075	13	<5	61	<5	<5	<5	71,174
Qld	825	46	60,530	<5	<5	—	6	8	61,418
WA	<5	21	15	31,720	11	—	<5	31	31,801
SA	6	21	<5	<5	19,900	—	—	33	19,966
Tas	<5	15	<5	—	—	6,213	—	<5	6,231
ACT	87	7	<5	—	<5	—	4,769	—	4,868
NT	<5	n.p.	20	5	31	—	<5	3,794	3,858
Non- resident ^(a)	—	n.p.	39	<5	—	—	—	—	70
Not stated	3	233	1	12	—	5	—	2	256
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
	Per cent								
NSW	99.0	1.8	0.8	n.p.	0.2	n.p.	14.4	n.p.	32.8
Vic	0.0	97.7	0.0	n.p.	0.3	n.p.	n.p.	n.p.	24.0
Qld	0.9	0.1	99.0	n.p.	n.p.	—	0.1	0.2	20.7
WA	n.p.	0.0	0.0	99.9	0.1	—	n.p.	0.8	10.7
SA	0.0	0.0	n.p.	n.p.	99.3	—	—	0.9	6.7
Tas	n.p.	0.0	n.p.	—	—	99.9	—	n.p.	2.1
ACT	0.1	0.0	n.p.	—	n.p.	—	85.4	—	1.6
NT	n.p.	n.p.	0.0	0.0	0.2	—	n.p.	97.9	1.3
Non- resident ^(a)	—	n.p.	0.1	n.p.	—	—	—	—	0.0
Not stated	0.0	0.3	0.0	0.0	—	0.1	—	0.1	0.1
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 and/or postcode. These data have been mapped to levels of remoteness using the ABS's Australian Standard Geographical Classification (ASGC) Remoteness Area structure.

The distribution of Remoteness Area varied by state and territory of usual residence. In Queensland, 61.3% of women lived in *Major cities*, compared with 74.1% or more in New South Wales, Victoria, Western Australia and South Australia. The Northern Territory and Australian Capital Territory presented different profiles of Remoteness Area, with almost all Australian Capital Territory residents living in a *Major cities* compared with Northern Territory residents who lived in *Outer regional*, *Remote* and *Very remote* areas (Table 3.5).

Table 3.5: Women who gave birth, by Remoteness Area of usual residence and state and territory of usual residence, 2011

Remoteness Area	State/territory of usual residence								Total
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	
	Number								
Major cities	74,167	55,097	37,134	24,058	14,784	..	4,744	..	209,983
Inner regional	16,713	13,279	11,529	2,599	1,905	4,271	11	..	50,307
Outer regional	5,967	2,736	9,407	1,988	2,461	1,809	..	2,009	26,378
Remote	482	42	1,384	1,541	611	130	..	823	5,012
Very remote	151	..	1,138	871	196	20	..	1,016	3,390
Total	97,480	71,153	60,592	31,056	19,956	6,230	4,755	3,848	295,070
	Per cent								
Major cities	76.1	77.4	61.3	77.5	74.1	..	99.8	..	71.2
Inner regional	17.1	18.7	19.0	8.4	9.5	68.6	0.2	..	17.0
Outer regional	6.1	3.8	15.5	6.4	12.3	29.0	..	52.2	8.9
Remote	0.5	0.1	2.3	5.0	3.1	2.1	..	21.4	1.7
Very remote	0.2	..	1.9	2.8	1.0	0.3	..	26.4	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

.. Not applicable.

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. Of non-Indigenous women who gave birth in 2011, 72.9% lived in *Major cities* and 16.9% in *Inner regional* areas. Place of residence for Aboriginal and Torres Strait Islander women was more evenly spread across Remoteness Areas, with 29.9% living in *Major cities* and 22.7% in *Outer regional* areas. Few non-Indigenous women who gave birth lived in *Very remote* areas (0.5%) compared with Indigenous mothers (16.8%)(Table 3.6).

Table 3.6: Women who gave birth, by Remoteness Area of usual residence and Indigenous status, 2011

Remoteness Area	Indigenous	Non-Indigenous	Not stated	Total
Number				
Major cities	3,463	206,096	424	209,983
Inner regional	2,399	47,747	161	50,307
Outer regional	2,632	23,666	80	26,378
Remote	1,139	3,864	9	5,012
Very remote	1,941	1,446	3	3,390
Total	11,574	282,820	676	295,070
Per cent				
Major cities	29.9	72.9	62.7	71.2
Inner regional	20.7	16.9	23.8	17.0
Outer regional	22.7	8.4	11.8	8.9
Remote	9.8	1.4	1.3	1.7
Very remote	16.8	0.5	0.5	1.1
Total	100.0	100.0	100.0	100.0

Note: Excludes mothers not usually resident in Australia.

Maternal country of birth

The country of birth of the mother can be an important risk factor for outcomes such as low birthweight and perinatal mortality. Of women who gave birth in Australia in 2011, 29.1% were born in countries other than Australia. New Zealand-born mothers constituted 2.9% of all women who gave birth and 13.8% of women who gave birth were born in an Asian country. Mothers born in the United Kingdom constituted 2.7% of all mothers, and accounted for a relatively high proportion of all mothers in Western Australia (6.4%). Larger proportions of mothers born in non-English speaking countries gave birth in the more populous states, New South Wales and Victoria (Table 3.7).

Table 3.7: Women who gave birth, by country of birth and state and territory, 2011

Country of birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
	Number								
Australia	63,602	49,510	47,090	20,569	15,568	5,635	4,088	3,174	209,236
New Zealand	2,236	1,541	3,321	1,211	182	52	84	77	8,704
United Kingdom	2,234	1,522	1,502	2,030	491	79	119	63	8,040
Former Yugoslavia	171	140	13	43	33	—	7	—	407
Other Europe and former USSR	2,571	1,956	1,166	992	375	68	143	68	7,339
Lebanon	1,373	431	28	25	33	<5	n.p.	—	1,901
Other Middle East and North Africa	2,714	1,762	584	583	313	37	128	27	6,148
China and Hong Kong	3,746	1,942	744	448	367	36	127	28	7,438
India	3,081	3,750	1,086	830	722	41	201	73	9,784
Philippines	1,386	708	640	389	210	29	47	79	3,488
Vietnam	1,506	1,492	347	278	255	n.p.	n.p.	18	3,960
Other Asia	6,287	4,553	1,985	1,892	900	100	330	147	16,194
Northern America	803	486	437	257	113	37	65	20	2,218
South and Central America and the Caribbean	886	453	299	203	98	15	49	8	2,011
Africa (excluding North Africa)	1,390	1,494	949	1,285	341	49	75	59	5,642
Other countries	1,544	501	905	100	42	14	53	32	3,191
Not stated	289	486	16	612	—	19.	2.	1	1,425
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126

(continued)

Table 3.7 (continued): Women who gave birth by country of birth and state and territory, 2011

Country of birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Per cent									
Australia	66.4	68.1	77.1	64.8	77.7	90.6	73.2	81.9	70.4
New Zealand	2.3	2.1	5.4	3.8	0.9	0.8	1.5	2.0	2.9
United Kingdom	2.3	2.1	2.5	6.4	2.4	1.3	2.1	1.6	2.7
Former Yugoslavia	0.2	0.2	0.0	0.1	0.2	—	0.1	—	0.1
Other Europe and former USSR	2.7	2.7	1.9	3.1	1.9	1.1	2.6	1.8	2.5
Lebanon	1.4	0.6	0.0	0.1	0.2	n.p.	n.p.	—	0.6
Other Middle East and North Africa	2.8	2.4	1.0	1.8	1.6	0.6	2.3	0.7	2.1
China and Hong Kong	3.9	2.7	1.2	1.4	1.8	0.6	2.3	0.7	2.5
India	3.2	5.2	1.8	2.6	3.6	0.7	3.6	1.9	3.3
Philippines	1.4	1.0	1.0	1.2	1.0	0.5	0.8	2.0	1.2
Vietnam	1.6	2.1	0.6	0.9	1.3	n.p.	n.p.	0.5	1.3
Other Asia	6.6	6.3	3.2	6.0	4.5	1.6	5.9	3.8	5.5
Northern America	0.8	0.7	0.7	0.8	0.6	0.6	1.2	0.5	0.7
South and Central America and the Caribbean	0.9	0.6	0.5	0.6	0.5	0.2	0.9	0.2	0.7
Africa (excluding North Africa)	1.5	2.1	1.6	4.0	1.7	0.8	1.3	1.5	1.9
Other countries	1.6	0.7	1.5	0.3	0.2	0.2	0.9	0.8	1.1
Not stated	0.3	0.7	0.0	1.9	—	0.3	0.0	0.0	0.5
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: Data were mapped to the ABS Standard Australian Classification of Countries (SACC) (ABS 2008).

Maternal characteristics

Parity

Parity is the number of a woman's previous pregnancies that resulted in a birth of at least 20 weeks gestation or weighing at least 400 grams at birth. In 2011, 43.0% of mothers had their first baby and 33.5% had their second baby. About 1 in 6 mothers (14.6%) had given birth twice previously and 8.7% had given birth three or more times (Table 3.8).

A parity of three or more was more common among mothers in the Northern Territory than in the other jurisdictions. In the Northern Territory, 7.6% of women who gave birth in 2011 had given birth three times previously and 6.9% four or more times, compared with 5.1% and 3.6% respectively for Australia (Table 3.8).

In 2011, 33.0% of Aboriginal and Torres Strait Islander mothers had their first baby and 66.6% had given birth previously. One-quarter (24.8%) of Indigenous women had given birth three or more times previously.

Table 3.8: Women who gave birth, by parity and state and territory, 2011

Parity	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Number									
None	41,597	32,355	25,129	13,490	8,546	2,512	2,546	1,548	127,723
One	31,748	24,773	20,036	10,919	7,000	2,093	1,908	1,183	99,660
Two	13,901	10,202	9,353	4,659	2,878	985	783	583	43,344
Three	4,865	3,387	3,667	1,399	966	378	209	294	15,165
Four or more	3,376	1,994	2,927	1,069	653	252	138	266	10,675
Not stated	332	16	—	211	—	—	—	—	559
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
Per cent									
None	43.4	44.5	41.1	42.5	42.6	40.4	45.6	40.0	43.0
One	33.1	34.1	32.8	34.4	34.9	33.6	34.2	30.5	33.5
Two	14.5	14.0	15.3	14.7	14.4	15.8	14.0	15.0	14.6
Three	5.1	4.7	6.0	4.4	4.8	6.1	3.7	7.6	5.1
Four or more	3.5	2.7	4.8	3.4	3.3	4.1	2.5	6.9	3.6
Not stated	0.3	0.0	—	0.7	—	0.0	—	—	0.2
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 28.3 in 2011, which was 0.3 years older than in 2010. The median age of first-time mothers was 28.0 in 2011 and 57.2% were younger than 30. The average age of women giving birth for the second time was 30.6.

The average age of first-time Aboriginal and Torres Strait Islander mothers was 21.5. This was markedly lower than for first-time non-Indigenous mothers (28.6).

Figure 3.1 shows the increase in the proportion of first-time mothers in the older age groups between 2002 and 2011. In 2011, of women aged 35–39, 27.3% were first-time mothers compared with 25.9% in 2002. Of women aged 40 and over, over one-quarter (26.4%) had their first baby in 2011, compared with 24.0% in 2002. Of all first-time mothers, 14.2% were aged 35 or older in 2011, compared with 11.2% in 2002.

The proportion of mothers who had given birth at least twice previously increased with maternal age from 1.5% for teenagers to 40.0% for mothers aged 40 and over (Table 3.9).

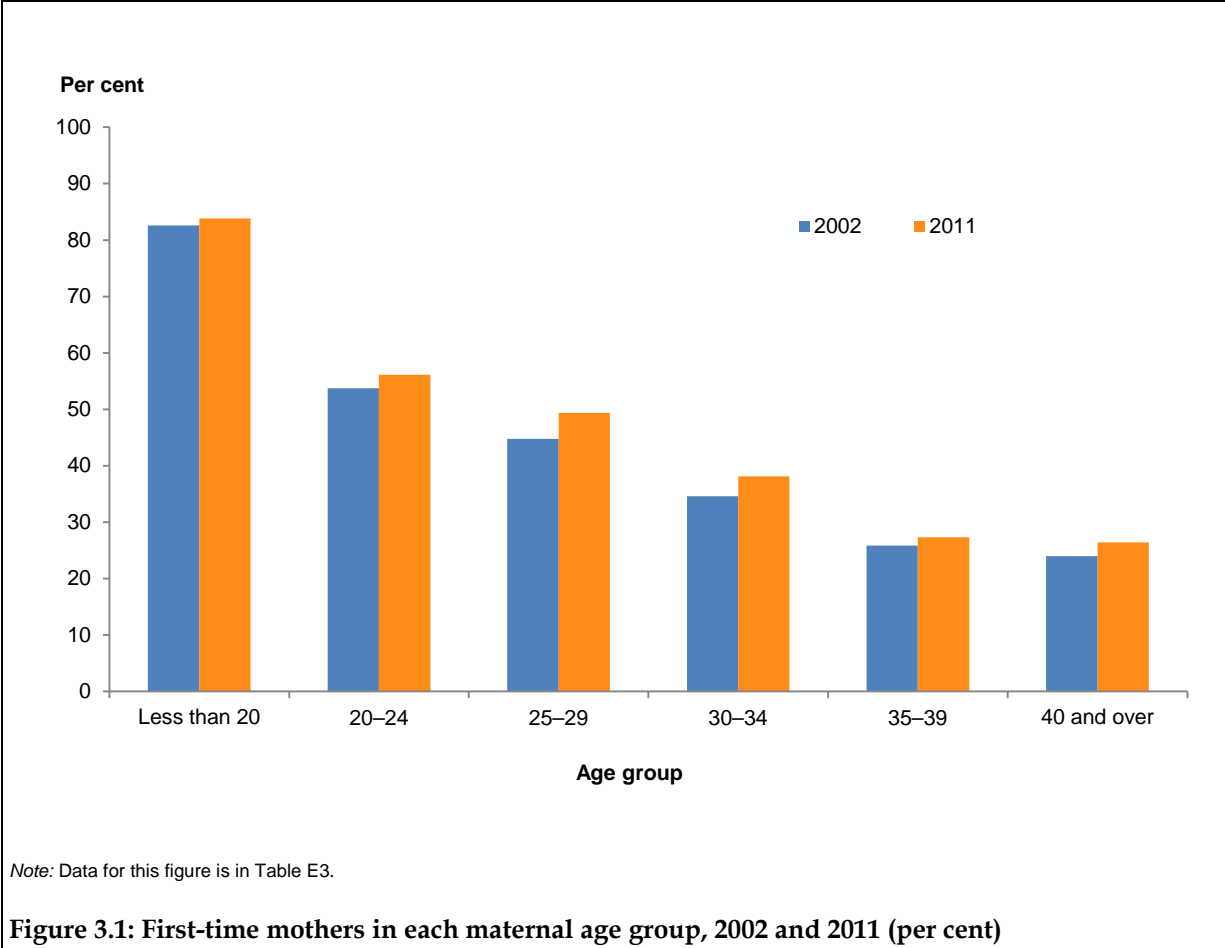


Table 3.9: Women who gave birth, by parity and maternal age (years), 2011

Parity	Aged less than 20	20–24	25–29	30–34	35–39	40 and over	Not stated	Total
Number								
None	9,207	22,990	40,871	35,850	14,810	3,354	641	127,723
One	1,595	12,735	25,751	34,783	20,087	4,191	518	99,660
Two	154	3,963	10,421	14,672	11,456	2,463	215	43,344
Three	n.p.	n.p.	3,604	5,061	4,259	1,213	62	15,165
Four or more	<5	n.p.	2,012	3,484	3,461	1,404	39	10,675
Not stated	9	41	118	168	153	70	—	559
Total	10,979	40,956	82,777	94,018	54,226	12,695	1,475	297,126
Per cent								
None	83.9	56.1	49.4	38.1	27.3	26.4	43.5	43.0
One	14.5	31.1	31.1	37.0	37.0	33.0	35.1	33.5
Two	1.4	9.7	12.6	15.6	21.1	19.4	14.6	14.6
Three	n.p.	n.p.	4.4	5.4	7.9	9.6	4.2	5.1
Four or more	n.p.	n.p.	2.4	3.7	6.4	11.1	2.6	3.6
Not stated	0.1	0.1	0.1	0.2	0.3	0.6	—	0.2
Total	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.

Previous caesarean sections

In 2011, 28.8% of multiparous women who gave birth in Australia had a history of previous caesarean section. This proportion ranged from 26.1% in the Australian Capital Territory to 30.3% in South Australia (Table 3.10). Of those women who had a history of previous caesarean section (excluding Western Australia), 23.3% of women had had the procedure more than once.

Table 3.10: Multiparous women who gave birth, by number of previous caesarean sections and state and territory, 2011

Previous caesarean sections	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
	Number								
None	37,787	28,760	25,272	12,697	8,014	2,731	2,241	1,650	119,152
At least one	15,116	11,589	10,711	5,349	3,483	977	793	676	48,694
<i>One</i>	11,649	8,976	8,048	<i>n.a.</i>	2,662	769	630	508	33,242
<i>Two</i>	2,775	2,126	2,095	<i>n.a.</i>	663	165	127	132	8,083
<i>Three or more</i>	692	487	568	<i>n.a.</i>	158	43	36	36	2,020
Not stated	987	7	—	—	—	—	4	—	998
Total	53,890	40,356	35,983	18,046	11,497	3,708	3,038	2,326	168,844
	Per cent								
None	70.1	71.3	70.2	70.4	69.7	73.7	73.8	70.9	70.6
At least one	28.0	28.7	29.8	29.6	30.3	26.3	26.1	29.1	28.8
<i>One</i>	21.6	22.2	22.4	<i>n.a.</i>	23.2	20.7	20.7	21.8	22.0
<i>Two</i>	5.1	5.3	5.8	<i>n.a.</i>	5.8	4.4	4.2	5.7	5.4
<i>Three or more</i>	1.3	1.2	1.6	<i>n.a.</i>	1.4	1.2	1.2	1.5	1.3
Not stated	1.8	0.0	—	—	0.0	—	0.1	—	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

n.a. Data not available.

Assisted reproductive technology

Data on whether the pregnancy resulted from assisted reproductive technology (ART) were available for Victoria, Queensland, Western Australia, Tasmania and the Australian Capital Territory. Of women who gave birth in these five jurisdictions in 2011, 3.8% received ART treatment, ranging from 1.3% in the Australian Capital Territory to 4.5% in Queensland (Table 3.11).

The average age of women who received ART treatment was 34.4. This was older than the average age of women who did not receive ART treatment (29.8). In 2011, 63.4% of mothers who received ART treatment were having their first baby and 36.4% had given birth previously. Of mothers who received ART treatment, 2.9% reported smoking during pregnancy, compared with 13.8% of women who did not receive ART treatment.

Table 3.11: Women who gave birth, by whether pregnancy was the result of assisted reproductive technology and state and territory, 2011

	NSW	Vic	Qld	WA	SA	Tas	ACT ^(a)	NT	Total
	Number								
ART	n.a.	2,532	2,736	1,091	n.a.	254	73	n.a.	6,686
Not ART	n.a.	69,628	58,374	30,656	n.a.	5,966	5,511	n.a.	170,135
Not stated	n.a.	567	2	—	n.a.	—	—	n.a.	569
Total	n.a.	72,727	61,112	31,747	n.a.	6,220	5,584	n.a.	177,390
	Per cent								
ART	n.a.	3.5	4.5	3.4	n.a.	4.1	1.3	n.a.	3.8
Not ART	n.a.	95.7	95.5	96.6	n.a.	95.9	98.7	n.a.	95.9
Not stated	n.a.	0.8	0.0	—	n.a.	—	—	n.a.	0.3
Total	n.a.	100.0	100.0	100.0	n.a.	100.0	100.0	n.a.	100.0

(a) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages.

n.a. Data not available.

Antenatal period

Antenatal visits

There is a strong relationship between regular antenatal care and positive child health outcomes. Receiving antenatal care at least four times, as recommended by the WHO, increases the likelihood of receiving effective maternal health interventions during antenatal visits (WHO 2011).

Data on the number of antenatal visits during pregnancy were available for New South Wales, Queensland, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory. Table 3.12 shows that 99.9% of women who gave birth in these jurisdictions had at least one antenatal visit, with 94.4% having five or more. Just 0.1% had no antenatal visits (Table 3.12).

When only women who gave birth at 32 weeks gestation or more were considered, thus excluding the very preterm births, 99.9% had at least one visit and 95.0% had five or more. Aboriginal and Torres Strait Islander mothers had fewer antenatal visits than non-Indigenous mothers. Of Indigenous mothers who gave birth at 32 weeks or more, 84.6% had five or more visits, compared with 95.6% of non-Indigenous mothers. The age-standardised rate of women who had five or more visits among Indigenous mothers who gave birth at 32 weeks or more was 84.8%, compared with 95.5% among non-Indigenous mothers.

Table 3.12: Women who gave birth, by number of antenatal visits and state and territory, 2011^(a)

Antenatal visits	NSW	Vic	Qld	WA	SA	Tas ^(b)	ACT	NT ^(c)	Total
Number									
None	<5	n.a.	149	n.a.	39	—	n.p.	37	248
At least one	n.p.	n.a.	60,923	n.a.	18,976	4,849	n.p.	3,747	183,806
One	n.p.	n.a.	246	n.a.	45	294	n.p.	34	1,622
Two to four	3,469	n.a.	2,838	n.a.	459	658	646	298	8,368
Five or more	85,634	n.a.	57,839	n.a.	18,472	3,897	4,559	3,415	173,816
Not stated	5,975	n.a.	40	n.a.	1,028	1,371	94	90	8,598
Total	95,819	n.a.	61,112	n.a.	20,043	6,220	5,584	3,874	192,652
Per cent^(d)									
None	n.p.	n.a.	0.2	n.a.	0.2	—	n.p.	1.0	0.1
At least one	n.p.	n.a.	99.8	n.a.	99.8	100.0	n.p.	99.0	99.9
One	n.p.	n.a.	0.4	n.a.	0.2	6.1	n.p.	0.9	0.9
Two to four	3.9	n.a.	4.6	n.a.	2.4	13.6	11.8	7.9	4.5
Five or more	95.3	n.a.	94.7	n.a.	97.1	80.4	83.0	90.2	94.4
Total	100.0	n.a.	100.0	n.a.	100.0	100.0	100.0	100.0	100.0

(a) Because of differences in definitions used and method of data collection, these data are not comparable across jurisdictions.

(b) For Tas, number of antenatal visit data was not reported by hospitals still using the paper-based form, so care must be taken when interpreting these data. Antenatal visit data will be included in the paper-based form from 1 January 2013.

(c) For NT, 'Not stated' includes antenatal care attendance is evident by the availability of antenatal screening results, but the total number of antenatal visits is unknown.

(d) Percentage calculated after excluding records with missing values. Care must be taken when interpreting percentages.

n.a. Data not available.

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

Duration of pregnancy at the first antenatal visit

In 2011, data on gestational age at the first antenatal visit were available for all states and territories. Of women who gave birth in these jurisdictions, 65.7% attended at least one antenatal visit in the first trimester (before 14 weeks gestation) and 13.8% did not begin antenatal care until after 20 weeks gestation (Table 3.13).

Table 3.13: Women who gave birth, by duration of pregnancy at first antenatal visit and state and territory, 2011^(a)

Duration of pregnancy at first antenatal visit (weeks)	NSW	Vic	Qld	WA ^(b)	SA	Tas ^(c)	ACT ^(d)	NT	Australia
	Number								
Less than 14	68,364	40,950	39,346	16,092	14,613	3,348	2,577	2,750	188,040
14–19	14,878	18,708	13,435	4,907	2,859	681	1,905	542	57,915
20 and over	9,668	11,862	7,445	6,880	1,069	820	1,097	514	39,355
Not applicable ^(e)	—	333	149	129	39	—	—	37	687
Not stated	2,909	874	737	3,739	1,463	1,371	5	31	11,129
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
	Per cent^(f)								
Less than 14	73.6	57.0	65.2	57.5	78.6	69.0	46.2	71.6	65.7
14–19	16.0	26.0	22.3	17.5	15.4	14.0	34.1	14.1	20.3
20 and over	10.4	16.5	12.3	24.6	5.8	16.9	19.7	13.4	13.8
Not applicable ^(e)	—	0.5	0.2	0.5	0.2	—	—	1.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Because of differences in definitions and methods used for data collection, care must be taken when comparing across jurisdictions.

(b) For WA, gestational age at first antenatal visit is reported by birth hospital; therefore, data may not be available for women who attend their first antenatal visit outside the birth hospital. This particularly affects hospitals without antenatal care services onsite.

(c) For Tas, duration of pregnancy at first antenatal visit data was not reported by hospitals still using the paper-based form, so these data should be interpreted with caution. Duration of pregnancy at first antenatal visit will be included in the paper-based form from 1 January 2013.

(d) For ACT, first antenatal visit is often the first hospital antenatal clinic visit. In many cases earlier antenatal care provided by the woman's GP is not reported.

(e) Includes women with no antenatal care.

(f) Percentage calculated after excluding records with missing values. Care must be taken when interpreting percentages.

Smoking during pregnancy

Smoking during pregnancy is the most common preventable 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). Women who cease smoking during pregnancy can reduce the risk of adverse outcomes for themselves and for their babies (Scollo & Winstanley 2008). Smoking cessation advice and referral to related programs are now widely available through antenatal clinics.

For 2011, data on smoking status were available for all states and territories. The proportion of women who smoked while pregnant ranged from 10.0% in the Australian Capital Territory to 26.0% in the Northern Territory. Nationally, 13.2% of women smoked during pregnancy (Table 3.14).

Table 3.14: Women who gave birth, by tobacco smoking status during pregnancy and state and territory, 2011^(a)

Smoking status	NSW	Vic	Qld	WA ^(b)	SA ^(c)	Tas	ACT	NT	Total
Number									
Smoked	10,667	8,503	9,773	3,827	3,358	1,064	558	983	38,733
Did not smoke	84,532	61,285	51,101	27,920	16,418	4,708	5,025	2,801	253,790
Not stated	620	2,939	238	—	267	448	1	90	4,603
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
Per cent^(d)									
Smoked	11.2	12.2	16.1	12.1	17.0	18.4	10.0	26.0	13.2
Did not smoke	88.8	87.8	83.9	87.9	83.0	81.6	90.0	74.0	86.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Because of differences in definitions and methods used for data collection, care must be taken when comparing across jurisdictions.

(b) For WA, 'Smoked' includes occasional smoking. 'Did not smoke' includes 'Not determined' average number of tobacco cigarettes smoked per day in first 20 weeks of pregnancy and after 20 weeks of pregnancy.

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

(d) Percentage calculated after excluding records with missing values. Care must be taken when interpreting percentages.

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

The average age of mothers who smoked during pregnancy was 27.3, compared with 30.4 for those who did not smoke. Teenage mothers accounted for 10.1% of all mothers who reported smoking during pregnancy and 2.7% of mothers who did not smoke. Of all teenage mothers, 35.8% reported smoking.

Aboriginal and Torres Strait Islander mothers accounted for 14.9% of mothers who smoked during pregnancy. Half of the Aboriginal and Torres Strait Islander mothers reported smoking during pregnancy (50.0%), compared with 11.7% of non-Indigenous women who gave birth. The age-standardised rate of smoking during pregnancy among Aboriginal and Torres Strait Islander mothers was 48.7%, compared with 12.0% among non-Indigenous mothers.

Of women who gave birth in 2011, 12.9% reported smoking during the first 20 weeks of pregnancy and 9.6% reported smoking after 20 weeks of pregnancy (Tables 3.15 and 3.16). Not all women who reported smoking after 20 weeks reported smoking before 20 weeks. In 2011, 20.4% of women who reported smoking during the first 20 weeks of pregnancy did not report smoking during the second 20 weeks of pregnancy. The proportion of smoking cessation in mothers of Aboriginal and Torres Strait Islander origin was 10.6%, which was half that of non-Indigenous mothers (22.1%).

Table 3.15: Women who gave birth, by tobacco smoking status during the first 20 weeks of pregnancy and state and territory, 2011^(a)

Smoking status	NSW	Vic	Qld	WA ^(b)	SA ^(c)	Tas ^(d)	ACT	NT	Total
Number									
Smoked	10,016	8,362	9,753	3,721	3,358	1,004	524	973	37,711
Did not smoke	85,166	63,242	51,116	27,683	16,420	3,422	5,056	2,804	254,909
Not stated	637	1,123	243	343	265	1,794	4	97	4,506
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
Per cent^(e)									
Smoked	10.5	11.7	16.0	11.8	17.0	22.7	9.4	25.8	12.9
Did not smoke	89.5	88.3	84.0	88.2	83.0	77.3	90.6	74.2	87.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Because of differences in definitions and methods used for data collection, care must be taken when comparing across jurisdictions.

(b) For WA, smoking status was determined at multiple locations and times and is therefore difficult to report accurately at time of birth.

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

(d) For Tas, smoking status during the first 20 weeks of pregnancy was not reported by hospitals still using the paper-based form, so these data should be interpreted with caution. Smoking status during the first 20 weeks of pregnancy will be included in the paper-based form from 1 January 2013.

(e) Percentage calculated after excluding records with missing values. Care must be taken when interpreting percentages.

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

Table 3.16: Women who gave birth, by tobacco smoking status after 20 weeks of pregnancy and state and territory, 2011^(a)

Smoking status	NSW	Vic	Qld	WA ^(b)	SA ^(c)	Tas ^(d)	ACT	NT	Total
Number									
Smoked	7,984	3,812	8,119	3,251	2,303	927	452	811	27,659
Did not smoke	87,689	63,568	52,741	28,154	17,359	3,499	5,131	2,685	260,826
Not stated	146	5,347	252	342	381	1,794	1	378	8,641
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
Per cent^(e)									
Smoked	8.3	5.7	13.3	10.4	11.7	20.9	8.1	23.2	9.6
Did not smoke	91.7	94.3	86.7	89.6	88.3	79.1	91.9	76.8	90.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Because of differences in definitions and methods used for data collection, care must be taken when comparing across jurisdictions.

(b) For WA, smoking status was determined at multiple locations and times and is therefore difficult to report accurately at time of birth.

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

(d) For Tas, smoking status during the first 20 weeks of pregnancy data was not reported by hospitals still using the paper-based form, so these data should be interpreted with caution. Smoking status after 20 weeks of pregnancy data will be included in the paper-based form from 1 January 2013.

(e) Percentage calculated after excluding records with missing values. Care must be taken when interpreting percentages.

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

Body mass index

Obesity in pregnancy contributes to increased morbidity and mortality for both mother and baby. Pregnant women who are obese have an increased risk of thromboembolism, gestational diabetes, pre-eclampsia, postpartum haemorrhage, wound infections and caesarean section, and their babies have higher rates of congenital anomaly, stillbirth and neonatal death compared with pregnant women who are not obese (CMACE & RCOG 2010).

Body mass index (BMI) is a ratio of weight and height. The normal range of BMI for non-pregnant women is 18.5 to 24.9. BMI increases are expected in pregnancy. Weight increases from early pregnancy as blood volume expands and later in pregnancy due to the contribution of the weight of the baby and other elements of the pregnancy. A BMI of 30.0 kg/m² or more at the first antenatal consultation has been defined as obesity in pregnancy.

For 2011, data on maternal BMI were available for Victoria, Queensland, South Australia, Tasmania and were partially collected from Western Australia, the Australian Capital Territory and the Northern Territory. Data collection practices vary considerably between jurisdictions. In 2011, 20.5% of women who gave birth in these jurisdictions were obese. This proportion ranged from 19.6% in Queensland to 24.5% in South Australia (Table 3.17).

Table 3.17: Women who gave birth, by body mass index and state and territory, 2011^(a)

BMI (kg/m²)	NSW	Vic	Qld^{(b)(c)}	WA^(d)	SA^(e)	Tas^(b)	ACT^(f)	NT^(g)	Australia
Mean	n.a	25.9	25.5	26.4	26.6	26.4	n.p.	26.4	25.9
Number									
Less than 18.5	n.a	1,921	3,161	139	477	172	n.p.	121	5,991
18.5–24.9	n.a	31,751	30,394	3,055	7,437	1,970	n.p.	968	75,575
25.0–29.9	n.a	17,179	14,745	1,930	4,434	1,134	n.p.	672	40,094
30.0–39.9	n.a	10,858	10,076	1,254	3,329	860	n.p.	464	26,841
40.0–49.9	n.a	1,627	1,533	177	619	145	n.p.	65	4,166
50 and over	n.a	191	149	20	61	14	n.p.	7	442
Not stated	n.a	9,200	1,054	25,172	3,686	1,925	n.p.	1,577	42,614
Total	n.a	72,727	61,112	31,747	20,043	6,220	n.p.	3,874	195,723
<i>Obese</i>	<i>n.a.</i>	<i>12,676</i>	<i>11,758</i>	<i>1,451</i>	<i>4,009</i>	<i>1,019</i>	<i>n.p.</i>	<i>536</i>	<i>31,449</i>
Per cent^(h)									
Less than 18.5	n.a	3.0	5.3	2.1	2.9	4.0	n.p.	5.3	3.9
18.5–24.9	n.a	50.0	50.6	46.5	45.5	45.9	n.p.	42.1	49.4
25.0–29.9	n.a	27.0	24.6	29.4	27.1	26.4	n.p.	29.3	26.2
30.0–39.9	n.a	17.1	16.8	19.1	20.4	20.0	n.p.	20.2	17.5
40.0–49.9	n.a	2.6	2.6	2.7	3.8	3.4	n.p.	2.8	2.7
50 and over	n.a	0.3	0.2	0.3	0.4	0.3	n.p.	0.3	0.3
Total	n.a	100.0	100.0	100.0	100.0	100.0	n.p.	100.0	100.0
<i>Obese</i>	<i>n.a.</i>	<i>20.0</i>	<i>19.6</i>	<i>22.1</i>	<i>24.5</i>	<i>23.7</i>	<i>n.p.</i>	<i>23.3</i>	<i>20.5</i>

(a) Because of differences in definitions and methods used for data collection, care must be taken when comparing across jurisdictions.

(b) For Qld and Tas, mother's height and weight at conception were self-reported.

(c) For Qld, BMI recorded as a whole number; therefore, it was recalculated by NPESU based on maternal height and weight.

(d) For WA, BMI was collected from January 2012; however, some sites commenced reporting in late 2011.

(e) For SA, BMI was calculated where mother's height and weight were measured at the first antenatal visit before 20 weeks gestation.

(f) For ACT, figures have not been published as only one hospital supplied data.

(g) For NT, mother's height and weight were captured at the first hospital visit.

(h) Percentage calculated after excluding records with missing values. Care must be taken when interpreting percentages.

n.a. Data not available.

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

Labour and birth characteristics

Place of birth

Actual place of birth

Almost all births in Australia occur in hospitals, in conventional labour-ward settings. There were 287,972 women who gave birth in hospitals (96.9%) in 2011. A further 6,615 women gave birth in birth centres (2.2%); this proportion was highest in South Australia (6.2%) and the Australian Capital Territory (6.1%). Planned homebirths and other births, such as those occurring unexpectedly before arrival in hospital or in other settings, accounted for the smallest proportion of women who gave birth (2,500 women, 0.8%) (Table 3.18).

Table 3.18: Women who gave birth, by actual place of birth and state and territory, 2011

Place of birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
	Number								
Hospital	92,305	71,121	59,774	31,144	18,634	6,142	5,204	3,648	287,972
Birth centre	2,804	891	840	362	1,235	23	343	117	6,615
Home	223	579	69	241	96	10	9	40	1,267
Other	450	135	429	—	78	45	27	69 ^(a)	1,233
Not stated	37	1	—	—	—	—	1	—	39
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
	Per cent								
Hospital	96.3	97.8	97.8	98.1	93.0	98.7	93.2	94.2	96.9
Birth centre	2.9	1.2	1.4	1.1	6.2	0.4	6.1	3.0	2.2
Home	0.2	0.8	0.1	0.8	0.5	0.2	0.2	1.0	0.4
Other	0.5	0.2	0.7	—	0.4	0.7	0.5	1.8 ^(a)	0.4
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) 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.

Intended place of birth

The jurisdictions collect intended place of birth at different times during the pregnancy. South Australia, Tasmania and the Northern Territory collect this item at the time of booking, while the remaining states and territories collect it at the onset of labour. Intended place of birth is not currently specified as at time of booking or onset of labour for Victoria. Care must be taken when comparing data across the jurisdictions due to these differing practices.

In 2011, the intended place of birth was hospital for 95.8% of mothers and birth centre for 3.4%. Just 0.8% intended to give birth at home or in other settings, and 4.2% of mothers intended to give birth outside a labour-ward setting (Table 3.19). Just 3.1% of mothers actually did so, giving birth in places such as birth centres or at home.

Table 3.19: Women who gave birth, by intended place of birth and state and territory, 2011

Place of birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Number									
Hospital	91,559	70,176	59,829	30,730	17,513	6,148	5,057	3,554	284,566
Birth centre	3,512	1,655	1,165	630	2,380	39	504	230	10,115
Home	261	432	100	305	114	27	10	52	1,301
Other	462	443	15	80	36	6	—	8 ^(a)	1,050
Not stated	25	21	3	2	—	—	13	30	94
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
Per cent									
Hospital	95.6	96.5	97.9	96.8	87.4	98.8	90.6	91.7	95.8
Birth centre	3.7	2.3	1.9	2.0	11.9	0.6	9.0	5.9	3.4
Home	0.3	0.6	0.2	1.0	0.6	0.4	0.2	1.3	0.4
Other	0.5	0.6	0.0	0.3	0.2	0.1	—	0.2 ^(a)	0.4
Not stated	0.0	0.0	0.0	0.0	—	—	0.2	0.8	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 SA, Tas and NT. Intended place of birth at onset of labour for NSW, Qld, WA and ACT. Intended place of birth is not specified as at time of booking or onset of labour for Victoria. Because of differences in definitions and methods used for data collection, care must be taken when comparing across jurisdictions.

Duration of pregnancy

Different methods may be used for estimating the duration of a pregnancy, which is reported as the number of completed weeks of gestation. 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. For most pregnancies, the gestational age derived from the known menstrual dates provides a good estimate of the duration of pregnancy. When the date of LMP is not known or is uncertain, gestational age can be estimated using ultrasound measurements taken in early pregnancy (before 20 weeks gestation). Estimates of gestational age may be revised if there is a discrepancy between gestational ages calculated from dates and ultrasounds, as most pregnant women have at least one ultrasound examination in early pregnancy.

Preterm birth (less than 37 completed weeks of gestation) occurred for 7.5% of all mothers in 2011. The average duration of pregnancy in Australia was 38.8 weeks. A small proportion of mothers gave birth at 20–27 weeks (0.8%) and 28–31 weeks (0.7%), while 6.0% gave birth at 32–36 weeks. There was a higher proportion of preterm birth in the Northern Territory (10.3%) than elsewhere (Table 3.20). This is likely to be associated with the different age structure of the population and higher proportion of births to teenage and Indigenous mothers (Tables 3.1 and 3.3).

Of women who gave birth in 2011, 91.8% gave birth at 37–41 completed weeks of gestation (term) and 0.7% at 42 or more weeks gestation (post-term). Post-term births were least common in South Australia (0.3%) and most common in the Australian Capital Territory (1.2%) (Table 3.20).

The numbers reported here are based on the duration of pregnancies, and so differ from the figures on infant gestational age reported in Chapter 4, which are based on the gestational age of the babies. The numbers differ because the lower gestational age associated with multiple births is applied once for the duration of pregnancy data, while the gestational age of each individual baby in a multiple birth is used for the data in Chapter 4.

Table 3.20: Women who gave birth, by duration of pregnancy and state and territory, 2011

Duration of pregnancy (weeks)	NSW	Vic^(a)	Qld	WA^(b)	SA	Tas	ACT^(c)	NT	Australia
Mean	38.9	38.8	38.7	38.6	38.7	38.7	38.8	38.6	38.8
	Number								
20–27 ^(d)	653	761	491	250	172	45	62	47	2,481
28–31	579	484	452	206	135	55	57	42	2,010
32–36	5,247	4,223	3,857	2,020	1,383	473	355	311	17,869
37–41	88,670	66,504	55,957	29,138	18,299	5,603	5,042	3,444	272,657
42 and over	660	755	349	133	54	39	67	30	2,087
Not stated	10	—	6	—	—	5	1	—	22
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
	Per cent								
20–27 ^(d)	0.7	1.0	0.8	0.8	0.9	0.7	1.1	1.2	0.8
28–31	0.6	0.7	0.7	0.6	0.7	0.9	1.0	1.1	0.7
32–36	5.5	5.8	6.3	6.4	6.9	7.6	6.4	8.0	6.0
37–41	92.5	91.4	91.6	91.8	91.3	90.1	90.3	88.9	91.8
42 and over	0.7	1.0	0.6	0.4	0.3	0.6	1.2	0.8	0.7
Not stated	0.0	—	0.0	—	—	0.1	0.0	—	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Preterm birth rates are higher in Victoria as the majority of late terminations for psychosocial indications performed in Australia are undertaken in Victoria, and many women travel from interstate (and overseas) to Victoria to have the termination undertaken.

(b) For WA, births includes late termination of pregnancy.

(c) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the percentage of ACT resident women who gave birth at 20–27 weeks gestation was 0.7% and at 28–31 weeks gestation was 0.8%.

(d) Includes three pregnancies of less than 20 weeks duration.

Note: For multiple births, the gestational age of the first born baby was used.

Multiple pregnancy

The number of multiple births has increased in the last two decades. This can be attributed largely to the increased use of fertility treatment, delay in child bearing and the higher proportion of older mothers.

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 2011, there were 4,595 multiple pregnancies (1.5% of all mothers) (Table 3.21), consisting of 4,520 twin pregnancies and 75 triplet and other higher-order multiple pregnancies.

Table 3.21: Women who gave birth, by plurality and state and territory, 2011

Plurality	NSW	Vic	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia
Number									
Singleton	94,422	71,549	60,087	31,299	19,746	6,117	5,468	3,821	292,509
Multiple	1,396	1,157	1,025	448	297	103	116	53	4,595
Not stated	1	21	—	—	—	—	—	—	22
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
Per cent									
Singleton	98.5	98.4	98.3	98.6	98.5	98.3	97.9	98.6	98.4
Multiple	1.5	1.6	1.7	1.4	1.5	1.7	2.1	1.4	1.5
Not stated	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) 14.6% 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 1.8%.

There were 15.5 multiple pregnancies per 1,000 mothers in 2011. The twinning rate was 15.2 per 1,000 mothers. In 2002, there were 4,259 multiple pregnancies (17.0 per 1,000 mothers), with a twinning rate of 16.7 per 1,000 mothers. Triplet and higher-order multiple pregnancies have remained fairly stable with a rate of 0.2 to 0.4 per 1,000 mothers since 2002. In the five jurisdictions where data were available on whether the pregnancy resulted from ART (Table 3.11), 9.3% of women who had ART treatment had a multiple pregnancy. Of these, 9.0% had twins and 0.3% had higher-order multiples. This compared with 1.3% for twins and 0.02% for higher-order multiples for non-ART mothers.

Onset and type of labour

Onset of labour is categorised as spontaneous, induced or no labour, where a caesarean section was performed before labour had started. In 2011, the onset of labour was spontaneous for 54.8% of all women who gave birth, and there was no labour for 19.1% of mothers. Labour was induced for 26.0% of mothers (Table 3.22).

The proportion of mothers with spontaneous onset of labour was highest in the Northern Territory (60.1%) and lowest in Tasmania (49.2%). Queensland and Western Australia had the highest proportions of mothers with no labour (20.6% and 20.2% respectively) (Table 3.22).

The proportion of women who were induced was higher in Tasmania (33.2%) than in the other states and territories. Overall, combined medical and surgical induction of labour was more common than either type alone.

Once labour has started, it may be necessary to intervene to speed up or augment the labour. In 2011, labour was augmented for 17.9% of all mothers, representing one-third (32.8%) of mothers with spontaneous onset of labour. There was considerable variation in practice among the states and territories regarding augmentation, ranging from 11.0% of all women who gave birth in Tasmania to 20.6% in the Northern Territory (Table 3.22).

Table 3.22: Women who gave birth, by onset of labour and state and territory, 2011

Onset of labour/type of augmentation or induction	NSW	Vic ^(a)	Qld	WA	SA	Tas	ACT ^(b)	NT	Total
	Number								
Spontaneous	52,722	40,630	34,335	16,267	10,185	3,058	3,312	2,330	162,839
<i>No augmentation</i>	37,757	<i>n.p.</i>	22,030	9,916	6,084	2,375	2,386	1,531	82,079
<i>Medical only^(c)</i>	5,373	<i>n.p.</i>	3,800	1,993	1,043	184	311	247	12,951
<i>Surgical only</i>	6,392	<i>n.p.</i>	6,455	2,766	2,442	373	345	381	19,154
<i>Combined</i>	3,191	<i>n.p.</i>	2,033	1,586	611	126	264	170	7,981
<i>Other/not stated</i>	9	<i>n.p.</i>	17	6	5	—	6	1	44
Induced	25,432	18,128	14,180	9,072	6,249	2,064	1,264	922	77,311
<i>Medical only^(c)</i>	8,016	5,401	4,729	1,746	1,712	764	274	217	22,859
<i>Surgical only</i>	1,789	1,318	1,135	602	748	229	85	61	5,967
<i>Combined</i>	15,476	11,318	8,170	6,579	3,747	1,043	853	639	47,825
<i>Other/not stated</i>	151	91	146	145	42	28	52	5	660
No labour	17,633	13,874	12,595	6,408	3,609	1,098	1,008	622	56,847
Not stated	32	95	2	—	—	—	—	—	129
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
	Per cent								
Spontaneous	55.0	55.9	56.2	51.2	50.8	49.2	59.3	60.1	54.8
<i>No augmentation</i>	39.4	<i>n.p.</i>	36.0	31.2	30.4	38.2	42.7	39.5	36.6
<i>Medical only^(c)</i>	5.6	<i>n.p.</i>	6.2	6.3	5.2	3.0	5.6	6.4	5.8
<i>Surgical only</i>	6.7	<i>n.p.</i>	10.6	8.7	12.2	6.0	6.2	9.8	8.5
<i>Combined</i>	3.3	<i>n.p.</i>	3.3	5.0	3.0	2.0	4.7	4.4	3.6
<i>Other/not stated</i>	0.0	<i>n.p.</i>	0.0	0.0	0.0	—	0.1	0.0	0.0
Induced	26.5	24.9	23.2	28.6	31.2	33.2	22.6	23.8	26.0
<i>Medical only^(c)</i>	8.4	7.4	7.7	5.5	8.5	12.3	4.9	5.6	7.7
<i>Surgical only</i>	1.9	1.8	1.9	1.9	3.7	3.7	1.5	1.6	2.0
<i>Combined</i>	16.2	15.6	13.4	20.7	18.7	16.8	15.3	16.5	16.1
<i>Other/not stated</i>	0.2	0.1	0.2	0.5	0.2	0.5	0.9	0.1	0.2
No labour	18.4	19.1	20.6	20.2	18.0	17.7	18.1	16.1	19.1
Not stated	0.0	0.1	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

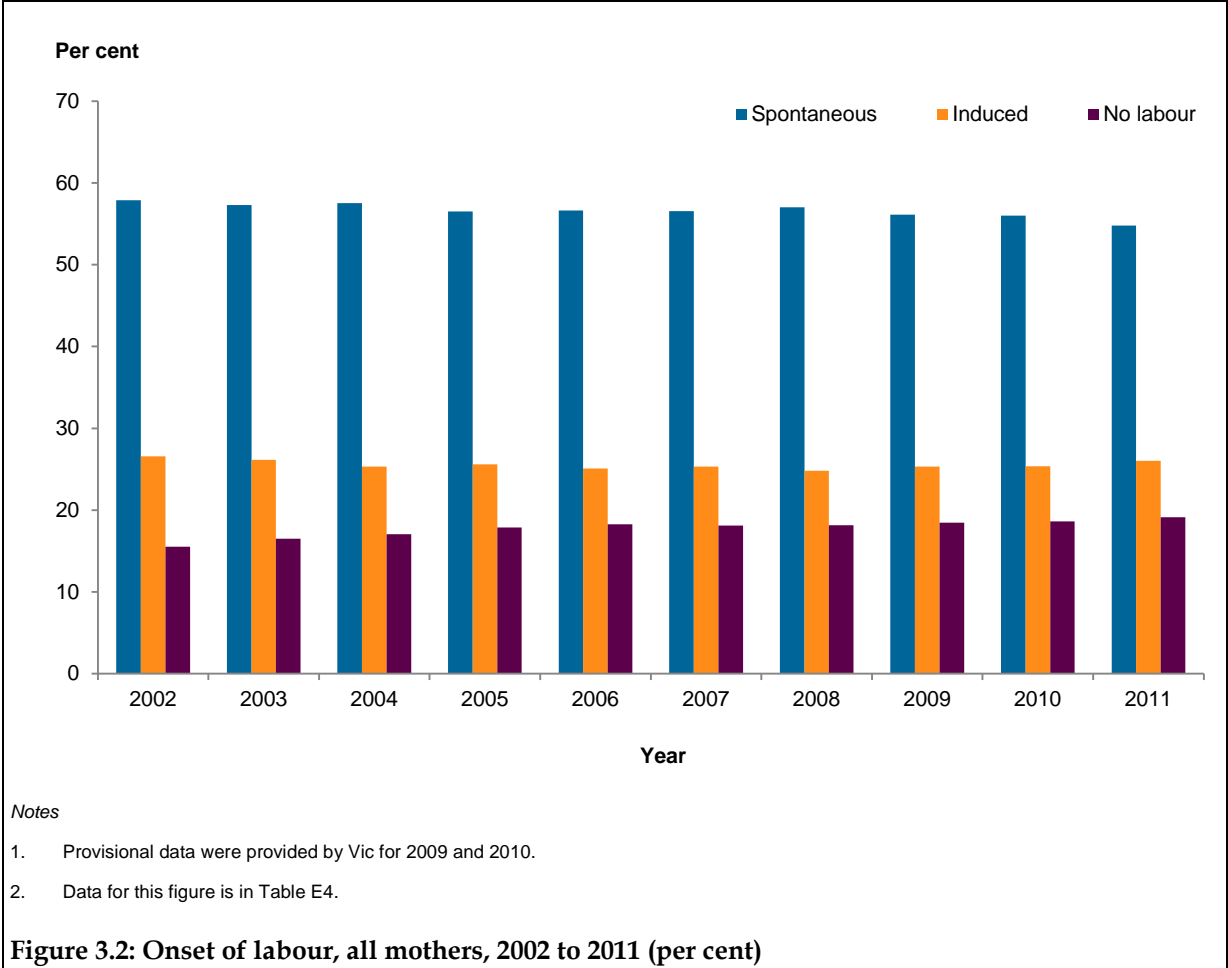
(a) Augmentation data are available in Vic.

(b) Multiple sources of data were used in the ACT to identify the types of augmentation and induction to improve ascertainment.

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

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

Figure 3.2 presents the trends in type of onset of labour from 2002 to 2011. In line with the increase in caesarean sections, spontaneous onset of labour generally decreased during this time, from 57.8% of all women giving birth in 2002 to 54.8% in 2011. The proportion of women giving birth without labour gradually increased from 15.5% in 2002 to 19.1% in 2011. The proportion of women having induction of labour has remained constant over recent years.



Information about the main reason for induction of labour is in Table 3.23 for New South Wales, Queensland, South Australia, Tasmania and the Northern Territory. These data are not part of the Perinatal NMDS, and data collection practices are not standard across jurisdictions. The data in this table should be examined independently for each state and territory – they are not comparable across jurisdictions because of variability in data collection methods and reporting by individual jurisdictions.

Table 3.23 shows similar proportions of women having induction for medical and fetal conditions and complications for the five jurisdictions. In these jurisdictions, hypertension or pre-eclampsia (range 9.3% to 12.4%) and premature rupture of membranes (range 2.2% to 15.2%) were important reasons for induction of labour.

Table 3.23: Women who gave birth and had an induction, by main reason for induction and state and territory, 2011^(a)

	NSW	Vic	Qld	WA	SA	Tas ^(b)	ACT	NT
	Number							
Prolonged pregnancy	5,785	n.r.	3,708	n.a.	1,116	354	n.a.	405
Hypertension/pre-eclampsia	2,374	n.r.	1,398	n.a.	778	230	n.a.	108
Premature rupture of membranes	3,867	n.r.	1,732	n.a.	409	298	n.a.	20
Diabetes	1,989	n.r.	1,285	n.a.	441	124	n.a.	78
Intrauterine growth restriction	1,151	n.r.	613	n.a.	389	83	n.a.	47
Fetal death	222	n.r.	139	n.a.	55	5	n.a.	9
Fetal distress	486	n.r.	190	n.a.	6	34	n.a.	—
Isoimmunisation	42	n.r.	28	n.a.	n.p.	n.p.	n.a.	—
Chorioamnionitis	44	n.r.	24	n.a.	<5	<5	n.a.	—
Other ^(c)	9,026	n.r.	5,063	n.a.	3,046	564	n.a.	239
Not stated	446	n.r.	—	n.a.	—	368	n.a.	16
Total	25,432	n.r.	14,180	n.a.	6,249	2,064	n.a.	922
	Per cent							
Prolonged pregnancy	22.7	n.r.	26.1	n.a.	17.9	17.2	n.a.	43.9
Hypertension/pre-eclampsia	9.3	n.r.	9.9	n.a.	12.4	11.1	n.a.	11.7
Premature rupture of membranes	15.2	n.r.	12.2	n.a.	6.5	14.4	n.a.	2.2
Diabetes	7.8	n.r.	9.1	n.a.	7.1	6.0	n.a.	8.5
Intrauterine growth restriction	4.5	n.r.	4.3	n.a.	6.2	4.0	n.a.	5.1
Fetal death	0.9	n.r.	1.0	n.a.	0.9	0.2	n.a.	1.0
Fetal distress	1.9	n.r.	1.3	n.a.	0.1	1.6	n.a.	—
Isoimmunisation	0.2	n.r.	0.2	n.a.	n.p.	n.p.	n.a.	—
Chorioamnionitis	0.2	n.r.	0.2	n.a.	n.p.	n.p.	n.a.	—
Other ^(c)	35.5	n.r.	35.7	n.a.	48.7	27.3	n.a.	25.9
Not stated	1.8	n.r.	—	n.a.	—	17.8	n.a.	1.7
Total	100.0	n.r.	100.0	n.a.	100.0	100.0	n.a.	100.0

(a) Because of differences in definitions and methods used for data collection, these data are not comparable across jurisdictions.

(b) For Tas, changes to the collection methodology for some reporting hospitals resulted in significant increase in 'Not stated'. Care must be taken when interpreting these numbers.

(c) Includes 'Psychosocial' and 'Other' reasons.

n.a. Data not available.

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

n.r. Data not received at the time of publication.

Pain relief during labour and operative delivery

The type of analgesia or anaesthesia used during labour or delivery influence the effectiveness of pain relief, the extent to which a woman is able to actively participate in the birth and her mobility immediately after the birth. Data on whether analgesia was administered to relieve pain for labour and whether anaesthesia was administered for an operative delivery (caesarean section, vacuum extraction or forceps) was available for all jurisdictions. Information on the types of analgesic or anaesthetic is also available and more than one type could be recorded for each woman. Epidural or caudal, spinal and combined spinal-epidural analgesia or anaesthesia have been grouped into the categories of 'regional analgesia' or 'regional anaesthesia'. The data are presented both individually and grouped for use in comparison with other modes of analgesia or anaesthesia.

Table 3.24 shows that, of all women who laboured (defined as spontaneous or induced onset of labour), 76.0% had analgesia administered. This proportion ranged from 64.9% in the Australian Capital Territory to 79.9% in Western Australia.

Table 3.24: Women who gave birth, by whether analgesia was administered to relieve pain for labour and state and territory, 2011^(a)

Analgesia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Number									
None	18,626	13,040	13,204	5,089	3,670	1,209	1,604	884	57,326
Analgesia administered	59,528	45,699	35,306	20,250	12,764	3,742	2,972	2,313	182,574
Not stated	—	19	5	—	—	171	—	55	250
Total	78,154	58,758	48,515	25,339	16,434	5,122	4,576	3,252	240,150
Per cent									
None	23.8	22.2	27.2	20.1	22.3	23.6	35.1	27.2	23.9
Analgesia administered	76.2	77.8	72.8	79.9	77.7	73.1	64.9	71.1	76.0
Not stated	—	0.0	0.0	—	—	3.3	—	1.7	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Only women who had a spontaneous or induced labour are included.

Of first-time mothers who laboured, 86.2% had analgesia administered for labour. This was markedly higher than the proportion of multiparous women (67.1%) who had analgesia administered for labour.

Table 3.25 shows the method of analgesia administration for labour. As more than one type may be recorded for each woman, the individual categories add up to more than the number of women who laboured. Nitrous oxide (inhaled) was used by half of all women who laboured (52.1%) with the highest proportion of use in the Northern Territory (57.4%). Regional analgesia was used for 31.8% of women, epidural or caudal method for 29.9%, and a spinal or combined spinal–epidural for 2.2%. Systemic opioids were administered to one-fifth of women who laboured (21.8%).

Table 3.25: Types of analgesia administered to relieve pain for labour, by state and territory, 2011^(a)

Type of analgesia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Number									
Nitrous oxide	41,800	32,864	25,591	10,628	8,072	2,480	1,875	1,868	125,178
Systemic opioids	14,418	16,008	10,812	4,225 ^(b)	3,576	1,679	1,017	720	52,455
Regional	23,535	16,676	14,619	12,014	6,486	1,262	1,206	614	76,412
<i>Epidural or caudal</i>	22,517	15,410	13,094	11,467	6,355	1,227	1,087	613	71,770
<i>Spinal</i>	610	844	1,414	307	151	43	125	—	3,494
<i>Combined spinal-epidural</i>	428	473	298	535	<5	13	14	<5	1,763
Other	7,107	7,428	379	846 ^(c)	347	246	1,318 ^(d)	236 ^(e)	17,907
Total women	78,154	58,758	48,515	25,339	16,434	5,122	4,576	3,252	240,150
Rate per 100 women who gave birth									
Nitrous oxide	53.5	55.9	52.7	41.9	49.1	48.4	41.0	57.4	52.1
Systemic opioids	18.4	27.2	22.3	16.7 ^(b)	21.8	32.8	22.2	22.1	21.8
Regional	30.1	28.4	30.1	47.4	39.5	24.6	26.4	18.9	31.8
<i>Epidural or caudal</i>	28.8	26.2	27.0	45.3	38.7	24.0	23.8	18.8	29.9
<i>Spinal</i>	0.8	1.4	2.9	1.2	0.9	0.8	2.7	—	1.5
<i>Combined spinal-epidural</i>	0.5	0.8	0.6	2.1	<i>n.p.</i>	0.3	0.3	<i>n.p.</i>	0.7
Other	9.1	12.6	0.8	3.3 ^(c)	2.1	4.8	28.8 ^(d)	7.3 ^(e)	7.5

(a) Only women who had a spontaneous or induced labour are included.

(b) For WA, systemic opioids includes intramuscular opioid injection.

(c) For WA, 'Other' includes intravenous narcotics, TENS, acupuncture, hypnotherapy and oral analgesia.

(d) For ACT, for three of the four ACT hospitals, 'Other' includes non-pharmacological methods such as bath, shower, spa, heat pack, aromatherapy, acupressure and acupuncture. In most cases it has been reported in addition to other listed pharmacological methods.

(e) For NT, 'Other' includes non-narcotic oral analgesia and non-pharmacological methods.

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

Note: More than one type of analgesia could be recorded; therefore, the sums of individual categories are greater than the total numbers of women who gave birth and percentages add to more than 100%.

Of all women who gave birth in 2011 and had a forceps, vacuum extraction or caesarean section delivery, 94.6% had anaesthesia administered. This proportion ranged from 87.6% in Queensland to 97.4% in New South Wales (Table 3.26).

Table 3.26: Women who gave birth and had caesarean section or instrumental vaginal deliveries^(a), by whether anaesthetic was administered for the operative delivery and state and territory, 2011

Anaesthesia	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Number									
None	1,083	1,414	3,240	541	320	223	214	58	7,093
Anaesthesia administered	39,877	32,152	22,938	14,875	8,667	2,359	2,384	1,499	124,751
Not stated	—	1	—	—	—	—	—	3	4
Total	40,960	33,567	26,178	15,416	8,987	2,582	2,598	1,560	131,848
Per cent									
None	2.6	4.2	12.4	3.5	3.6	8.6	8.2	3.7	5.4
Anaesthesia administered	97.4	95.8	87.6	96.5	96.4	91.4	91.8	96.1	94.6
Not stated	—	0.0	—	—	—	—	—	0.2	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) Instrumental vaginal deliveries include forceps and vacuum extraction.

Table 3.27 presents method of administration of anaesthesia for women giving birth by caesarean section. Although this data element specifies method of delivery of anaesthetic for caesarean sections, some states and territories may include anaesthetics administered for labour or administered after birth under this item, and this may be reflected in the differences reported among the states and territories.

In 2011, 63.5% of women who had a caesarean section had a spinal anaesthetic, 21.7% had an epidural or caudal anaesthetic and 10.4% had a combined spinal-epidural anaesthetic (Table 3.27). The data suggest that a combination of types may be administered for each woman who has a caesarean section, noting that more than one type can be reported.

A general anaesthetic was administered for 7.2% of caesarean sections (Table 3.27). There was variability in the proportion of women having a general anaesthetic for caesarean section by state and territory, from 4.6% in Western Australia to 9.8% in the Australian Capital Territory.

Table 3.27: Types of anaesthetic administered for caesarean sections, by state and territory, 2011^(a)

Type of anaesthetic	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Number									
Regional	27,664	22,032	19,155	10,370	6,292	1,778	1,692	1,146	90,129
<i>Epidural or caudal</i>	6,297	3,884	3,696	4,500	1,542	330	373	200	20,822
<i>Spinal</i>	17,944	17,268	13,109	4,069	4,748	1,450	1,327	933	60,848
<i>Combined spinal-epidural</i>	3,512	1,010	2,553	2,772	65	14	13	15	9,954
General	2,713	1,363	1,427	490	444	165	181	110	6,893
Total women	30,023	23,152	20,293	10,768	6,646	1,935	1,841	1,236	95,894
Rate per 100 women who gave birth									
Regional	92.1	95.2	94.4	96.3	94.7	91.9	91.9	92.7	94.0
<i>Epidural or caudal</i>	21.0	16.8	18.2	41.8	23.2	17.1	20.3	16.2	21.7
<i>Spinal</i>	59.8	74.6	64.6	37.8	71.4	74.9	72.1	75.5	63.5
<i>Combined spinal-epidural</i>	11.7	4.4	12.6	25.7	1.0	0.7	0.7	1.2	10.4
General	9.0	5.9	7.0	4.6	6.7	8.5	9.8	8.9	7.2

(a) Table excludes 560 cases of local anaesthetic to perineum, pudendal anaesthetic and other types of anaesthetic.

Note: More than one type of anaesthetic could be recorded; therefore, the sums of individual categories are greater than the total numbers of women who gave birth and percentages add to more than 100%.

Of the 6,893 women who had a general anaesthetic for caesarean section, 54.3% had a caesarean section in labour and 45.6% had a caesarean section without labour. Of the women who had a caesarean section in labour and a general anaesthetic, 60.1% had a spontaneous onset of labour and 39.9% had an induction of labour. Of the women who had a regional anaesthetic for caesarean section, 39.9% had a caesarean section in labour and 60.1% had a caesarean section without labour.

The method of anaesthetic administration varied between states and territories. More than half of all women who had an instrumental vaginal delivery had a regional anaesthetic (53.5%). Administration of a general anaesthetic was rare at 6 per 1,000 women who had an instrumental vaginal birth. A local anaesthetic to the perineum was administered in 26.7% and a pudendal block in 6.3% of instrumental deliveries (Table 3.28).

Table 3.28: Types of anaesthetic administered for instrumental vaginal deliveries^(a), by state and territory, 2011

Type of anaesthetic	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Number									
None	1,083	1,406	3,238	541	320	223	214	58	7,083
Local anaesthetic to perineum	4,278	2,685	879	990	419	181	93	91	9,616
Pudendal	648	973	142	171	175	65	55	25	2,254
Regional	5,791	5,913	1,856	3,332	1,573	203	413	161	19,242
<i>Epidural or caudal</i>	5,325	5,387	1,709	3,155	1,498	169	338	136	17,717
<i>Spinal</i>	379	418	117	75	74	36	78	25	1,202
<i>Combined spinal-epidural</i>	92	122	41	123	<5	<5	<5	—	384
General	76	94	7	<5	<5	11	8	—	202
Other	105	454	5	57	17	6	—	3	647
Total women	10,937	10,415	5,885	4,648	2,341	647	757	324	35,954
Rate per 100 women who gave birth									
None	9.9	13.5	55.0	11.6	13.7	34.5	28.3	17.9	19.7
Local anaesthetic to perineum	39.1	25.8	14.9	21.3	17.9	28.0	12.3	28.1	26.7
Pudendal	5.9	9.3	2.4	3.7	7.5	10.0	7.3	7.7	6.3
Regional	52.9	56.8	31.5	71.7	67.2	31.4	54.6	49.7	53.5
<i>Epidural or caudal</i>	48.7	51.7	29.0	67.9	64.0	26.1	44.6	42.0	49.3
<i>Spinal</i>	3.5	4.0	2.0	1.6	3.2	5.6	10.3	7.7	3.3
<i>Combined spinal-epidural</i>	0.8	1.2	0.7	2.6	n.p.	n.p.	n.p.	—	1.1
General	0.7	0.9	0.1	n.p.	n.p.	1.7	1.1	—	0.6
Other	1.0	4.4	0.1	1.2	0.7	0.9	—	0.9	1.8

(a) Instrumental vaginal deliveries include forceps and vacuum extraction.

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

Note: More than one type of anaesthetic could be recorded; therefore, the sums of individual categories are greater than the total numbers of women who gave birth and percentages add to more than 100%.

Presentation at birth

Data are presented in this section by mother. Women who gave birth to more than one baby are categorised according to the presentation at birth of the first born baby. Presentation at birth is defined as presenting part of the fetus at birth. Table 4.11 shows the presentation for each individual baby by plurality.

In 2011, the predominant presentation at birth was cephalic (94.6%), which included presentation of any part (vertex, face or brow) of the fetal head in labour or at birth. Vertex presentation, where the crown (vertex) of the fetal head is the presenting part, occurred for 94.4% of all women who gave birth, while face or brow presentation occurred for 0.3% of mothers. Breech presentation, the presentation of the baby's buttocks or feet in labour or at birth, occurred for 3.8% of mothers. Summary data for breech presentation are shown; data were not available on complete, incomplete and frank breech presentations (Table 3.29). Of

the 11,368 women with a breech presentation, 91.5% were singleton pregnancies and 8.4% were multiple pregnancies where first baby born had a breech presentation.

Table 3.29: Women who gave birth, by presentation at birth and state and territory, 2011

Presentation	NSW	Vic	Qld	WA	SA	Tas ^(a)	ACT ^(b)	NT	Australia
Number									
Vertex	91,674	68,740	57,883	30,067	18,986	4,248	5,174	3,676	280,448
Breech	3,338	2,948	2,582	1,268	850	21	214	147	11,368
Face	91	82	79	67	12	<5	92	n.p.	432
Brow	82	100	65	46	29	<5	13	n.p.	345
Other ^(c)	534	719	490	283	129	12	89	27	2,283
Not stated	100	138	13	16	37	1,933	2	11	2,250
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
Per cent									
Vertex	95.7	94.5	94.7	94.7	94.7	68.3	92.7	94.9	94.4
Breech	3.5	4.1	4.2	4.0	4.2	0.3	3.8	3.8	3.8
Face	0.1	0.1	0.1	0.2	0.1	n.p.	1.6	n.p.	0.1
Brow	0.1	0.1	0.1	0.1	0.1	n.p.	0.2	n.p.	0.1
Other ^(c)	0.6	1.0	0.8	0.9	0.6	0.2	1.6	0.7	0.8
Not stated	0.1	0.2	0.0	0.1	0.2	31.1	0.0	0.3	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) For Tas, presentations were only recorded for vaginal births. Where a caesarean section occurred the presentation was recorded as 'Not stated'.

(b) 14.6% 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 3.7%, and 4.4% for non-ACT residents who gave birth in the ACT.

(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.

Method of birth

Data are presented in this section by mother. For multiple births, women are categorised according to the method of birth for the first born baby. Table 4.12 presents method of birth data for each individual baby by plurality.

From 2007, changes to the Perinatal NMDS item for method of birth were implemented. 'Spontaneous vaginal' was changed to 'Non-instrumental vaginal' and 'Vaginal breech' was no longer a category. Therefore, care must be taken when looking at time series data. Vaginal breech births would be recorded as either 'Non-instrumental vaginal' or 'Forceps' for 2007 onwards with breech as the presentation. Six of the eight jurisdictions were able to provide data in this way; therefore, the 'Non-instrumental vaginal' category for 2011 may include women in New South Wales and Western Australia who had breech births where instruments were used.

Tables 4.13 and 4.14 present information on method of birth for babies with breech presentations.

Vaginal births

In 2011, 201,182 women (67.7%) had a vaginal birth, and most of these (82.1%) did not involve instruments.

Of all women who gave birth in 2011, 55.6% had a non-instrumental vaginal birth. The proportion of non-instrumental vaginal births ranged from 51.4% in Western Australia to 59.7% in the Northern Territory (Table 3.30).

About 1 in 9 mothers (12.1%) had an instrumental vaginal delivery where either forceps or vacuum extraction was used. The proportions of these instrumental deliveries varied among the states and territories, from 8.4% the Northern Territory to 14.6% in Western Australia. Forceps delivery occurred for 4.2% of mothers and was most common in the Australian Capital Territory (7.7%). Deliveries by vacuum extraction occurred for 7.9% of women who gave birth, ranging from 5.3% in the Northern Territory to 12.1% in Western Australia (Table 3.30).

Table 3.30: Women who gave birth, by method of birth and state and territory, 2011

Method of birth	NSW ^(a)	Vic	Qld	WA ^(a)	SA	Tas	ACT ^(b)	NT	Australia
Number									
Non-instrumental vaginal	54,822	39,150	34,933	16,331	11,054	3,638	2,986	2,314	165,228
Forceps	3,932	4,520	1,142	814	1,152	229	430	119	12,338
Vacuum extraction	7,005	5,895	4,743	3,834	1,189	418	327	205	23,616
Caesarean section	30,023	23,152	20,293	10,768	6,646	1,935	1,841	1,236	95,894
<i>Labour</i>	<i>12,383</i>	<i>9,264</i>	<i>7,698</i>	<i>4,360</i>	<i>3,037</i>	<i>838</i>	<i>833</i>	<i>614</i>	<i>39,027</i>
<i>No labour</i>	<i>17,633</i>	<i>13,868</i>	<i>12,595</i>	<i>6,408</i>	<i>3,609</i>	<i>1,097</i>	<i>1,008</i>	<i>622</i>	<i>56,840</i>
<i>Not stated</i>	<i>7</i>	<i>20</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>27</i>
Not stated	37	10	1	—	2	—	—	—	50
Total	95,819	72,727	61,112	31,747	20,043	6,220	5,584	3,874	297,126
Per cent									
Non-instrumental vaginal	57.2	53.8	57.2	51.4	55.2	58.5	53.5	59.7	55.6
Forceps	4.1	6.2	1.9	2.6	5.7	3.7	7.7	3.1	4.2
Vacuum extraction	7.3	8.1	7.8	12.1	5.9	6.7	5.9	5.3	7.9
Caesarean section	31.3	31.8	33.2	33.9	33.2	31.1	33.0	31.9	32.3
<i>Labour</i>	<i>12.9</i>	<i>12.7</i>	<i>12.6</i>	<i>13.7</i>	<i>15.2</i>	<i>13.5</i>	<i>14.9</i>	<i>15.8</i>	<i>13.1</i>
<i>No labour</i>	<i>18.4</i>	<i>19.1</i>	<i>20.6</i>	<i>20.2</i>	<i>18.0</i>	<i>17.6</i>	<i>18.1</i>	<i>16.1</i>	<i>19.1</i>
<i>Not stated</i>	<i>0.0</i>	<i>0.0</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>—</i>	<i>0.0</i>
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) For NSW and WA, 'Non-instrumental vaginal' includes all women who had a vaginal breech birth, whether or not instruments were used. For the remaining jurisdictions, vaginal breech births are only included where instruments were not used.

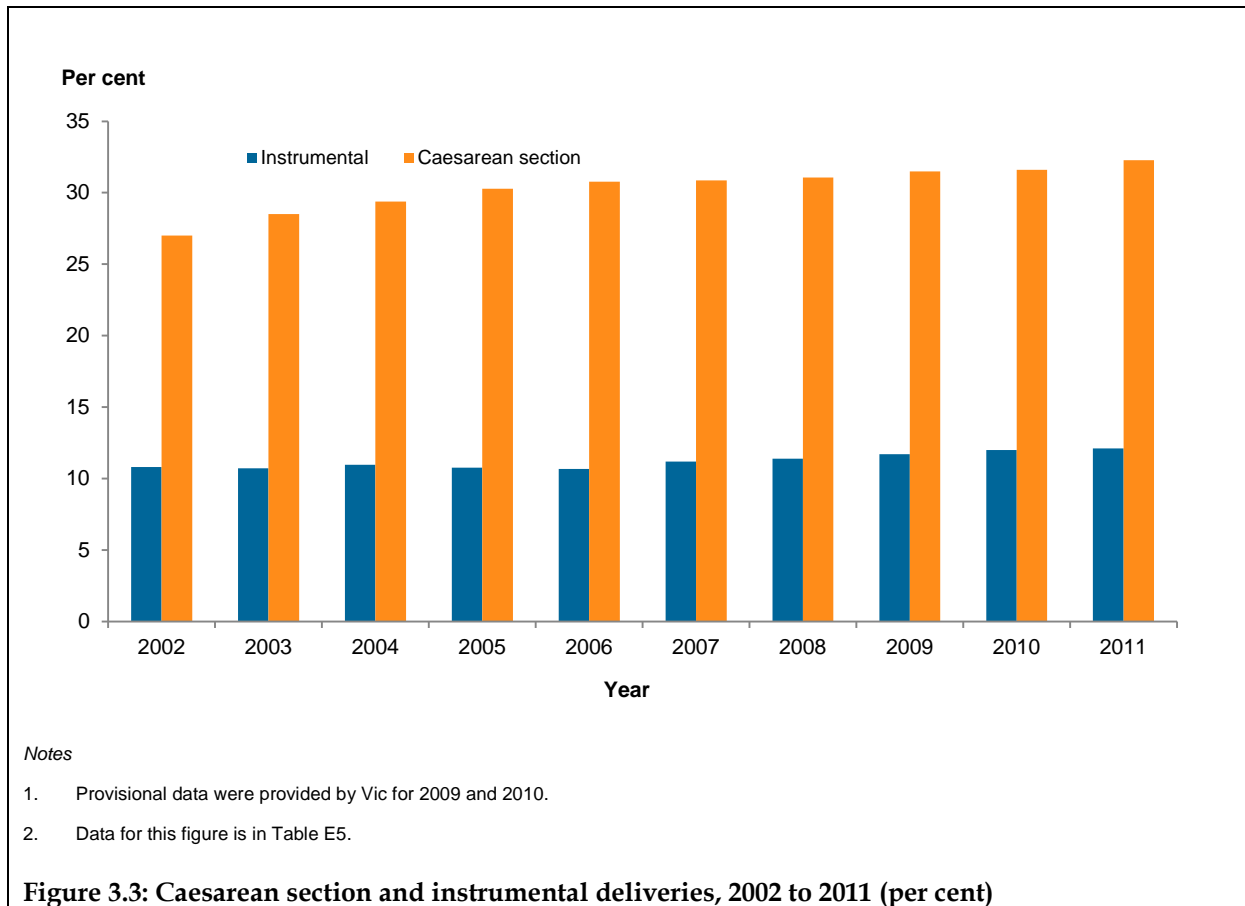
(b) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, 32.1% of ACT resident women had a caesarean section compared with 37.9% of non-ACT residents who gave birth in the ACT.

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

Caesarean sections

There were 95,894 caesarean sections performed in 2011. The proportion of caesarean section deliveries varied by state and territory, ranging from 31.1% in Tasmania to 33.9% in Western Australia (Table 3.30). Of all women who gave birth, 19.1% had a caesarean section without labour and 13.1% had a caesarean section with labour.

The caesarean section rate showed an upward trend in the 10 years to 2011, increasing from 27.0% nationally in 2002 to a peak of 32.3% in 2011. In contrast, the proportion of instrumental deliveries remained stable at about 11.0% throughout this period (Figure 3.3).



Directly age-standardised rates of caesarean section were calculated for states and territories for 2011, using as the standard all women who gave birth in 2011. The age-standardised rates of caesarean section varied by state and territory, ranging from 31.0% in New South Wales and Victoria to 34.4% in Western Australia (Table 3.31).

Table 3.31: Women who gave birth by caesarean section, by age and state and territory, 2011

Age (years)	NSW	Vic	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia
	Number								
Less than 20	542	282	541	251	158	72	19	81	1,946
20–24	2,536	1,732	2,384	1,125	726	285	137	200	9,125
25–29	7,153	5,213	5,305	2,757	1,790	515	453	333	23,519
30–34	10,216	8,039	6,578	3,577	2,179	592	640	345	32,166
35–39	7,531	5,742	4,383	2,391	1,403	346	462	209	22,467
40 and over	2,035	1,675	1,102	667	390	125	130	68	6,192
Not stated	10	469	—	—	—	—	—	—	479
Total	30,023	23,152	20,293	10,768	6,646	1,935	1,841	1,236	95,894
	Per cent								
Less than 20	1.8	1.2	2.7	2.3	2.4	3.7	1.0	6.6	2.0
20–24	8.4	7.5	11.7	10.4	10.9	14.7	7.4	16.2	9.5
25–29	23.8	22.5	26.1	25.6	26.9	26.6	24.6	26.9	24.5
30–34	34.0	34.7	32.4	33.2	32.8	30.6	34.8	27.9	33.5
35–39	25.1	24.8	21.6	22.2	21.1	17.9	25.1	16.9	23.4
40 and over	6.8	7.2	5.4	6.2	5.9	6.5	7.1	5.5	6.5
Not stated	0.0	2.0	—	—	—	—	—	—	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Age-standardised rate^(b)								
Rate	31.0	31.0	34.2	34.4	33.5	32.3	32.1	34.2	—

(a) The ACT rate includes non-ACT residents who gave birth in the ACT. Therefore, the rate is a health service population rate rather than an ACT population rate.

(b) Directly age-standardised using the Australian population of women who gave birth in 2011.

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

Information about the main reason for carrying out a caesarean section is in Table 3.32 for Queensland, South Australia, Tasmania and the Northern Territory. These data are not part of the Perinatal NMDS and should be examined independently for each state and territory as the data are not standard across jurisdictions. The table shows that data were not available or coded to the 'Other' category for a substantial proportion of caesarean sections. A history of repeat/previous caesarean section was the leading reason reported for caesarean section (range 34.4% to 39.3%). There was no separate category for patient choice in the data presented.

Table 3.32: Women who gave birth by caesarean section, by main reason for caesarean section and state and territory, 2011^(a)

	NSW	Vic ^(b)	Qld	WA	SA	Tas	ACT	NT
	Number							
Previous caesarean section	n.p.	n.r.	7,463	n.a.	2,288	760	n.a.	448
Fetal distress	n.p.	n.r.	2,335	n.a.	827	308	n.a.	181
Malpresentation	n.p.	n.r.	1,733	n.a.	673	186	n.a.	101
Antepartum haemorrhage	n.p.	n.r.	528	n.a.	146	43	n.a.	15
Hypertension/ pre-eclampsia	n.p.	n.r.	517	n.a.	138	49	n.a.	—
Multiple pregnancy	n.p.	n.r.	346	n.a.	99	17	n.a.	—
Intrauterine growth restriction	n.p.	n.r.	240	n.a.	66	16	n.a.	—
Other ^(c)	n.p.	n.r.	7,131	n.a.	2,409	553	n.a.	491
Not stated	n.p.	n.r.	—	n.a.	—	3	n.a.	—
Total	n.p.	n.r.	20,293	n.a.	6,646	1,935	n.a.	1,236
	Per cent							
Previous caesarean section	n.p.	n.r.	36.8	n.a.	34.4	39.3	n.a.	36.2
Fetal distress	n.p.	n.r.	11.5	n.a.	12.4	15.9	n.a.	14.6
Malpresentation	n.p.	n.r.	8.5	n.a.	10.1	9.6	n.a.	8.2
Antepartum haemorrhage	n.p.	n.r.	2.6	n.a.	2.2	2.2	n.a.	1.2
Hypertension/ pre-eclampsia	n.p.	n.r.	2.5	n.a.	2.1	2.5	n.a.	—
Multiple pregnancy	n.p.	n.r.	1.7	n.a.	1.5	0.9	n.a.	—
Intrauterine growth restriction	n.p.	n.r.	1.2	n.a.	1.0	0.8	n.a.	—
Other ^(c)	n.p.	n.r.	35.1	n.a.	36.2	28.6	n.a.	39.7
Not stated	n.p.	n.r.	—	n.a.	—	0.2	n.a.	—
Total	n.p.	n.r.	100.0	n.a.	100.0	100.0	n.a.	100.0

(a) Because of differences in definitions used and methods of data collection, these data are not comparable across jurisdictions.

(b) Indications for caesarean section data are available in Vic.

(c) Includes failure to progress/cephalopelvic disproportion, psychosocial/elective/patient choice and other reasons.

n.a. Data not available.

n.p. Data not published to maintain confidentiality of small numbers. Data for NSW not published as complete data were not available in a comparable format.

n.r. Data not received at the time of publication.

Method of birth and maternal age

Table 3.33 presents methods of birth by maternal age group. Non-instrumental vaginal birth was most common for women younger than 20 (69.7%) and declined progressively with increasing maternal age. The proportion of vaginal births that was instrumented was highest in the 25–29 years age group (13.6%).

Caesarean section rates increased with advancing maternal age. In 2011, caesarean section rates ranged from 17.7% for mothers younger than 20 to 48.8% for mothers aged 40 and over (Table 3.33).

Table 3.33: Method of birth, by maternal age (years), 2011

Method of birth	Younger than 20	20–24	25–29	30–34	35–39	40 and over	Not stated	Total
Number								
Non-instrumental vaginal ^(a)	7,652	27,112	48,005	49,984	26,279	5,428	768	165,228
Forceps	398	1,530	3,978	4,045	1,910	376	101	12,338
Vacuum extraction	980	3,183	7,260	7,812	3,562	692	127	23,616
Caesarean section	1,946	9,125	23,519	32,166	22,467	6,192	479	95,894
Not stated	3	6	15	11	8	7	—	50
Total	10,979	40,956	82,777	94,018	54,226	12,695	1,475	297,126
Per cent								
Non-instrumental vaginal ^(a)	69.7	66.2	58.0	53.2	48.5	42.8	52.1	55.6
Forceps	3.6	3.7	4.8	4.3	3.5	3.0	6.8	4.2
Vacuum extraction	8.9	7.8	8.8	8.3	6.6	5.5	8.6	7.9
Caesarean section	17.7	22.3	28.4	34.2	41.4	48.8	32.5	32.3
Not stated	0.0	0.0	0.0	0.0	0.0	0.1	—	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) For NSW and WA, 'Non-instrumental vaginal' includes all women who had a vaginal breech birth, whether or not instruments were used. For the remaining jurisdictions, vaginal breech births are only included where instruments were not used.

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

Method of birth and Indigenous status

Mothers who identified as being of Aboriginal and Torres Strait Islander origin had a higher proportion of non-instrumental vaginal births than non-Indigenous mothers (66.6% compared with 55.2%) and a lower proportion of instrumental vaginal deliveries (forceps or vacuum extraction). The caesarean section rate of 27.0% for mothers who identified as Aboriginal and Torres Strait Islander was less than that for non-Indigenous mothers (32.5%) (Table 3.34). This may be partially explained by the younger age of Indigenous mothers, which averaged 25.3 years. The age-standardised rate of caesarean section among Aboriginal and Torres Strait Islander mothers was 31.0% compared to 32.2% among Non-Indigenous mothers.

Table 3.34: Women who gave birth, by Indigenous status, method of birth and state and territory, 2011

Indigenous status ^(a) / method of birth	NSW ^(b)	Vic	Qld	WA ^(b)	SA	Tas	ACT ^(c)	NT	Australia
Indigenous	Number								
Non-instrumental vaginal	2,002	596	2,515	1,100	437	187	61	913	7,811
Instrumental vaginal ^(d)	204	74	182	124	49	19	13	83	748
Caesarean section	766	249	949	461	206	88	29	418	3,166
Not stated	2	1	—	—	1	—	—	—	4
Total	2,974	920	3,646	1,685	693	294	103	1,414	11,729
	Per cent								
Non-instrumental vaginal	67.3	64.8	69.0	65.3	63.1	63.6	59.2	64.6	66.6
Instrumental vaginal ^(d)	6.9	8.0	5.0	7.4	7.1	6.5	12.6	5.9	6.4
Caesarean section	25.8	27.1	26.0	27.4	29.7	29.9	28.2	29.6	27.0
Not stated	0.1	0.1	—	—	0.1	—	—	—	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Non-Indigenous	Number								
Non-instrumental vaginal	52,673	38,402	32,409	15,231	10,617	3,374	2,925	1,398	157,029
Instrumental vaginal ^(d)	10,715	10,305	5,701	4,524	2,292	615	742	241	35,135
Caesarean section	29,181	22,789	19,342	10,307	6,440	1,813	1,812	817	92,501
Not stated	35	9	1	—	1	—	—	—	46
Total	92,604	71,505	57,453	30,062	19,350	5,802	5,479	2,456	284,711
	Per cent								
Non-instrumental vaginal	56.9	53.7	56.4	50.7	54.9	58.2	53.4	56.9	55.2
Instrumental vaginal ^(d)	11.6	14.4	9.9	15.0	11.8	10.6	13.5	9.8	12.3
Caesarean section	31.5	31.9	33.7	34.3	33.3	31.2	33.1	33.3	32.5
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) Indigenous status 'Not stated' not included.

(b) For NSW and WA, 'Non-instrumental vaginal' includes all women who had a vaginal breech birth, whether or not instruments were used. For the remaining jurisdictions, vaginal breech births are only included where instruments were not used.

(c) 28.2% of Aboriginal and Torres Strait Islander women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, 23.0% of ACT resident Indigenous women had a caesarean section compared with 41.4% of non-ACT resident Indigenous women who gave birth in ACT.

(d) Instrumental vaginal birth includes forceps and vacuum extraction.

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

Age-specific rates of caesarean section were calculated by Indigenous status (Table 3.35). For those younger than 20, and those aged 20–24, the rate of caesarean section for Aboriginal and Torres Strait Islander mothers was higher than for non-Indigenous mothers. For mothers aged 25 and over, the rate of caesarean section was lower for Indigenous mothers than for non-Indigenous mothers (Table 3.35).

Table 3.35: Women who gave birth by caesarean section, by Indigenous status and age, 2011

	Younger than 20	20–24	25–29	30–34	35–39	40 and over	Not stated	Total
Number								
Indigenous	463	915	795	586	316	87	4	3,166
Non-Indigenous	1,479	8,180	22,671	31,517	22,097	6,087	470	92,501
Not stated	4	30	53	63	54	18	5	227
Total	1,946	9,125	23,519	32,166	22,467	6,192	479	95,894
Age-specific rate								
Indigenous	21.2	24.0	27.4	33.8	36.2	42.2	22.2	27.0
Non-Indigenous	16.9	22.1	28.5	34.2	41.5	48.9	32.5	32.5
Age-standardised rate^(a)								
Indigenous	..	..	..	..	..	..	..	31.0
Non-Indigenous	..	..	..	..	..	..	..	32.2

(a) Directly age-standardised using the Australian population of women who gave birth in 2011.

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

Primary caesarean sections

The rate of primary caesarean section varied by parity, with 33.2% of primiparous women giving birth by caesarean section compared with 10.3% of multiparous women. The rate of caesarean section for primiparous women ranged from 32.1% in New South Wales to 35.2% in Western Australia. The overall rate for women without a history of previous caesarean section was 22.4% (Table 3.36).

Table 3.36: Primary caesarean sections, by parity and state and territory, 2011

Parity	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Number									
Primiparas	13,359	10,598	8,580	4,742	2,895	854	886	529	42,443
Multiparas ^(a)	3,782	2,848	2,585	873	871	279	290	175	11,703
Total	17,141	13,446	11,165	5,615	3,766	1,133	1,176	704	54,146
Primary caesarean section rate									
Primiparas	32.1	32.8	34.1	35.2	33.9	34.0	34.8	34.2	33.2
Multiparas ^(a)	10.0	9.9	10.2	11.5	10.9	10.2	12.9	10.6	10.3
Total	21.6	22.0	22.2	26.6	22.7	21.6	24.6	22.0	22.4

(a) Only includes multiparous women who had not previously had a caesarean section.

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

Method of birth and previous caesarean section

In 2011, 12.3% of mothers who had previously had a caesarean section had a non-instrumental vaginal birth and 3.5% had an instrumental vaginal birth. Repeat caesarean sections occurred for 84.1% of mothers with a history of caesarean section, and ranged from 78.7% in the Northern Territory to 86.8% in Western Australia (Table 3.37).

Table 3.37: Multiparous mothers who had previous caesarean section, by current method of birth and state and territory, 2011

Method of birth	NSW ^(a)	Vic	Qld	WA ^(a)	SA	Tas	ACT	NT	Total
Number									
Non-instrumental vaginal	1,952	1,429	1,306	508	458	136	91	124	6,004
Instrumental vaginal ^(b)	546	456	277	196	145	39	38	20	1,717
Caesarean section	12,617	9,703	9,128	4,645	2,880	802	664	532	40,971
Not stated	1	1	—	—	—	—	—	—	2
Total	15,116	11,589	10,711	5,349	3,483	977	793	676	48,694
Per cent									
Non-instrumental vaginal	12.9	12.3	12.2	9.5	13.1	13.9	11.5	18.3	12.3
Instrumental vaginal ^(b)	3.6	3.9	2.6	3.7	4.2	4.0	4.8	3.0	3.5
Caesarean section	83.5	83.7	85.2	86.8	82.7	82.1	83.7	78.7	84.1
Not stated	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 NSW and WA, 'Non-instrumental vaginal' includes all women who had a vaginal breech birth, whether or not instruments were used. For the remaining jurisdictions, vaginal breech births are only included where instruments were not used.

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

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

In 2011, the rate of caesarean section for women giving birth to term singletons ranged from 45.7% at 38 weeks gestation to 18.9% at 40 weeks gestation, and was 31.0% overall. Caesarean section in labour was most common at 41 weeks. The rate of no labour caesarean section peaked at 38 weeks at 35.7% (Table 3.38).

Table 3.38: Women who gave birth to term singleton babies and had a caesarean section, by gestational age and onset of labour, 2011

Gestational age	Labour	No labour	Total ^(a)
37	2,646	4,752	7,401
38	5,711	20,463	26,179
39	7,775	18,583	26,362
40	10,561	3,821	14,391
41	8,046	1,492	9,543
Total	34,739	49,111	83,876
37	13.9	25.1	39.0
38	10.0	35.7	45.7
39	9.7	23.2	32.9
40	13.9	5.0	18.9
41	21.0	3.9	24.9
Total	12.8	18.1	31.0

(a) Includes 'not stated' onset of labour.

Perineal status after vaginal birth

In 2011, more than one-quarter of mothers (26.8%) had an intact perineum after vaginal birth. A first or second degree laceration or graze was reported in 47.8% of women after vaginal birth. A third or fourth degree laceration of the perineum was reported in 2.0% of vaginal births. This proportion varied among the states and territories, from 1.7% in Tasmania to 3.6% in the Australian Capital Territory. An episiotomy only was performed for 15.6% of vaginal births, with the highest rate recorded in Victoria (21.0%). A combined laceration and episiotomy occurred in 3.0% of women who had a vaginal birth, giving a total of 18.5% of women who had a vaginal birth having an episiotomy (Table 3.39).

Table 3.39: Women who gave birth vaginally, by perineal status and state and territory, 2011

Perineal status	NSW	Vic	Qld	WA	SA	Tas ^(a)	ACT	NT	Total
Number									
Episiotomy	9,603	10,405	5,047	2,947	2,085	442	426	332	31,287
Intact	14,789	12,182	11,997	7,643	3,628	1,363	1,228	1,003	53,833
1st degree laceration/ vaginal graze	19,065	8,405	8,119	3,274	3,313	1,098	531	557	44,362
2nd degree laceration	17,584	12,198	10,331	5,016	3,702	985	1,368	608	51,792
3rd/4th degree laceration	1,304	928	720	439	290	73	134	77	3,965
Combined laceration and episiotomy	2,269	1,490	410	1,267	370	97	56	30	5,989
Other	1,120 ^(b)	3,529	4,190 ^(c)	393 ^(b)	6	227	—	31	9,496
Not stated	25	428	4	—	1	—	—	—	458
Total	65,759	49,565	40,818	20,979	13,395	4,285	3,743	2,638	201,182
Per cent									
Episiotomy	14.6	21.0	12.4	14.0	15.6	10.3	11.4	12.6	15.6
Intact	22.5	24.6	29.4	36.4	27.1	31.8	32.8	38.0	26.8
1st degree laceration/ vaginal graze	29.0	17.0	19.9	15.6	24.7	25.6	14.2	21.1	22.1
2nd degree laceration	26.7	24.6	25.3	23.9	27.6	23.0	36.5	23.0	25.7
3rd/4th degree laceration	2.0	1.9	1.8	2.1	2.2	1.7	3.6	2.9	2.0
Combined laceration and episiotomy	3.5	3.0	1.0	6.0	2.8	2.3	1.5	1.1	3.0
Other	1.7 ^(b)	7.1	10.3 ^(c)	1.9 ^(b)	0.0	5.3	—	1.2	4.7
Not stated	0.0	0.9	0.0	—	0.0	—	—	—	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) For Tas, cases where both a laceration and episiotomy occurred were coded as 'Combined laceration and episiotomy' in the electronic systems. In the paper-based form they were recorded as 'Episiotomy'. Care must be taken when interpreting these numbers.

(b) Includes unspecified perineal tear and vulval or perineal haematoma.

(c) Includes genital grazes such as clitoral or labial.

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

Pre-existing and pregnancy-related medical conditions

Table 3.40 presents information on pre-existing conditions and complications arising in pregnancy for women who gave birth in all jurisdictions except Victoria. These data are not part of the Perinatal NMDS and should be examined independently for each state and territory as they are not standard across jurisdictions. The pre-existing essential hypertension rates ranged from 5.8 per 1,000 women in Queensland to 14.5 per 1,000 women in Tasmania. The rate of fetal distress varied by state and territory, and ranged from 87.6 per 1,000 women in Tasmania to 182.1 per 1,000 women in Queensland. This may reflect the relevant definitions as well as variability in the practices and protocols used to assess the conditions. The rate for gestational diabetes ranged from 44.5 per 1,000 women in Tasmania to 69.4 in Western Australia and 69.5 per 1,000 women in South Australia.

Table 3.40: Women who gave birth, by selected medical and obstetric conditions and state and territory, 2011^(a)

Medical and obstetric condition or complication	NSW	Vic^(b)	Qld	WA	SA	Tas	ACT^(c)	NT
	Number							
Pre-existing hypertension	783	n.r.	357	365	237	90	80	54
Pre-existing diabetes mellitus	612	n.r.	366	228	139	68	47	70
Epilepsy	n.a.	n.r.	250	168	108	67	41	19
Antepartum haemorrhage	n.a.	n.r.	1,560	1,119	659	135	310	52
<i>Placenta praevia</i>	<i>n.a.</i>	<i>n.r.</i>	376	208	109	32	54	<i>n.a.</i>
<i>Abruptio placenta</i>	<i>n.a.</i>	<i>n.r.</i>	289	66	99	20	46	<i>n.a.</i>
<i>Other</i>	<i>n.a.</i>	<i>n.r.</i>	895	845	451	83	210	<i>n.a.</i>
Pregnancy-induced hypertension	6,143	n.r.	2,865	288	1,456	387	304	144
Gestational diabetes	6,093	n.r.	3,951	2,202	1,393	277	331	268
Fetal distress	n.a.	n.r.	11,130 ^(d)	3,394	2,198	545	943	531
Cord prolapse	n.a.	n.r.	96	47	33	7	11	7
Postpartum haemorrhage	1,373	n.r.	3,413 ^(e)	5,231	2,401	816	642	1,053
Retained placenta	n.a.	n.r.	758	337	268	77	99	49
	Rate per 1,000 women who gave birth							
Pre-existing hypertension	8.2	n.r.	5.8	11.5	11.8	14.5	14.3	13.9
Pre-existing diabetes mellitus	6.4	n.r.	6.0	7.2	6.9	10.9	8.4	18.1
Epilepsy	n.a.	n.r.	4.1	5.3	5.4	10.8	7.3	4.9
Antepartum haemorrhage	n.a.	n.r.	25.5	35.2	32.9	21.7	55.5	13.4
<i>Placenta praevia</i>	<i>n.a.</i>	<i>n.r.</i>	6.2	6.6	5.4	5.1	9.7	<i>n.a.</i>
<i>Abruptio placenta</i>	<i>n.a.</i>	<i>n.r.</i>	4.7	2.1	4.9	3.2	8.2	<i>n.a.</i>
<i>Other</i>	<i>n.a.</i>	<i>n.r.</i>	14.6	26.6	22.5	13.3	37.6	<i>n.a.</i>
Pregnancy-induced hypertension	64.1	n.r.	46.9	9.1	72.6	62.2	54.4	37.2
Gestational diabetes	63.6	n.r.	64.7	69.4	69.5	44.5	59.3	69.2
Fetal distress	n.a.	n.r.	182.1 ^(d)	106.9	109.7	87.6	168.9	137.1
Cord prolapse	n.a.	n.r.	1.6	1.5	1.6	1.1	2.0	1.8
Postpartum haemorrhage	14.3	n.r.	55.8 ^(e)	164.8	119.8	131.2	115.0	271.8
Retained placenta	n.a.	n.r.	12.4	10.6	13.4	12.4	17.7	12.6

(a) Because of differences in definitions and methods used for data collection, these data are not comparable across jurisdictions.

(b) Maternal medical conditions and obstetric complications data are available in Vic.

(c) 14.6% 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 are collected from multiple sources.

(d) Includes fetal distress and/or meconium liquor.

(e) Includes primary and secondary postpartum haemorrhage.

n.a. Data not available.

n.r. Data not received at the time of publication.

Women who gave birth in hospitals

Hospitals and birth centres

The size of maternity units in hospitals and birth centres were categorised by the number of women who gave birth in them in 2011. The size of units vary from 100 births or less to more than 2,000 births, and are affected by geographical location, the population of the region and policies regarding maternity services. Table 3.41 presents the number of hospitals or birth centres in each category by state and territory. In 2011, 34.2% of the hospitals or birth centres had 100 or fewer women who gave birth, and 12.8% had more than 2,000 women who gave birth.

Table 3.41: Hospitals and birth centres, by number of women who gave birth and state and territory, 2011

Number of women who gave birth	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
	Number								
1–100	27	26	41	18	10	3	—	1	126
101–500	32	16	22	9	12	1	—	2	94
501–1,000	16	15	7	4	4	3	1	2	52
1,001–2,000	14	11	13	4	2	2	2	1	49
2,001 and over	18	12	10	3	3	—	1	—	47
Total	107	80	93	38	31	9	4	6	368
	Per cent								
1–100	25.2	32.5	44.1	47.4	32.3	33.3	—	16.7	34.2
101–500	29.9	20.0	23.7	23.7	38.7	11.1	—	33.3	25.5
501–1,000	15.0	18.8	7.5	10.5	12.9	33.3	25.0	33.3	14.1
1,001–2,000	13.1	13.8	14.0	10.5	6.4	22.2	50.0	16.7	13.3
2,001 and over	16.8	15.0	10.8	7.9	9.7	—	25.0	—	12.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: In some jurisdictions, a birth centre and co-located hospital labour ward would be considered as one maternity unit.

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 2011, the proportion in private hospitals was 29.0%, ranging from 19.6% in the Northern Territory to 40.9% in Western Australia (Table 3.42).

Table 3.42: Women who gave birth in hospital, by hospital sector and state and territory, 2011

Hospital sector	NSW	Vic	Qld	WA ^(a)	SA	Tas	ACT	NT	Australia
	Number								
Public	68,624	51,049	41,889	18,391	13,799	4,053	3,662	2,932	204,399
Private	23,681	20,072	17,885	12,753	4,835	2,089	1,542	716	83,573
Total	92,305	71,121	59,774	31,144	18,634	6,142	5,204	3,648	287,972
	Per cent								
Public	74.3	71.8	70.1	59.1	74.1	66.0	70.4	80.4	71.0
Private	25.7	28.2	29.9	40.9	25.9	34.0	29.6	19.6	29.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) For WA, some private hospitals admit public women, hence the number of women who elected private status might be lower than the number of women admitted to private hospitals. Care must be taken when interpreting these numbers.

Admitted patient election status

'Admitted patient election status' is the accommodation chargeable status elected by a patient on admission to hospital. The proportion of women who gave birth in hospitals in 2011, who elected private status (that is, elected to be treated as a private patient) was 31.7%, ranging from 22.1% in the Northern Territory to 37.5% in Western Australia (Table 3.43).

Table 3.43: Women who gave birth in hospital, by admitted patient election status and state and territory, 2011

Admitted patient elected accommodation status	NSW	Vic	Qld	WA ^(a)	SA	Tas	ACT	NT	Australia
	Number								
Public	58,003	49,417	40,354	19,440	12,846	4,424	3,655	2,842	190,981
Private	28,500	21,696	19,420	11,668	5,788	1,718	1,548	806	91,144
Not stated	5,802	8	—	36 ^(b)	—	—	1	—	5,847
Total	92,305	71,121	59,774	31,144	18,634	6,142	5,204	3,648	287,972
	Per cent								
Public	62.8	69.5	67.5	62.4	68.9	72.0	70.2	77.9	66.3
Private	30.9	30.5	32.5	37.5	31.1	28.0	29.7	22.1	31.7
Not stated	6.3	0.0	—	0.1 ^(b)	—	—	0.0	—	2.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) For WA, some private hospitals admit public women, hence the number of women who elected private status might be lower than the number of women admitted to private hospitals. Care must be taken when interpreting these numbers.

(b) 'Not stated' for WA are cases that were not able to be linked to admission records, most predominantly those giving birth before admission.

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 3.44). Women who gave birth in public hospitals reported higher levels of non-instrumental vaginal birth than those in private hospitals (59.3% compared with 41.9%). Private hospital patients had higher proportions of vaginal births requiring forceps (4.5% compared with 4.2%) or vacuum extraction (10.7% compared with 7.1%) (Table 3.44) than public hospital patients.

Of women who gave birth in public hospitals, the highest rate of forceps deliveries was in the Australian Capital Territory (8.5%), and of those in private hospitals, the highest rate of forceps deliveries was in Victoria (7.7%). Vacuum extraction was most common for both public and private hospitals in Western Australia.

Of women who gave birth in hospitals in Australia in 2011, 33.3% had a caesarean section delivery. The caesarean section rate of 42.8% for women in private hospitals was higher than the rate in public hospitals (29.4%). The highest rate of caesarean section deliveries in private hospitals was in the Northern Territory (47.1%), followed by Queensland (46.9%) and the Australian Capital Territory (45.3%) (Table 3.44). The age-standardised caesarean section rate of women who gave birth in public hospitals was 30.4%, compared with 39.9% among women who gave birth in private hospitals.

Table 3.44: Women who gave birth in hospital, by method of birth, hospital sector and state and territory, 2011

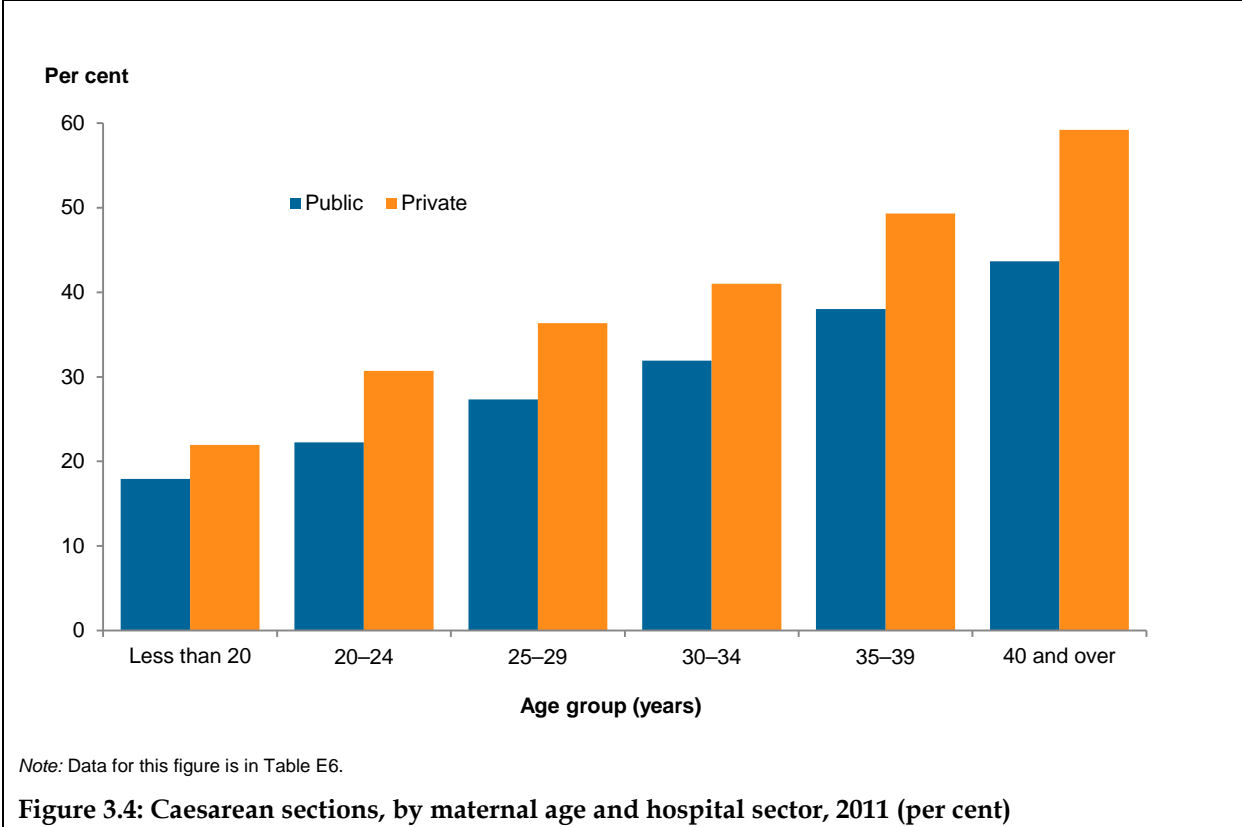
Hospital sector/ method of birth	NSW ^(a)	Vic	Qld	WA ^(a)	SA	Tas	ACT ^(b)	NT	Australia
Public	Number								
Non-instrumental vaginal	41,249	29,378	26,299	10,613	7,472	2,433	1,994	1,789	121,227
Forceps	2,925	2,963	640	533	901	161	311	72	8,506
Vacuum extraction	4,498	3,712	3,041	1,796	835	277	214	172	14,545
Caesarean section	19,939	14,995	11,909	5,449	4,590	1,182	1,143	899	60,106
Not stated	13	1	—	—	1	—	—	—	15
Total	68,624	51,049	41,889	18,391	13,799	4,053	3,662	2,932	204,399
	Per cent								
Non-instrumental vaginal	60.1	57.5	62.8	57.7	54.1	60.0	54.5	61.0	59.3
Forceps	4.3	5.8	1.5	2.9	6.5	4.0	8.5	2.5	4.2
Vacuum extraction	6.6	7.3	7.3	9.8	6.1	6.8	5.8	5.9	7.1
Caesarean section	29.1	29.4	28.4	29.6	33.3	29.2	31.2	30.7	29.4
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
Private	Number								
Non-instrumental vaginal	10,182	8,180	7,299	5,122	2,217	1,127	618	299	35,044
Forceps	969	1,555	502	280	239	68	117	47	3,777
Vacuum extraction	2,428	2,179	1,701	2,032	323	141	109	33	8,946
Caesarean section	10,084	8,149	8,383	5,319	2,056	753	698	337	35,779
Not stated	18	9	—	—	—	—	—	—	27
Total	23,681	20,072	17,885	12,753	4,835	2,089	1,542	716	83,573
	Per cent								
Non-instrumental vaginal	43.0	40.8	40.8	40.2	45.9	53.9	40.1	41.8	41.9
Forceps	4.1	7.7	2.8	2.2	4.9	3.3	7.6	6.6	4.5
Vacuum extraction	10.3	10.9	9.5	15.9	6.7	6.7	7.1	4.6	10.7
Caesarean section	42.6	40.6	46.9	41.7	42.5	36.0	45.3	47.1	42.8
Not stated	0.1	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 NSW and WA, 'Non-instrumental vaginal' includes all women who had a vaginal breech birth, whether or not instruments were used. For the remaining jurisdictions, vaginal breech births are only included where instruments were not used.

(b) 14.6% 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.

Caesarean section rates were higher in private hospitals than in public hospitals across all age groups. Figure 3.4 shows the differences by age group and hospital sector. The caesarean section rate for mothers aged 35–39 who gave birth in private hospitals was 49.3% compared with 38.0% for those in public hospitals. Of mothers aged 40 or more, 59.2% in private hospitals had a caesarean section compared with 43.7% of similarly aged mothers in public hospitals.



Length of stay in hospital

Antenatal length of stay

Two-thirds of women (66.5%) gave birth within a day of admission to hospital. The proportion of women who gave birth within two days of admission was 93.1%. Just 0.8% of mothers were hospitalised for seven days or more immediately before giving birth (Table 3.45).

Table 3.45: Women who gave birth in hospital, by length of antenatal stay and state and territory, 2011

Length of stay	NSW	Vic	Qld	WA	SA	Tas ^(a)	ACT	NT	Australia
	Number								
Less than 1 day	58,926	49,494	41,620	20,890	11,594	3,347	3,388	2,377	191,636
1 day	24,780	18,274	15,155	8,547	5,647	1,587	1,471	971	76,432
2–6 days	4,911	2,703	2,649	1,449	1,157	343	310	249	13,771
7–13 days	505	287	237	117	130	12	21	35	1,344
14 or more days	293	318	113	102	106	13	14	16	975
Not stated	2,890	45	—	39 ^(b)	—	840	—	—	3,814
Total	92,305	71,121	59,774	31,144	18,634	6,142	5,204	3,648	287,972
	Per cent								
Less than 1 day	63.8	69.6	69.6	67.1	62.2	54.5	65.1	65.2	66.5
1 day	26.8	25.7	25.4	27.4	30.3	25.8	28.3	26.6	26.5
2–6 days	5.3	3.8	4.4	4.7	6.2	5.6	6.0	6.8	4.8
7–13 days	0.5	0.4	0.4	0.4	0.7	0.2	0.4	1.0	0.5
14 or more days	0.3	0.4	0.2	0.3	0.6	0.2	0.3	0.4	0.3
Not stated	3.1	0.1	—	0.1 ^(b)	—	13.7	—	—	1.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) For Tas, these data are not fully reported due to the linkage issues between movement of cases between hospitals. Care must be taken when interpreting these numbers.

(b) 'Not stated' for WA are cases that were not able to be linked to admission records, most predominantly those giving birth before admission.

Postnatal length of stay

In 2011, the median postnatal hospital stay for mothers was 3.0 days (Table 3.46). The trend towards shorter postnatal stays in hospital is reflected by the higher proportion of mothers who were discharged less than five days after giving birth. In 2011, 17.1% of mothers were discharged less than two days after giving birth, and 65.2% were discharged between two and four days after giving birth (Table 3.46). This compares with 11.0% and 58.6% respectively in 2002. Relatively more mothers in Queensland (87.4%) and Victoria (84.9%) had stays of less than five days in 2011. Longer lengths of stay (of five or more days) were relatively more common in the Northern Territory.

Table 3.46: Women who gave birth in hospital^(a), by length of postnatal stay and state and territory, 2011

Length of stay	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Median (days)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Number								
Less than 1 day	2,914	1,735	2,518	797	526	188	309	162	9,149
1 day	13,180	7,045	11,009	4,270	1,870	811	757	381	39,323
2 days	19,629	19,587	14,039	5,573	3,483	1,212	954	591	65,068
3 days	18,750	12,968	13,100	6,360	4,016	1,345	1,061	712	58,312
4 days	18,478	18,146	11,130	6,051	4,361	1,243	1,098	605	61,112
5 days	12,004	8,260	5,520	4,174	2,729	686	663	479	34,515
6 days	3,434	1,318	1,252	2,043	831	212	142	220	9,452
7–13 days	2,187	816	649	1,180	451	151	78	177	5,689
14 or more days	152	96	16	20	16	11	6	29	346
Not stated	17	105	—	—	—	—	—	—	122
Total	90,745	70,076	59,233	30,468	18,283	5,859	5,068	3,356	283,088
	Per cent								
Less than 1 day	3.2	2.5	4.3	2.6	2.9	3.2	6.1	4.8	3.2
1 day	14.5	10.1	18.6	14.0	10.2	13.8	14.9	11.4	13.9
2 days	21.6	28.0	23.7	18.3	19.1	20.7	18.8	17.6	23.0
3 days	20.7	18.5	22.1	20.9	22.0	23.0	20.9	21.2	20.6
4 days	20.4	25.9	18.8	19.9	23.9	21.2	21.7	18.0	21.6
5 days	13.2	11.8	9.3	13.7	14.9	11.7	13.1	14.3	12.2
6 days	3.8	1.9	2.1	6.7	4.5	3.6	2.8	6.6	3.3
7–13 days	2.4	1.2	1.1	3.9	2.5	2.6	1.5	5.3	2.0
14 or more days	0.2	0.1	0.0	0.1	0.1	0.2	0.1	0.9	0.1
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 includes mothers who were discharged home.

Note: For multiple births, the length of stay after the birth of the first born baby was used.

Mothers in private hospitals had a median postnatal length of stay of 4.0 days in 2011, compared with 2.0 days for those in public hospitals. The proportion of women with a postnatal stay of less than five days was 62.1% for those in private hospitals, compared with 90.7% in public hospitals.

Women who had a caesarean section birth had a longer median length of stay (4.0 days) than women who had a non-instrumental vaginal birth (2.0 days). The median length of stay for women who had a forceps or vacuum extraction delivery was 3.0 days. Of women who had a caesarean section, 4.2% had a postnatal length of stay of seven days or longer (Table 3.47).

Table 3.47: Women who gave birth in hospital^(a), by length of postnatal stay and method of birth, 2011

Length of stay	Non-instrumental vaginal^(b)	Forceps	Vacuum extraction	Caesarean section	Australia^(c)
Median (days)	2.0	3.0	3.0	4.0	3.0
Less than 1 day	8,716	157	196	75	9,149
1 day	35,591	758	2,250	722	39,323
2 days	47,303	3,244	5,787	8,729	65,068
3 days	27,693	2,607	4,973	23,036	58,312
4 days	26,018	3,584	6,799	24,693	61,112
5 days	5,495	1,121	2,079	25,815	34,515
6 days	1,654	340	679	6,779	9,452
7–13 days	1,300	259	380	3,750	5,689
14 or more days	115	12	23	196	346
Not stated	62	4	11	45	122
Total	153,947	12,086	23,177	93,840	283,088
Less than 1 day	5.7	1.3	0.8	0.1	3.2
1 day	23.1	6.3	9.7	0.8	13.9
2 days	30.7	26.8	25.0	9.3	23.0
3 days	18.0	21.6	21.5	24.5	20.6
4 days	16.9	29.7	29.3	26.3	21.6
5 days	3.6	9.3	9.0	27.5	12.2
6 days	1.1	2.8	2.9	7.2	3.3
7–13 days	0.8	2.1	1.6	4.0	2.0
14 or more days	0.1	0.1	0.1	0.2	0.1
Not stated	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0

(a) Only includes mothers who were discharged home.

(b) For NSW and WA, 'Non-instrumental vaginal' includes all women who had a vaginal breech birth, whether or not instruments were used.

(c) Includes 'not stated' method of birth.

Note: For multiple births, the length of stay after the birth of the first born baby and the method of birth of the first born baby were used.

Mode of separation from hospital

Nearly all women who gave birth in hospital were discharged to their homes (98.3%). Approximately 1.6% of mothers were transferred to another hospital (Table 3.48). This usually occurs for continuing care in a hospital located nearer to the mother's place of residence or for further treatment of complications. More transfers to another hospital occurred in Tasmania (4.6%) than in the other jurisdictions (Table 3.48).

Table 3.48: Women who gave birth in hospital, by mode of separation and state and territory, 2011

Mode of separation	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Total
Number									
Discharge home	90,745	70,076	59,233	30,468	18,283	5,859	5,068	3,356	283,088
Transfer to another hospital	1,526	1,028	540	532	351	283	128	77	4,465
Died	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	8
Other ^(a)	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	320
Not stated	30	14	—	39 ^(b)	—	—	8	—	91
Total	92,305	71,121	59,774	31,144	18,634	6,142	5,204	3,648	287,972
Per cent									
Discharge home	98.3	98.5	99.1	97.8	98.1	95.4	97.4	92.0	98.3
Transfer to another hospital	1.7	1.4	0.9	1.7	1.9	4.6	2.5	2.1	1.6
Died	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	0.0
Other ^(a)	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	n.p.	0.1
Not stated	0.0	0.0	—	0.1 ^(b)	—	—	0.2	—	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) 'Other' includes statistical discharges and transfers to accommodation other than acute hospitals, such as hostels and prisons, and mothers discharged against medical advice.

(b) 'Not stated' for WA are cases that were not able to be linked to admission records, most probably those giving birth before admission.

n.p. Data not published to maintain confidentiality of small numbers. Note that in this table <5 cells and some blank cells have been presented as 'n.p.'.

Homebirths

In 2011, there were 1,267 women who gave birth at home, representing 0.4% of all women who gave birth. The highest proportions were in Victoria and Western Australia (0.8%) (Table 3.18). It is probable that not all homebirths are reported to the perinatal data collections.

The mean age of mothers who gave birth at home was 31.7 years (Table 3.49). The proportion of mothers younger than 20 was 1.3%, and the proportion aged 35 and over was 29.8%. The proportion of mothers who gave birth at home who identified as being of Aboriginal and Torres Strait Islander origin was 1.1%. Most women who gave birth at home were living in *Major cities* (70.8%) (Table 3.49).

Of mothers who gave birth at home, about one-quarter had their first baby (22.3%), and 77.4% were multiparous. The predominant method of birth for 99.3% of women who gave birth at home was non-instrumental vaginal (Table 3.49). The presentation was vertex for 97.6% of women who gave birth at home.

Of babies born at home in 2011, 99.2% were liveborn. The mean birthweight of these liveborn babies was 3,614 grams (Table 3.49). The proportion of liveborn babies of low birthweight born at home was 1.6%, and the proportion of preterm babies born at home was 1.3%.

Table 3.49: Selected characteristics of women who gave birth at home, 2011

Characteristic	Number	Per cent
Women who gave birth	1,267	—
Mean maternal age	31.7	—
Parity		
None	282	22.3
One	513	40.5
Two	279	22.0
Three	98	7.7
Four or more	91	7.2
Remoteness area of mother's usual residence^(a)		
Major cities	896	70.8
Inner regional	256	20.2
Outer regional	64	5.1
Remote/Very remote	30	2.3
Method of birth		
Non-instrumental vaginal ^(b)	1,258	99.3
Other	7	0.6
Births	1,268	—
Birth status		
Live births	1,258	99.2
Fetal deaths	10	0.8
Sex		
Male	611	48.2
Female	655	51.7
Mean birthweight of live births (g)	3,614	—

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

(b) For NSW and WA, 'Non-instrumental vaginal' includes all women who had a vaginal breech birth, whether or not instruments were used. For the remaining jurisdictions, vaginal breech births are only included where instruments were not used.

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 in Australia as a death occurring before 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 (AIHW 2012). The scope of the NPDC restricts the inclusion of live births to those that are at least 400 grams birthweight.

There were 299,588 live births and 2,220 fetal deaths in Australia in 2011, with a total of 301,810 births reported to the NPDC (Table 2.1). This equates to a stillbirth rate of 7.4 per 1,000 births.

Month of birth

In 2011, the highest monthly percentage of births occurred in March (8.8%), May, August and September (8.5%). March births ranged from 8.0% in the Australian Capital Territory to 9.2% in Western Australia and Tasmania (Table 4.1).

Table 4.1: Births, by month of birth, 2011

Month	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Number									
January	8,110	6,071	5,188	2,661	1,705	530	512	316	25,093
February	7,610	5,725	4,980	2,554	1,539	520	502	322	23,752
March	8,583	6,290	5,675	2,965	1,733	579	454	357	26,636
April	8,069	5,890	5,281	2,668	1,689	501	459	332	24,889
May	8,355	6,074	5,423	2,777	1,726	546	482	343	25,726
June	8,223	6,113	5,247	2,764	1,678	493	485	372	25,375
July	7,995	6,407	5,133	2,617	1,712	531	459	342	25,196
August	8,225	6,405	5,204	2,638	1,720	514	450	363	25,519
September	8,336	6,303	5,127	2,804	1,744	533	516	294	25,657
October	8,122	6,533	4,980	2,591	1,782	544	442	318	25,312
November	7,732	6,090	4,983	2,633	1,655	495	467	290	24,345
December	7,878	6,005	4,945	2,532	1,661	537	474	278	24,310
Total	97,238	73,906	62,166	32,204	20,344	6,323	5,702	3,927	301,810
Per cent									
January	8.3	8.2	8.3	8.3	8.4	8.4	9.0	8.0	8.3
February	7.8	7.7	8.0	7.9	7.6	8.2	8.8	8.2	7.9
March	8.8	8.5	9.1	9.2	8.5	9.2	8.0	9.1	8.8
April	8.3	8.0	8.5	8.3	8.3	7.9	8.0	8.5	8.2
May	8.6	8.2	8.7	8.6	8.5	8.6	8.5	8.7	8.5
June	8.5	8.3	8.4	8.6	8.2	7.8	8.5	9.5	8.4
July	8.2	8.7	8.3	8.1	8.4	8.4	8.0	8.7	8.3
August	8.5	8.7	8.4	8.2	8.5	8.1	7.9	9.2	8.5
September	8.6	8.5	8.2	8.7	8.6	8.4	9.0	7.5	8.5
October	8.4	8.8	8.0	8.0	8.8	8.6	7.8	8.1	8.4
November	8.0	8.2	8.0	8.2	8.1	7.8	8.2	7.4	8.1
December	8.1	8.1	8.0	7.9	8.2	8.5	8.3	7.1	8.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sex

Male births exceeded female births in all states and territories, and accounted for 51.4% of all live births nationally in 2011. This proportion was similar across the states and territories. In 2011, the sex ratio for Australia, defined as the number of male liveborn babies per 100 female liveborn babies, was 105.7 (Table 4.2).

Table 4.2: Live births, by sex and state and territory, 2011

Sex	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	Australia
Sex ratio (M:F)	105.9	106.3	104.2	106.1	105.3	107.0	111.4	106.6	105.7
	Number								
Males	49,696	37,690	31,513	16,436	10,356	3,251	2,981	2,012	153,935
Females	46,939	35,446	30,253	15,498	9,838	3,038	2,675	1,887	145,574
Indeterminate/ not stated	29	47	—	1	—	—	2	—	79
Total	96,664	73,183	61,766	31,935	20,194	6,289	5,658	3,899	299,588
	Per cent								
Males	51.4	51.5	51.0	51.5	51.3	51.7	52.7	51.6	51.4
Females	48.6	48.4	49.0	48.5	48.7	48.3	47.3	48.4	48.6
Indeterminate/ not stated	0.0	0.1	—	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

For singleton live births, the sex ratio was 105.9 male births per 100 female births. The sex ratio for twins was 102.3 male births per 100 female births, and for higher-order multiples 86.0 male births per 100 female births. The sex ratio for all live births was highest in the Australian Capital Territory, at 111.4 male births per 100 female births, and lowest in Queensland, at 104.2 male births per 100 female births.

Babies of Aboriginal and Torres Strait Islander mothers

The 11,729 mothers reported to the NPDC for 2011 who identified as being Aboriginal and Torres Strait Islander gave birth to 11,737 liveborn and 158 stillborn babies (fetal deaths). There were 284,711 non-Indigenous mothers who gave birth to 287,149 liveborn and 2,055 stillborn babies (Table 4.3).

Table 4.3: Births, by maternal Indigenous status and state and territory, 2011

Indigenous status ^(a)	NSW	Vic	Qld	WA	SA	Tas	ACT ^(b)	NT	Australia
Aboriginal and Torres Strait Islander									
Fetal deaths	40	16	34	35	10	<5	<5	17	158
Live births	2,981	924	3,657	1,667	693	n.p.	n.p.	1,416	11,737
All births	3,021	940	3,691	1,702	703	298	107	1,433	11,895
Non-Indigenous									
Fetal deaths	531	702	366	234	140	31	40	11	2,055
Live births	93,435	71,949	58,096	30,268	19,501	5,868	5,553	2,479	287,149
All births^(c)	93,968	72,651	58,462	30,502	19,641	5,899	5,593	2,490	289,206

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

(b) 28.2% of Aboriginal and Torres Strait Islander women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, 75 of the 107 babies were born in the ACT to ACT resident Aboriginal and Torres Strait Islander women in 2011.

(c) Includes birth status 'Not stated'.

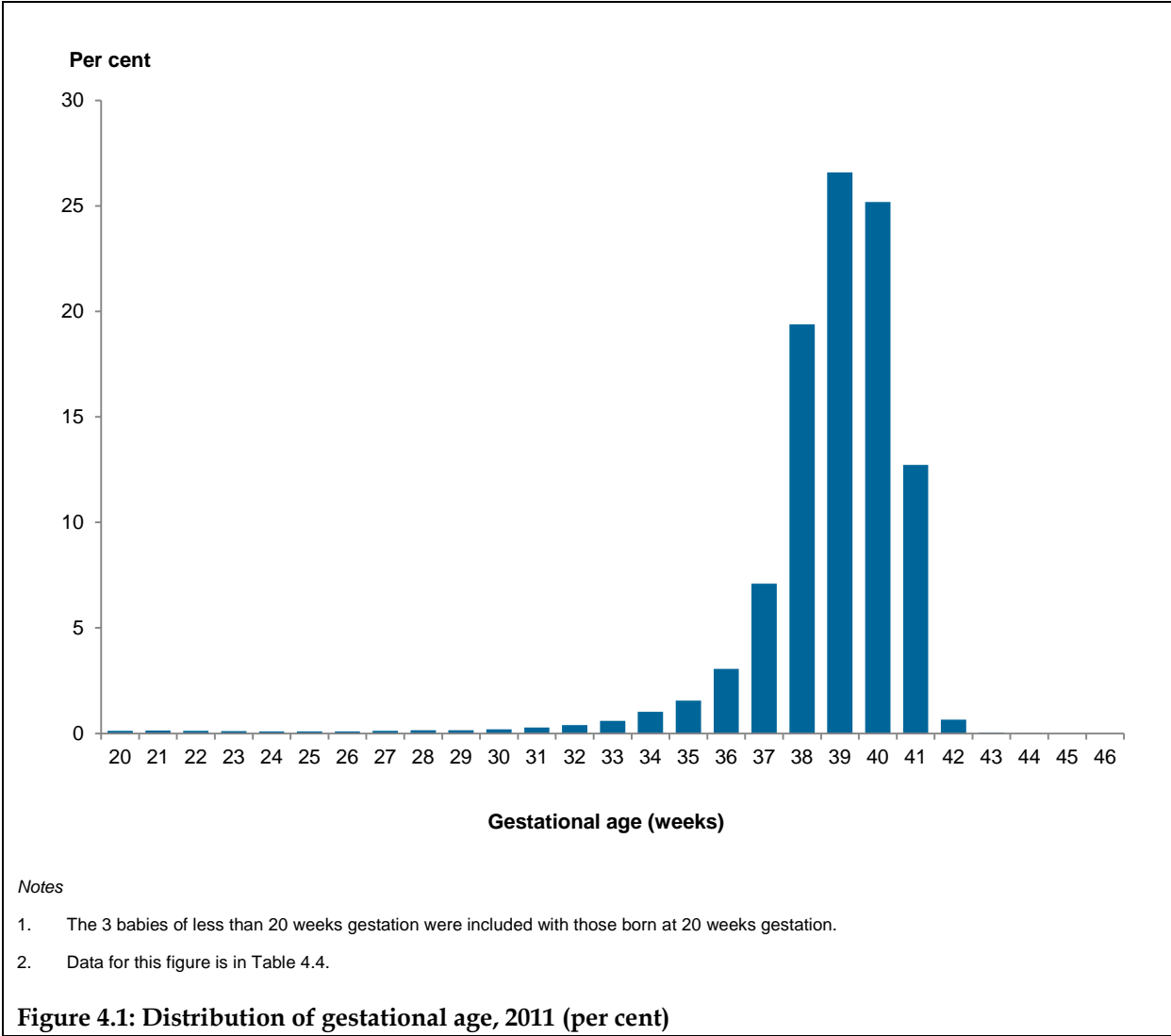
n.p. Data not published to maintain confidentiality of small numbers.

Outcomes

Gestational age

In 2011, the mean gestational age for all babies was 38.7 weeks. The proportion of babies born at term (37–41 weeks gestation) was 91.0% (Table 4.4).

Preterm birth (before 37 completed weeks of gestation) is associated with a higher risk of adverse neonatal outcomes. Preterm births were classified according to the criteria of the WHO into groups of 20–27, 28–31 and 32–36 completed weeks. Of all babies born in 2011, 8.3% were preterm, most of which occurred at a gestational age of 32–36 completed weeks (Figure 4.1; Table 4.4).



Most stillbirths were preterm (82.5%) compared with 7.8% of liveborn babies (Table 4.4).

Table 4.4: Births, by gestational age and birth status, 2011

Gestational age (weeks)	Live births		Fetal deaths		Total ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent
20 ^(b)	69	0.0	295	13.3	364	0.1
21	87	0.0	307	13.8	394	0.1
22	111	0.0	237	10.7	348	0.1
23	121	0.0	205	9.2	326	0.1
24	189	0.1	116	5.2	305	0.1
25	219	0.1	90	4.1	309	0.1
26	247	0.1	67	3.0	314	0.1
27	299	0.1	56	2.5	355	0.1
28	416	0.1	50	2.3	466	0.2
29	389	0.1	53	2.4	442	0.1
30	569	0.2	44	2.0	613	0.2
31	799	0.3	45	2.0	844	0.3
32	1,169	0.4	42	1.9	1,211	0.4
33	1,760	0.6	45	2.0	1,805	0.6
34	3,039	1.0	54	2.4	3,093	1.0
35	4,640	1.5	59	2.7	4,699	1.6
36	9,159	3.1	66	3.0	9,225	3.1
37	21,344	7.1	77	3.5	21,421	7.1
38	58,418	19.5	91	4.1	58,509	19.4
39	80,168	26.8	83	3.7	80,252	26.6
40	75,934	25.3	92	4.1	76,026	25.2
41	38,342	12.8	42	1.9	38,385	12.7
42	n.p.	n.p.	<5	n.p.	1,957	0.6
43	n.p.	n.p.	<5	n.p.	96	0.0
44 ^(c)	34	0.0	—	—	34	0.0
Not stated	16	0.0	1	0.0	17	0.0
Total	299,588	100.0	2,220	100.0	301,810	100.0
20–36	23,282	7.8	1,831	82.5	25,113	8.3
Mean (weeks)	38.8		27.2		38.7	

(a) Includes 2 'Not stated' birth status.

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

(c) Includes 10 babies of greater than 44 weeks gestation.

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

The mean gestational age for all preterm births in 2011 was 33.2 weeks. Nationally, 0.9% of births were at 20–27 weeks gestation, 0.8% were at 28–31 weeks and 6.6% were at 32–36 weeks. The Northern Territory had the highest proportion of preterm births, at 11.1% of all births, and New South Wales had the lowest, at 7.5% (Table 4.5).

Table 4.5: Preterm births, by gestational age and state and territory, 2011

Gestational age (weeks)	NSW	Vic^(a)	Qld	WA^(b)	SA	Tas	ACT^(c)	NT	Australia
Mean	33.3	32.9	33.3	33.4	33.4	33.5	32.7	33.0	33.2
	Number								
20–27 ^(d)	722	823	546	270	189	51	65	49	2,715
28–31	676	574	529	247	163	62	67	47	2,365
32–36	5,872	4,762	4,367	2,240	1,524	525	405	338	20,033
Total	7,270	6,159	5,442	2,757	1,876	638	537	434	25,113
	Per cent of total births								
20–27 ^(d)	0.7	1.1	0.9	0.8	0.9	0.8	1.1	1.2	0.9
28–31	0.7	0.8	0.9	0.8	0.8	1.0	1.2	1.2	0.8
32–36	6.0	6.4	7.0	7.0	7.5	8.3	7.1	8.6	6.6
Total	7.5	8.3	8.8	8.6	9.2	10.1	9.4	11.1	8.3

(a) Preterm birth rates are higher in Victoria as the majority of late terminations for psychosocial indications performed in Australia are undertaken in Victoria, and many women travel from interstate (and overseas) to Victoria to have the termination undertaken.

(b) For WA, births includes late termination of pregnancy.

(c) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the proportion of preterm births among babies of ACT residents who gave birth in the ACT was 7.6% compared with 19.8% of non-ACT residents who gave birth in the ACT.

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

In 2011, 13.8% of babies of Aboriginal and Torres Strait Islander mothers were born preterm, compared with 8.1% of babies of non-Indigenous mothers.

For singletons, the mean gestational age was 38.8 weeks, compared with 35.0 weeks for twins and 31.0 weeks for higher-order multiple births. Preterm birth occurred in 57.3% of twins and in 100.0% of higher-order multiple births, compared with 6.7% of singleton births (Table 4.6). The downward shift in the distributions of gestational age for babies born as multiples compared with singletons increased markedly for babies of less than 32 weeks gestation, when the risks of subsequent complications are much higher. In 2011, birth before 32 weeks gestation occurred for 11.3% of twin births and 48.7% of higher-order multiple births, but just in 1.3% of singleton births (Table 4.6).

In contrast, just 0.7% of babies were born post-term (at 42 weeks or more gestation) (Table 4.6). The duration of pregnancy by state and territory is in Table 3.20.

Table 4.6: Births, by gestational age and plurality, 2011

Gestational age (weeks)	Singletons		Twins		Other multiple births		Total ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
20–27 ^(b)	2,264	0.8	414	4.6	35	15.4	2,715	0.9
28–31	1,683	0.6	606	6.7	76	33.3	2,365	0.8
32–36	15,744	5.4	4,163	46.1	117	51.3	20,033	6.6
37–41	270,714	92.5	3,857	42.7	—	—	274,593	91.0
42 and over	2,087	0.7	—	—	—	—	2,087	0.7
Not stated	17	0.0	—	—	—	—	17	0.0
Total	292,509	100.0	9,040	100.0	228	100.0	301,810	100.0
20–36 ^(b)	19,691	6.7	5,183	57.3	228	100.0	25,113	8.3
Mean (weeks)	38.8		35.0		31.0		38.7	

(a) Includes plurality 'Not stated'.

(b) 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. 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).

In 2011, 92.0% of liveborn babies had a birthweight in the range 2,500–4,499 grams. The average birthweight of liveborn babies was 3,367 grams, ranging from 3,275 grams in the Northern Territory to 3,381 grams in Tasmania (Table 4.7).

In Australia in 2011, there were 18,829 (6.3%) liveborn babies of low birthweight. From 2002 to 2011, the proportion of low birthweight liveborn babies ranged from 6.1% to 6.4%. The 3,080 very low birthweight babies constituted 1.0% of all live births in 2011, and the 1,394 extremely low birthweight babies constituted 0.5% (Table 4.7).

Table 4.7: Live births, by birthweight and state and territory, 2011

Birthweight (g)	NSW	Vic	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia
Mean	3,372	3,371	3,377	3,355	3,340	3,381	3,343	3,275	3,367
Number									
Less than 1,000	400	370	305	125	104	29	35	26	1,394
1,000–1,499	503	392	381	165	106	51	48	40	1,686
1,500–1,999	1,059	919	825	363	267	98	115	75	3,721
2,000–2,499	3,648	2,927	2,459	1,279	924	300	259	232	12,028
2,500–2,999	14,727	11,188	9,202	5,115	3,308	889	844	709	45,982
3,000–3,499	35,311	26,159	21,642	11,728	7,253	2,120	1,950	1,376	107,539
3,500–3,999	29,896	22,377	19,293	9,749	6,015	1,974	1,744	1,017	92,065
4,000–4,499	9,509	7,470	6,545	3,015	1,926	684	560	363	30,072
4,500 and over	1,565	1,381	1,110	396	289	144	103	61	5,049
Not stated	46	—	4	—	2	—	—	—	52
Total	96,664	73,183	61,766	31,935	20,194	6,289	5,658	3,899	299,588
<i>Less than 1,500</i>	<i>903</i>	<i>762</i>	<i>686</i>	<i>290</i>	<i>210</i>	<i>80</i>	<i>83</i>	<i>66</i>	<i>3,080</i>
<i>Less than 2,500</i>	<i>5,610</i>	<i>4,608</i>	<i>3,970</i>	<i>1,932</i>	<i>1,401</i>	<i>478</i>	<i>457</i>	<i>373</i>	<i>18,829</i>
Per cent									
Less than 1,000	0.4	0.5	0.5	0.4	0.5	0.5	0.6	0.7	0.5
1,000–1,499	0.5	0.5	0.6	0.5	0.5	0.8	0.8	1.0	0.6
1,500–1,999	1.1	1.3	1.3	1.1	1.3	1.6	2.0	1.9	1.2
2,000–2,499	3.8	4.0	4.0	4.0	4.6	4.8	4.6	6.0	4.0
2,500–2,999	15.2	15.3	14.9	16.0	16.4	14.1	14.9	18.2	15.3
3,000–3,499	36.5	35.7	35.0	36.7	35.9	33.7	34.5	35.3	35.9
3,500–3,999	30.9	30.6	31.2	30.5	29.8	31.4	30.8	26.1	30.7
4,000–4,499	9.8	10.2	10.6	9.4	9.5	10.9	9.9	9.3	10.0
4,500 and over	1.6	1.9	1.8	1.2	1.4	2.3	1.8	1.6	1.7
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
<i>Less than 1,500</i>	<i>0.9</i>	<i>1.0</i>	<i>1.1</i>	<i>0.9</i>	<i>1.0</i>	<i>1.3</i>	<i>1.5</i>	<i>1.7</i>	<i>1.0</i>
<i>Less than 2,500</i>	<i>5.8</i>	<i>6.3</i>	<i>6.4</i>	<i>6.0</i>	<i>6.9</i>	<i>7.6</i>	<i>8.1</i>	<i>9.6</i>	<i>6.3</i>

(a) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the proportion of live births of ACT residents who gave birth in the ACT where the birthweight was less than 1,500 grams was 1.0% and where the birthweight was less than 2,500 grams the percentage was 6.5%.

The mean birthweight of stillborn babies was 1,179 grams in 2011 compared with 3,367 grams for liveborn babies. Low birthweight occurred in 79.4% of stillborn babies. Of stillborn babies, 63.0% had a birthweight of less than 1,000 grams (Table 4.8).

The proportion of male liveborn babies that was low birthweight (5.8%) was lower than for female babies (6.8%). The average birthweight of liveborn male babies was 3,425 grams, 119 grams higher than that of females (3,306 grams).

Table 4.8: Births, by birthweight and birth status, 2011

Birthweight (g)	Live births		Fetal deaths		Total	
	Number	Per cent	Number	Per cent	Number	Per cent
Less than 1,000	1,394	0.5	1,398	63.0	2,792	0.9
1,000–1,499	1,686	0.6	151	6.8	1,837	0.6
1,500–1,999	3,721	1.2	99	4.5	3,820	1.3
2,000–2,499	12,028	4.0	114	5.1	12,142	4.0
2,500–2,999	45,982	15.3	156	7.0	46,138	15.3
3,000–3,499	107,539	35.9	135	6.1	107,674	35.7
3,500–3,999	92,065	30.7	81	3.6	92,146	30.5
4,000–4,499	30,072	10.0	22	1.0	30,094	10.0
4,500 and over	5,049	1.7	12	0.5	5,061	1.7
Not stated	52	0.0	52	2.3	106	0.0
Total	299,588	100.0	2,220	100.0	301,810	100.0
<i>Less than 1,500</i>	<i>3,080</i>	<i>1.0</i>	<i>1,549</i>	<i>69.8</i>	<i>4,629</i>	<i>1.5</i>
<i>Less than 2,500</i>	<i>18,829</i>	<i>6.3</i>	<i>1,762</i>	<i>79.4</i>	<i>20,591</i>	<i>6.8</i>
Mean (g)	3,367		1,179		3,351	

For liveborn singletons, the mean birthweight was 3,398 grams, compared with 2,379 grams for twins and 1,549 grams for other multiple births. Low birthweight occurred in half of all liveborn twins (52.1%) and in almost all higher-order multiple births (98.6%), and in just 4.8% of singleton births (Table 4.9).

Table 4.9: Live births, by birthweight and plurality, 2011

Birthweight (g)	Singletons		Twins		Other multiple births		Total ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Less than 1,000	1,048	0.4	303	3.4	41	19.3	1,394	0.5
1,000–1,499	1,124	0.4	507	5.7	55	25.9	1,686	0.6
1,500–1,999	2,482	0.9	1,171	13.2	n.p.	n.p.	3,721	1.2
2,000–2,499	9,343	3.2	2,630	29.7	n.p.	n.p.	12,028	4.0
2,500–2,999	42,892	14.8	3,080	34.8	<5	n.p.	45,982	15.3
3,000–3,499	106,470	36.7	1,061	12.0	—	—	107,539	35.9
3,500–3,999	91,966	31.7	93	1.1	—	—	92,065	30.7
4,000–4,499	30,064	10.3	8	0.1	—	—	30,072	10.0
4,500 and over	5,049	1.7	—	—	—	—	5,049	1.7
Not stated	51	0.0	1	0.0	—	—	52	0.0
Total	290,489	100.0	8,854	100.0	212	100.0	299,588	100.0
<i>Less than 1,500</i>	<i>2,172</i>	<i>0.7</i>	<i>810</i>	<i>9.1</i>	<i>96</i>	<i>45.3</i>	<i>3,080</i>	<i>1.0</i>
<i>Less than 2,500</i>	<i>13,997</i>	<i>4.8</i>	<i>4,611</i>	<i>52.1</i>	<i>209</i>	<i>98.6</i>	<i>18,829</i>	<i>6.3</i>
Mean (g)	3,398		2,379		1,549		3,367	

(a) Includes plurality 'Not stated'.

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

In 2011, the average birthweight of liveborn babies of Aboriginal and Torres Strait Islander mothers was 3,187 grams. This was 187 grams lighter than the average of 3,375 grams for liveborn babies of non-Indigenous mothers. The proportion of low birthweight in liveborn babies of Aboriginal and Torres Strait Islander mothers was 12.6% (Table 4.10), twice that of babies of non-Indigenous mothers (6.0%). The mean birthweight of liveborn babies of Aboriginal and Torres Strait Islander mothers, and the proportion with low birthweight, varied markedly among the states and territories. The proportion of low birthweight in babies of Aboriginal and Torres Strait Islander mothers was 13.5%, twice that of babies of non-Indigenous mothers (6.5%).

Table 4.10: Live births of Aboriginal and Torres Strait Islander mothers, by birthweight and state and territory, 2011

Birthweight (g)	NSW	Vic	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia
Mean	3,229	3,246	3,215	3,144	3,116	3,206	2,929	3,089	3,187
	Number								
Less than 1,500	36	n.p.	74	30	26	n.p.	n.p.	37	237
1,500–2,499	310	100	336	187	79	n.p.	n.p.	184	1,245
2,500–2,999	611	166	764	420	160	54	18	357	2,550
3,000–3,499	973	294	1,251	540	216	98	26	489	3,887
3,500–3,999	764	249	881	368	157	84	23	233	2,759
4,000–4,499	240	85	300	105	45	18	8	91	892
4,500 and over	46	n.p.	51	17	10	<5	—	25	166
Not stated	1	—	—	—	—	—	—	—	1
Total	2,981	924	3,657	1,667	693	n.p.	n.p.	1,416	11,737
<i>Less than 2,500</i>	<i>346</i>	<i>116</i>	<i>410</i>	<i>217</i>	<i>105</i>	<i>39</i>	<i>28</i>	<i>221</i>	<i>1,482</i>
	Per cent								
Less than 1,500	1.2	n.p.	2.0	1.8	3.8	n.p.	n.p.	2.6	2.0
1,500–2,499	10.4	10.8	9.2	11.2	11.4	n.p.	n.p.	13.0	10.6
2,500–2,999	20.5	18.0	20.9	25.2	23.1	18.2	17.5	25.2	21.7
3,000–3,499	32.6	31.8	34.2	32.4	31.2	33.1	25.2	34.5	33.1
3,500–3,999	25.6	26.9	24.1	22.1	22.7	28.4	22.3	16.5	23.5
4,000–4,499	8.1	9.2	8.2	6.3	6.5	6.1	7.8	6.4	7.6
4,500 and over	1.5	n.p.	1.4	1.0	1.4	n.p.	—	1.8	1.4
Not stated	0.0	—	—	—	—	—	—	—	0.0
Total	100.0	100.0	100.0	100.0	100.0	n.p.	n.p.	100.0	100.0
<i>Less than 2,500</i>	<i>11.6</i>	<i>12.6</i>	<i>11.2</i>	<i>13.0</i>	<i>15.2</i>	<i>13.2</i>	<i>27.2</i>	<i>15.6</i>	<i>12.6</i>

(a) 28.2% of Aboriginal and Torres Strait Islander women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the proportion of liveborn babies born in the ACT to ACT resident Aboriginal and Torres Strait Islander women in 2011 where the birthweight was less than 2,500 grams was 16.4%.

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

Mothers aged 30–34 had the lowest proportion of low birthweight liveborn babies (5.8%). The proportion was higher among babies of younger and older mothers (8.8% for mothers younger than 20, 8.2% for mothers aged 40–44 and 20.0% for mothers aged 45 and older). The proportion of low birthweight liveborn babies was higher in babies of mothers who gave birth in public hospitals (7.1%) than in babies of mothers who gave birth in private hospitals (4.6%). Mothers who reported smoking during pregnancy had a higher proportion of low birthweight liveborn babies (11.2%) than mothers who did not smoke (5.5%).

Presentation at birth

In 2011, vertex presentations occurred for 93.8% of all babies. Breech presentation occurred for 4.3% and other presentations for 1.1%. Non-vertex presentations occurred for 31.6% of twins and 43.9% of higher-order multiple births (Table 4.11).

Table 4.11: Births, by presentation at birth and plurality, 2011

Presentation	Singletons		Twins		Other multiple births		Total ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Vertex	276,956	94.7	6,010	66.5	128	56.1	283,118	93.8
Breech	10,407	3.6	2,567	28.4	88	38.6	13,069	4.3
Other ^(b)	2,973	1.0	294	3.3	12	5.3	3,281	1.1
Not stated	2,173	0.7	169	1.9	—	—	2,342	0.8
Total	292,509	100.0	9,040	100.0	228	100.0	301,810	100.0

(a) Includes plurality 'Not stated'.

(b) Includes face, brow, shoulder/transverse and compound presentations.

Table 3.29 shows the presentation at birth for mothers, where the presentation at birth of the first born baby in multiple births is used.

Method of birth

Of all births in 2011, 32.9% of babies were delivered by caesarean section and 55.1% had a non-instrumental vaginal birth. About 1 in 9 babies was born by an instrumental vaginal delivery (12.0%). Two-thirds of all twins (68.3%) and the majority of higher-order multiples were delivered by caesarean section (94.7%) (Table 4.12).

Table 3.30 presents data for mothers, where the method of birth of the first born baby in multiple births is used.

Table 4.12: Births, by method of birth and plurality, 2011

Method of birth	Singletons		Twins		Other multiple births		Total ^(a)	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Non-instrumental vaginal ^(b)	164,086	56.1	2,219	24.5	n.p.	n.p.	166,326	55.1
Instrumental vaginal ^(c)	35,602	12.2	644	7.1	<5	n.p.	36,249	12.0
Caesarean section	92,773	31.7	6,174	68.3	216	94.7	99,184	32.9
Not stated	48	0.0	3	0.0	—	—	51	0.0
Total	292,509	100.0	9,040	100.0	228	100.0	301,810	100.0

(a) Includes plurality 'Not stated'.

(b) For NSW and WA, 'Non-instrumental vaginal' includes all women who had a vaginal breech birth, whether or not instruments were used. For the remaining jurisdictions, vaginal breech births are only included where instruments were not used.

(c) 'Instrumental vaginal' includes forceps and vacuum extraction.

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

Method of birth for babies with breech presentations

Of babies with breech presentations at birth in 2011, 88.0% were born by caesarean section. This ranged from 84.9% in the Northern Territory to 89.8% in Queensland (Table 4.13). The remaining babies were born vaginally.

Table 4.13: Babies with breech presentations, by method of birth and state and territory, 2011

Method of birth	NSW	Vic	Qld	WA	SA	Tas	ACT ^(a)	NT	Total
Number									
Vaginal ^(b)	461	453	301	188	110	n.p.	29	24	1,566
Caesarean section	3,320	2,993	2,659	1,268	875	n.p.	220	135	11,470
Not stated	2	—	—	—	—	n.p.	—	—	2
Total	3,783	3,446	2,960	1,456	985	n.p.	249	159	13,038
Per cent									
Vaginal ^(b)	12.2	13.1	10.2	12.9	11.2	n.p.	11.6	15.1	12.0
Caesarean section	87.8	86.9	89.8	87.1	88.8	n.p.	88.4	84.9	88.0
Not stated	0.1	—	—	—	—	n.p.	—	—	0.0
Total	100.0	100.0	100.0	100.0	100.0	n.p.	100.0	100.0	100.0

(a) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the proportion of babies born in the ACT to ACT residents with a breech presentation by a vaginal birth was 10.6%.

(b) Includes instrumental vaginal births.

n.p. Data not published to maintain confidentiality of small numbers. Data for Tas not published as presentation was only recorded for vaginal births.

Of singleton babies born at term with breech presentations, 95.9% were born by caesarean section. Three-quarters of all term singleton breech births were delivered by caesarean section without labour (77.4%) (Table 4.14).

Table 4.14: Singleton term babies with breech presentations, by method of birth and state and territory, 2011

Method of birth	NSW	Vic	Qld	WA	SA	Tas	ACT ^(a)	NT	Total
Number									
Vaginal ^(b)	91	76	91	25	27	n.p.	n.p.	<5	326
Caesarean section	2,366	1,950	1,722	862	568	n.p.	n.p.	n.p.	7,686
<i>Labour</i>	443	341	373	159	123	n.p.	n.p.	n.p.	1,484
<i>No labour</i>	1,923	1,608	1,349	703	445	n.p.	106	67	6,201
Total	2,458	2,026	1,813	887	595	n.p.	143	91	8,013
Per cent									
Vaginal ^(b)	3.7	3.8	5.0	2.8	4.5	n.p.	n.p.	n.p.	4.1
Caesarean section	96.3	96.2	95.0	97.2	95.5	n.p.	n.p.	n.p.	95.9
<i>Labour</i>	18.0	16.8	20.6	17.9	20.7	n.p.	n.p.	n.p.	18.5
<i>No labour</i>	78.2	79.4	74.4	79.3	74.8	n.p.	74.1	73.6	77.4
Total	100.0	100.0	100.0	100.0	100.0	n.p.	100.0	100.0	100.0

(a) 14.6% of women who gave birth in the ACT were non-ACT residents.

(b) Includes instrumental vaginal births.

n.p. Data not published to maintain confidentiality of small numbers. Data for Tas not published as presentations were only recorded for 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 2011, 1.6% 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 1.3% of live births. Among the states and territories, the distribution of low Apgar scores at 5 minutes ranged from 1.5% of all live births in Queensland and Western Australia to 2.5% in the Australian Capital Territory (Table 4.15).

Table 4.15: Live births, by Apgar score at 5 minutes and state and territory, 2011

Apgar score	NSW	Vic	Qld	WA	SA	Tas	ACT ^(a)	NT	Australia
	Number								
0–3	332	142	235	66	38	19	31	16	879
4–6	1,207	1,100	679	420	287	90	109	66	3,958
7–10	94,834	71,765	60,793	31,431	19,835	6,159	5,515	3,808	294,140
Not stated	291	176	59	18	34	21	3	9	611
Total	96,664	73,183	61,766	31,935	20,194	6,289	5,658	3,899	299,588
<i>Less than 7</i>	<i>1,539</i>	<i>1,242</i>	<i>914</i>	<i>486</i>	<i>325</i>	<i>109</i>	<i>140</i>	<i>82</i>	<i>4,837</i>
	Per cent								
0–3	0.3	0.2	0.4	0.2	0.2	0.3	0.5	0.4	0.3
4–6	1.2	1.5	1.1	1.3	1.4	1.4	1.9	1.7	1.3
7–10	98.1	98.1	98.4	98.4	98.2	97.9	97.5	97.7	98.2
Not stated	0.3	0.2	0.1	0.1	0.2	0.3	0.1	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Less than 7</i>	<i>1.6</i>	<i>1.7</i>	<i>1.5</i>	<i>1.5</i>	<i>1.6</i>	<i>1.7</i>	<i>2.5</i>	<i>2.1</i>	<i>1.6</i>

(a) 14.6% 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 in Table 4.16. For these data, the type of resuscitation used is coded hierarchically from lowest 'None' to highest 'External cardiac massage and ventilation', with the category 'Other' not included in the hierarchy. 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. One-quarter (24.3%) of babies required some form of resuscitation at birth, although about two thirds of these babies (64.9%) required only suction or oxygen therapy. Ventilatory assistance by intermittent positive pressure ventilation (IPPV) through a bag and mask or after endotracheal intubation was performed for at least 7.3% of all live births in 2011. External cardiac massage and ventilation was provided for a minority of babies (0.3%) (Table 4.16).

Table 4.16: Live births, by active resuscitation measures at birth and state and territory, 2011

Resuscitation type ^(a)	NSW	Vic ^(b)	Qld	WA	SA	Tas	ACT ^(c)	NT	Australia
Number									
None	75,911	n.p.	41,840	24,642	15,961	5,188	4,612	3,018	171,172
Suction	6,473	n.p.	5,947	1,673	675	218	244	223	15,453
Oxygen therapy	7,873	n.p.	7,728	2,052	1,832	346	191	212	20,234
IPPV through bag and mask	5,224	n.p.	4,751	1,942	1,536	485	422	345	14,705
Endotracheal intubation and IPPV	582	n.p.	689	177	143	32	98	44	1,765
External cardiac massage and ventilation	376	n.p.	183	72	41	16	91	13	792
Other	—	n.p.	617 ^(d)	1,377 ^(e)	6	4	—	43 ^(f)	2,047
Not stated	225	n.p.	11	—	—	—	—	1	237
Total	96,664	n.p.	61,766	31,935	20,194	6,289	5,658	3,899	226,405
Per cent									
None	78.5	n.p.	67.7	77.2	79.0	82.5	81.5	77.4	75.6
Suction	6.7	n.p.	9.6	5.2	3.3	3.5	4.3	5.7	6.8
Oxygen therapy	8.1	n.p.	12.5	6.4	9.1	5.5	3.4	5.4	8.9
IPPV through bag and mask	5.4	n.p.	7.7	6.1	7.6	7.7	7.5	8.8	6.5
Endotracheal intubation and IPPV	0.6	n.p.	1.1	0.6	0.7	0.5	1.7	1.1	0.8
External cardiac massage and ventilation	0.4	n.p.	0.3	0.2	0.2	0.3	1.6	0.3	0.3
Other	—	n.p.	1.0 ^(d)	4.3 ^(e)	0.0	0.1	—	1.1 ^(f)	0.9
Not stated	0.2	n.p.	0.0	—	—	—	—	0.0	0.1
Total	100.0	n.p.	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) 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.

(b) Resuscitation data are available in Vic.

(c) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages.

(d) For Qld, 'Other' includes tactile stimulation.

(e) For WA, 'Other' includes continuous positive airway pressure, laryngoscopy, and medications for resuscitation including Adrenalin and Narcan.

(f) For NT, 'Other' includes continuous positive airway pressure, intubation and tracheal suctioning to prevent meconium aspiration syndrome or stimulation by intramuscular injection.

IPPV intermittent positive pressure ventilation.

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

Admission to special care nurseries or neonatal intensive care units

Babies are admitted to a special care nursery (SCN) or neonatal intensive care unit (NICU) if they require more specialised medical care and treatment than is available on the postnatal ward. Of liveborn babies in 2011, 15.3% were admitted to an SCN or NICU. This proportion appears low in Western Australia because only babies who stayed in an SCN or NICU for one day or more and if infant was admitted to an SCN or NICU at the birth site were included. In the other states and territories, the proportion of liveborn babies admitted to an SCN or NICU for any length of time ranged from 14.8% in New South Wales to 17.3% in Queensland (Table 4.17).

Table 4.17: Live births, by admission to special care nursery or neonatal intensive care unit and state and territory, 2011

Admission to SCN or NICU	NSW	Vic	Qld	WA ^(a)	SA	Tas	ACT ^(b)	NT	Australia
Number									
Admitted	14,353	11,718	10,680	3,141	3,308	964	892	668	45,724
Not admitted	81,924	59,803	51,086	28,794	16,886	5,325	4,742	3,231	240,438
Not stated	387	1,662	—	—	—	—	24	—	13,426
Total	96,664	73,183	61,766	31,935	20,194	6,289	5,658	3,899	299,588
Per cent									
Admitted	14.8	16.0	17.3	9.8	16.4	15.3	15.8	17.1	15.3
Not admitted	84.8	81.7	82.7	90.2	83.6	84.7	83.8	82.9	80.3
Not stated	0.4	2.3	—	—	—	—	0.4	—	4.5
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 1 day or more and if infant was admitted to an SCN or NICU at the birth site.

(b) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages.

Hospital births

Length of stay in hospital of birth

Most babies are discharged from hospital at the same time as their mothers but some require longer 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 2011, the median length of stay in hospital for babies born in hospital who were discharged home was 3.0 days. The majority of babies remained in their hospital of birth for less than 6 days (90.7%), and more than half stayed for less than four days (57.7%). Relatively more babies born in Queensland had a length of stay of less than four days (65.2%). Nationally in 2011, babies hospitalised for seven or more days accounted for 5.8% of babies born in hospital (Table 4.18).

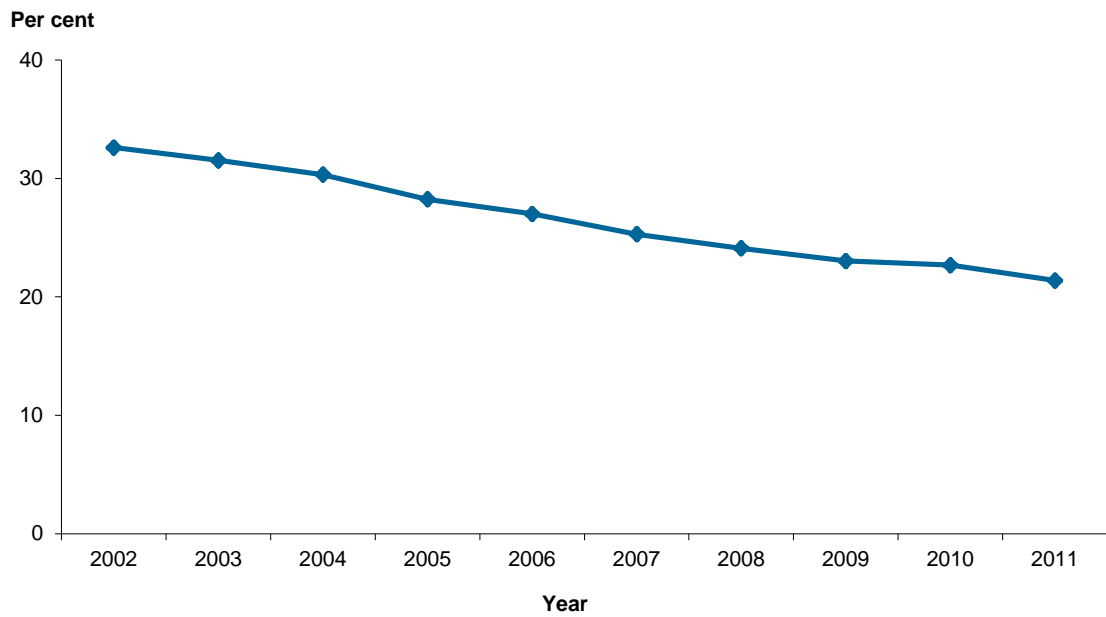
Table 4.18: Babies born in hospital^(a), by length of stay and state and territory, 2011

Length of stay (days)	NSW	Vic	Qld	WA	SA	Tas	ACT ^(b)	NT	Australia
Median	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	Number								
Less than 1 day	2,603	1,321	2,273	704	461	189	270	152	7,973
1 day	12,606	6,577	10,499	3,789	1,724	791	700	378	37,064
2 days	18,998	18,222	13,268	5,106	3,223	1,180	885	571	61,453
3 days	17,942	12,026	12,311	5,893	3,751	1,276	986	654	54,839
4 days	17,994	17,343	10,584	5,723	4,168	1,160	1,014	575	58,561
5 days	11,601	8,016	5,299	4,683	2,615	644	628	452	33,938
6 days	3,345	1,550	1,298	2,104	812	195	133	206	9,643
7–13 days	3,062	1,846	1,598	1,389	697	222	171	253	9,238
14–20 days	800	783	765	158	271	105	72	74	3,028
21–27 days	381	382	374	92	151	63	21	34	1,498
28 or more days	550	777	529	148	271	85	49	80	2,489
Not stated	16	14	—	—	—	—	—	—	30
Total	89,898	68,857	58,798	29,789	18,144	5,910	4,929	3,429	279,754
	Per cent								
Less than 1 day	2.9	1.9	3.9	2.4	2.5	3.2	5.5	4.4	2.9
1 day	14.0	9.6	17.9	12.7	9.5	13.4	14.2	11.0	13.2
2 days	21.1	26.5	22.6	17.1	17.8	20.0	18.0	16.7	22.0
3 days	20.0	17.5	20.9	19.8	20.7	21.6	20.0	19.1	19.6
4 days	20.0	25.2	18.0	19.2	23.0	19.6	20.6	16.8	20.9
5 days	12.9	11.6	9.0	15.7	14.4	10.9	12.7	13.2	12.1
6 days	3.7	2.3	2.2	7.1	4.5	3.3	2.7	6.0	3.4
7–13 days	3.4	2.7	2.7	4.7	3.8	3.8	3.5	7.4	3.3
14–20 days	0.9	1.1	1.3	0.5	1.5	1.8	1.5	2.2	1.1
21–27 days	0.4	0.6	0.6	0.3	0.8	1.1	0.4	1.0	0.5
28 or more days	0.6	1.1	0.9	0.5	1.5	1.4	1.0	2.3	0.9
Not stated	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) Only babies who were discharged home are included. For multiple births, the place of birth of the first born baby was used for all subsequent babies.

(b) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages as babies of non-ACT residents were more likely to stay in hospital for 4 days or more, compared with babies of ACT residents (45.6% and 41.9% respectively).

From 2002 to 2011, the proportion of hospital-born babies with a length of stay of less than five days increased from 67.4% to 78.6%, while the proportion of babies with a length of stay in hospital of five days or more decreased from 32.6% to 21.4% (Figure 4.2).



Notes

1. Excludes Vic for 2009 and 2010.
2. Only babies who were discharged home are included.
3. Data for this figure is in Table E7.

Figure 4.2: Length of stay of five days or more for babies born in hospital, 2002 to 2011 (per cent)

Mode of separation from hospital

In 2011, 95.6% of babies born in hospital were discharged home, varying from 92.6% in the Australian Capital Territory to 96.7% in Queensland. A total of 3.3% of babies were transferred to another hospital from their hospital of birth (Table 4.19).

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 4.19: Babies born in hospital^(a), by mode of separation and state and territory, 2011

Mode of separation	NSW	Vic	Qld	WA	SA	Tas	ACT ^(b)	NT	Australia
Number									
Discharge home	89,898	68,857	58,798	29,789	18,144	5,910	4,929	3,429	279,754
Transfer to another hospital ^(c)	2,940	2,550	1,463	1,466	607	281	316	101	9,724
Fetal or neonatal death	788	870	549	312	182	52	63	37	2,853
Other ^(d)	—	6	13	34	—	2	—	111 ^(e)	166
Not stated	92	16	—	—	—	—	14	22	144
Total	93,718	72,299	60,823	31,601	18,933	6,245	5,322	3,700	292,641
Per cent									
Discharge home	95.9	95.2	96.7	94.3	95.8	94.6	92.6	92.7	95.6
Transfer to another hospital ^(c)	3.1	3.5	2.4	4.6	3.2	4.5	5.9	2.7	3.3
Fetal or neonatal death	0.8	1.2	0.9	1.0	1.0	0.8	1.2	1.0	1.0
Other ^(d)	—	0.0	0.0	0.1	—	0.0	—	3.0 ^(e)	0.1
Not stated	0.1	0.0	—	—	—	—	0.3	0.6	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(a) For multiple births, the place of birth of the first born baby was used for all subsequent babies.

(b) 14.6% of women who gave birth in the ACT were non-ACT residents. Care must be taken when interpreting percentages. For example, the proportion of live babies born in the ACT to ACT residents who were transferred to another hospital was 2.7%.

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

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

(e) Includes mothers discharged with their babies against medical advice, babies transferred to accommodation hostels and statistical discharges.

5 Perinatal mortality

Definitions

There are different definitions in Australia for reporting and registering perinatal deaths (Figure 5.1). The NPDC uses a definition of perinatal deaths to include all fetal and neonatal deaths of at least 400 grams birthweight or at least 20 weeks gestation.

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 should be registered (ABS 2012). Further information on these definitions and the issues surrounding the collection of data on perinatal deaths is in a previous edition of this report (Laws & Sullivan 2004).

Figure 5.1: 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 & NPDC	400 grams	20 weeks	<28 days

Figure 5.2 shows the definitions of periods of perinatal and infant deaths used by the NPDC. Neonatal deaths are those occurring in live births up to 27 completed days after birth. Infant deaths are those occurring in live births at less than one year of age.

Figure 5.2: Perinatal and infant death periods

Labour		Birth	7 days	28 days	1 year
<i>At least 20 weeks or 400 grams</i>					
Antepartum fetal deaths	Intrapartum fetal deaths	0–6 days	7–27 days	28 days–<1 year	
		Early neonatal deaths	Late neonatal deaths	Postneonatal deaths	
Fetal deaths		Neonatal deaths			
Perinatal deaths					
Infant deaths					

The ABS definition of a perinatal death 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 of the death rather than on the year of birth or death. Data are in the *Cause of death, Australia 2011* report (ABS 2013). For vital statistics, refer to ABS data at <<http://www.abs.gov.au>>. *Australia's mothers and babies 2011* presents data on perinatal deaths from the NPDC.

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 2011, there were 2,220 fetal deaths reported to the NPDC, resulting in a fetal death rate of 7.4 per 1,000 births. Since 2002, the fetal death rate has increased from 6.7 per 1,000 births, with some minor fluctuations to a maximum of 7.8 per 1,000 births in 2009. The state and territory fetal death rates ranged from 5.4 per 1,000 births in Tasmania to 9.8 per 1,000 births in Victoria (Table 5.1).

Table 5.1: Fetal, neonatal and perinatal deaths, by state and territory, 2011

	State/territory of birth								Total
	NSW	Vic ^(a)	Qld	WA	SA	Tas	ACT ^(b)	NT	
	Number								
Live births ^(c)	96,664	73,183	61,766	31,935	20,194	6,289	5,658	3,899	299,588
Fetal deaths	572	723	400	269 ^(d)	150	34	44	28	2,220
Neonatal deaths ^(e)	250	154 ^(f)	200	63 ^(d)	44	18	20	23	772
<i>Perinatal deaths</i>	<i>822</i>	<i>877^(g)</i>	<i>600</i>	<i>332</i>	<i>194</i>	<i>52</i>	<i>64</i>	<i>51</i>	<i>2,992</i>
Total births	97,238	73,906	62,166	32,204	20,344	6,323	5,702	3,927	301,810
	Rate per 1,000 births^(h)								
Fetal deaths	5.9	9.8	6.4	8.4 ^(d)	7.4	5.4	7.7	7.1	7.4
Neonatal deaths ^(e)	2.6	2.1 ^(f)	3.2	2.0 ^(d)	2.2	2.9	3.5	5.9	2.6
<i>Perinatal deaths</i>	<i>8.5</i>	<i>11.9^(g)</i>	<i>9.7</i>	<i>10.3</i>	<i>9.5</i>	<i>8.2</i>	<i>11.2</i>	<i>13.0</i>	<i>9.9</i>

- (a) Death rates are higher in Victoria as the majority of late terminations for psychosocial indications performed in Australia are undertaken in Victoria, and many women travel from interstate (and overseas) to Victoria to have the termination undertaken.
- (b) 14.6% 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 5.8 fetal deaths per 1,000 births, 2.5 neonatal deaths per 1,000 live births and 8.2 perinatal deaths per 1,000 births.
- (c) Includes neonatal deaths.
- (d) For WA, fetal deaths and neonatal deaths include late termination of pregnancy.
- (e) 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.
- (f) Neonatal deaths for VIC is incomplete as deaths that occurred outside the birth episode or outside Victoria are not included.
- (g) Perinatal deaths in VIC include terminations of pregnancy and fetus papyraceous.
- (h) Fetal and perinatal death rates were calculated using all births (live births and stillbirths). Neonatal death rates were calculated using all live births.

Table 5.2 presents fetal, neonatal and perinatal deaths by state or territory of the mother's usual residence, excluding women who were usually resident overseas. It shows that for 2011, the state and territory fetal death rates ranged from 5.5 per 1,000 births for babies of mothers who lived in Tasmania, to 8.7 per 1,000 births to mothers who lived in Western Australia (Table 5.2). For Victoria, the rate of fetal death was 9.8 per 1,000 births occurring in Victoria (Table 5.1) and 8.2 per 1,000 births for women who lived in Victoria (Table 5.2). For the Australian Capital Territory, where 14.6% of women who gave birth were non-residents, the fetal death rate was 7.7 per 1,000 births by territory of birth (Table 5.1) and 6.7 per 1,000 births by territory of mother's usual residence (Table 5.2).

Table 5.2: Fetal, neonatal and perinatal deaths, by state and territory of mother's usual residence, 2011

	State/territory of usual residence								Total
	NSW	Vic	Qld	WA	SA	Tas	ACT	NT	
	Number								
Live births ^(a)	98,332	71,737	62,021	31,978	20,107	6,301	4,921	3,885	299,282
Fetal deaths	635	593	435	280	154	35	33	32	2,197
Neonatal deaths ^(b)	261	152 ^(c)	195	64	43	19	12	25	771
Perinatal deaths	896	745 ^(d)	630	344	197	54	45	57	2,968
Total births	98,969	72,330	62,456	32,258	20,261	6,336	4,954	3,917	301,481
	Rate per 1,000 births^(e)								
Fetal deaths	6.4	8.2	7.0	8.7	7.6	5.5	6.7	8.2	7.3
Neonatal deaths ^(b)	2.7	2.1 ^(c)	3.1	2.0	2.1	3.0	2.4	6.4	2.6
Perinatal deaths	9.1	10.3 ^(d)	10.1	10.7	9.7	8.5	9.1	14.6	9.8

(a) Includes neonatal deaths.

(b) 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) Neonatal deaths for VIC is incomplete as deaths that occurred outside the birth episode or outside Victoria are not included.

(d) Perinatal deaths in VIC include terminations of pregnancy and fetus papyraceous.

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

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

Fetal and neonatal death data were stratified by a number of demographic, pregnancy and risk factors in Table 5.3. Data did not include timing of fetal death (antepartum or intrapartum) or cause of death. There was variation in fetal and perinatal death rates according to maternal age, with higher rates reported for teenage mothers. The age-group specific fetal death rates ranged from 6.2 per 1,000 births for babies of mothers aged 30–34 to 15.0 per 1,000 births for babies of mothers younger than 20 (Table 5.3).

The fetal death rate of babies born to Aboriginal and Torres Strait Islander mothers was 13.3 per 1,000 births, compared with 7.1 per 1,000 births for non-Indigenous mothers. For Australian-born mothers the fetal death rate was 7.3 per 1,000 births, compared with 7.4 per 1,000 births for mothers born overseas (Table 5.3). For the five jurisdictions where data were available on whether the mother received ART treatment, the fetal death rate was 9.4 per 1,000 births for women giving birth after ART treatment.

Fetal death rates were higher among babies of first-time mothers (8.7 per 1,000 births) than among babies whose mothers had at least one previous birth (6.4 per 1,000 births) (Table 5.3).

However, for grand multiparous women (women who have had four or more previous pregnancies resulting in a live birth or stillbirth), the rate was higher at 9.4 per 1,000 births. Fetal deaths occurred more frequently in the lowest gestational age and birthweight groups (Table 5.3).

The fetal death rate of twins (20.6 per 1,000 births) and higher-order multiples (70.2 per 1,000 births) was higher than that of singleton babies (6.9 per 1,000 births) (Table 5.3). For singleton term babies, the fetal death rate was 1.3 per 1,000 births.

Table 5.3: Rates of fetal, neonatal and perinatal deaths, by selected characteristics, 2011

Characteristic	Fetal deaths	Rate per 1,000 births ^(b)	
		Neonatal deaths ^(a)	Perinatal deaths ^(a)
Maternal age			
Younger than 20	15.0	4.9	19.8
20–24	7.9	3.0	10.9
25–29	6.6	2.5	9.1
30–34	6.2	2.4	8.6
35–39	7.5	2.4	9.9
40 and over	11.1	1.9	12.9
Maternal Indigenous status			
Aboriginal and Torres Strait Islander	13.3	6.0	19.2
Non-Indigenous	7.1	2.4	9.5
Maternal country of birth			
Australia	7.3	2.7	10.0
Other	7.4	2.2	9.6
Parity			
Primipara	8.7	2.9	11.5
Multipara	6.4	2.3	8.7

(continued)

Table 5.3 (continued): Rates of fetal, neonatal and perinatal deaths, by selected characteristics, 2011

Characteristic	Fetal deaths	Neonatal deaths ^(a)	Perinatal deaths ^(a)
		Rate per 1,000 births ^(b)	
Plurality			
Singletons	6.9	2.2	9.1
Twins	20.6	14.6	34.8
Higher-order multiples	70.2	23.6	92.1
Gestational age (weeks)			
20–27	505.7	392.7	699.8
28–31	81.2	27.2	106.1
32–36	13.3	3.5	16.8
37–41	1.4	0.4	1.8
42 and over	1.4	0.0	1.9
Birthweight (g)			
Less than 1,500	334.6	186.0	458.4
1,500–2,499	13.3	5.1	18.4
2,500–2,999	3.4	1.0	4.3
3,000–3,999	1.1	0.3	1.4
4,000 and over	1.0	0.3	1.2

(a) 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.

(b) Fetal and perinatal death rates were calculated using all births (live births and fetal deaths). Neonatal death rates were calculated using all live births.

Neonatal deaths

There were 772 neonatal deaths reported to the NPDC for 2011, giving a rate of 2.6 per 1,000 live births (Table 5.1). Ascertainment of neonatal deaths within 28 days of birth is likely to be incomplete. In particular, deaths occurring among babies transferred to another hospital, readmitted to hospital or dying at home may not be known to midwives who collect these data or staff who compile state and territory data. Neonatal deaths occurring in a different state or territory from where the birth occurred may also not be included.

The Perinatal NMDS did not include neonatal or perinatal death data items. However, this information is collected as part of the NPDC. 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 in the states or territories. The neonatal death rates ranged from 2.0 per 1,000 live births in Western Australia to 5.9 per 1,000 live births in the Northern Territory (Table 5.1). A significant proportion of women who gave birth in the Australian Capital Territory were New South Wales residents (14.4% in 2011). Many women from southern New South Wales with high-risk pregnancies gave birth in the Australian Capital Territory (Table 3.4), so death rates are likely to appear higher than for those based on births to residents of the Australian Capital Territory. Presenting the deaths by state or territory of usual residence of the mother addresses this issue. The neonatal death rate for mothers usually resident in the Australian

Capital Territory was 2.4 per 1,000 live births (Table 5.2) compared with 3.5 per 1,000 live births to women who gave birth in this territory (Table 5.1).

Higher neonatal death rates were reported for younger mothers. The age-group specific neonatal death rate was 4.9 per 1,000 live births for babies of teenage mothers (aged less than 20 years) (Table 5.3).

The neonatal death rate of babies born to Aboriginal and Torres Strait Islander mothers was 6.0 per 1,000 live births. The neonatal death rate for babies of non-Indigenous mothers was 2.4 per 1,000 live births (Table 5.3). The neonatal death rate was 5.4 per 1,000 live births for women giving birth after ART treatment, where data were available.

The neonatal death rate of twins (14.6 per 1,000 live births) and higher-order multiples (23.6 per 1,000 live births) was higher than that of singleton babies (2.2 per 1,000 live births) (Table 5.3). For singleton term babies, the neonatal death rate was 0.4 per 1,000 live births.

Neonatal death rates decreased with increasing gestational age, from 392.7 per 1,000 live births for those born at 20–27 weeks gestation to 0.4 per 1,000 live births for those born at term. For babies of less than 1,500 grams birthweight, the neonatal death rate was 186.0 per 1,000 live births, compared with 0.3 per 1,000 live births for babies of 3,000–3,999 grams, and 0.3 per 1,000 live births for babies of 4,000 grams or more (Table 5.3).

Perinatal deaths

There were 2,992 perinatal deaths reported to the NPDC for 2011, giving a rate of 9.9 perinatal deaths per 1,000 births (Table 5.1). Of these, 74.2% were fetal deaths.

For the Australian Capital Territory, where 14.6% of women who gave birth were non-residents, the crude rate of perinatal mortality was 11.2 per 1,000 births by territory of birth (Table 5.1) and 9.1 per 1,000 births by territory of mother's usual residence (Table 5.2).

Perinatal death data were stratified by a number of demographic, pregnancy and risk factors in Table 5.3. Perinatal death rates were highest in babies of teenage mothers (19.8 per 1,000 births), followed by babies of mothers aged 40 and over (12.9 per 1,000 births). The perinatal death rate of babies born to Aboriginal and Torres Strait Islander mothers was 19.2 per 1,000 births. The rate was 9.5 per 1,000 births in babies born to non-Indigenous mothers (Table 5.3). The perinatal death rate was 14.7 per 1,000 births for women giving birth after ART treatment, compared with 10.5 per 1,000 births for non-ART women, where data were available.

Perinatal death rates were higher among babies of first-time mothers (11.5 per 1,000 births) than among babies whose mothers had at least one previous birth (8.7 per 1,000 births) (Table 5.3).

Table 5.3 shows that perinatal death rates were higher for babies in the 20–27 week gestational age group (699.8 per 1,000 births) and lowest at 37–41 weeks (1.8 per 1,000 births). Babies weighing less than 1,500 grams at birth had the highest perinatal death rate (458.4 per 1,000 births).

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) to classify causes of perinatal deaths. Further details on this classification is at <<http://www.psanz.com.au/special-interest/perinatal-mortality-group/psanzcpg>>.

For the 2011 data, four jurisdictions provided causes of death according to the PSANZ-PDC: Queensland, Western Australia, South Australia and Tasmania. The main causes of perinatal deaths in these jurisdictions were congenital abnormalities (anomalies) (27.2%), spontaneous preterm birth (21.1%) and unexplained antepartum death (15.6%). These three groups of causes accounted for more than half of all perinatal deaths in these states (63.8%) and the rates were 2.6, 2.0 and 1.5 respectively per 1,000 births in the four jurisdictions. Specific perinatal conditions (7.8%) were also commonly reported causes of perinatal death, with a rate of 0.8 per 1,000 births (Table 5.4).

Applying this classification reveals variability by jurisdiction in the leading causes of perinatal death. The largest apparent difference relates to the category of 'Maternal conditions'. This category includes late terminations undertaken for psychosocial indications. Differences in the rates of termination of pregnancy may reflect different provision of these services, with the majority undertaken in Victoria (CCOPMM 2012). There may also be some differential assignment of the ranking related to jurisdictional differences in applying the classifications, as well as variability due to small number of deaths in some categories.

Table 5.4: Perinatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and state and territory, 2011

Cause of death	NSW	Vic ^(a)	Qld	WA	SA	Tas	ACT	NT	Total	Rate ^(b)
Number										
Congenital abnormality	n.a.	n.r.	161	86	60	13	n.a.	n.a.	320	2.6
Perinatal infection	n.a.	n.r.	13	n.p.	16	<5	n.a.	n.a.	49	0.4
Hypertension	n.a.	n.r.	11	13	5	—	n.a.	n.a.	29	0.2
Antepartum haemorrhage (APH)	n.a.	n.r.	38	11	18	9	n.a.	n.a.	76	0.6
Maternal conditions	n.a.	n.r.	12	13	<5	<5	n.a.	n.a.	30	0.2
Specific perinatal conditions	n.a.	n.r.	36	27	21	8	n.a.	n.a.	92	0.8
Hypoxic peripartum death	n.a.	n.r.	8	8	8	6	n.a.	n.a.	30	0.2
Fetal growth restriction (FGR)	n.a.	n.r.	20	25	19	6	n.a.	n.a.	70	0.6
Spontaneous preterm	n.a.	n.r.	139	85	19	5	n.a.	n.a.	248	2.0
Unexplained antepartum death	n.a.	n.r.	121	38	n.p.	<5	n.a.	n.a.	184	1.5
No obstetric antecedent	n.a.	n.r.	41	n.p.	<5	—	n.a.	n.a.	50	0.4
Total	n.a.	n.r.	600	332	194	52	n.a.	n.a.	1,178	9.7
Per cent										
Congenital abnormality	n.a.	n.r.	26.8	25.9	30.9	25.0	n.a.	n.a.	27.2	
Perinatal infection	n.a.	n.r.	2.2	n.p.	8.2	n.p.	n.a.	n.a.	4.2	
Hypertension	n.a.	n.r.	1.8	3.9	2.6	—	n.a.	n.a.	2.5	
Antepartum haemorrhage (APH)	n.a.	n.r.	6.3	3.3	9.3	17.3	n.a.	n.a.	6.5	
Maternal conditions	n.a.	n.r.	2.0	3.9	n.p.	n.p.	n.a.	n.a.	2.5	
Specific perinatal conditions	n.a.	n.r.	6.0	8.1	10.8	15.4	n.a.	n.a.	7.8	
Hypoxic peripartum death	n.a.	n.r.	1.3	2.4	4.1	11.5	n.a.	n.a.	2.5	
Fetal growth restriction (FGR)	n.a.	n.r.	3.3	7.5	9.8	11.5	n.a.	n.a.	5.9	
Spontaneous preterm	n.a.	n.r.	23.2	25.6	9.8	9.6	n.a.	n.a.	21.1	
Unexplained antepartum death	n.a.	n.r.	20.2	11.4	n.p.	n.p.	n.a.	n.a.	15.6	
No obstetric antecedent	n.a.	n.r.	6.8	n.p.	n.p.	—	n.a.	n.a.	4.2	
Total	n.a.	n.r.	100.0	100.0	100.0	100.0	n.a.	n.a.	100.0	

(a) PSANZ data available in Vic but not published due to ongoing mortality case reviews at the time of publication.

(b) Rate per 1,000 births in Qld, WA, SA and Tas. The total number of births in the four jurisdictions was 121,037 in 2011.

n.a. Data not available.

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

n.r. Data not received at the time of publication.

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

Table 5.5 presents causes of perinatal deaths by gestational age group for Queensland, Western Australia, South Australia and Tasmania. The main cause of perinatal death was congenital abnormalities at 20–21 weeks (46.6%). The leading cause of death at 22–27 weeks gestation was spontaneous preterm (35.9%). Perinatal deaths of babies at 32–36 and 37 and over weeks were most commonly an unexplained antepartum death.

Table 5.5: Perinatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and gestational age, 2011

Cause of death	Gestational age (weeks)					Total
	20–21	22–27	28–31	32–36	37 and over	
	Number					
Congenital abnormality	138	80	14	43	45	320
Perinatal infection	9	21	<5	n.p.	12	49
Hypertension	<5	10	10	<5	5	29
Antepartum haemorrhage (APH)	11	30	15	13	7	76
Maternal conditions	8	<5	<5	9	7	30
Specific perinatal conditions	9	35	9	19	20	92
Hypoxic peripartum death	—	<5	<5	5	21	30
Fetal growth restriction (FGR)	<5	27	n.p.	15	13	70
Spontaneous preterm	97	142	n.p.	<5	—	248
Unexplained antepartum death	15	34	25	44	66	184
No obstetric antecedent	<5	10	<5	6	27	50
Total	296	396	99	164	223	1,178
	Per cent					
Congenital abnormality	46.6	20.2	14.1	26.2	20.2	27.2
Perinatal infection	3.0	5.3	n.p.	n.p.	5.4	4.2
Hypertension	n.p.	2.5	10.1	n.p.	2.2	2.5
Antepartum haemorrhage (APH)	3.7	7.6	15.2	7.9	3.1	6.5
Maternal conditions	2.7	n.p.	n.p.	5.5	3.1	2.5
Specific perinatal conditions	3.0	8.8	9.1	11.6	9.0	7.8
Hypoxic peripartum death	—	n.p.	n.p.	3.0	9.4	2.5
Fetal growth restriction (FGR)	n.p.	6.8	n.p.	9.1	5.8	5.9
Spontaneous preterm	32.8	35.9	n.p.	n.p.	—	21.1
Unexplained antepartum death	5.1	8.6	25.3	26.8	29.6	15.6
No obstetric antecedent	n.p.	2.5	n.p.	3.7	12.1	4.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

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

Notes

1. Includes Qld, WA, SA and Tas.
2. The total number of births in the four jurisdictions included in the table was 121,037 in 2011.

The causes of death differed for fetal and neonatal deaths. Spontaneous preterm was the leading cause of neonatal deaths (35.4%), while congenital abnormality was the leading cause of fetal deaths (26.3%). Among neonatal deaths, congenital abnormalities accounted for 63.0% of babies at 32–36 weeks and 46.3% of babies at 37 weeks and over. The second most common cause of fetal deaths was unexplained antepartum death (21.6%) (Table 5.6).

Table 5.6: Fetal and neonatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and gestational age, 2011

Cause of death	Fetal deaths				Total
	20–27	28–31	32–36	37 and over	
	Number				
Congenital abnormality	189	7	14	14	224
Perinatal infection	23	<5	n.p.	11	41
Hypertension	10	n.p.	<5	5	27
Antepartum haemorrhage (APH)	22	12	8	6	48
Maternal conditions	n.p.	<5	8	6	25
Specific perinatal conditions	33	8	17	19	77
Hypoxic peripartum death	<5	<5	—	12	15
Fetal growth restriction (FGR)	26	9	15	12	62
Spontaneous preterm	131	—	<5	—	133
Unexplained antepartum death	49	25	44	66	184
No obstetric antecedent	8	<5	<5	5	17
Total	502	77	118	156	853
	Per cent				
Congenital abnormality	37.6	9.1	11.9	9.0	26.3
Perinatal infection	4.6	n.p.	n.p.	7.1	4.8
Hypertension	2.0	n.p.	n.p.	3.2	3.2
Antepartum haemorrhage (APH)	4.4	15.6	6.8	3.8	5.6
Maternal conditions	n.p.	n.p.	6.8	3.8	2.9
Specific perinatal conditions	6.6	10.4	14.4	12.2	9.0
Hypoxic peripartum death	n.p.	n.p.	—	7.7	1.8
Fetal growth restriction (FGR)	5.2	11.7	12.7	7.7	7.3
Spontaneous preterm	26.1	—	n.p.	—	15.6
Unexplained antepartum death	9.8	32.5	37.3	42.3	21.6
No obstetric antecedent	1.6	n.p.	n.p.	3.2	2.0
Total	100.0	100.0	100.0	100.0	100.0

(continued)

Table 5.6 (continued): Fetal and neonatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and gestational age, 2011

Cause of death	Neonatal deaths				Total
	20–27	28–31	32–36	37 and over	
	Number				
Congenital abnormality	29	7	29	31	96
Perinatal infection	n.p.	—	—	<5	8
Hypertension	<5	—	—	—	<5
Antepartum haemorrhage (APH)	19	<5	5	<5	28
Maternal conditions	<5	—	<5	<5	n.p.
Specific perinatal conditions	11	<5	<5	<5	15
Hypoxic peripartum death	<5	—	n.p.	9	15
Fetal growth restriction (FGR)	<5	<5	—	<5	8
Spontaneous preterm	108	n.p.	<5	—	115
Unexplained antepartum death	—	—	—	—	—
No obstetric antecedent	6	<5	<5	22	33
Total	190	22	46	67	325
	Per cent				
Congenital abnormality	15.3	31.8	63.0	46.3	29.5
Perinatal infection	n.p.	—	—	n.p.	2.5
Hypertension	n.p.	—	—	—	n.p.
Antepartum haemorrhage (APH)	10.0	n.p.	10.9	n.p.	8.6
Maternal conditions	n.p.	—	n.p.	n.p.	n.p.
Specific perinatal conditions	5.8	n.p.	n.p.	n.p.	4.6
Hypoxic peripartum death	n.p.	—	n.p.	13.4	4.6
Fetal growth restriction (FGR)	n.p.	n.p.	—	n.p.	2.5
Spontaneous preterm	56.8	n.p.	n.p.	—	35.4
Unexplained antepartum death	—	—	—	—	—
No obstetric antecedent	3.2	n.p.	n.p.	32.8	10.2
Total	100.0	100.0	100.0	100.0	100.0

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

Notes

1. Includes Qld, WA, SA and Tas.
2. The total number of births in the four jurisdictions included in the table was 121,037 in 2011.

The most common cause of perinatal death in singletons was congenital abnormalities (29.3%). Deaths of twins and higher-order multiples were mostly due to spontaneous preterm birth and specific perinatal conditions (Table 5.7).

Table 5.7: Perinatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and plurality, 2011

Cause of death	Singletons	Twins and higher-order multiples	Total
		Number	
Congenital abnormality	307	13	320
Perinatal infection	44	5	49
Hypertension	29	—	29
Antepartum haemorrhage (APH)	64	12	76
Maternal conditions	30	—	30
Specific perinatal conditions	57	35	92
Hypoxic peripartum death	n.p.	<5	30
Fetal growth restriction (FGR)	n.p.	<5	70
Spontaneous preterm	204	44	248
Unexplained antepartum death	176	8	184
No obstetric antecedent	42	8	50
Total	1,049	129	1,178
		Per cent	
Congenital abnormality	29.3	10.1	27.2
Perinatal infection	4.2	3.9	4.2
Hypertension	2.8	—	2.5
Antepartum haemorrhage (APH)	6.1	9.3	6.5
Maternal conditions	2.9	—	2.5
Specific perinatal conditions	5.4	27.1	7.8
Hypoxic peripartum death	n.p.	n.p.	2.5
Fetal growth restriction (FGR)	n.p.	n.p.	5.9
Spontaneous preterm	19.4	34.1	21.1
Unexplained antepartum death	16.8	6.2	15.6
No obstetric antecedent	4.0	6.2	4.2
Total	100.0	100.0	100.0

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

Notes

1. Includes Qld, WA, SA and Tas.
2. The total number of births in the four jurisdictions included in the table was 121,037 in 2011.

Causes of death for singletons were examined by gestational age. This showed that 35.7% of 20–27 week babies had congenital abnormalities. The most common cause of death for 28–31 and 32–36 week babies was unexplained antepartum death (24.7% and 28.9% respectively). For babies of 37 weeks and over, the leading categories were unexplained antepartum death (31.3%) and congenital abnormality (19.0%) (Table 5.8).

Table 5.8: Singleton perinatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and gestational age, 2011

Cause of death	Gestational age (weeks)				Total
	20–27	28–31	32–36	37 and over	
	Number				
Congenital abnormality	217	13	37	40	307
Perinatal infection	26	<5	<5	12	44
Hypertension	n.p.	10	<5	5	29
Antepartum haemorrhage (APH)	30	15	13	6	64
Maternal conditions	12	<5	n.p.	7	30
Specific perinatal conditions	24	6	11	16	57
Hypoxic peripartum death	<5	<5	<5	20	28
Fetal growth restriction (FGR)	29	12	15	12	68
Spontaneous preterm	197	<5	<5	—	204
Unexplained antepartum death	47	22	41	66	176
No obstetric antecedent	10	<5	<5	27	42
Total	607	89	142	211	1,049
	Per cent				
Congenital abnormality	35.7	14.6	26.1	19.0	29.3
Perinatal infection	4.3	n.p.	n.p.	5.7	4.2
Hypertension	n.p.	11.2	n.p.	2.4	2.8
Antepartum haemorrhage (APH)	4.9	16.9	9.2	2.8	6.1
Maternal conditions	2.0	n.p.	n.p.	3.3	2.9
Specific perinatal conditions	4.0	6.7	7.7	7.6	5.4
Hypoxic peripartum death	n.p.	n.p.	n.p.	9.5	2.7
Fetal growth restriction (FGR)	4.8	13.5	10.6	5.7	6.5
Spontaneous preterm	32.5	n.p.	n.p.	—	19.4
Unexplained antepartum death	7.7	24.7	28.9	31.3	16.8
No obstetric antecedent	1.6	n.p.	n.p.	12.8	4.0
Total	100.0	100.0	100.0	100.0	100.0

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

Notes

1. Includes Qld, WA, SA and Tas.
2. The total number of births in the four jurisdictions included in the table was 121,037 in 2011.

Of perinatal deaths to mothers younger than 20, over one-quarter were related to spontaneous preterm (29.3%). In mothers aged 40 and over, 21.0% of perinatal deaths were caused by congenital abnormalities as well as spontaneous preterm (17.7%). For congenital abnormalities, the figure was 34.0% for perinatal deaths to mothers in the 35–39 years age group (Table 5.9).

Table 5.9: Perinatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and maternal age, 2011

Cause of death	Maternal age (years)						Total
	Less than 20	20–24	25–29	30–34	35–39	40 and over	
	Number						
Congenital abnormality	16	45	86	90	70	13	320
Perinatal infection	<5	8	14	11	10	<5	49
Hypertension	<5	5	5	12	<5	<5	29
Antepartum haemorrhage (APH)	5	19	21	19	9	<5	76
Maternal conditions	<5	6	11	<5	6	<5	30
Specific perinatal conditions	<5	8	27	25	n.p.	10	92
Hypoxic peripartum death	<5	5	8	n.p.	5	—	30
Fetal growth restriction (FGR)	<5	17	16	16	11	n.p.	70
Spontaneous preterm	22	41	67	72	35	11	248
Unexplained antepartum death	10	33	50	47	34	10	184
No obstetric antecedent	<5	15	10	14	5	<5	50
Total	75	202	315	318	206	62	1,178
	Per cent						
Congenital abnormality	21.3	22.3	27.3	28.3	34.0	21.0	27.2
Perinatal infection	n.p.	4.0	4.4	3.5	4.9	n.p.	4.2
Hypertension	n.p.	2.5	1.6	3.8	n.p.	n.p.	2.5
Antepartum haemorrhage (APH)	6.7	9.4	6.7	6.0	4.4	n.p.	6.5
Maternal conditions	n.p.	3.0	3.5	n.p.	2.9	n.p.	2.5
Specific perinatal conditions	n.p.	4.0	8.6	7.9	n.p.	16.1	7.8
Hypoxic peripartum death	n.p.	2.5	2.5	n.p.	2.4	—	2.5
Fetal growth restriction (FGR)	n.p.	8.4	5.1	5.0	5.3	n.p.	5.9
Spontaneous preterm	29.3	20.3	21.3	22.6	17.0	17.7	21.1
Unexplained antepartum death	13.3	16.3	15.9	14.8	16.5	16.1	15.6
No obstetric antecedent	n.p.	7.4	3.2	4.4	2.4	n.p.	4.2
Total	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.

Notes

1. Includes Qld, WA, SA and Tas.
2. The total number of births in the four jurisdictions included in the table was 121,037 in 2011.

Of perinatal deaths to women who gave birth in hospital, 27.5% were due to congenital abnormalities. This proportion was higher in public (29.4%) than in private hospitals (17.4%). Specific perinatal conditions occurred in 13.5% of perinatal deaths to women in private hospitals, compared with 6.8% in public hospitals (Table 5.10). Of all perinatal deaths in hospitals at 32 weeks gestation or more, 28.7% were unexplained antepartum deaths (45.3% in private hospitals and 25.3% in public hospitals), and 22.9% were due to congenital abnormalities (9.4% in private hospitals and 25.6% in public hospitals).

Table 5.10: Perinatal deaths to women who gave birth in hospital, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and hospital sector, 2011

Cause of death	Public	Private	Total
		Number	
Congenital abnormality	288	31	319
Perinatal infection	n.p.	<5	47
Hypertension	n.p.	<5	29
Antepartum haemorrhage (APH)	69	6	75
Maternal conditions	n.p.	<5	29
Specific perinatal conditions	67	24	91
Hypoxic peripartum death	22	7	29
Fetal growth restriction (FGR)	63	6	69
Spontaneous preterm	197	44	241
Unexplained antepartum death	136	46	182
No obstetric antecedent	42	5	47
Total	980	178	1,158
		Per cent	
Congenital abnormality	29.4	17.4	27.5
Perinatal infection	n.p.	n.p.	4.1
Hypertension	n.p.	n.p.	2.5
Antepartum haemorrhage (APH)	7.0	3.4	6.5
Maternal conditions	n.p.	n.p.	2.5
Specific perinatal conditions	6.8	13.5	7.9
Hypoxic peripartum death	2.2	3.9	2.5
Fetal growth restriction (FGR)	6.4	3.4	6.0
Spontaneous preterm	20.1	24.7	20.8
Unexplained antepartum death	13.9	25.8	15.7
No obstetric antecedent	4.3	2.8	4.1
Total	100.0	100.0	100.0

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

Notes

1. Includes Qld, WA, SA and Tas.
2. The total number of births in the four jurisdictions included in the table was 121,037 in 2011.

Appendix A: State and territory perinatal data collections, contacts and recent reports

New South Wales

Jason Bentley and Patricia Correll
Principal Epidemiologist and Manager
Health Services, Epidemiology and Biostatistics
Centre for Epidemiology and Evidence
NSW Ministry of Health
Level 7/73 Miller Street
North Sydney NSW 2060
Phone: (02) 9391 9680
Fax: (02) 9391 9232
Email: <jbent@doh.health.nsw.gov.au>, <pcorr@doh.health.nsw.gov.au>.
Website: <<http://www.health.nsw.gov.au/topics/maternal.asp>>.

Latest report:

Centre for Epidemiology and Evidence. New South Wales Mothers and Babies 2010. Sydney: NSW Ministry of Health, 2012.

Victoria

Manager
Clinical Councils Unit
Department of Health
GPO Box 4003
Melbourne Vic 3001
Phone: (03) 1300 858 505
Fax: (03) 9096 2700
Email: <perinatal.data@health.vic.gov.au>
Website: <<http://www.health.vic.gov.au/perinatal>>.

Latest report:

CCOPMM (Consultative Council on Obstetric and Paediatric Mortality and Morbidity) 2012. Annual report for the year 2009. State Government of Victoria, Melbourne.

Queensland

Ms Sue Cornes
Executive Director
Health Statistics Centre
Queensland Health
GPO Box 48
Brisbane Qld 4001

Phone: (07) 3234 0921

Fax: (07) 3234 0564

Email: <suzanne_cornes@health.qld.gov.au>.

Website: <<http://www.health.qld.gov.au/hic>>.

Latest report:

Health Statistics Centre 2013. Perinatal statistics Queensland 2011. Brisbane: Queensland Health.

Western Australia

Ms Maureen Hutchinson
Manager
Maternal and Child Health Unit
Data Collection & Analysis – Statutory and Non-Admitted Branch
Data Integrity Directorate
Performance Activity and Quality Division
Department of Health, Western Australia
189 Royal Street
East Perth WA 6004

Phone: (08) 9222 2417

Fax: (08) 9222 4408

Email: <maureen.hutchinson@health.wa.gov.au>.

Website: <<http://www.health.wa.gov.au/healthdata>>.

Latest report:

Joyce A, Hutchinson M (2012). Western Australia's Mothers and Babies, 2010: Twenty-eighth Annual Report of the Western Australian Midwives' Notification System, Department of Health, Western Australia.

Gee V (2013). Perinatal, Infant and Maternal Mortality in Western Australia, 2006-2010. Department of Health, Perth, Western Australia.

South Australia

Dr Wendy Scheil
Head Pregnancy Outcome Unit
SA Health
PO Box 6, Rundle Mall
Adelaide SA 5000

Phone: (08) 8226 6357

Fax: (08) 8226 6291

Email: <Wendy.Scheil@health.sa.gov.au>

Website: <<http://www.dh.sa.gov.au/pehs/pregnancyoutcome.htm>>.

Latest reports:

Scheil W, Scott J, Catcheside B, Sage L. Pregnancy Outcome in South Australia 2011.

Adelaide: Pregnancy Outcome Unit, SA Health, Government of South Australia, 2013.

Maternal, Perinatal and Infant Mortality Committee. Maternal, Perinatal and Infant Mortality in South Australia 2011. Adelaide: SA Health, Government of South Australia, 2013.

Tasmania

Mr Peter Mansfield
Team Leader
Data Standards and Integrity Unit
Health Statistics
Department of Health and Human Services
Level 5, 24 Davey Street
Hobart Tas 7000

Phone: (03) 6233 2173

Fax: (03) 6233 7167

Email: <peter.mansfield@dhhs.tas.gov.au>.

Website: <<http://www.dhhs.tas.gov.au>>.

Latest report:

Council of Obstetric and Paediatric Mortality and Morbidity 2013. Annual report 2011.

Hobart: Department of Health and Human Services.

Australian Capital Territory

Ms Louise Freebairn
Manager, Population Health Informatics
Epidemiology Section, Health Improvement Branch
ACT Health
123 Carruthers St Curtin ACT 2605
GPO Box 825
Canberra ACT 2601

Phone: (02) 6207 4036

Fax: (02) 6244 4138

Email: <perinataldata@act.gov.au>.

Website: < <http://www.health.act.gov.au/healthinfo>>.

Latest report:

Epidemiology Branch, ACT Health 2011. Maternal and perinatal health in the ACT, 1999–2008. Canberra: ACT Health.

Northern Territory

Ms Lee O'Neil
Perinatal Business Analyst
Health Gains Planning Branch
Department of Health
PO Box 40596
Casuarina NT 0811

Phone: (08) 8922 7673

Email: <leanne.o'neil@nt.gov.au>.

Website: < <http://www.health.nt.gov.au>>.

Latest report:

Thompson F. Northern Territory Midwives' Collection. Mothers and Babies 2010. Department of Health, Darwin, 2013.

Appendix B: Collection and collation of data for the National Perinatal Data Collection

Figure B1 shows the pathway of perinatal data to the NPESU for national collation.

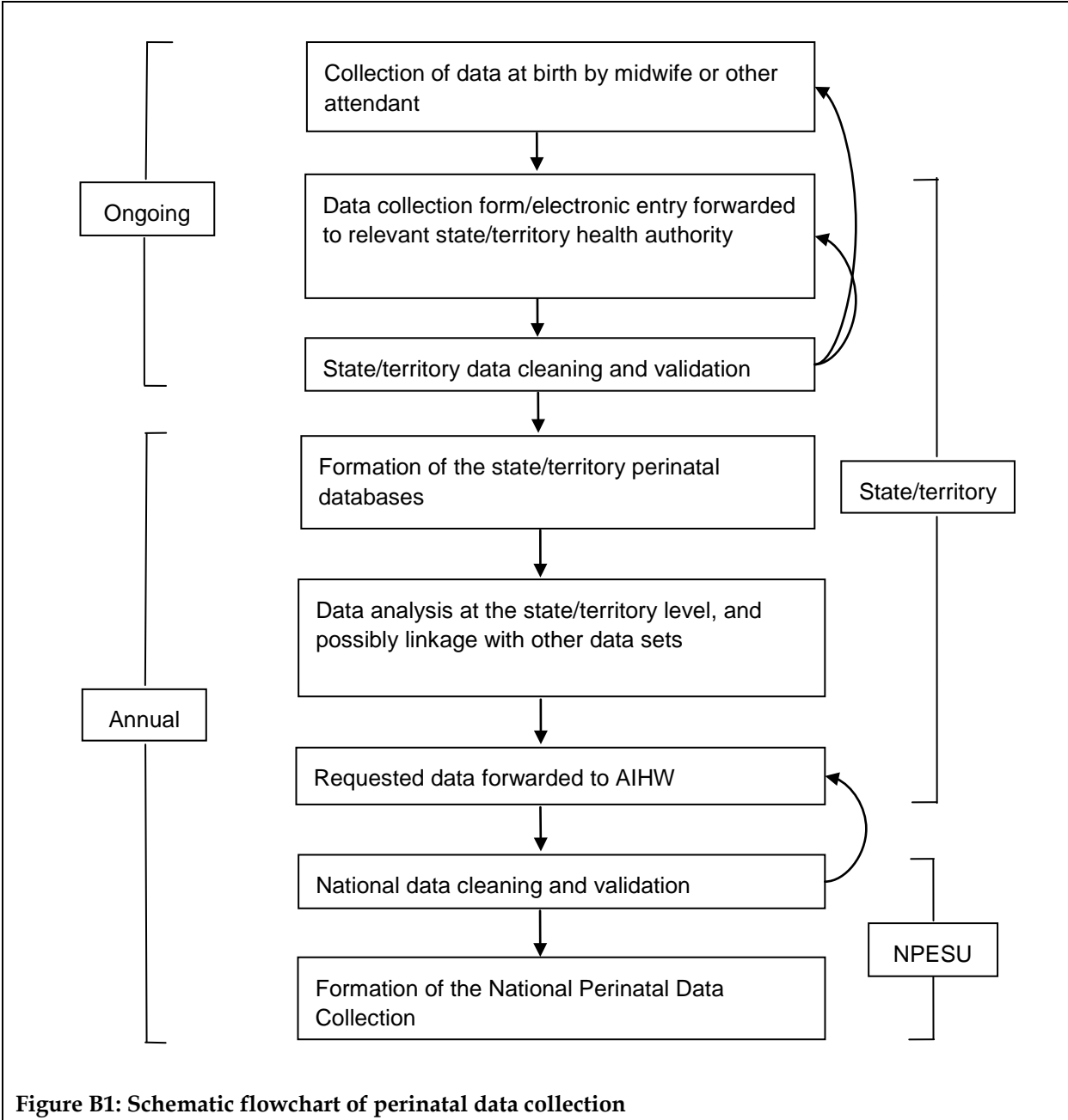


Figure B1: Schematic flowchart of perinatal data collection

Appendix C: Perinatal National Minimum Data Set items

Table C1: Perinatal NMDS 2010–2011 data items

Data element name	MEteOR identifier
Birth event—birth method, code N	295349
Birth event—birth plurality, code N	269994
Birth event—birth presentation, code N	299992
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
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
Episode of admitted patient care—separation date, DDMMYYYY	270025
Establishment—organisation identifier (Australian), NNX[X]NNNNN	269973
Female (pregnant)—number of cigarettes smoked (per day after 20 weeks of pregnancy), number N[NN]	365445
Female (pregnant)—tobacco smoking indicator (after twenty weeks of pregnancy), yes/no code N	365417
Female (pregnant)—tobacco smoking indicator (first twenty weeks of pregnancy), yes/no code N	365404
Person—area of usual residence, geographical location code (ASGC 2009) NNNNN	386783
Person—country of birth, code (SACC 2008) NNNN	370943
Person—date of birth, DDMMYYYY	287007
Person—Indigenous status, code N	291036
Person—person identifier, XXXXXX[X(14)]	290046
Person—sex, code N	287316
Pregnancy—estimated duration (at the first visit for antenatal care), completed weeks N[N]	379597
Product of conception—gestational age, completed weeks N[N]	298105

Note: Implementation start date 1 July 2010; Implementation end date 30 June 2011.

Source: <<http://meteor.aihw.gov.au/content/index.phtml/itemId/363256>>.

Table C2: Perinatal NMDS 2011–2012 data items

Data element name	MEteOR identifier
Birth event—birth method, code N	295349
Birth event—birth plurality, code N	269994
Birth event—birth presentation, code N	299992
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
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
Episode of admitted patient care—separation date, DDMMYYYY	270025
Establishment—organisation identifier (Australian), NNX[X]NNNNN	269973
Female (pregnant)—number of cigarettes smoked (per day after 20 weeks of pregnancy), number N[NN]	365445
Female (pregnant)—tobacco smoking indicator (after twenty weeks of pregnancy), yes/no code N	365417
Female (pregnant)—tobacco smoking indicator (first twenty weeks of pregnancy), yes/no code N	365404
Person—area of usual residence, geographical location code (ASGC 2009) NNNNN	426285
Person—country of birth, code (SACC 2008) NNNN	370943
Person—date of birth, DDMMYYYY	287007
Person—Indigenous status, code N	291036
Person—person identifier, XXXXXX[X(14)]	290046
Person—sex, code N	287316
Pregnancy—estimated duration (at the first visit for antenatal care), completed weeks N[N]	379597
Product of conception—gestational age, completed weeks N[N]	298105

Note: Implementation start date 1 July 2011; Implementation end date 30 June 2012.

Source: <<http://meteor.aihw.gov.au/content/index.phtml/itemId/426735>>.

Appendix D: Data quality statement

National Perinatal Data Collection for 2011

Summary of key issues

- The National Perinatal Data Collection (NPDC) provides national information on the pregnancy and childbirth of mothers, and the characteristics and outcomes of their babies.
- It contains information on all births in Australia in hospitals, birth centres and the community.
- It includes information on the Indigenous status of the mother only. Since 2005, all jurisdictions have collected information on Indigenous status of the mother in accordance with the Perinatal National Minimum Data Set (NMDS).
- Neonatal deaths collected as part of the NPDC may be incomplete.
- The Australian Capital Territory data contain a relatively high proportion of New South Wales residents who gave birth in the Australian Capital Territory.

Description

The NPDC is a national population-based cross-sectional data collection of pregnancy and childbirth. The data are based on births reported to the perinatal data collection in each state and territory in Australia. Midwives and other staff, using information obtained from mothers and from hospital or other records, complete notification forms for each birth. Selected information is compiled annually into this national data set by the AIHW National Perinatal Epidemiology and Statistics Unit (NPESU). Information is included in the NPDC on both live births and stillbirths of at least 400 grams birthweight or at least 20 weeks gestation, except in Western Australia, where the births included were at least 20 weeks gestation or, if gestation was unknown, the birthweight was at least 400 grams.

Institutional environment

Data in the NPDC include data collected as part of the Perinatal NMDS and supplied by state and territory health authorities to the Australian Institute of Health and Welfare (AIHW). The NPESU is a collaborating unit of the AIHW. States and territories supplied these data under the terms of the National Health Information Agreement:

National Health Information Agreement

<<http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=6442475527>>.

Data specifications for the NPDC are documented in the AIHW online metadata repository, METeOR, and the Maternity Information Matrix:

METeOR – AIHW online metadata repository

<<http://meteor.aihw.gov.au/content/index.phtml/itemId/181162>>.

Perinatal National Minimum Data Set (NMDS)

<<http://meteor.aihw.gov.au/content/index.phtml/itemId/426735>>.

Maternity Information Matrix <<http://www.npesu.com.au/maternityinformation/>>.

The AIHW is Australia's national agency for health and welfare statistics and information. The role of the AIHW is to provide information on Australia's health and welfare, through statistics and data development that inform discussion and decisions on policy and services.

The AIHW works closely with all state, territory and Australian government health authorities in collecting, analysing and disseminating data. The AIHW is an independent statutory authority within the Health portfolio, and is responsible to the Minister for Health. The Institute is governed by a board, which is accountable to the Parliament of Australia through the minister.

Timeliness

NPDC data are collated annually for calendar years. Most jurisdictions need at least 12 months lead time to undertake data entry, validation and linking with hospitals data as required after the end of the data collection period. Data were requested to be submitted on 30 April 2013. Three jurisdictions supplied required data by this date. Final and useable data was received from all jurisdictions by 30 September 2013. Data are published in the *Australia's mothers and babies* report in November/December each year, about two years after the end of the data collection period. The National Health Information Standards and Statistics Committee agreed that jurisdictions would move to financial year data collection from July 2013.

Accessibility

The AIHW NPESU provides a variety of products that draw upon the NPDC. Published products available are:

- *Australia's mothers and babies* annual report
- *Indigenous mothers and their babies* reports
- *National core maternity indicators* reports.

Ad hoc data are also available on request (charges apply to recover costs).

Data for selected indicators are also published biennially in reports such as *Australia's Health*, the *Aboriginal and Torres Strait Islander Health Performance Framework* report, *A Picture of Australia's Children*, and the *Overcoming Indigenous Disadvantage* report.

The latest publication on the National Perinatal Data Collection is *Australia's mothers and babies 2011*. This is the twenty-first annual report on pregnancy and childbirth in Australia providing national information on women who gave birth and the characteristics and outcomes of their babies.

Interpretability

Supporting information on the use and quality of the NPDC are published annually in *Australia's mothers and babies* (Chapter 1), and available in hard copy or on the AIHW website. Comprehensive information on the quality of Perinatal NMDS elements are published in *Perinatal National Minimum Data Set compliance evaluation 2006 to 2009* (Donnolley & Li 2012). Readers are advised to read caveat information to ensure appropriate interpretation of data. Metadata information for the NPDC are published in METeOR, the *National health data dictionary* and the Maternity Information Matrix.

Relevance

The NPDC comprises data items as specified in the Perinatal National Minimum Data Set plus additional items collected by the states and territories. The purpose of the NPDC is to collect information at birth for monitoring pregnancy, childbirth and the neonatal period for both the mother and baby.

The NPDC is a specification for data collected on all births in Australia in hospitals, birth centres and the community. It includes information for all live births and stillbirths of at least 400 grams birthweight, or at least 20 weeks gestation. 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, gestational age at birth, birthweight and neonatal morbidity and fetal deaths.

A program of national perinatal data development has led to improvements in data provision and reporting. The program involves revision of existing Perinatal NMDS items, data development work on existing perinatal METeOR items and the development of new perinatal items. The scope of the NPDC has not changed. Many of the core data elements have also not changed since the beginning of the data collection in 1991. Definitions and data domains of some individual data elements have changed over time in response to data development; however, in many cases, data can be mapped to create a consistent time series. New data elements introduced into the NPDC will not be available for the entire period. Developments to the Perinatal NMDS are under way to include additional data elements. Collection of data for alcohol use in pregnancy is under development. Indigenous status of the baby has been added to the NMDS, with data collection beginning from 1 July 2012. The number of antenatal care visits, postpartum perineal status, type of analgesia administered, type of anaesthesia administered have been added to the NMDS for collection from 1 July 2012.

Due to the time delay between collection of data by the state and territory perinatal data collections and their inclusion into the NPDC, these items will not appear in published data until after 2013. Enhancement of perinatal data is a priority for the Council of Australian Governments.

Accuracy

Inaccurate responses may occur in all data provided to the NPESU. The NPESU does not have direct access to perinatal records to determine the accuracy of the data provided. However, the NPESU undertakes validation on receipt of data. Data received from states and territories are checked for completeness, validity and logical errors. Potential errors are queried with jurisdictions, and corrections and resubmissions are made in response to these edit queries. The NPESU does not adjust data to account for possible data errors.

Errors may occur during the processing of data by the states and territories or at the NPESU. Processing errors before data supply may be found through the validation checks applied by the NPESU.

Before publication, data are referred back to jurisdictions for checking and review. The NPESU does not adjust the data to correct for missing values. Note that because of data editing and subsequent updates of state/territory databases, numbers reported may differ from those in reports published by the states and territories.

According to the NHDD, Indigenous status is a measure of whether a person identifies as being of Aboriginal and Torres Strait Islander origin (AIHW 2012). All states and territories have a data item to record Indigenous status of the mother on their perinatal form, although there are some differences among the jurisdictions. For 2011, data on the baby's Indigenous status were available from New South Wales, Victoria, Queensland, Tasmania, the Australian Capital Territory and the Northern Territory. Neonatal deaths collected as part of the NPDC may be incomplete. In some jurisdictions, neonatal deaths for babies transferred to another hospital or readmitted to hospital and those dying at home may not be included. Neonatal deaths for the Northern Territory are considered to be incomplete for 2011 as data

do not include deaths occurring outside the Northern Territory. Differences in mortality rates may be due to the small number of deaths which result in statistical fluctuations, under-ascertainment, or actual differences in mortality experience.

Coherence

NPDC data are reported and published annually by the AIHW. While definitions and data domains of some individual data elements have changed over time in response to data development, in many cases it is possible to map coding changes to make meaningful comparisons over time.

The other national data sources on perinatal data are the Australian Bureau of Statistics (ABS) and the AIHW National Hospital Morbidity Database (NHMD). The ABS compiles statistics and publishes reports on registrations of live births and perinatal deaths from data made available by the Registrars of Births, Deaths and Marriages in each state and territory. The ABS collection includes all live births that were not previously registered and stillbirths of at least 400 grams, or at least 20 weeks gestation where birthweight is unknown. The NHMD is compiled from data supplied by the state and territory health authorities. It is a collection of electronic confidentialised summary records for separations (that is, episodes of admitted patient care) in public and private hospitals in Australia.

As these collections differ from NPDC in scope, collection methodology, definitions and reference periods, comparisons between collections should be made with caution.

Appendix E: Data used in figures

Table E1: Number of births, 2002 to 2011

Year	Births
2002	255,095
2003	256,925
2004	257,205
2005	272,419
2006	282,169
2007	294,205
2008	296,925
2009	299,220
2010	299,563
2011	301,810

Note: Provisional data were provided by Vic for 2009 and 2010.

Table E2: Women giving birth in the population, 2002 to 2011 (per 1,000 women aged 15–44)

Rate	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Crude	58.7	58.7	58.5	61.5	63.1	64.9	64.4	63.6	63.6	63.3
Age-standardised rate	58.8	59.0	58.9	62.0	63.7	65.6	64.9	63.9	63.7	63.4

Note: Provisional data were provided by Vic for 2009 and 2010.

Table E3: Primiparous women who gave birth, by maternal age, 2002 and 2011 (per cent)

Maternal age (years)	2002	2011
Younger than 20	82.6	83.9
20–24	53.7	56.1
25–29	44.8	49.4
30–34	34.6	38.1
35–39	25.9	27.3
40 and over	24.0	26.4

Table E4: Women who gave birth, by onset of labour, 2002 to 2011 (per cent)

Onset of labour	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Spontaneous	57.9	57.3	57.6	56.5	56.6	56.6	57.0	56.1	56.0	54.8
Induced	26.6	26.1	25.3	25.6	25.1	25.3	24.8	25.3	25.4	26.0
No labour	15.5	16.5	17.1	17.9	18.3	18.1	18.2	18.4	18.6	19.1

Note: Provisional data were provided by Vic for 2009 and 2010.

Table E5: Women who gave birth, by caesarean section and instrumental birth, 2002 to 2011 (per cent)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Caesarean section	27.0	28.5	29.4	30.3	30.8	30.9	31.1	31.5	31.6	32.3
Instrumental	10.8	10.7	11.0	10.8	10.7	11.2	11.4	11.7	12.0	12.1

Note: Provisional data were provided by Vic for 2009 and 2010.

Table E6: Women who gave birth, by caesarean section by maternal age and hospital sector, 2011 (per cent)

Maternal age (years)	Public	Private
Less than 20	17.9	22.0
20–24	22.2	30.7
25–29	27.3	36.3
30–34	31.9	41.0
35–39	38.0	49.3
40 and over	43.7	59.2

Table E7: Length of stay of five days or more for babies born in hospital, 2002 to 2011 (per cent)

Length of stay	2002	2003	2004	2005	2006	2007	2008	2009 ^(a)	2010 ^(a)	2011
5 days and over	32.6	31.5	30.3	28.2	27.0	25.3	24.1	23.0	22.7	21.4

(a) Excludes Vic.

Note: Only babies who were discharged home are included.

Glossary

age-specific rate: A rate for a specific age group. The numerator and denominator relate to the same age group.

age standardisation: A method of removing the influence of age when comparing populations with different age structures. This is usually necessary because the rates of many diseases vary strongly (usually increasing) with age. The age structures of the different populations are converted to the same 'standard' structure, and then the disease rates that would have occurred with that structure are calculated and compared.

antenatal: The period covering conception up to the time of birth. Synonymous with **prenatal**.

ante partum 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. Between 0 and 2 points are given for each of five characteristics: heart rate, breathing, colour, muscle tone and reflex irritability, and the total score is between 0 and 10.

assisted reproductive technology: Treatments or procedures that involve the in vitro handling of human oocytes (eggs) and sperm or embryos for the purposes of establishing a pregnancy.

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).

body mass index (BMI): The most commonly used method of assessing whether a person is normal weight, underweight, overweight or obese (see obesity). It is calculated by dividing the person's weight (in kilograms) by their height (in metres) squared; that is, $\text{kg} \div \text{m}^2$. For both men and women, underweight is a BMI below 18.5, acceptable weight is from 18.5 to less than 25, overweight is from 25 to less than 30, and obese is 30 and over. Sometimes overweight and obese are combined, and is defined as a BMI of 25 and over.

breech presentation: a fetal presentation in which the buttocks are at the opening of the womb. In a frank breech the legs are straight up in front of the body. In a complete breech the legs are folded, but the feet are above the buttocks. In an incomplete breech the feet are below the buttocks.

caudal anaesthesia or analgesia: the injection of anaesthetic agent into the lowest (caudal) end of the spinal canal.

caesarean section: A method of birth in which a surgical incision is made into the mother's womb via the abdomen to directly remove the baby.

chorioamnionitis: An inflammation, usually from an infection, of the membranes surrounding the fetus.

diabetes (diabetes mellitus): A chronic condition in which the body cannot properly use its main energy source, the sugar glucose. This is due to a relative or absolute deficiency in insulin, a hormone that is produced by the pancreas and helps glucose enter the body's cells

from the bloodstream and then be processed by them. Diabetes is marked by an abnormal build-up of glucose in the blood, and it can have serious short- and long-term effects.

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.

epilepsy: A disturbance of brain function marked by recurrent fits and loss of consciousness.

episiotomy: An incision of the perineum and vagina to enlarge the vulval orifice.

extremely low birthweight: Birthweight of less than 1,000 grams.

first degree laceration: Graze, laceration, rupture or tear of the perineal skin during delivery that may be considered to be slight or that involves fourchette, labia, vagina or vulva.

fetal death (stillbirth): Death before 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.

fetal death rate: Number of fetal deaths per 1,000 total births (fetal deaths plus live births).

forceps: Handheld, hinged obstetric instrument applied to the fetal head and assist birth.

fourth degree laceration: perineal laceration, rupture or tear as in third degree laceration occurring during delivery also involving anal mucosa or rectal mucosa.

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.

gestational diabetes: A form of **diabetes** that is first diagnosed during pregnancy (gestation). It may disappear after pregnancy but signals a high risk of diabetes occurring later on.

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

high blood pressure/hypertension: The definition of high blood pressure (also known as hypertension) can vary but a well-accepted one is from the World Health Organization: a systolic blood pressure of 140 mmHg or more or a diastolic blood pressure of 90 mmHg or more, or [the person is] receiving medication for high blood pressure.

Indigenous: A person of Aboriginal and/or Torres Strait Islander descent who identifies as an Aboriginal and/or Torres Strait Islander.

induction of labour: Intervention to stimulate the onset of labour.

instrumental delivery: Vaginal delivery using forceps or vacuum extraction.

intrapartum fetal death: Fetal death occurring during labour.

intrauterine growth restriction: A fetus whose estimated weight is below the 10th percentile for its gestational age.

isoimmunisation: Development of antibodies directed at the red blood cells of the baby in utero. This occurs when there is an incompatibility between the baby's blood type and that of its mother.

late neonatal death: Death of a liveborn baby after 7 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: Weight of a baby at birth that is 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 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.

neonatal mortality rate: Number of neonatal deaths per 1,000 live births.

non-Indigenous: People who have declared they are not of Aboriginal and Torres Strait Islander descent.

obesity: Marked degree of overweight, defined for population studies as a body mass index of 30 or over.

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.

perinatal mortality rate: Number of perinatal deaths per 1,000 total births (fetal deaths plus live births).

perineal status: Status of the perineum after the birth. It 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 1 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.

primary caesarean section: Caesarean section to mother with no previous history of caesarean section.

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

pudendal: Local anaesthetic to block transmission of pain and sensation by the pudendal nerves.

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.

second degree laceration: perineal laceration, rupture or tear as in first degree laceration occurring during delivery also involving pelvic floor, perineal muscles or vaginal muscles.

sex ratio: Number of male liveborn babies per 100 female liveborn babies.

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.

third degree laceration: perineal laceration, rupture or tear as in second degree laceration occurring during delivery also involving anal floor, rectovaginal septum or sphincter not otherwise specified(NOS).

vacuum extraction: Assisted birth using traction or rotation on a suction cap applied to the baby's head.

very low birthweight: Birthweight of less than 1,500 grams.

List of tables

Table 2.1:	Births and women who gave birth, by state and territory, 2011	6
Table 3.1:	Women who gave birth, by maternal age and state and territory, 2011	9
Table 3.2:	Women who gave birth, by Indigenous status and state and territory, 2011.....	10
Table 3.3:	Women who gave birth, by maternal age and Indigenous status, 2011	11
Table 3.4:	Women who gave birth, by state and territory of usual residence and state and territory of birth, 2011.....	12
Table 3.5:	Women who gave birth, by Remoteness Area of usual residence and state and territory of usual residence, 2011.....	13
Table 3.6:	Women who gave birth, by Remoteness Area of usual residence and Indigenous status, 2011.....	14
Table 3.7:	Women who gave birth, by country of birth and state and territory, 2011	15
Table 3.8:	Women who gave birth, by parity and state and territory, 2011	17
Table 3.9:	Women who gave birth, by parity and maternal age (years), 2011	19
Table 3.10:	Multiparous women who gave birth, by number of previous caesarean sections and state and territory, 2011.....	20
Table 3.11:	Women who gave birth, by whether pregnancy was the result of assisted reproductive technology and state and territory, 2011	21
Table 3.12:	Women who gave birth, by number of antenatal visits and state and territory, 2011	22
Table 3.13:	Women who gave birth, by duration of pregnancy at first antenatal visit and state and territory, 2011	23
Table 3.14:	Women who gave birth, by tobacco smoking status during pregnancy and state and territory, 2011.....	24
Table 3.15:	Women who gave birth, by tobacco smoking status during the first 20 weeks of pregnancy and state and territory, 2011	25
Table 3.16:	Women who gave birth, by tobacco smoking status after 20 weeks of pregnancy and state and territory, 2011.....	26
Table 3.17:	Women who gave birth, by body mass index and state and territory, 2011	28
Table 3.18:	Women who gave birth, by actual place of birth and state and territory, 2011	29
Table 3.19:	Women who gave birth, by intended place of birth and state and territory, 2011	30
Table 3.20:	Women who gave birth, by duration of pregnancy and state and territory, 2011	32
Table 3.21:	Women who gave birth, by plurality and state and territory, 2011.....	33
Table 3.22:	Women who gave birth, by onset of labour and state and territory, 2011.....	35
Table 3.23:	Women who gave birth and had an induction, by main reason for induction and state and territory, 2011 ^(a)	37
Table 3.24:	Women who gave birth, by whether analgesia was administered to relieve pain for labour and state and territory, 2011 ^(a)	38
Table 3.25:	Types of analgesia administered to relieve pain for labour, by state and territory, 2011	39
Table 3.26:	Women who gave birth and had caesarean section or instrumental vaginal deliveries, by whether anaesthetic was administered for the operative delivery and state and territory, 2011.....	40
Table 3.27:	Types of anaesthetic administered for caesarean sections, by state and territory, 2011	41

Table 3.28:	Types of anaesthetic administered for instrumental vaginal deliveries, by state and territory, 2011.....	42
Table 3.29:	Women who gave birth, by presentation at birth and state and territory, 2011	43
Table 3.30:	Women who gave birth, by method of birth and state and territory, 2011	45
Table 3.31:	Women who gave birth by caesarean section, by age and state and territory, 2011	47
Table 3.32:	Women who gave birth by caesarean section, by main reason for caesarean section and state and territory, 2011	48
Table 3.33:	Method of birth, by maternal age (years), 2011	49
Table 3.34:	Women who gave birth, by Indigenous status, method of birth and state and territory, 2011	50
Table 3.35:	Women who gave birth by caesarean section, by Indigenous status and age, 2011	51
Table 3.36:	Primary caesarean sections, by parity and state and territory, 2011	51
Table 3.37:	Multiparous mothers who had previous caesarean section, by current method of birth and state and territory, 2011.....	52
Table 3.38:	Women who gave birth to term singleton babies and had a caesarean section, by gestational age and onset of labour, 2011	53
Table 3.39:	Women who gave birth vaginally, by perineal status and state and territory, 2011	54
Table 3.40:	Women who gave birth, by selected medical and obstetric conditions and state and territory, 2011.....	56
Table 3.41:	Hospitals and birth centres, by number of women who gave birth and state and territory, 2011.....	57
Table 3.42:	Women who gave birth in hospital, by hospital sector and state and territory, 2011.....	58
Table 3.43:	Women who gave birth in hospital, by admitted patient election status and state and territory, 2011.....	58
Table 3.44:	Women who gave birth in hospital, by method of birth, hospital sector and state and territory, 2011.....	60
Table 3.45:	Women who gave birth in hospital, by length of antenatal stay and state and territory, 2011	62
Table 3.46:	Women who gave birth in hospital, by length of postnatal stay and state and territory, 2011.....	63
Table 3.47:	Women who gave birth in hospital, by length of postnatal stay and method of birth, 2011	64
Table 3.48:	Women who gave birth in hospital, by mode of separation and state and territory, 2011	65
Table 3.49:	Selected characteristics of women who gave birth at home, 2011	66
Table 4.1:	Births, by month of birth, 2011.....	68
Table 4.2:	Live births, by sex and state and territory, 2011.....	69
Table 4.3:	Births, by maternal Indigenous status and state and territory, 2011	70
Table 4.4:	Births, by gestational age and birth status, 2011	72
Table 4.5:	Preterm births, by gestational age and state and territory, 2011.....	73
Table 4.6:	Births, by gestational age and plurality, 2011	74
Table 4.7:	Live births, by birthweight and state and territory, 2011.....	75
Table 4.8:	Births, by birthweight and birth status, 2011	76
Table 4.9:	Live births, by birthweight and plurality, 2011	77

Table 4.10:	Live births of Aboriginal and Torres Strait Islander mothers, by birthweight and state and territory, 2011.....	78
Table 4.11:	Births, by presentation at birth and plurality, 2011	79
Table 4.12:	Births, by method of birth and plurality, 2011.....	79
Table 4.13:	Babies with breech presentations, by method of birth and state and territory, 2011	80
Table 4.14:	Singleton term babies with breech presentations, by method of birth and state and territory, 2011.....	81
Table 4.15:	Live births, by Apgar score at 5 minutes and state and territory, 2011.....	82
Table 4.16:	Live births, by active resuscitation measures at birth and state and territory, 2011	83
Table 4.17:	Live births, by admission to special care nursery or neonatal intensive care unit and state and territory, 2011.....	84
Table 4.18:	Babies born in hospital, by length of stay and state and territory, 2011	85
Table 4.19:	Babies born in hospital, by mode of separation and state and territory, 2011	87
Table 5.1:	Fetal, neonatal and perinatal deaths, by state and territory, 2011	89
Table 5.2:	Fetal, neonatal and perinatal deaths, by state and territory of mother's usual residence, 2011	90
Table 5.3:	Rates of fetal, neonatal and perinatal deaths, by selected characteristics, 2011	91
Table 5.4:	Perinatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and state and territory, 2011.....	95
Table 5.5:	Perinatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and gestational age, 2011	96
Table 5.6:	Fetal and neonatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and gestational age, 2011	97
Table 5.7:	Perinatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and plurality, 2011	99
Table 5.8:	Singleton perinatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and gestational age, 2011	100
Table 5.9:	Perinatal deaths, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and maternal age, 2011.....	101
Table 5.10:	Perinatal deaths to women who gave birth in hospital, by Perinatal Society of Australia and New Zealand Perinatal Death Classification and hospital sector, 2011	102
Table C1:	Perinatal NMDS 2010–2011 data items.....	108
Table C2:	Perinatal NMDS 2011–2012 data items.....	109
Table E1:	Number of births, 2002 to 2011	114
Table E2:	Women giving birth in the population, 2002 to 2011 (per 1,000 women aged 15-44).....	114
Table E3:	Primiparous women who gave birth, by maternal age, 2002 and 2011 (per cent).....	114
Table E4:	Women who gave birth, by onset of labour, 2002 to 2011 (per cent).....	114
Table E5:	Women who gave birth, by caesarean section and instrumental birth, 2002 to 2011 (per cent).....	115
Table E6:	Women who gave birth, by caesarean section by maternal age and hospital sector, 2011 (per cent).....	115
Table E7:	Length of stay of five days or more for babies born in hospital, 2002 to 2011 (per cent).....	115

List of figures

- Figure 1.1: Structure of the National Perinatal Data Collection2
- Figure 2.1: Number of births, 2002 to 20116
- Figure 2.2: Women giving birth, 2002 to 20117
- Figure 3.1: First-time mothers in each maternal age group, 2002 and 2011 (per cent)18
- Figure 3.2: Onset of labour, all mothers, 2002 to 2011 (per cent)36
- Figure 3.3: Caesarean section and instrumental deliveries, 2002 to 2011 (per cent)46
- Figure 3.4: Caesarean sections, by maternal age and hospital sector, 2011 (per cent)61
- Figure 4.1: Distribution of gestational age, 2011 (per cent)71
- Figure 4.2: Length of stay of five days or more for babies born in hospital, 2002 to 2011
(per cent)86
- Figure 5.1: Definitions of perinatal mortality88
- Figure 5.2: Perinatal and infant death periods88
- Figure B1: Schematic flowchart of perinatal data collection107

Related publications

This report, *Australia's mothers and babies 2011*, is part of an annual series. The earlier editions and any published subsequently can be downloaded for free from the AIHW website <<http://www.aihw.gov.au/mothers-and-babies-publications/>>. The website also includes information on ordering printed copies.

The following publications relating to mothers and babies might also be of interest:

- AIHW National Perinatal Epidemiology and Statistics Unit and AIHW 2013. National core maternity indicators. Cat. no. PER 58. Canberra: AIHW.
- Donnelly N & Li Z 2012. Perinatal National Minimum Data Set compliance evaluation 2006 to 2009. Perinatal statistics series no. 26. Cat. no. PER 54. Sydney: AIHW National Perinatal Epidemiology and Statistics Unit.
- Leeds K, Gourley M, Laws P, Zhang J, Al-Yaman F & Sullivan EA 2007. Indigenous mothers and their babies, Australia 2001–2004. Perinatal statistics series no. 19. Cat. no. PER 38. Canberra: AIHW.
- Macalldowie A, Wang YA, Chambers GM & Sullivan EA 2013. Assisted reproductive technology in Australia and New Zealand 2011. Sydney: National Perinatal Epidemiology and Statistics Unit, the University of New South Wales.

References

- ABS (Australian Bureau of Statistics) 2008. Standard Australian Classification of Countries (SACC). ABS cat. no. 1269.0. Canberra: ABS.
- ABS 2012. Births, Australia, 2011. ABS cat. no. 3301.0. Canberra: ABS.
- ABS 2013. Cause of death, Australia, 2011. ABS cat. no. 3303.0. Canberra: ABS.
- AIHW (Australian Institute of Health and Welfare) 2012. National health data dictionary, Version 16. National health data dictionary series. Cat. no. 16. HWI 119. Canberra: AIHW.
- CCOPMM (The Consultative Council on Obstetric and Paediatric Mortality and Morbidity) 2012. Annual report for the year 2009, incorporating the 48th survey of perinatal deaths in Victoria. Melbourne: Department of Health.
- CMACE & RCOG (Centre for Maternal and Child Enquiries & Royal College of Obstetricians and Gynaecologists) 2010. Management of Women with Obesity in Pregnancy. Available at: <<http://www.rcog.org.uk/womens-health/clinical-guidance/management-women-obesity-pregnancy>>.
- COAG (Council of Australian Governments) 2012, National Healthcare Agreement 2012. Intergovernmental agreement on federal financial relations. Available at: <http://www.federalfinancialrelations.gov.au/content/national_agreements.aspx>.
- Donnolley N & Li Z 2012. Perinatal National Minimum Data Set compliance evaluation 2006 to 2009. Perinatal statistics series no. 26. Cat. no. PER 54. Canberra: AIHW National Perinatal Epidemiology and Statistics Unit.
- Laws PJ & Sullivan EA 2004. Australia's mothers and babies 2002. Perinatal statistics series no. 15. Cat. no. PER 28. Canberra: AIHW National Perinatal Statistics Unit.
- Laws PJ, Grayson N & Sullivan EA 2006. Smoking and pregnancy. Cat. no. PER 33. Canberra: AIHW National Perinatal Statistics Unit.
- Laws PJ, Abeywardana S, Walker J & Sullivan EA 2007. Australia's mothers and babies 2005. Perinatal statistics series no. 20. Cat. no. PER 40. Canberra: AIHW National Perinatal Statistics Unit.
- Li Z, Zeki R, Hilder L & Sullivan EA 2012. Australia's mothers and babies 2010. Perinatal statistics series no. 27. Cat. no. PER 57. Canberra: AIHW National Perinatal Epidemiology and Statistics Unit.
- Scollo, MM, Winstanley, MH [editors]. Tobacco in Australia: Facts and Issues. Third Edition. Melbourne: Cancer Council Victoria; 2008. Available from <www.TobaccoInAustralia.org.au>.
- SIMC (Statistical Information Management Committee) 2007. Guidelines for the use and disclosure of health data for statistical purposes. Canberra: AIHW.
- WHO (World Health Organization) 1992. International Statistical Classification of Diseases and Related Health Problems: 10th revision. Geneva: WHO.
- WHO 2011. Indicator code book: world health statistics – world health statistics indicators. Geneva: WHO.

In 2011, 297,126 women gave birth to 301,810 babies in Australia. This was an increase of 2,247 births (0.8%) than reported in 2010, and a total increase of 18.3% since 2002. Nationally, the proportion of teenage mothers (younger than 20) declined from 3.9% in 2010 to 3.7% in 2011, compared with 4.9% in 2002.