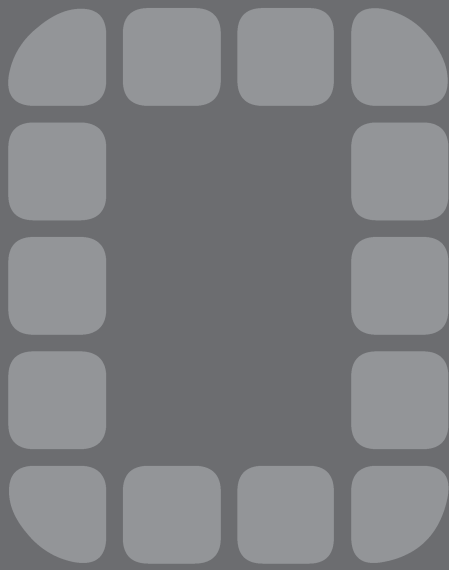
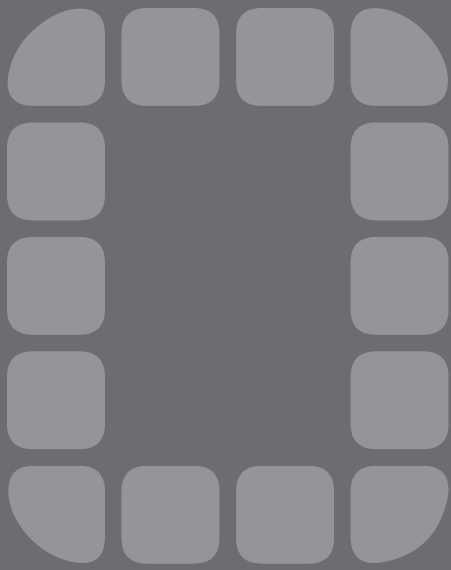


Perinatal Statistics in Western Australia, 2006

Twenty-fourth Annual Report of the
Western Australian Midwives' Notification System



September 2008





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Maternal and Child Health
Information Management and Reporting
Department of Health
Western Australia

Statistical series number 83

ISSN: 0816-2999

Acknowledgments

The authors wish to thank the midwives of Western Australia for continuing to provide high-quality information to the Department of Health through the use of electronic data entry packages and the 'Notification of Case Attended' form for all births that occurred in 2006.

Sincere thanks are also extended to:

Maternal and Child Health Unit clerical staff who processed and coded the information;

Dr Carol Bower of the Birth Defects Register for providing the information on birth defects; and

The Registry of Births, Deaths and Marriages for providing additional information on births and perinatal deaths in Western Australia.

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Citation

The citation below should be used in reference to this publication.

Gee V, Ernstzen A, Le M (2008). *Perinatal Statistics in Western Australia, 2006*. Twenty-fourth Annual Report of the Western Australian Midwives' Notification System. Department of Health, Western Australia.

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The Midwives' Notification System compiles information on all births in Western Australia. This report presents an overview of data on births for 2006 in terms of maternal demography, procedures and infant outcomes. It also describes trends over the 15-year period from 1992 to 2006. Information on women resident in this state who gave birth outside Western Australia during 2006 is not included in this report.

Maternal Demographic Information

- In 2006, 28,254 women gave birth in Western Australia.
- Teenage mothers (≤ 19 years) represented 5.4% (n=1515) and mothers aged 35 years or more represented 20.5% (n=5781) of women who gave birth. While the proportion of teenage mothers has remained stable, the group of older mothers has increased significantly during the past 15 years.
- Aboriginal mothers represented 6.3% (n=1789) of women who gave birth and Aboriginal women on average had birth rates almost twice (1.8) as high as non-Aboriginal women.
- Of births to teenage mothers, the proportion to Aboriginal mothers was six times greater than to non-Aboriginal mothers.
- The majority (98.9%) of women gave birth in hospital and 194 (0.7%) women gave birth at home as planned. The remainder (0.4%) were unplanned births outside hospital.

Pregnancy Profile

- First-time mothers, who had an average age of 27.6 years, represented 41.8% of women who gave birth in 2006. Trend data shows that there has been no substantial increase in this proportion over the past 15 years.
- Among women aged 35 years or more, 26.9% (n=1555) gave birth for the first time.
- The Age Specific Birth Rate of women aged 15–19 years decreased over the past 15 years from 25.4 births per 1000 women in 1992 to 21.2 births per 1000 women in 2006. The rate for women aged 35–44 years increased from 20.4 births per 1000 women in 1992 to 37.3 births per 1000 women in 2006.
- Complications of pregnancy were recorded for 34.7% of women. The more common complications were threatened abortion in early pregnancy (4.5%), premature rupture of membranes (4.4%), gestational diabetes (4.5%), pre-eclampsia (3.2%), and urinary tract infection (3.6%).
- A significant proportion of women who gave birth in 2006 had pre-existing medical conditions recorded. The most frequent were diseases of the respiratory system (ICD-10-AM, J00–J99) (10.8%) and mental and behavioural disorders (ICD-10-AM, F00–F99) (5.5%).

Labour and Delivery

- Labour was spontaneous in onset for 51.1% of women and was induced for 27.8%. A further 21.1% of mothers did not experience labour their babies, being delivered by caesarean section. Trend data indicates that there was a significant increase over the 15-year period in the proportion of women who did not experience labour.
- The caesarean section rate in 2006 was 32.7%. This figure has risen from 19.2% in 1992, and represents one of the most striking features of modern obstetrics. Of the women recorded as having had a previous caesarean section, 87.7% (n=4002) were again delivered by caesarean section.
- Among women who established labour spontaneously (51.1% of all births), only 23.6% proceeded through labour without augmentation and achieved a spontaneous vaginal birth. Thus, fewer than a quarter of births occurred without intervention to the processes of labour or delivery.

Baby Characteristics

- In 2006, 28,665 babies were born in Western Australia.
- The crude birth rate steadily declined from 15.2 per 1000 total population in 1992 to 12.6 per 1000 total population in 2003 and has risen to 13.8 per 1000 total population in 2006.
- Singleton pregnancies occurred in 98.6% of the total 28,254 women who gave birth in 2006. The 402 (1.4%) women with a multiple pregnancy gave birth to 813 twin or triplet babies. There were no quadruplet or quintuplet pregnancies recorded in 2006. There has been minimal difference in these proportions over the previous 15-year period.
- Gestational age and birthweight are important factors affecting the survival of a baby. In 2006, almost two thirds of babies (66.5%) weighed 3000–3999 grams at birth, and the average birthweight was 3336 grams. The percentage of low birthweight (<2500grams) babies was 7.0%, and this proportion has remained steady over the previous 15-year period.
- In 2006 the percentage of low birthweight babies to mothers identified as Aboriginal (14.9%) was more than twice that of babies born to non-Aboriginal women (6.4%).
- There were 388 (1.4%) babies born as low pre-term (23–31 weeks gestation) in 2006. Of these, the majority were born in public Teaching Hospitals (88.9%), reflecting high referral rates to these institutions.
- Perinatal mortality among the babies born in 2006 indicated that there were 208 fetal deaths and 65 neonatal deaths, providing a perinatal mortality rate of 9.5 perinatal deaths per 1000 total births. The perinatal mortality rate has declined over the previous 15 year period, from 11.0 per 1000 total births in 1992.
- The perinatal mortality rate in 2006 for babies of Aboriginal mothers was 24.9 per 1000 compared with a rate of 8.5 per 1000 for babies of non-Aboriginal women. The perinatal mortality rate for babies of Aboriginal mothers has fluctuated during the 15 year period from 1992.

This is the Twenty-fourth Annual Report on Perinatal Statistics in Western Australia from the Midwives' Notification System. All routine reports from the collection are in statistical form without identification of individual patients, midwives, doctors or hospitals.

The report contains information on women who gave birth in 2006 and their babies. Pregnancies that resulted in a final product of conception at 20 weeks or more gestation and/or a birth weight equal to or greater than 400 grams have been included. These criteria are in accordance with national reporting methods.

Western Australia's statutory reporting requirements are outlined in section 355 of the *Health Act 1911*. Under the *Health (Notifications by Midwives) Regulations 1994*, midwives are required to provide the Department of Health with notifications of cases attended. These notifications are received predominantly by electronic data transmission, with the remainder received in paper format. The Maternal and Child Health personnel check the data for completeness and, if necessary, follow up for additional details. Information received in paper format is transcribed into a coded format, using the World Health Organisation - International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification² (ICD-10-AM, 5th Ed.) to code morbidity.

To ensure the complete ascertainment of perinatal births and deaths within Western Australia, information is collated from the Midwives' Notification System, Hospital Morbidity System and the Registry of Births, Deaths and Marriages. These data are maintained as state-wide data collections.

1. Maternal Demographic Information

1.1 Age

In 2006, 28,254 women gave birth in Western Australia. This represented an increase of 6.5% on 2005³ and is the highest number of births on record for the state.

Maternal age ranged between 13 and 49 years with a mean of 29.4 years, while the average age of first-time mothers was 27.6 years.

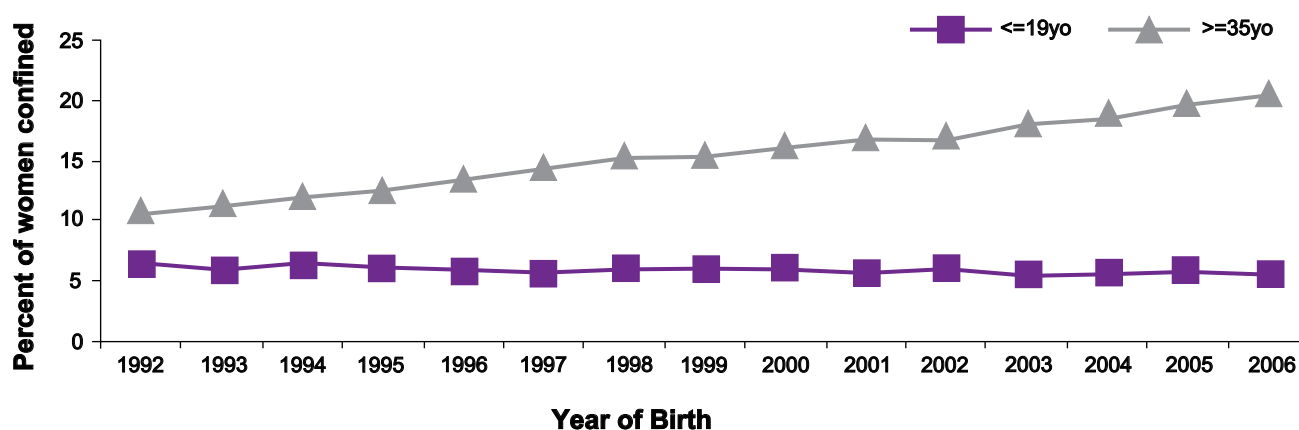
Table 1. Age and Aboriginality of women who gave birth in Western Australia, 2006

	Aboriginality of Mother				Total No.
	Aboriginal		Non-Aboriginal		
	No.	%	No.	%	
≤19	430	24.0	1085	4.1	1515
20-24	595	33.3	4040	15.3	4635
25-29	395	22.1	7032	26.6	7427
30-34	246	13.8	8650	32.7	8896
35-39	106	5.9	4780	18.1	4886
40-44	17	1.0	844	3.2	861
≥45	-	-	34	0.1	34
Total	1789	100	26465	100	28254

The proportion of births to teenage mothers has remained fairly constant over the past decade being 6.0% or less since 1996. The 2006 figure of 5.4% is the lowest recorded.

In the past 15 years, there has been a steady increase in the proportion of women aged 35 years and older who gave birth rising from 10.6% in 1992 to 20.5% in 2006 (see Figure 1).

Figure 1. Trends in maternal age in Western Australia, 1992–2006



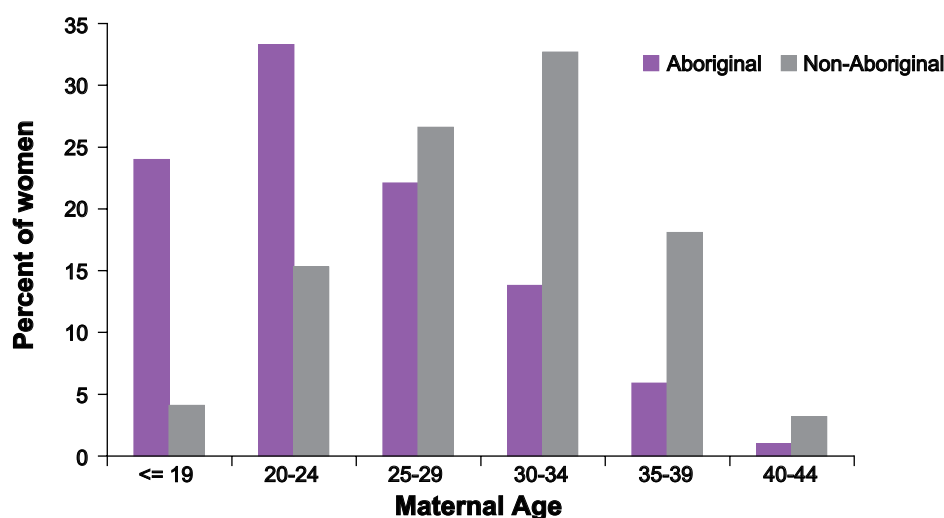
1.2 Aboriginality

Aboriginal women represented 6.3% of all women who gave birth and 10.1% of all Aboriginal women aged 15–44 in 2006.

Childbearing women usually occurs at an earlier age among women who identify as Aboriginal.

Among births to teenage mothers, the proportion of Aboriginal mothers was six times greater than for non-Aboriginal mothers.

Figure 2. Age distribution by Aboriginality of women giving birth in Western Australia, 2006



Among women who were reported as being non-Aboriginal, 54.1% of births occurred in women aged 30 years or more (see Figure 2).

1.3 Place of Birth

The place of birth was recorded for 27,596 (97.7%) women who gave birth in Western Australia. Of these, more than one-quarter were born overseas.

Table 2. Place of birth of women who gave birth in Western Australia, 2006

Place of Birth	Percentage (n=27,596)
Australia	74.4
United Kingdom & Ireland	7.7
Asia	6.9
Africa	3.8
New Zealand	3.3
Other Europe	2.4
Americas & Pacific Islands	1.5

1.4 Conjugal State

At the time of giving birth 91.4% of women in Western Australia were reported as being married or in a de facto relationship.

Single women represented 7.2% and the remaining women (1.4%) were either separated, divorced or widowed.

1.5 Health Region of Residence

Three-quarters (75.1%) of women who gave birth in 2006 provided their usual residential address as being within a metropolitan health region, while 24.8% reported their usual place of residence as within one of the seven non-metropolitan health regions, and 32 (0.1%) women were non-residents of Western Australia.

Among birthing women who identified as Aboriginal, 36.6% were metropolitan residents and 63.3% were resident in a non-metropolitan region.

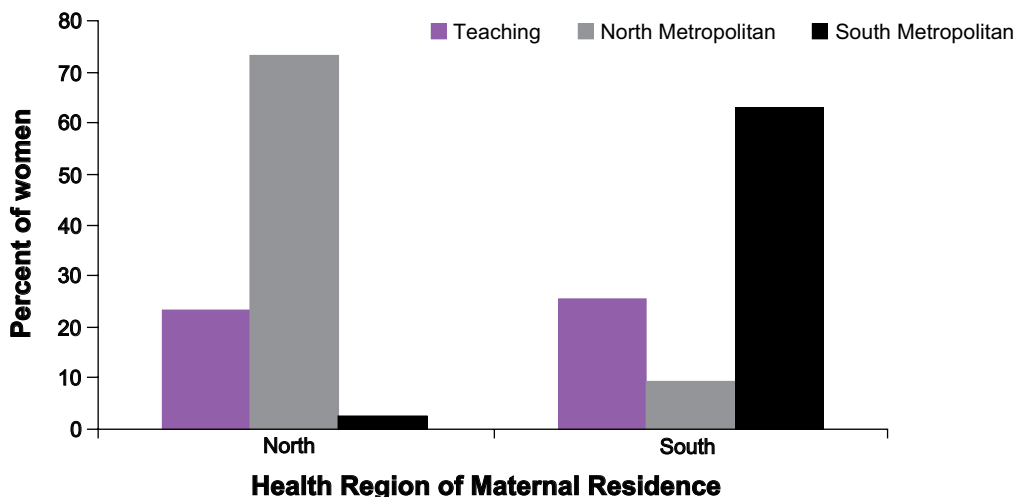
Conversely, 77.7% of non-Aboriginal women were resident in a metropolitan health region, 22.2% were resident in a non-metropolitan health region and 0.1% were not usual residents of Western Australia.

Table 3. Health region of residence and Aboriginality of women who gave birth in Western Australia, 2006

Health Region of Residence	Total	Aboriginality of Mother	
		Aboriginal %	Non-Aboriginal %
Metropolitan			
North Metropolitan	11149	16.4	41.0
South Metropolitan	10065	20.2	36.7
Total Metropolitan	21214	36.6	77.7
Non-Metropolitan			
Kimberley	675	24.0	0.9
Pilbara	838	9.4	2.5
Midwest	921	11.2	2.7
Wheatbelt	921	4.5	3.2
Goldfields	966	7.5	3.1
Great Southern	755	3.1	2.7
South West	1932	3.6	7.1
Total Non-Metropolitan	7008	63.3	22.2
Outside WA	32	0.1	0.1
Overall State	28254	100.0	100.0

The majority of women resident in both the North and South Metropolitan Health Regions gave birth in hospitals within their health region or in a metropolitan teaching hospital (see Figure 3).

Figure 3. Place of birth for women resident in metropolitan Health Regions in Western Australia, 2006



In 2006, 5545 (19.8%) women in Western Australia gave birth at a hospital outside the metropolitan area. A further 1445 (5.2%) women with a non-metropolitan residential address gave birth in a metropolitan hospital.

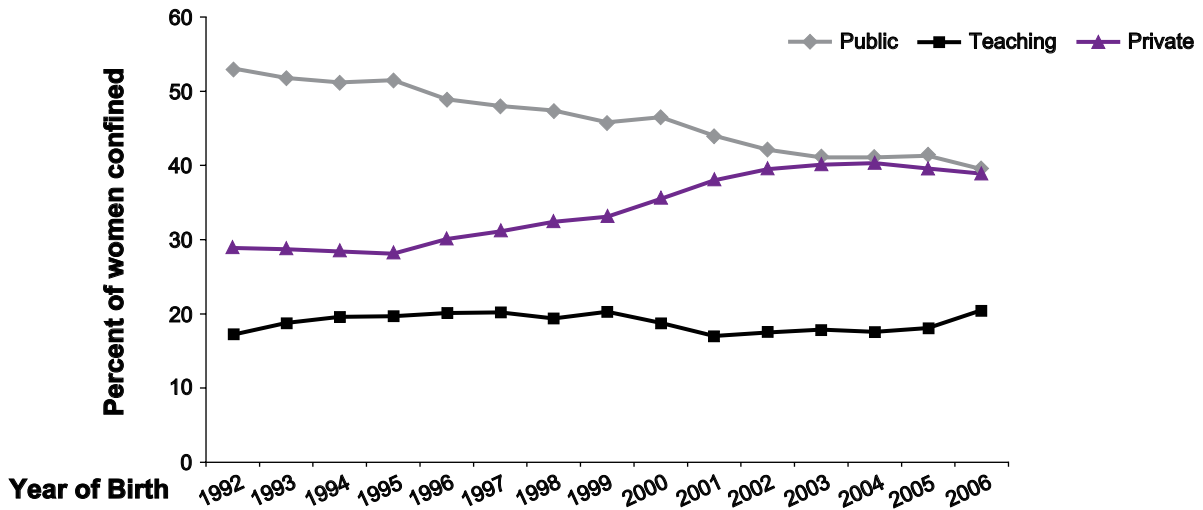
1.6 Place of Birth

Of the 28,254 women who gave birth in Western Australia in 2006, 98.9% gave birth in a hospital.

Non-hospital births included 107 births before arrival at hospital (BBA) and 194 babies born at home as planned.

Trend data indicates that the proportion of births at private hospitals over the past 15 years has increased. However, the increase mostly occurred in the period 1997–2001 with the establishment of public patient facilities at two large private hospitals. These two hospitals provide care for public patients in private facilities. The proportion of births at teaching hospitals has remained relatively constant (see Figure 4).

Figure 4. Trend in use of public and private facilities for women giving birth in Western Australia, 1992–2006



Plurality of pregnancy influenced the place of birth, with metropolitan teaching hospitals being the place of birth for 49.5% of women with multiple pregnancy and 20.1% of those with a singleton pregnancy (see Figures 5 and 6).

Figure 5. Place of birth for singleton births in Western Australia, 2006

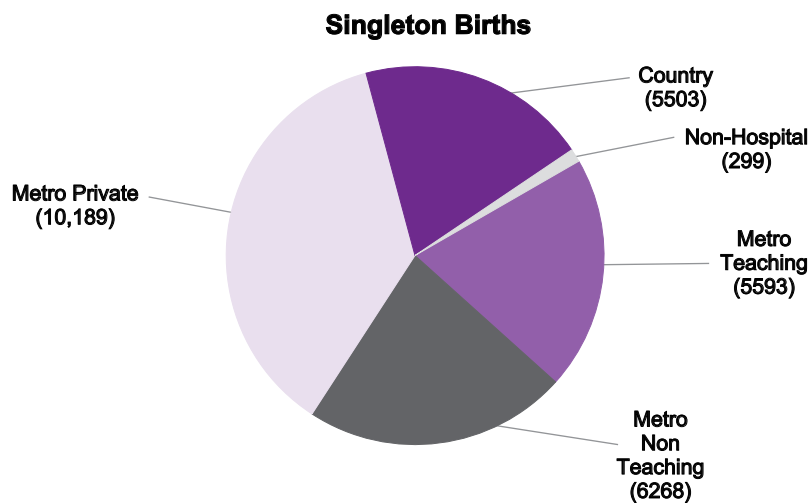
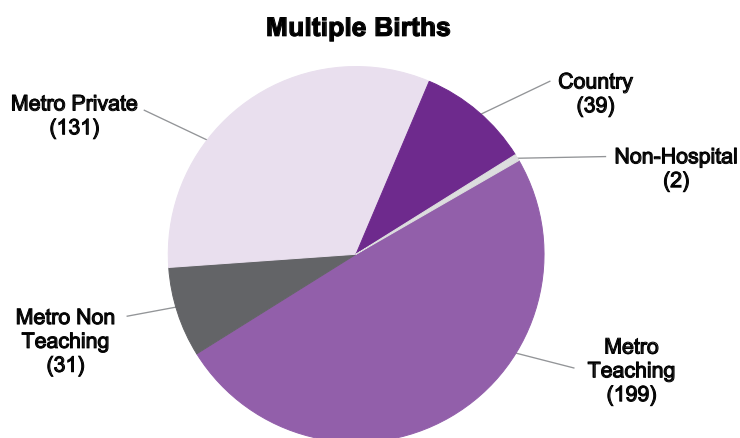


Figure 6. Place of birth for multiple births in Western Australia, 2006



The trend for homebirth has remained relatively constant representing between 0.4% and 0.7% of women who gave birth over the past 15 years.

The Department of Health received notification of a further 39 women in 2006 who had planned a birth at home but because of complications were referred to hospital care, being transferred either during pregnancy or during labour and delivery. These women and their babies are included in hospital births.

Further information on Maternal Demographics 2006 is available in Appendix B (Tables 1-10).

2.1 Previous Pregnancies

Almost forty two percent (41.8%) of the women who gave birth in Western Australia during 2006 were giving birth for the first time.

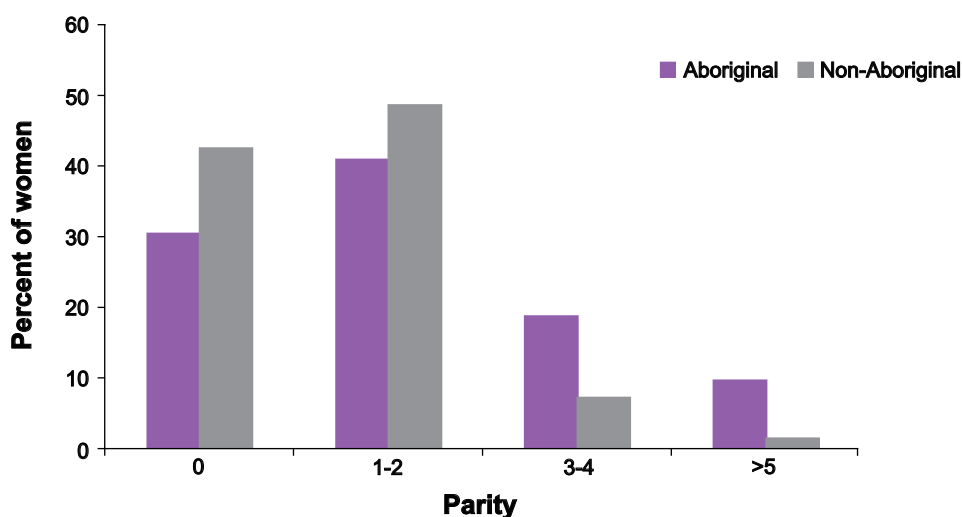
The highest number of recorded previous pregnancies was 16 with a mean of 1.5 previous pregnancies per women.

In 2006 the highest number of previous births of 20 weeks or more gestational age was 13.0 with a mean of 1.0 birth.

The percentage of non-Aboriginal women giving birth for the first time (42.5%) was higher than for Aboriginal first-time mothers (30.5%).

Of women giving birth, the percentage having their fifth or more child among Aboriginal women (9.7%) was more than six times the percentage (1.5%) among non-Aboriginal women (see Figure 7).

Figure 7. Parity and Aboriginality of women who gave birth in Western Australia, 2006



Of the 11,805 women giving birth for the first time:

- 10.6% were teenage (<20 years)
- 76.6% were aged 20-34 years
- 12.8% were aged 35 years or more.

Among the 5,781 women giving birth who were aged 35 years or more, 1,512 (26.2%) were having their first baby.

Women with either one or two previous births comprised:

- 1.9% teenage women
- 74.1% women aged 20-34
- 24.0% women aged 35 or more.

Table 4. Parity and age of women who gave birth in Western Australia, 2006

Parity	Total No.	Maternal Age (years)		
		≤ 19%	20-34%	≥ 35%
0	11805	82.8	43.1	26.2
1-2	13624	17.0	48.2	56.5
3-4	2258	0.2	7.2	12.8
≥5	567	-	1.5	4.5
Total	28254	100.0	100.0	100.0

Trend data shows that the gradual increase in the proportion of mothers having their first birth experience is consistent with reduced family size.

Trend data has also shown that the average parity (births before current pregnancy) has remained constant during the 15-year period from 1992 to 2006 ranging between 1.00 and 1.06, with the average parity remaining low for 2006 at 1.02.

2.2 Socio-economic Status

Socio-economic status was assessed for all women who gave birth in Western Australia in 2006 according to their Socio-Economic-Index-For-Areas (SEIFA) Disadvantage Index.

Group I has the highest socio-economic status and the highest proportion (30.8%) of births to women aged ≥ 35 years old. Conversely, group V has the lowest socio-economic status and the highest proportion (9.9%) of births to teenage woman(≤ 19 years old).

Table 5. Socioeconomic status and age of women who gave birth in Western Australia, 2006

SEIFA Index	Total No.	Maternal Age (years)		
		≤ 19 %	20-34 %	≥ 35 %
I	7007	1.9	67.4	30.8
II	3833	4.4	76.6	19.0
III	5231	5.0	76.1	19.0
IV	6355	6.3	76.6	17.1
V	5442	9.9	76.4	13.7
Total	27868	5.4	74.1	20.5

Note: 386 women could not be classified using this index.

2.3 Age-Specific Birth Rates

Overall the birth rate of Aboriginal women was 101.8 per 1000 women of child-bearing age (15–44 years old) compared with the birth rate for non-Aboriginal women of 64.0 per 1000 women of child-bearing age (15–44 years old).

Among the 15–19 year age group the birth rate of Aboriginal women (107.0 per 1000) was more than six times the rate for non-Aboriginal women (16.4 per 1000).

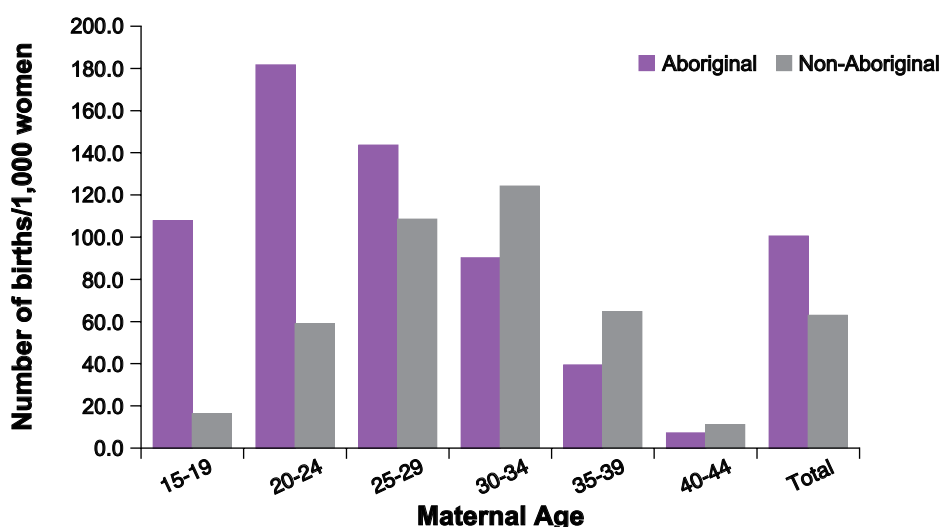
For women in the 20–24 year age group, the birth rate for Aboriginal women (184.9 per 1000) was three times the rate for non-Aboriginal women (59.2 per 1000) (see Figure 8).

For women in the 30–34 year age group, the birth rate for Aboriginal women (91.1 per 1000) was lower than the rate for non-Aboriginal women (126.4 per 1000).

Trend data indicates that the age specific birth rate for women 15–19 years decreased over the past 15 years from 25.4 births per 1000 in 1992 to 21.4 per 1000 in 2006.

Trend data also indicates that the birth rate for women aged 35–44 increased from 20.4 births per 1000 women in 1992 to 37.3 per 1000 women in 2006.

Figure 8. Age specific birth rates by 5-year age groups and Aboriginality in Western Australia, 2006



2.4 Complications of Pregnancy

Over half (65.3%) of the women who gave birth during 2006 were recorded as having had no complications of pregnancy.

Of the women who did experience complications the highest proportions were threatened abortion before 20 weeks and gestational diabetes (each 4.5%) and premature rupture of membranes (4.4%).

Table 6. Selected complications of pregnancy of women who gave birth in Western Australia, 2006

Complications of Pregnancy ¹	No.	% of women
Threatened abortion	1273	4.5
Threatened preterm labour	789	2.8
Urinary tract infection	1011	3.6
Pre-eclampsia	895	3.2
Antepartum haemorrhage		
- placenta praevia	181	0.6
- placental abruption	109	0.4
- other	727	2.6
Premature rupture of membranes	1240	4.4
Gestational diabetes	1285	4.5
Other	4683	16.6
No complications of pregnancy	18450	65.3

¹ A woman may have more than one complication of pregnancy.

2.5 Medical Conditions

There were 10,509 reported instances of pre-existing medical conditions recorded among the 28,254 women who gave birth during 2006.

No pre-existing medical condition was recorded for 18,725 women (66.3%).

Table 7. Selected pre-existing medical conditions of women who gave birth in Western Australia, 2006

Medical Conditions ¹	No.	% of women
Diseases of the respiratory system (J00–J99)	3052	10.8
Mental and behavioural disorders (F00–F99)	1559	5.5
Certain infectious & parasitic diseases (A00–B99)	1279	4.5
Endocrine, nutritional and metabolic diseases (E00–E89)	768	2.7
Diseases of the genitourinary system (N00–N99)	613	2.2
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50–D89)	611	2.2
Pregnancy, childbirth and the puerperium (O00–O99)	488	1.7
Diseases of the circulatory system (I00–I99)	486	1.7
Symptoms, signs & abnormal clinical & laboratory findings, not elsewhere Classified (R00–R99)	304	1.1
Other ICD category	1349	4.8

¹ A woman may have more than one medical condition.

2.6 Procedures and Treatments

There were 49,578 procedures and treatments provided to 27,756 women who gave birth in 2006.

The most common procedure was uterine ultrasound, with 97.8% of all women giving birth having undergone this procedure.

Table 8. Procedures and treatments provided to women who gave birth in Western Australia, 2006

Procedures and Treatments ¹	No.	% of women who had procedures & treatment
Ultrasound	27149	97.8
CTG intrapartum ²	12264	44.2
CTG antepartum ²	8704	31.4
Fertility treatment	670	2.4
Amniocentesis	648	2.3
CVS/placental biopsy ³	82	0.3
Cervical suture	61	0.2

¹ A Woman may have more than one procedure or treatment.

² CTG – Cardiotocography.

³ CVS – Chorionic Villus Sampling.

Further information on Pregnancy Profiles 2006 is available in Appendix B (Tables 11-18).

3. Labour and Delivery

3.1 Onset of Labour

Labour established spontaneously for more than 51.1% of the women who gave birth in Western Australia in 2006.

Induction of labour occurred for 27.8% of all women who gave birth and 21.1% did not experience labour, being delivered by caesarean section.

Among those women with a multiple pregnancy:

- 31.6% had a spontaneous onset of labour
- 21.6% had labour induced
- 46.8% did not experience labour (see Figure 9).

Figure 9. Onset of labour for singleton and multiple births in Western Australia, 2006

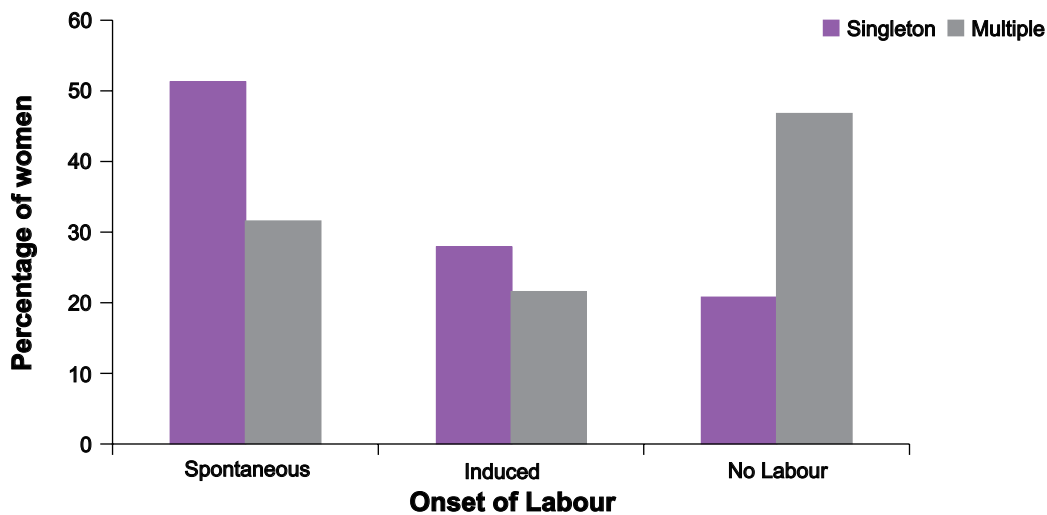
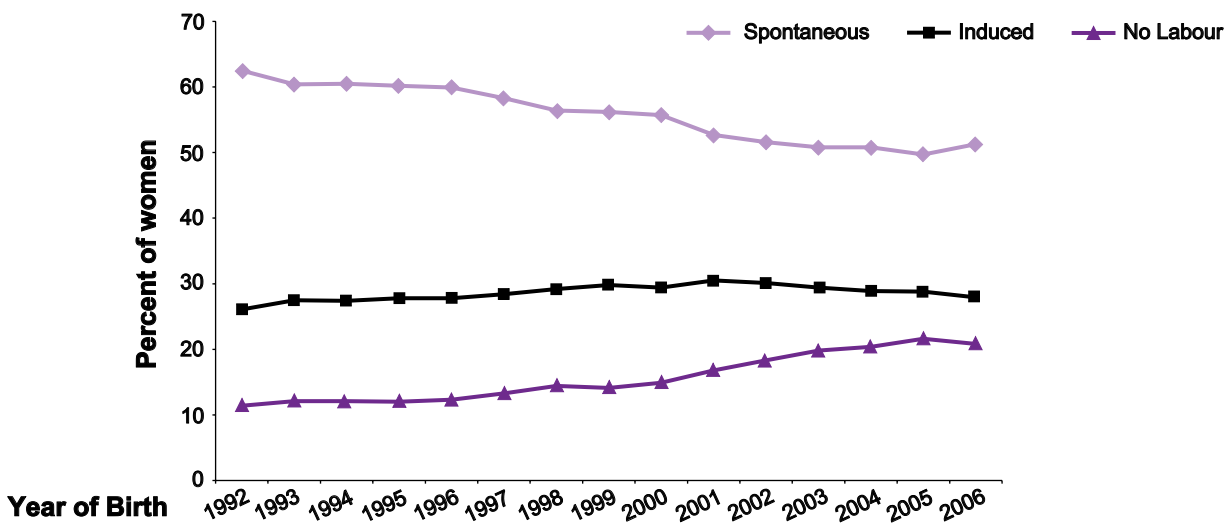


Figure 10. Onset of labour for singleton births in Western Australia, 1992–2006



Trend data indicates a small increase in the proportion of women with a singleton pregnancy for whom labour was induced (24.8% in 1992 to 27.9% in 2006) and a large increase in those who did not experience labour (10.8% in 1992 to 20.8% in 2006).

There was a corresponding decrease in the proportion of women with a singleton pregnancy who established labour spontaneously (64.4% in 1992 to 51.3% in 2006) (see Figure 10).

3.2 Augmentation of Labour

Augmentation of spontaneous labour by surgical and/or medical intervention was administered to 5793 (40.2%) of women who established labour spontaneously.

Of the women for whom labour was augmented, 3710 (64.0%) progressed to a spontaneous vaginal birth, 1308 (22.6%) to a vaginal birth with assistance and 775 (13.4%) required a caesarean section delivery.

Women who established labour and gave birth without obstetric intervention comprised only 23.6% of all women who gave birth in 2006.

3.3 Induction of Labour

Labour was induced by medical and/or surgical means for 7855 (27.8%) women who gave birth.

The methods of induction were usually combined. Artificial rupture of membranes combined with an oxytocin infusion and/or prostaglandins were recorded for 67.0%, while artificial rupture of membranes alone (6.2%) and oxytocin infusion alone (7.3%) comprised methods for women whose labour was induced.

3.4 Analgesia

Of the 17,611 women who did receive analgesia, a lumbar epidural block was administered to 48.8%, nitrous oxide and oxygen inhalation was provided to 25.7%, narcotic sedation to 20.9% and spinal analgesic block to 2.6%.

Among the 19,019 women who gave birth vaginally, 20.6% received no pharmacological analgesia.

Table 9. Analgesia for women who had vaginal births in Western Australia, 2006

Vaginal Births		
Type of Analgesia	No.	% of women
None	3917	20.6
Nitrous oxide & oxygen	4363	22.9
Narcotic sedation	3444	18.1
Epidural	6791	35.7
Spinal	216	1.1
Other	288	1.5
Total	19019	100.0

3.5 Anaesthesia

Among the 19,019 women who gave birth vaginally, 10,760 (56.6%) received no anaesthesia at time of birth.

Epidural and/or spinal anaesthesia was the most frequently administered (32.2%) form of anaesthesia to those women who required pain relief.

Table 10. Anaesthesia for women who had vaginal births in Western Australia, 2006

Vaginal Births		
Type of Anaesthesia	No.	% of women
None	10760	56.6
Local infiltration	1354	7.1
Pudendal block	226	1.2
Epidural and/or spinal	6116	32.2
General/other	563	3.0
Total	19019	100.0

Among women who were delivered by caesarean section, epidural and/or spinal anaesthesia was the preferred option (84.6%).

Trend data for the last 15 years shows that the use of general anaesthesia/analgesia has decreased in women who were delivered by caesarean section. For example, in 1992 general anaesthesia was used in 19.1% of elective caesareans compared with 2.1% in 2006.

Table 11. Anaesthesia for women who had caesarean births in Western Australia, 2006

Caesarean Births		
Type of Anaesthesia	No.	% of women
Epidural and/or spinal	7809	84.6
General	368	4.0
Combination of epidural, spinal & general	68	0.7
Other	990	10.7
Total	9235	100.0

3.6 Presentation

The majority of singleton pregnancy babies were cephalic presentations (95.3%) of which 70.4% delivered vaginally.

Breech presentations among babies of singleton pregnancies (3.9%) were delivered by caesarean section in 91.5% of cases.

Table 12. Caesarean births in other States and Territories of Australia, 2005

Caesarean Births		
States and Territories	Year	% of women
Western Australia	2005	33.9
South Australia	2005	32.3
Queensland	2005	32.1
Victoria	2005	30.2
Northern Territory	2005	29.1
New South Wales	2005	28.1
Australian Capital Territory	2005	28.9
Tasmania	2005	26.4
Australia	2005	30.3

3.7 Type of Birth

Spontaneous vaginal birth occurred for a little more than half (54.4%) of women who gave birth in 2006. A further 12.8% required an assisted vaginal birth.

Among women who delivered per vaginam, 15.0% were assisted by vacuum extraction and 3.6% were assisted by forceps extraction. Among women with breech presentation 93 (8.6%) gave birth vaginally with or without assistance.

Caesarean section was the method of birth for 9235 (32.7%) women. Elective caesarean births made up 18.7% of births while 14.0% were emergency procedures.

Women with multiple birth pregnancies have a higher probability of caesarean section delivery. In 2006, 255 (64.9%) of women with a twin pregnancy and eight of the nine women with a triplet pregnancy were delivered by caesarean section.

Women who have had caesarean section births previously are most likely to have repeat procedures. This is shown by 87.7% of women for whom previous caesarean section was recorded having a repeat caesarean in 2006.

Caesarean section to optimise birth outcome is the preferred choice of delivery of preterm births (<37 weeks). In 1992, 36.2% of preterm babies were delivered by caesarean section while in 2006 this proportion has risen to 44.4%.

Trend data indicates that the occurrence of caesarean sections has increased significantly over the past 15 years from 19.3% in 1992 to 32.7% in 2006.

The most recent national comparison⁴ (2005) of State and Territory caesarean section births indicates that Western Australia had the highest proportion with a recorded proportion of 33.9%. The national proportion of caesarean section in 2005 was 30.3%.

Indications for caesarean section are provided by complications of labour and delivery. More than one complication may be recorded and women delivered by caesarean section had a minimum of one complication recorded.

Table 13. Frequently recorded complications of labour and delivery for women who gave birth by caesarean section in Western Australia, 2006

Caesarean Births		
Complications of Labour and Delivery ¹	No.	% of caesarean section
Previous caesarean	3932	42.6
Fetal distress	1617	17.5
Postpartum haemorrhage	1403	15.2
Prolonged labour	1244	13.5
Malpresentation of fetus	1149	12.4
Cephalopelvic disproportion	558	6.0
Abnormal forces of labour	539	5.8

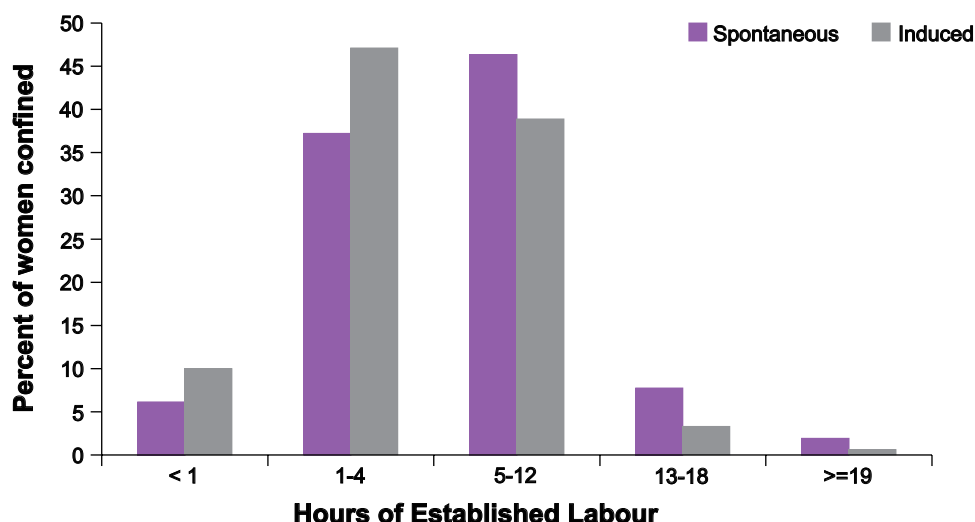
¹ A woman may have more than one complication of labour and delivery recorded.

3.8 Hours of Established Labour

For the majority of women who experienced spontaneous labour, the duration was between one and four hours for 37.4% of births and between five and 12 hours for 46.5% of births.

Women for whom labour was induced tended to have shorter hours of labour than those with spontaneous onset of labour.

Figure 11. Hours of established labour for spontaneous and induced onsets in Western Australia, 2006



3.9 Complications of Labour and Delivery

There were no complications of labour and delivery recorded for more than one-third (38.8%) of women who gave birth in 2006.

Of women who had a multiple pregnancy, only 6.0% of women reported having no complications of labour and delivery.

Table 14. Complications of labour and delivery for women who gave birth in Western Australia, 2006

All Births		
Complications of Labour and Delivery ¹	No.	% of women
Previous caesarean	4294	15.2
Fetal distress	3617	12.8
Postpartum haemorrhage	2938	10.4
Precipitate delivery	1485	5.3
Failure to progress >3cms	1492	5.3
Cord tightly around neck	1122	4.0
Failure to progress ≤3cms	1088	3.9
Persistent occipito posterior	696	2.5
Cephalopelvic disproportion	479	1.7
Shoulder dystocia	405	1.4
Retained placenta – manual removal	363	1.3
Prolapsed cord	30	0.1
Other	6911	24.5
Total	24245	

¹ A woman may have more than one complication of labour and delivery.

The most common complications experienced by women who gave birth in 2006 were previous caesarean section (15.2%), fetal distress (12.8%), and post partum haemorrhage (10.4%).

Differences in complications of labour and delivery exist between singleton and multiple births. For example, post partum haemorrhage was recorded for 10.0% of singleton pregnancies and 34.8% of multiple pregnancies for an overall figure of 10.4% of all births.

3.10 Accoucheur

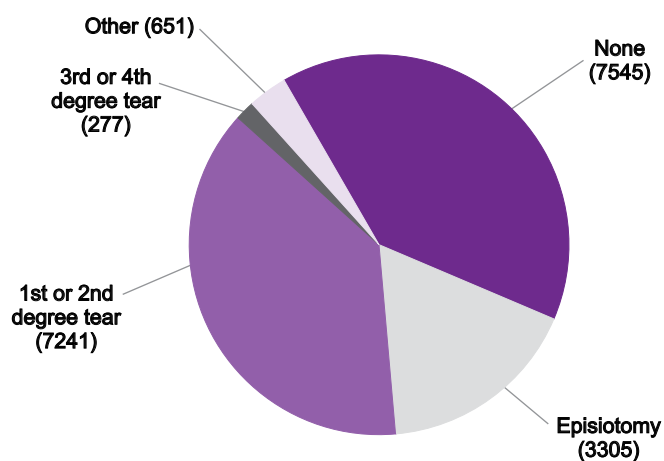
A midwife or a midwife supervising a student was the accoucheur for 11,251 women (73.2%) who had a spontaneous vaginal birth.

Obstetricians and other medical officers were reported to be the accoucheur for 39.7% of women who gave birth vaginally.

3.11 Repair of Perineum and/or Vagina

Among women who gave birth per vaginum 7545 (39.7%) did not require a repair procedure; 17.4% had an episiotomy repaired; and 38.1% had repair of a first or second degree tear (Figure 12).

Figure 12. Repair of perineum and/or vagina for vaginal births in Western Australia, 2006



Further information on Labour and Delivery 2006 is available in Appendix B (Tables 19-39).

4. Baby Characteristics

4.1 Births

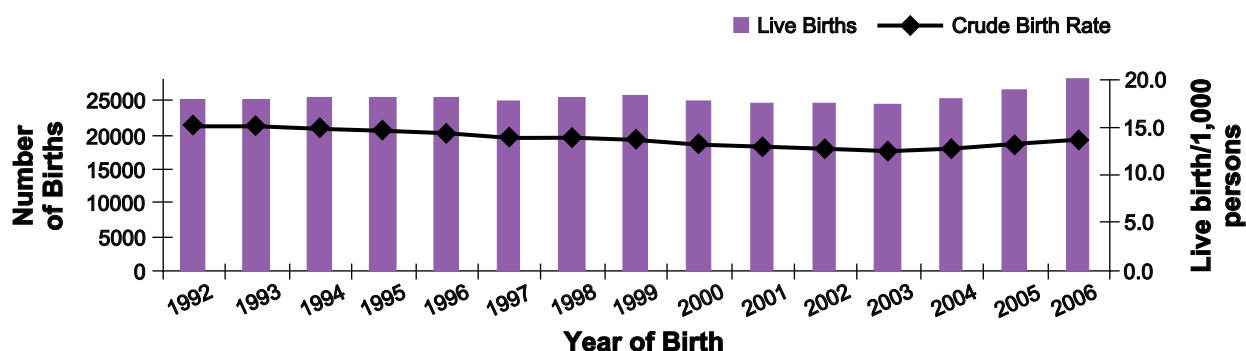
Notification forms (Appendix D) were received for 28,665 births of 20 weeks or more gestation or 400 grams or greater birth weight in 2006, an increase of 6.2% from 2005 births.

4.2 Crude Birth Rate

The crude birth rate in 2006 was 13.8 per 1000 population.

Trend data indicates that the rate gradually declined during the past 15 years from 15.2 per 1000 in 1992 to 12.6 in 2003 with rises in each year subsequent to 13.8 in 2006 (see Figure 13).

Figure 13. Live births and crude birth rates in Western Australia, 1992–2006



4.3 Gender

The gender of births was male (50.5%) and female (49.4%) during 2006 (male:female ratio of 1.02).

4.4 Condition at Birth

There were 28,457 (99.3%) live births and 208 (0.7%) fetal deaths during 2006 and this proportion has remained consistent during the past 15-years.

The referral of mothers with a high-risk pregnancy and/or known fetal death in utero is illustrated by the fact that almost two-thirds of fetal deaths (63.9%) were delivered in a metropolitan teaching hospital.

4.5 Plurality of Birth

Single births represented 97.2% and multiple birth babies 2.8% of total births.

There were 786 twin babies and 27 triplet babies (9 sets) born during 2006.

The proportion of multiple births has generally increased over the past 15 years rising from 2.7% in 1992 to 3.3% of total births in 2005. However the figure decreased in 2006 to 2.8%, the lowest since 1995.

4.6 Apgar Score at One Minute and Five Minutes

An Apgar score at one minute of 8-10 was recorded for 83.9% of live births while only 402 (1.4%) of live births had an Apgar score of less than 4 at one minute.

At five minutes 97.7% of live births had an Apgar score of 8-10.

4.7 Time to Spontaneous Respiration

Among all live births, 91.3% established spontaneous respiration within the first minute of life. The time taken by babies who were intubated during resuscitation to establish spontaneous respiration is not reported.

4.8 Resuscitation

Approximately one-third (33.9%) of live births received some form of resuscitation. Oxygen therapy was provided to 12.8% and suction only to 12.3%.

Other babies required more active resuscitation using bag and mask technique (6.9%) and endotracheal intubation either alone or with external cardiac massage (1.2%).

Table 15. Resuscitation methods for liveborn babies in Western Australia, 2006.

Resuscitation Method ¹	No.	% of live births
None	18805	66.1
Suction only	3501	12.3
Oxygen therapy	3641	12.8
Bag & mask	1952	6.9
Intubation	273	1.0
External cardiac massage	58	0.2
Other	198	0.7

¹ Resuscitation methods of live births.

4.9 Birthweight

A mean birthweight of 3336 grams with a standard deviation of 617 grams was recorded.

Two thirds (66.5%) of babies weighed between 3000 and 3999 grams at birth. Low birthweight babies (<2500 grams) represented 7.0% of births.

Among babies of women identified as Aboriginal, the proportion of low birthweight was higher (14.9%) than the proportion among babies of women who did not identify as Aboriginal (6.4%).

Trend data indicates that the proportion of low birthweight among babies of Aboriginal mothers ranged from a low of 11.8% in 1992 to a high of 16.5% in 2005. The 2006 figure therefore represents a decrease (14.9%). The proportion of low birthweight among babies of non-Aboriginal women has also increased minimally over the same period.

4.10 Gestational Age

Preterm birth (less than 37 weeks gestation) occurred for 8.8% of the total births in 2006.

Plurality affected gestational age outcome with 7.2% of singleton births and 64.5% of multiple births being born preterm.

Among the lower preterm births of 23 to 31 weeks gestation, 88.9% were born in a metropolitan teaching hospital and 3.9% in a private hospital.

Trend data for the period 1992–2006 indicates that the proportion of live births at 23–31 week age, born at metropolitan teaching hospitals has been in the range of 70%–80%. This proportion demonstrates the practice of referral transfer of women with a high-risk pregnancy.

4.11 Birth Trauma

Cephalhaematoma and other soft tissue trauma to the skull were reported in 7.2% of vaginal births. This includes trauma from application of a vacuum cup or forceps blades during assisted vaginal births.

4.12 Birth Defects

Table 16. Birth defects of babies born in Western Australia, 2006

Birth Defects	No.	Rate/1000 births
Musculoskeletal	378	13.2
Cardiovascular	284	9.9
Urinary-genital	248	8.7
Chromosome	146	5.1
Gastrointestinal	125	4.4
Nervous system	89	3.1
Respiratory system	29	1.0

Recording of a birth defect in the Midwives Notification System data provides an initial data source for the Birth Defects Registry. More detailed information is available upon request to the Birth Defects Registry.⁵

4.13 Special Care

Reporting of special care for newborn babies relates only to those who received care in Level 2 or Level 3 special care nurseries. Babies who stayed for less than one day are not included. The proportion of live births who received special care of one day or more was 8.8%.

4.14 Neonatal Transfers

Inter-hospital transfers were made for 1159 (4.1%) of live births. This was to provide care at tertiary hospitals (34.7%) and for provision of continued care in a hospital or a community facility during the neonatal period prior to discharge home.

4.15 Length of Stay

The majority of liveborn babies (83.1%) stayed in their hospital of birth from two to seven days and a further 11.1% stayed for less than 24 hours following birth. An additional 4.2% stayed between eight and 14 days while 0.7% stayed for more than 28 days.

4.16 Perinatal Mortality

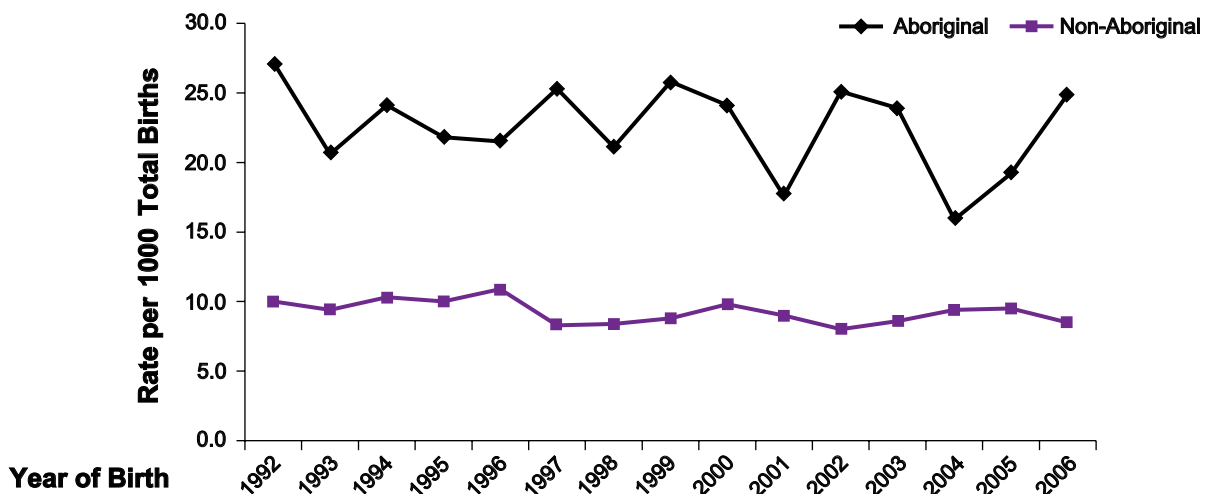
There were 273 perinatal deaths of 20 weeks or more gestation recorded during 2006 (208 fetal deaths plus 65 neonatal deaths).

This represented a perinatal mortality rate of 9.5 per 1000 total births, a fetal death rate of 7.3 per 1000 total births and a neonatal mortality rate of 2.3 per 1000 live births for 2006.

The perinatal death rate among babies of women identified as Aboriginal (24.9 per 1000) was nearly three times the rate for non-Aboriginal babies (8.5 per 1000).

Trend data indicated that there has been a gradual reduction in the perinatal mortality rate over the past 15 years from 11.0 in 1992 to 9.5 per 1000 total births in 2006. For this period, the rate reduction for babies of Aboriginal mothers was from 27.2 to 24.9 per 1000, and that for non-Aboriginal mothers from 10.0 to 8.5 per 1000.

Figure 14. Perinatal mortality by Aboriginality in Western Australia, 1992–2006



Low birthweight and early gestational age influence perinatal mortality rates.

Two-fifths (39.9%) of the perinatal deaths in 2006 were in babies with a birthweight less than 500 grams and more than three-quarters (79.1%) were in the low birthweight category of less than 2500 grams.

Multiple birth babies are subject to increased mortality due to complications associated with low birthweight and earlier gestational age. The perinatal mortality rate for multiple births of 40.6 per 1000 was more than four times the rate for singleton births of 8.6 per 1000 in 2006.

A neonatal death (the death of a liveborn baby before the 28th day) is more likely to occur before the end of the first day of life and in 2006 52.3% of deaths occurred in babies aged less than one day.

Autopsy requests were made for 61.2% of perinatal deaths, 69.7% of fetal deaths and 33.8% of neonatal deaths. There were eight perinatal deaths for which it was not known if an autopsy had been requested.

The principal causes of fetal deaths were lethal birth defects (29.3%) and extremely low birthweight (<1000 grams) (27.9%). Among neonatal deaths, extremely low birthweight (53.8%) was the most prevalent cause.

Further information on Baby Characteristics 2006 is available in Appendix B (Tables 40–75).

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Appendix A - Glossary

Age-Specific Birth Rate	The total births (live births and stillbirths) per 1000 to women aged between 15–44 years.
Apgar Score	A numerical scoring system applied after birth to evaluate the condition of the baby. It is based on the heart rate, respiration, muscle tone, reflexes and colour. Low scores indicate poor condition.
Born Before Arrival (BBA)	A birth that occurs prior to arrival of the mother at the intended place of birth.
Birth Defects	Any defect present at birth, probably of developmental origin.
Birthweight	The first weight, measured to the nearest five grams, of the newborn, which is usually obtained within the first hour of birth. Low Birthweight: A birthweight of less than 2500 grams. Very Low Birthweight: A birthweight of less than 1500 grams.
Caesarean Section	A delivery of the fetus through an incision in the abdominal wall. Elective Caesarean Section – A planned procedure prior to onset of labour and before spontaneous rupture of membranes or without any induction procedure. Emergency Caesarean Section – An unplanned procedure, performed because of a complication. May be performed before the onset of labour or during labour.
Confinement	Pregnancy resulting in at least one birth.
Crude Birth Rate	The number of live births per 1000 total population.
Epidural	Injection of analgesic agent outside the dura mater which covers the spinal canal.
Episiotomy	An incision of the perineum and vagina to enlarge the vulval orifice
Gestational Age	The duration of pregnancy in completed weeks from the first day of the last normal menstrual period.
Fetal Death	The complete expulsion or extraction from its mother of a product of conception of at least 20 weeks gestation or 400 grams birthweight, which after separation did not show any sign of life.
Length of Stay	The total number of patient days in hospital at time of discharge. A stay of less than one day (patient admission, birth and discharge on the same day) is counted as one day in the total days of care. For patients admitted and discharged on different days, the number of days is computed by subtracting the date of admission from the day of separation. For planned homebirths it is routinely coded as 10 days from date of birth.
Live birth	The complete expulsion or extraction from its mother of a product of conception, irrespective of duration of pregnancy, which after separation shows signs of life.

Mortality Rates	Fetal death rate – the number of fetal deaths per 1000 total births in a year.
	Neonatal mortality – the number of neonatal deaths per 1000 live births in a year.
	Perinatal mortality – the number of stillbirths and neonatal deaths per 1000 total births in a year.
Neonatal Death	The death of a liveborn infant within 28 days of birth.
Parity	The total number of live births and fetal deaths of the mother prior to the parturition under consideration.
	Nulliparous – Never having completed a pregnancy beyond 20 weeks gestation.
	Multiparous – Having completed one or more pregnancies beyond 20 weeks gestation.
Perinatal Death	A fetal death or neonatal death.
Perineal Status	first degree tear: a perineal graze-laceration-tear involving the fourchette, hymen, labia, skin, vagina or vulva.
	second degree tear: a perineal laceration or tear involving the pelvic floor or perineal muscles or vagina muscles.
	third degree tear: a perineal laceration-tear involving the anal sphincter or rectovaginal septum.
	fourth degree tear: a third degree perineal laceration or tear which also involves the anal mucosa or rectal mucosa.
Plurality	The number of fetuses or babies resulting from the pregnancy. On this basis pregnancy may be classified as singleton or multiple.
SEIFA Index	Using 2001 Census data, Statistical Local Areas were allocated to six groups based on the Socio-Economic-Index-For-Areas (SEIFA) Disadvantage Index. SEIFA Group I is classed as having the highest socio-economic status and SEIFA group VI as the group with the lowest socio-economic status.

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Table 1: Age and Aboriginality of women who gave birth in Western Australia, 2006

Maternal Age	Aboriginality of Mother				Total	
	Aboriginal		Non-Aboriginal		No.	%
	No.	%	No.	%	No.	%
≤ 14	7	0.4	3	0.0	10	0.0
15	25	1.4	21	0.1	46	0.2
16	54	3.0	87	0.3	141	0.5
17	85	4.8	186	0.7	271	1.0
18	113	6.3	321	1.2	434	1.5
19	146	8.2	467	1.8	613	2.2
≤ 19	430	24.0	1085	4.1	1515	5.4
20-24	595	33.3	4040	15.3	4635	16.4
25-29	395	22.1	7032	26.6	7427	26.3
30-34	246	13.8	8650	32.7	8896	31.5
35-39	106	5.9	4780	18.1	4886	17.3
40-44	17	1.0	844	3.2	861	3.1
≥ 45	-	-	34	0.1	34	0.1
TOTAL	1789	100.0	26465	100.0	28254	100.0

Mean = 29.4 years. Standard deviation = 5.8 years.

Table 2: Age of women who gave birth in Western Australia, 1992–2006

Year of Birth	Maternal Age						Total	
	≤ 19		20-34		≥ 35		No.	%
	No.	%	No.	%	No.	%	No.	%
1992	1574	6.3	20757	83.1	2639	10.6	24970	100.0
1993	1496	6.0	20670	82.8	2807	11.2	24973	100.0
1994	1592	6.3	20515	81.8	2964	11.8	25071	100.0
1995	1522	6.1	20395	81.3	3173	12.6	25090	100.0
1996	1521	6.0	20297	80.6	3374	13.4	25192	100.0
1997	1446	5.8	19899	80.0	3524	14.2	24869	100.0
1998	1519	6.0	19928	78.8	3847	15.2	25294	100.0
1999	1509	5.9	19979	78.7	3890	15.3	25378	100.0
2000	1479	6.0	19367	78.0	3972	16.0	24818	100.0
2001	1422	5.8	19005	77.6	4065	16.6	24492	100.0
2002	1438	5.9	18872	77.4	4084	16.7	24394	100.0
2003	1340	5.5	18566	76.5	4375	18.0	24281	100.0
2004	1389	5.5	19091	76.0	4631	18.4	25111	100.0
2005	1486	5.6	19857	74.8	5195	19.6	26538	100.0
2006	1515	5.4	20958	74.2	5781	20.5	28254	100.0

Table 3: Country of birth and age of women who gave birth in Western Australia, 2006

Place of Birth	Maternal Age						Total	
	≤ 19		20-34		≥ 35		No.	%
	No.	%	No.	%	No.	%		
Australia	1358	91.2	15505	75.7	3655	64.9	20518	74.4
New Zealand	35	2.4	683	3.3	181	3.2	899	3.3
Other Pacific	1	0.1	54	0.3	23	0.4	78	0.3
United Kingdom and Ireland	43	2.9	1329	6.5	759	13.5	2131	7.7
Other Europe	6	0.4	454	2.2	201	3.6	661	2.4
Vietnam	1	0.1	238	1.2	60	1.1	299	1.1
Malaysia	3	0.2	167	0.8	74	1.3	244	0.9
Other SE Asia	5	0.3	558	2.7	168	3.0	731	2.6
Other Asia	7	0.5	454	2.2	181	3.2	642	2.3
North America	2	0.1	130	0.6	76	1.3	208	0.8
South and Central America	3	0.2	86	0.4	30	0.5	119	0.4
South Africa and Zimbabwe	4	0.3	323	1.6	95	1.7	422	1.5
Other Africa and Middle East	21	1.4	490	2.4	133	2.4	644	2.3
TOTAL	1489	100.0	20471	100.0	5636	100.0	27596	100.0

Excludes 658 women whose country of birth is unknown.

Table 4: Conjugal state and plurality of women who gave birth in Western Australia, 2006

Conjugal State	Plurality				Total	
	Singleton		Multiple		No.	%
	No.	%	No.	%		
Single	2012	7.2	33	8.2	2045	7.2
Married/De facto	25454	91.4	367	91.3	25821	91.4
Other ¹	386	1.4	2	0.5	388	1.4
TOTAL	27852	100.0	402	100.0	28254	100.0

¹ Other includes separated, divorced and widowed.

Table 5: Health region of residence and Aboriginality of women who gave birth in Western Australia, 2006

Health Region of Residence	Aboriginality of Mother				Total	
	Aboriginal		Non-Aboriginal		No.	%
	No.	%	No.	%		
Metropolitan						
North	293	16.4	10856	41.0	11149	39.5
South	362	20.2	9703	36.7	10065	35.6
Total Metro	655	36.6	20559	77.7	21214	75.1
Country						
Kimberley	429	24.0	246	0.9	675	2.4
Pilbara	169	9.4	669	2.5	838	3.0
Midwest	201	11.2	720	2.7	921	3.3
Wheatbelt	80	4.5	841	3.2	921	3.3
Goldfields	135	7.5	831	3.1	966	3.4
South West	64	3.6	1868	7.1	1932	6.8
Great Southern	55	3.1	700	2.7	755	2.7
Total Country	1133	63.3	5875	22.2	7008	24.8
Outside WA	1	0.1	31	0.1	32	0.1
TOTAL	1789	100.0	26465	100.0	28254	100.0

Table 6: Place of birth for women resident in metropolitan health regions in Western Australia, 2006

Health Region of Residence	Birth Hospital in Health Region					Total
	Teaching	North Metro	South Metro	Country	Non Hospital	
Number						
North	2587	8162	277	12	111	11149
South	2572	933	6416	9	135	10065
TOTAL	5159	9095	6693	21	246	21214
Percentage						
North	23.2	73.2	2.5	0.1	1.0	100.0
South	25.6	9.3	63.7	0.1	1.3	100.0
TOTAL	24.3	42.9	31.5	0.1	1.2	100.0

Table 7: Place of birth for women resident in country health regions in Western Australia, 2006

Health Region of Residence	Birth Hospital in Health Region					Total
	Internal	Teaching	Other Metro	Other Country	Non Hospital	
Number						
Kimberley	603	51	16	5	-	675
Pilbara	567	79	154	37	1	838
Midwest	722	126	63	10	-	921
Wheatbelt	309	141	445	25	1	921
Goldfields	848	62	47	9	-	966
South West	1750	106	54	6	16	1932
Great Southern	640	59	42	14	-	755
TOTAL	5439	624	821	106	18	7008
Percentage						
Kimberley	89.3	7.6	2.4	0.7	-	100.0
Pilbara	67.7	9.4	18.4	4.4	0.1	100.0
Midwest	78.4	13.7	6.8	1.1	-	100.0
Wheatbelt	33.6	15.3	48.3	2.7	0.1	100.0
Goldfields	87.8	6.4	4.9	0.9	-	100.0
South West	90.6	5.5	2.8	0.3	0.8	100.0
Great Southern	84.8	7.8	5.6	1.9	-	100.0
TOTAL	77.6	8.9	11.7	1.5	0.3	100.0

Table 8: Place of birth and intended place of birth for women who gave birth in Western Australia, 2006

Actual Place of Birth	Intended Place of Birth			Total
	Hospital	Birth Centre	Home	
Number				
Teaching ¹	5072	384	32	5488
Public hospital	11100	55	5	11160
Private hospital ²	10978	18	-	10996
Birth centre	20	244	-	264
Home	2	1	191	194
BBA ³	99	2	2	103
TOTAL	27271	704	230	28205
Percentage				
Teaching	92.4	7.0	0.6	100.0
Public hospital	99.5	0.5	-	100.0
Private hospital	99.8	0.2	-	100.0
Birth centre	7.6	92.4	-	100.0
Home	1.0	0.5	98.5	100.0
BBA	96.1	1.9	1.9	100.0
TOTAL	96.7	2.5	0.8	100.0

Excludes 49 women for whom intended place of birth was not recorded.

¹ Teaching Hospital - *University Medical School, Teaching Hospitals Act 1955*.

² Private Hospital - includes some private hospitals with both private and public beds.

³ BBA - born before arrival at hospital.

Table 9: Place of birth and plurality of women who gave birth in Western Australia, 2006

Place of Birth	Plurality				Total	
	Singleton		Multiple		No.	%
	No.	%	No.	%		
Metropolitan						
Teaching	5593	20.1	199	49.5	5792	20.5
Department ³	6268	22.5	31	7.7	6299	22.3
Private	10189	36.6	131	32.6	10320	36.5
Country						
Regional ¹	3349	12.0	28	7.0	3377	12.0
Private	670	2.4	7	1.7	677	2.4
Other ²	1484	5.3	4	1.0	1488	5.3
Non Hospital						
Homebirths	193	0.7	1	0.2	194	0.7
BBA	106	0.4	1	0.2	107	0.4
TOTAL	27852	100.0	402	100.0	28254	100.0

¹ Country Regional Hospital - public hospital in regional centre.

² Other Country Hospital - other public hospital.

³ Metropolitan Departmental Hospital - public hospital in metropolitan area.

Table 10: Place of birth of women who gave birth in Western Australia, 1992–2006

Year of Birth	Place of Birth									
	Teaching		Public		Private		Home Birth		BBA	
	No.	%	No.	%	No.	%	No.	%	No.	%
1992	4300	17.2	13269	53.1	7216	28.9	107	0.4	78	0.3
1993	4694	18.8	12935	51.8	7161	28.7	102	0.4	81	0.3
1994	4917	19.6	12841	51.2	7111	28.4	109	0.4	93	0.4
1995	4931	19.7	12913	51.5	7055	28.1	96	0.4	95	0.4
1996	5074	20.1	12331	48.9	7583	30.1	120	0.5	84	0.3
1997	5025	20.2	11925	48.0	7742	31.1	113	0.5	64	0.3
1998	4912	19.4	11980	47.4	8201	32.4	102	0.4	99	0.4
1999	5150	20.3	11634	45.8	8398	33.1	126	0.5	70	0.3
2000	4671	18.8	11313	46.5	8633	35.5	122	0.5	79	0.3
2001	4166	17.0	10785	44.0	9317	38.0	144	0.6	80	0.3
2002	4267	17.5	10277	42.1	9645	39.5	121	0.5	84	0.3
2003	4335	17.9	9975	41.1	9727	40.1	163	0.7	81	0.3
2004	4425	17.6	10324	41.1	10130	40.3	150	0.6	82	0.3
2005	4811	18.1	10959	41.3	10520	39.6	155	0.6	93	0.4
2006	5792	20.5	11164	39.5	10997	38.9	194	0.7	107	0.4

Table 11: Parity and Aboriginality of women who gave birth in Western Australia, 2006

Parity	Aboriginality of Mother				Total	
	Aboriginal		Non-Aboriginal			
	No.	%	No.	%	No.	%
0	545	30.5	11260	42.5	11805	41.8
1-2	733	41.0	12891	48.7	13624	48.2
3-4	337	18.8	1921	7.3	2258	8.0
≥ 5	174	9.7	393	1.5	567	2.0
TOTAL	1789	100.0	26465	100.0	28254	100.0

Table 12: Parity and age of women who gave birth in Western Australia, 2006

Parity	Maternal Age						Total	
	≤ 19		20-34		≥ 35			
	No.	%	No.	%	No.	%	No.	%
0	1255	82.8	9038	43.1	1512	26.2	11805	41.8
1-2	257	17.0	10098	48.2	3269	56.5	13624	48.2
3-4	3	0.2	1515	7.2	740	12.8	2258	8.0
≥ 5	-	-	307	1.5	260	4.5	567	2.0
TOTAL	1515	100.0	20958	100.0	5781	100.0	28254	100.0

Table 13: Parity of women who gave birth in Western Australia, 1992–2006

Year of Birth	Number of Women	Parity				Average Parity
		0	1-2	3-4	≥ 5	
		%	%	%	%	
1992	24970	38.7	50.8	9.0	1.5	1.06
1993	24973	38.7	50.9	8.9	1.6	1.06
1994	25071	40.0	49.7	8.8	1.5	1.04
1995	25090	40.6	49.2	8.6	1.6	1.03
1996	25192	40.0	49.9	8.5	1.5	1.03
1997	24869	40.3	49.6	8.6	1.6	1.03
1998	25294	40.0	49.7	8.7	1.6	1.03
1999	25378	40.4	49.6	8.4	1.6	1.02
2000	24818	41.2	48.5	8.5	1.9	1.03
2001	24492	40.7	49.4	8.2	1.8	1.02
2002	24394	40.6	49.3	8.3	1.8	1.02
2003	24281	41.3	49.0	7.8	1.9	1.01
2004	25111	41.9	48.6	7.8	1.8	1.00
2005	26538	41.9	48.4	7.8	1.9	1.01
2006	28254	41.8	48.2	8.0	2.0	1.02

Table 14: Socioeconomic status and age of women who gave birth in Western Australia, 2006

Socio-economic Status ¹	Maternal Age							
	Women		≤ 19		20-34		≥ 35	
	No.	%	No.	%	No.	%	No.	%
I	7007	25.1	131	0.5	4719	16.9	2157	7.7
II	3833	13.8	170	0.6	2934	10.5	729	2.6
III	5231	18.8	260	0.9	3979	14.3	992	3.6
IV	6355	22.8	398	1.4	4869	17.5	1088	3.9
V	5442	19.5	541	1.9	4158	14.9	743	2.7
TOTAL	27868	100.0	1500	5.4	20659	74.1	5709	20.5

¹ Socioeconomic status is in accord with the Socioeconomic Indices for Areas (SEIFA) disadvantage index, constructed by the Australian Bureau of Statistics using 2001 Census data. SLAs were allocated to six groups based on their disadvantage index. Group I has the highest socioeconomic status and group V has the lowest. Index ranges used are: I = 1045.000-1999.999, II = 1012.000-1044.999, III = 984.000-1011.999, IV = 952.000-983.999, V = 100.000-951.999. Excludes 386 women who could not be classified using this index.

Table 15: Age-specific birth rates and Aboriginality for women who gave birth in Western Australia, 2006

Age	Aboriginality of Mother						Total		
	Aboriginal			Non-Aboriginal			Births	Population	Birth Rate ¹
	Births	Population	Birth Rate ¹	Births	Population	Birth Rate ¹			
15-19	426	3980	107.0	1096	67015	16.4	1522	70995	21.4
20-24	605	3272	184.9	4065	68611	59.2	4670	71883	65.0
25-29	399	2746	145.3	7115	64767	109.9	7514	67513	111.3
30-34	248	2721	91.1	8799	69593	126.4	9047	72314	125.1
35-39	106	2678	39.6	4883	73737	66.2	4989	76415	65.3
40-44	17	2295	7.4	858	75469	11.4	875	77764	11.3
TOTAL	1801	17692	101.8	26816	419192	64.0	28617	436884	65.5

¹ Age-Specific Birth Rate - The total number of births in one year per 1000 women of the same age group.

SOURCE: ABS Estimated Resident Populations for WA.

Epidemiology Branch, Analysis and Performance Reporting, Department of Health WA 2007.

Table 16: Age-specific birth rates¹ by age and Aboriginality of women who gave birth in Western Australia, 1992–2006

Year of Birth	Aboriginality of Mother						Total		
	Aboriginal			Non-Aboriginal			15-19	20-34	35-44
	15-19	20-34	35-44	15-19	20-34	35-44			
1992	159.9	154.7	19.0	20.0	102.7	20.4	25.4	104.3	20.4
1993	165.7	152.3	21.4	18.5	102.4	21.6	24.2	104.0	21.6
1994	166.0	148.2	18.2	20.1	101.2	22.5	25.7	102.7	22.4
1995	143.6	151.8	22.5	19.7	99.6	23.7	24.6	101.3	23.7
1996	137.7	148.2	21.7	19.6	98.9	24.6	24.1	100.6	24.5
1997	156.2	159.4	22.0	17.4	95.7	25.1	22.7	97.9	25.0
1998	137.9	151.7	26.3	18.2	95.1	27.0	23.2	97.0	27.0
1999	134.4	164.5	28.0	17.9	94.9	26.9	22.8	97.2	27.0
2000	126.8	160.3	28.0	17.0	91.6	27.5	21.7	93.9	27.5
2001	118.1	167.0	24.4	16.2	91.8	27.2	20.8	94.4	27.1
2002	103.5	143.4	25.7	16.0	84.8	27.7	20.3	87.0	27.7
2003	101.7	127.8	21.2	14.3	90.8	29.7	18.7	92.3	29.5
2004	97.2	125.8	23.1	15.0	90.4	30.8	19.4	91.9	30.5
2005	108.4	133.5	25.6	15.7	93.5	34.4	20.8	95.1	34.2
2006	107.0	141.4	24.7	16.4	97.2	37.7	21.4	99.0	37.3

¹ Age-Specific Birth Rate - The total number of births in one year per 1000 women of the same age group.

Table 17: Selected complications of pregnancy and plurality of women who gave birth in Western Australia, 2006

Complications of Pregnancy ¹	Plurality				Total	
	Singleton		Multiple		No.	% ⁴
	No.	% ²	No.	% ³		
Threatened abortion	1251	4.5	22	5.5	1273	4.5
Threatened preterm labour	719	2.6	70	17.4	789	2.8
Urinary tract infection	1000	3.6	11	2.7	1011	3.6
Pre-eclampsia	850	3.1	45	11.2	895	3.2
Antepartum haemorrhage						
– placenta praevia	179	0.6	2	0.5	181	0.6
– abruptio	109	0.4	0	0.0	109	0.4
– other	712	2.6	15	3.7	727	2.6
Premature rupture of membranes	1192	4.3	48	11.9	1240	4.4
Gestational diabetes	1264	4.5	21	5.2	1285	4.5
Other	4405	15.8	278	69.2	4683	16.6
No complications of pregnancy	18376	66.0	74	18.4	18450	65.3

¹ A woman may have more than one complication of pregnancy.

² Percentage of women with a singleton pregnancy (n=27852).

³ Percentage of women with a multiple pregnancy (n=402).

⁴ Percentage of women who gave birth (n=28254).

Table 18: Selected pre-existing medical conditions for women who gave birth in Western Australia, 2006

Medical Conditions ¹	No.	% of women
Respiratory system diseases	3052	10.8
Mental and behavioural disorders	1559	5.5
Infectious and parasitic diseases	1279	4.5
Endocrine, nutritiona and metabolic diseases	768	2.7
Genito-urinary system diseases	613	2.2
Blood and blood-forming organs and disorders involving the immune mechanism	611	2.2
Pregnancy, childbirth and puerperial disorders	488	1.7
Circulatory system diseases	486	1.7
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	304	1.1
Factors influencing health status and contact with health services	290	1.0
Digestive system diseases	282	1.0
Nervous system diseases	238	0.8
Musculoskeletal system and connective tissue diseases	223	0.8
Skin and subcutaneous tissue diseases	73	0.3
Congenital malformations, deformations and chromosomal abnormalities	67	0.2
Injury poisoning and certain other consequences of external causes	62	0.2
Neoplasms	57	0.2
Certain conditions originating in the perinatal period	30	0.1
Ear and mastoid process diseases	21	0.1
Eye and adnexa diseases	6	0.0
No medical conditions	18725	66.3

Note: number of women who gave birth (n=28254)

¹ A woman may have more than one medical condition.

Table 19: Onset of labour and plurality of women who gave birth in Western Australia, 2006

Onset of Labour	Plurality				Total	
	Singleton		Multiple		No.	%
	No.	%	No.	%		
Spontaneous	14297	51.3	127	31.6	14424	51.1
Induced	7768	27.9	87	21.6	7855	27.8
No labour	5787	20.8	188	46.8	5975	21.1
TOTAL	27852	100.0	402	100.0	28254	100.0

Table 20: Onset and augmentation of labour and type of delivery for women who gave birth in Western Australia, 2006

Onset and Augmentation of Labour	Type of Delivery								Total	
	Spontaneous Vaginal		Assisted Vaginal		Elective Caesarean		Emergency Caesarean		No.	%
	No.	%	No.	%	No.	%	No.	%		
Spontaneous onset no augmentation	6667	23.6	845	3.0	-	-	1119	4.0	8631	30.5
Spontaneous onset and augmentation	3710	13.1	1308	4.6	-	-	775	2.7	5793	20.5
Induced onset	4999	17.7	1490	5.3	-	-	1366	4.8	7855	27.8
No labour	-	-	-	-	5280	18.7	695	2.5	5975	21.1
TOTAL	15376	54.4	3643	12.9	5280	18.7	3955	14.0	28254	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 21: Augmentation of labour and hours of established labour for women with a spontaneous onset who gave birth in Western Australia, 2006

Type of Augmentation	Hours of Established Labour							TOTAL
	< 1	1-4	5-12	13-18	19-24	> 24	n/r	
Number								
None	635	3922	3575	355	68	29	38	8622
Oxytocin	112	362	845	244	44	10	5	1622
Artificial Rupture of Membranes (ARM)	69	846	1588	266	46	12	4	2831
Oxytocin and ARM	70	221	642	257	56	22	2	1270
Prostaglandin	3	8	12	1	1	1	0	26
Other	3	20	26	2	1	0	1	53
TOTAL	892	5379	6688	1125	216	74	50	14424
Percentage								
None	71.2	72.9	53.5	31.6	31.5	39.2	76.0	59.8
Oxytocin	12.6	6.7	12.6	21.7	20.4	13.5	10.0	11.2
Artificial Rupture of Membranes (ARM)	7.7	15.7	23.7	23.6	21.3	16.2	8.0	19.6
Oxytocin and ARM	7.8	4.1	9.6	22.8	25.9	29.7	4.0	8.8
Prostaglandin	0.3	0.1	0.2	0.1	0.5	1.4	0.0	0.2
Other	0.3	0.4	0.4	0.2	0.5	0.0	2.0	0.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

n/r = Not recorded.

Table 22: Type of induction and delivery for women who were induced in Western Australia, 2006

Type of Induction	Type of Delivery						Total	
	Spontaneous Vaginal		Assisted Vaginal		Emergency Caesarean		No.	%
	No.	%	No.	%	No.	%		
Oxytocin	371	64.9	93	16.3	108	18.9	572	100.0
Prostaglandin	514	58.4	142	16.1	224	25.5	880	100.0
Artificial Rupture of Membrane (ARM)	394	81.2	57	11.8	34	7.0	485	100.0
Oxytocin and ARM	2446	69.5	670	19.0	402	11.4	3518	100.0
Prostaglandin and ARM	356	70.8	80	15.9	67	13.3	503	100.0
Prostaglandin and Oxytocin	111	42.5	77	29.5	73	28.0	261	100.0
Prostaglandin, Oxytocin and ARM	636	51.3	282	22.7	322	26.0	1240	100.0
Other	171	43.2	89	22.5	136	34.3	396	100.0
TOTAL	4999	63.6	1490	19.0	1366	17.4	7855	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 23: Onset of labour for singleton births of women who gave birth in Western Australia, 1992–2006

Year of Birth	Onset of Labour						TOTAL	
	Spontaneous		Induced		No Labour		No.	%
	No.	%	No.	%	No.	%		
1992	15395	62.5	6436	26.1	2797	11.4	24628	100.0
1993	14868	60.4	6766	27.5	2991	12.1	24625	100.0
1994	14958	60.5	6777	27.4	2993	12.1	24728	100.0
1995	14890	60.2	6879	27.8	2975	12.0	38950	100.0
1996	14856	59.9	6898	27.8	3063	12.3	24817	100.0
1997	14279	58.3	6945	28.4	3263	13.3	24487	100.0
1998	14047	56.4	7288	29.2	3583	14.4	24918	100.0
1999	14043	56.2	7442	29.8	3518	14.1	25003	100.0
2000	13603	55.7	7170	29.4	3646	14.9	24419	100.0
2001	12672	52.7	7341	30.5	4046	16.8	24059	100.0
2002	12391	51.6	7227	30.1	4391	18.3	24009	100.0
2003	12131	50.8	7017	29.4	4739	19.8	23887	100.0
2004	12539	50.8	7129	28.9	5034	20.4	24702	100.0
2005	12962	49.7	7505	28.8	5629	21.6	26096	100.0
2006	14297	51.3	7768	27.9	5787	20.8	27852	100.0

Table 24: Analgesia and type of delivery for women who gave birth in Western Australia, 2006

Type of Analgesia	Type of Delivery								Total	
	Spontaneous Vaginal		Assisted Vaginal		Elective Caesarean		Emergency Caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
None	3712	13.1	205	0.7	5280	18.7	1446	5.1	10643	37.7
Nitrous oxide & oxygen inhalation	3987	14.1	376	1.3	-	-	165	0.6	4528	16.0
Intra-muscular narcotics	2965	10.5	479	1.7	-	-	240	0.8	3684	13.0
Epidural	4355	15.4	2436	8.6	-	-	1804	6.4	8595	30.4
Spinal	119	0.4	97	0.3	-	-	239	0.8	455	1.6
Other	238	0.8	50	0.2	-	-	61	0.2	349	1.2
TOTAL	15376	54.4	3643	12.9	5280	18.7	3955	14.0	28254	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 25: Anaesthesia and type of delivery for women who gave birth in Western Australia, 2006

Type of Anaesthesia	Type of Delivery								Total	
	Spontaneous Vaginal		Assisted Vaginal		Elective Caesarean		Emergency Caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
None	10284	36.4	476	1.7	-	-	-	-	10760	38.1
Local anaesthesia to perineum	895	3.2	459	1.6	-	-	-	-	1354	4.8
Pudendal	12	0.0	214	0.8	-	-	-	-	226	0.8
Epidural	3655	12.9	2281	8.1	1664	5.9	1978	7.0	9578	33.9
Spinal	96	0.3	84	0.3	3039	10.8	1128	4.0	4347	15.4
General with epidural or spinal	4	0.0	0	0.0	14	0.0	54	0.2	72	0.3
General	9	0.0	3	0.0	99	0.4	269	1.0	380	1.3
Other	421	1.5	126	0.4	464	1.7	526	1.9	1537	5.4
TOTAL	15376	54.4	3643	12.9	5280	18.7	3955	14.0	28254	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 26: Epidural and general anaesthesia/analgesia for women who gave birth by caesarean section in Western Australia, 1992–2006

Year of Birth	Type of Delivery								Number of Caesareans	
	Elective Caesarean				Emergency Caesarean				Elective	Emerg.
	Epidural		General		Epidural		General			
	No.	%	No.	%	No.	%	No.	%	No.	No.
1992	2070	80.9	489	19.1	1486	65.9	768	34.1	2559	2254
1993	2282	82.6	481	17.4	1749	71.1	710	28.9	2763	2459
1994	2347	86.0	382	14.0	1891	75.8	603	24.2	2729	2494
1995	2371	86.5	369	13.5	1807	78.0	511	22.0	2740	2318
1996	2548	88.9	317	11.1	1860	81.5	423	18.5	2865	2283
1997	2761	90.8	281	9.2	2004	83.0	407	16.9	3042	2414
1998	3008	92.0	262	8.0	2257	85.6	379	14.4	3270	2636
1999	3100	93.7	210	6.3	2263	86.4	356	13.6	3310	2619
2000	3289	93.4	231	6.6	2439	88.4	321	11.6	3520	2760
2001	3563	95.2	181	4.8	2703	89.4	319	10.6	3744	3022
2002	3844	96.0	160	4.0	2822	89.3	339	10.7	4004	3161
2003	4160	96.1	167	3.9	2856	89.9	322	10.1	4327	3178
2004	4383	96.6	152	3.4	3249	90.5	341	9.5	4535	3590
2005	4916	97.0	154	3.0	3529	90.1	387	9.9	5070	3916
2006	4703	97.7	113	2.3	3219	90.9	323	9.1	4816	3542

Excludes 877 cases with anaesthesia/analgesia of 'other'

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Epidural includes spinal anaesthesia/analgesia.

Table 27: Presentation and type of delivery for singleton births in Western Australia, 2006

Type of Delivery	Presentation						Total	
	Vertex		Breech		Other		No.	%
	No.	%	No.	%	No.	%		
Normal	15195	57.3	7	0.6	71	30.2	15273	54.8
Vacuum	2826	10.7	-	-	16	6.8	2842	10.2
Forceps	668	2.5	-	-	11	4.7	679	2.4
Breech Manoeuvre	1	-	85	7.8	-	-	86	0.3
Elective Caesarean	4446	16.8	669	61.7	36	15.3	5151	18.5
Emergency Caesarean	3396	12.8	324	29.9	101	43.0	3821	13.7
TOTAL	26532	100.0	1085	100.0	235	100.0	27852	100.0

Table 28: Type of delivery and plurality of women who gave birth in Western Australia, 2006

Type of Delivery	Plurality						TOTAL	
	Singleton		Twin		Triplet		No.	%
	No.	%	No.	%	No.	%		
Spontaneous Vaginal	15273	54.8	102	26.0	1	-	15376	54.4
Vacuum	2842	10.2	14	3.6	0	0.0	2856	10.1
Forceps	679	2.4	13	3.3	0	-	692	2.4
Breech Manoeuvre	86	0.3	9	2.3	0	-	95	0.3
Elective Caesarean	5151	18.5	123	31.3	6	66.7	5280	18.7
Emergency Caesarean	3821	13.7	132	33.6	2	22.2	3955	14.0
TOTAL	27852	100.0	393	100.0	9	88.9	28254	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 29: Type of delivery and parity of women who gave birth in Western Australia, 2006

Type of Delivery	Parity								Total	
	0		1-2		3-4		≥ 5		No.	%
	No.	%	No.	%	No.	%	No.	%		
Spontaneous Vaginal	5125	43.4	8186	60.1	1639	72.6	426	75.1	15376	54.4
Assisted Vaginal	2763	23.4	799	5.9	62	2.7	19	3.4	3643	12.9
Elective Caesarean	1391	11.8	3453	25.3	377	16.7	59	10.4	5280	18.7
Emergency Caesarean	2526	21.4	1186	8.7	180	8.0	63	11.1	3955	14.0
TOTAL	11805	100.0	13624	100.0	2258	100.0	567	100.0	28254	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 30: Type of delivery and type of previous delivery of women who gave birth in Western Australia, 2006

Previous delivery	Type of Delivery								Total	
	Spontaneous Vaginal		Assisted Vaginal		Elective Caesarean		Emergency Caesarean		No.	%
	No.	%	No.	%	No.	%	No.	%		
First delivery	5125	43.4	2763	23.4	1391	11.8	2526	21.4	11805	100.0
Previous deliveries no caesareans	9817	82.6	753	6.3	653	5.5	663	5.6	11886	100.0
Previous caesarean, last delivery vaginal	176	58.9	20	6.7	52	17.4	51	17.1	299	100.0
Previous caesarean, last delivery caesarean	258	6.1	107	2.5	3184	74.7	715	16.8	4264	100.0
TOTAL	15376	54.4	3643	12.9	5280	18.7	3955	14.0	28254	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 31: Place of confinement and type of delivery for women who gave birth in Western Australia, 2006

Place of Birth	Type of Delivery								Total	
	Spontaneous Vaginal		Assisted Vaginal		Elective Caesarean		Emergency Caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
Metropolitan										
Teaching	3278	56.6	735	12.7	642	11.1	1137	19.6	5792	100.0
Departmental	4003	63.5	695	11.0	883	14.0	718	11.4	6299	100.0
Private	4162	40.3	1601	15.5	3069	29.7	1488	14.4	10320	100.0
Country										
Regional	2228	66.0	355	10.5	393	11.6	401	11.9	3377	100.0
Private	331	48.9	120	17.7	143	21.1	83	12.3	677	100.0
Other	1073	72.1	137	9.2	150	10.1	128	8.6	1488	100.0
Non-hospital	301	100.0	0	0.0	0	-	0	-	301	100.0
TOTAL	15376	54.4	3643	12.9	5280	18.7	3955	14.0	28254	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Non-hospital includes homebirths and births before arrival.

Table 32: Type of delivery for women who gave birth in Western Australia, 1992–2006

Year of Birth	Type of Delivery								Total	
	Spontaneous Vaginal		Assisted Vaginal		Elective Caesarean		Emergency Caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
1992	16028	64.2	4129	16.5	2559	10.2	2254	9.0	24970	100.0
1993	15873	63.6	3878	15.5	2763	11.1	2459	9.8	24973	100.0
1994	15935	63.6	3913	15.6	2729	10.9	2494	9.9	25071	100.0
1995	16208	64.6	3824	15.2	2740	10.9	2318	9.2	25090	100.0
1996	16119	64.0	3925	15.6	2865	11.4	2283	9.1	25192	100.0
1997	15756	63.4	3657	14.7	3042	12.2	2414	9.7	24869	100.0
1998	15794	62.4	3594	14.2	3270	12.9	2636	10.4	25294	100.0
1999	15772	62.1	3677	14.5	3310	13.0	2619	10.3	25378	100.0
2000	15098	60.8	3440	13.9	3520	14.2	2760	11.1	24818	100.0
2001	14619	59.7	3107	12.7	3744	15.3	3022	12.3	24492	100.0
2002	14139	58.0	3090	12.7	4004	16.4	3161	13.0	24394	100.0
2003	13837	57.0	2939	12.1	4327	17.8	3178	13.1	24281	100.0
2004	13758	54.8	3228	12.9	4535	18.1	3590	14.3	25111	100.0
2005	14191	53.5	3361	12.7	5070	19.1	3916	14.8	26538	100.0
2006	15376	54.4	3643	12.9	5280	18.7	3955	14.0	28254	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 33: Frequency of complications of labour and delivery for women who gave birth by caesarean section in Western Australia, 2006

Number of complications of labour and delivery	Elective Caesarean		Emergency Caesarean		Total	
	No.	%	No.	%	No.	%
1	4326	81.9	1979	50.0	6305	68.3
2	618	11.7	1019	25.8	1637	17.7
3	306	5.8	475	12.0	781	8.5
4	24	0.5	280	7.1	304	3.3
5	6	0.1	119	3.0	125	1.4
6	-	-	55	1.4	55	0.6
7	-	-	19	0.5	19	0.2
8	-	-	9	0.2	9	0.1
TOTAL	5280	100.0	3955	100.0	9235	100.0

Table 34: Complications of labour and delivery for women who gave birth by caesarean section in Western Australia, 2005

Complications of labour and delivery ¹	Elective Caesarean		Emergency Caesarean		Total	
	No.	% ²	No.	% ³	No.	% ⁴
Multiple gestation	136	2.6	138	3.5	274	3.0
Maternal care - known/suspected malpresentation of fetus	769	14.6	380	9.6	1149	12.4
Maternal care - known/suspected disproportion	128	2.4	31	0.8	159	1.7
Maternal care - known/suspected abnorm. pelvic organs	434	8.2	124	3.1	558	6.0
Placenta praevia	79	1.5	31	0.8	110	1.2
Premature separation of placenta (abruptio placentae)	0	0.0	26	0.7	26	0.3
Failed induction of labour	0	0.0	94	2.4	94	1.0
Abnormalities of forces of labour	69	1.3	470	11.9	539	5.8
Long labour	0	0.0	1244	31.5	1244	13.5
Labour and delivery affected by malposition and malpresentation of fetus	32	0.6	318	8.0	350	3.8
Labour and delivery affected by maternal pelvic abnormality	181	3.4	278	7.0	459	5.0
Other factors affecting labour and delivery	10	0.2	38	1.0	48	0.5
Labour and delivery complicated by intrapartum haemorrhage not elsewhere classified	0	0.0	21	0.5	21	0.2
Labour and delivery complicated by fetal distress	84	1.6	1533	38.8	1617	17.5
Labour and delivery complicated by umbilical cord complications	40	0.8	207	5.2	247	2.7
Post partum haemorrhage	529	10.0	874	22.1	1403	15.2
Retained placenta and membranes without haemorrhage	6	0.1	9	0.2	15	0.2
Delayed delivery after spontaneous or unspecified rupture of membranes	4	0.1	66	1.7	70	0.8
Vaginal delivery following previous caesarean section	3235	61.3	697	17.6	3932	42.6
Supervision of pregnancy with other poor reproductive or obstetric history	138	2.6	19	0.5	157	1.7
Other	686	13.0	558	14.1	1244	13.5
TOTAL	6560		7156		13716	

¹ A woman may have more than one complication of labour and delivery.

² Percentage of women who had elective caesarean (n=5280)

³ Percentage of women who had emergency caesarean (n=3955)

⁴ Percentage of women who had a caesarean section (n=9235)

For Tables 33 and 34, women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 35: Hours of established labour and onset of labour for women who gave birth in Western Australia, 2006

Hours of Labour	Onset of Labour			
	Spontaneous		Induction	
	No.	%	No.	%
< 1	892	6.2	788	10.0
1-4	5379	37.4	3702	47.1
5-12	6688	46.5	3059	38.9
13-18	1125	7.8	262	3.3
19-24	216	1.5	28	0.4
> 24	74	0.5	15	0.2
TOTAL	14374	100.0	7854	100.0

Excludes 5975 women who did not experience labour and 51 women for whom hours of established labour were not recorded.

Table 36: Type of delivery and hours of established labour for women who gave birth in Western Australia, 2006

Type of Delivery	Hours of Established Labour							Total
	No Labour	< 1	1-4	5-12	13-18	19-24	> 24	
Number								
Normal	-	303	7881	6415	634	93	34	15360
Vacuum	-	2	632	1802	343	56	20	2855
Forceps	-	0	100	452	120	17	3	692
Breech Manoeuvre	-	3	57	30	4	1	0	95
Elective Caesarean	5280	0	0	0	0	0	0	5280
Emergency Caesarean	695	1372	411	1048	286	77	32	3921
TOTAL	5975	1680	9081	9747	1387	244	89	28203
Percentage								
Normal	-	18.0	86.8	65.8	45.7	38.1	38.2	54.5
Vacuum	-	0.1	7.0	18.5	24.7	23.0	22.5	10.1
Forceps	-	0.0	1.1	4.6	8.7	7.0	3.4	2.5
Breech Manoeuvre	-	0.2	0.6	0.3	0.3	0.4	0.0	0.3
Elective Caesarean	88.4	-	-	-	-	-	-	18.7
Emergency Caesarean	11.6	81.7	4.5	10.8	20.6	31.6	36.0	13.9
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Excludes 51 women for whom hours of established labour were not recorded.

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 37: Selected complications of labour and delivery and plurality for women who gave birth in Western Australia, 2006

Complications of Labour and Delivery ¹	Plurality				Total	
	Singleton		Multiple			
	No.	% ²	No.	% ³	No.	% ⁴
Precipitate delivery	1477	5.3	8	2.0	1485	5.3
Fetal distress	3568	12.8	49	12.2	3617	12.8
Prolapsed cord	29	0.1	1	0.2	30	0.1
Cord tightly around neck	1113	4.0	9	2.2	1122	4.0
Cephalopelvic disproportion	479	1.7	0	0.0	479	1.7
Postpartum haemorrhage	2798	10.0	140	34.8	2938	10.4
Retained placenta - manual removal	355	1.3	8	2.0	363	1.3
Persistent occipito posterior	689	2.5	7	1.7	696	2.5
Shoulder dystocia	405	1.5	0	0.0	405	1.4
Failure to progress <= 3cms	1072	3.8	16	4.0	1088	3.9
Failure to progress > 3cms	1478	5.3	14	3.5	1492	5.3
Previous caesarean section	4228	15.2	66	16.4	4294	15.2
Other	6554	23.5	357	88.8	6911	24.5
No complications of labour and delivery	10926	39.2	24	6.0	10950	38.8

¹ A woman may have more than one complication of labour and delivery.

² Percentage of women with singleton birth (n=27852).

³ Percentage of women with multiple birth (n=402).

⁴ Percentage of women who gave birth (n=28254).

Table 38: Type of delivery and accoucheur of women who gave birth in Western Australia, 2006

Accoucheur	Type of Delivery								Total	
	Spontaneous Vaginal		Assisted Vaginal		Elective Caesarean		Emergency Caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
Obstetrician	2322	15.1	2116	58.1	4517	85.5	2559	64.7	11514	40.8
Other medical officer	1649	10.7	1455	39.9	757	14.3	1396	35.3	5257	18.6
Midwife	10314	67.1	65	1.8	6	-	-	-	10385	36.8
Student	937	6.1	2	0.1	0	-	-	-	939	3.3
Self/no attendant	57	0.4	0	0.0	0	-	-	-	57	0.2
Other	97	0.6	5	-	0	-	-	-	102	0.4
TOTAL	15376	100.0	3643	100.0	5280	100.0	3955	100.0	28254	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Table 39: Type of delivery and repair of perineum and/or vagina for women who gave birth in Western Australia, 2006

Type of Delivery	Repair of perineum and/or Vagina					Total
	None	Episiotomy	1 or 2 degree tear	3 or 4 degree tear	Other	
Number						
Normal	7057	1417	6185	147	570	15376
Vacuum	381	1361	957	88	69	2856
Forceps	32	518	90	40	12	692
Breech manoeuvre	75	9	9	2	0	95
Elective caesarean	5280	0	0	0	0	5280
Emergency caesarean	3919	11	11	0	14	3955
TOTAL	16744	3316	7252	277	665	28254
Percentage						
Normal	42.1	42.7	85.3	53.1	85.7	54.4
Vacuum	2.3	41.0	13.2	31.8	10.4	10.1
Forceps	0.2	15.6	1.2	14.4	1.8	2.4
Breech manoeuvre	0.4	0.3	0.1	0.7	-	0.3
Elective caesarean	31.5	-	-	-	-	18.7
Emergency caesarean	23.4	0.3	0.2	-	2.1	14.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.

Baby Characteristics

Table 40: Condition at birth and crude birth rate in Western Australia, 1992–2006

Year of Birth	Condition at Birth				Total No.	Crude Birth Rate ¹
	Live birth		Fetal death			
	No.	%	No.	%		
1992	25159	99.3	165	0.7	25324	15.2
1993	25159	99.3	176	0.7	25335	15.0
1994	25237	99.3	188	0.7	25425	14.8
1995	25254	99.2	191	0.8	25445	14.6
1996	25385	99.2	199	0.8	25584	14.4
1997	25096	99.3	171	0.7	25267	14.0
1998	25516	99.4	164	0.6	25680	13.9
1999	25592	99.3	179	0.7	25771	13.8
2000	25022	99.2	206	0.8	25228	13.3
2001	24773	99.3	166	0.7	24939	13.0
2002	24607	99.3	175	0.7	24782	12.8
2003	24499	99.3	184	0.7	24683	12.6
2004	25340	99.3	188	0.7	25528	12.8
2005	26781	99.3	200	0.7	26981	13.3
2006	28457	99.3	208	0.7	28665	13.8

¹ Crude birth rate is the number of live births per 1,000 total population.

Table 41: Condition at birth and gender of births in Western Australia, 2006

Gender	Condition at Birth				Total	
	Live birth		Fetal death		No.	%
	No.	%	No.	%		
Male	14378	50.5	110	52.9	14488	50.5
Female	14077	49.5	94	45.2	14171	49.5
Indeterminate	2	0.0	4	1.9	6	0.0
TOTAL	28457	100.0	208	100.0	28665	100.0

Table 42: Condition at birth and Aboriginality of mother for births in Western Australia, 2006

Aboriginality of Mother	Condition at Birth				Total		Fetal death rate/1000
	Live birth		Fetal death		No.	%	
	No.	%	No.	%			
Aboriginal	1781	6.3	27	13.0	1808	6.3	14.9
Non-Aboriginal	26676	93.7	181	87.0	26857	93.7	6.7
TOTAL	28457	100.0	208	100.0	28665	100.0	7.3

Table 43: Condition at birth and place of birth for births in Western Australia, 2006

Place of Birth	Condition at Birth				TOTAL		Fetal death rate
	Live birth		Fetal death		No.	%	
	No.	%	No.	%			
Metropolitan							
Teaching	5866	20.6	133	63.9	5999	20.9	22.2
Department ³	6316	22.2	14	6.7	6330	22.1	2.2
Private	10430	36.7	22	10.6	10452	36.5	2.1
Country							
Regional ¹	3382	11.9	23	11.1	3405	11.9	6.8
Private	678	2.4	6	6.0	684	2.4	8.8
Other ²	1487	5.2	6	2.9	1493	5.2	4.0
Non-Hospital							
Homebirths	195	0.7	0	0.0	195	0.7	0.0
BBA	103	0.4	4	1.9	107	0.4	37.4
TOTAL	28457	100.0	208	100.0	28665	100.0	7.3

¹ Country regional hospital - public hospital in regional centre.

² Other country hospital - other public hospital.

³ Departmental hospital - public hospital in metropolitan area.

Table 44: Plurality of all births in Western Australia, 1992–2006

Year of Birth	Plurality							
	Singleton		Twins		Triplets		Other Multiple	
	No.	%	No.	%	No.	%	No.	%
1992	24628	97.3	660	2.6	36	0.1		
1993	24625	97.2	668	2.6	42	0.2		
1994	24728	97.3	666	2.6	27	0.1	4	0.0
1995	24744	97.2	674	2.6	27	0.1	-	-
1996	24817	97.0	720	2.8	39	0.2	8	0.0
1997	24487	96.9	738	2.9	30	0.1	12	0.0
1998	24918	97.0	732	2.9	30	0.1	-	-
1999	25003	97.0	720	2.8	39	0.2	9	0.0
2000	24419	96.8	774	3.1	36	0.1	-	-
2001	24059	96.5	842	3.4	36	0.1	-	-
2002	24009	96.9	764	3.1	9	0.0	-	-
2003	23887	96.8	774	3.1	18	0.1	4	0.0
2004	24702	96.8	802	3.1	24	0.1	-	-
2005	26096	96.7	860	3.2	36	0.1	-	-
2006	27852	97.2	786	2.7	27	0.1	-	-

Table 45: Apgar score at one minute and time to spontaneous respiration of live births in Western Australia, 2006

Time to Spontaneous Respiration	Apgar Score at 1 Minute								Total	
	0		1-3		4-7		8-10			
	No.	%	No.	%	No.	%	No.	%	No.	%
≤ 1	3	42.9	30	7.6	2514	60.2	23388	98.1	25935	91.3
2-3	0	0.0	83	21.0	1264	30.3	350	1.5	1697	6.0
4-6	-	-	133	33.7	221	5.3	66	0.3	420	1.5
7-10	-	-	27	6.8	28	0.7	3	0.0	58	0.2
> 10	3	42.9	11	2.8	5	0.1	1	-	20	0.1
Intubation ¹	1	14.3	111	28.1	144	3.4	30	0.1	286	1.0
TOTAL	7	100.0	395	100.0	4176	100.0	23838	100.0	28416	100.0

Excludes 41 live births for whom an Apgar score at one minute and/or time to establish spontaneous respiration was unknown.

¹ These babies were intubated at birth and time to establish spontaneous respiration was not recorded.

Table 46: Apgar score at five minutes and time to spontaneous respiration of live births in Western Australia, 2006

Time to Spontaneous Respiration	Apgar Score at 5 Minutes								Total	
	0		1-3		4-7		8-10			
	No.	%	No.	%	No.	%	No.	%	No.	%
≤ 1	2	28.6	7	14.6	139	22.7	25792	92.9	25940	91.3
2-3	-	-	0	-	147	24.1	1550	5.6	1697	6.0
4-6	-	-	4	8.3	152	24.9	264	1.0	420	1.5
7-10	-	-	7	14.6	45	7.4	6	0.0	58	0.2
> 10	-	-	6	12.5	11	1.8	3	0.0	20	0.1
Intubation ¹	5	71.4	24	50.0	117	19.1	140	0.5	286	1.0
TOTAL	7	100.0	48	100.0	611	100.0	27755	100.0	28421	100.0

Excludes 36 live births for whom an Apgar score at five minutes and/or time to establish spontaneous respiration was unknown.

¹ These babies were intubated at birth and time to establish spontaneous respiration was not recorded.

Table 47: Apgar score at five minutes and resuscitation methods of live births in Western Australia, 2005

Resuscitation	Apgar Score at 5 Minutes								Total	
	0		1-3		4-7		8-10			
	No.	%	No.	%	No.	%	No.	%	No.	%
None	4	50.0	18	33.3	16	2.6	18767	67.6	18805	66.1
Suction only	-	-	1	1.9	9	1.5	3491	12.6	3501	12.3
Oxygen therapy	-	-	1	1.9	100	16.4	3540	12.8	3641	12.8
Bag & mask	-	-	8	14.8	318	52.0	1626	5.9	1952	6.9
Intubation	-	-	7	13.0	116	19.0	150	0.5	273	1.0
Ext card mass	2	25.0	12	22.2	27	4.4	17	0.1	58	0.2
Other	2	25.0	7	13.0	25	4.1	164	0.6	198	0.7
TOTAL	8	100.0	54	100.0	611	100.0	27755	100.0	28428	100.0

Excludes 29 live births for whom an Apgar score at five minutes was unknown.

Table 48: Birthweight and resuscitation methods of live births in Western Australia, 2006

Resuscitation	Birthweight (grams)					Total
	< 500	500-1499	1500-1999	2000-2499	≥ 2500	
Number						
None	14	29	117	610	18059	18829
Suction only	1	2	20	98	3380	3501
Oxygen therapy	1	35	79	213	3314	3642
Bag & mask	0	75	130	192	1558	1955
Intubation	4	119	15	16	120	274
Ext card mass	0	12	2	9	35	58
Other	0	17	5	12	164	198
TOTAL	20	289	368	1150	26630	28457
Percentage						
None	70.0	10.0	31.8	53.0	67.8	66.2
Suction only	-	0.7	5.4	8.5	12.7	12.3
Oxygen therapy	5.0	12.1	21.5	18.5	12.4	12.8
Bag & mask	5.0	26.0	35.3	16.7	5.9	6.9
Intubation	20.0	41.2	4.1	1.4	0.5	1.0
Ext card mass	0.0	4.2	0.5	0.8	0.1	0.2
Other	0.0	5.9	1.4	1.0	0.6	0.7
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Table 49: Birthweight distribution and Aboriginality of mother for births in Western Australia, 2006

Birthweight (grams)	Aboriginality of Mother				Total	
	Aboriginal		Non-Aboriginal		No.	%
	No.	%	No.	%		
< 500	16	0.9	97	0.4	113	0.4
500-999	24	1.3	136	0.5	160	0.6
1000-1499	31	1.7	148	0.6	179	0.6
1500-1999	56	3.1	324	1.2	380	1.3
2000-2499	142	7.9	1021	3.8	1163	4.1
< 2500	269	14.9	1726	6.4	1995	7.0
2500-2999	439	24.3	4082	15.2	4521	15.8
3000-3499	588	32.5	9846	36.7	10434	36.4
3500-3999	370	20.5	8255	30.7	8625	30.1
4000-4499	110	6.1	2527	9.4	2637	9.2
≥ 4500	32	1.8	421	1.6	453	1.6
TOTAL	1808	100.0	26857	100.0	28665	100.0

Mean = 3336 grams. Standard deviation = 617 grams.

Table 50: Low birthweight and very low birthweight by Aboriginality of mother for births in Western Australia, 1992–2006

Year of Birth	Aboriginality of Mother							
	Aboriginal				Non-Aboriginal			
	Low birthweight ¹		Very low birthweight ²		Low birthweight ¹		Very low birthweight ²	
	No.	%	No.	%	No.	%	No.	%
1992	169	11.8	33	2.3	1481	6.2	309	1.3
1993	191	13.1	62	4.3	1456	6.1	281	1.2
1994	206	14.2	47	3.2	1441	6.0	348	1.5
1995	177	12.1	41	2.8	1496	6.2	322	1.3
1996	198	13.7	39	2.7	1542	6.4	349	1.4
1997	217	13.7	45	2.8	1467	6.2	328	1.4
1998	192	12.6	44	2.9	1538	6.4	320	1.3
1999	231	14.2	62	3.8	1488	6.2	314	1.3
2000	232	14.4	62	3.8	1521	6.4	337	1.4
2001	258	15.7	59	3.6	1495	6.4	322	1.4
2002	238	14.2	55	3.3	1432	6.2	298	1.3
2003	234	15.1	57	3.7	1477	6.4	286	1.2
2004	234	14.9	53	3.4	1586	6.6	358	1.5
2005	284	16.5	64	3.7	1631	6.5	357	1.4
2006	269	14.9	71	3.9	1726	6.4	381	1.4

¹ Low birthweight – less than 2500 grams.

² Very low birthweight – less than 1500 grams.

Table 51: Birthweight distribution and condition at birth for total births in Western Australia, 2006

Birthweight (grams)	Condition at Birth				Total	
	Live birth		Fetal Death		No.	%
	No.	%	No.	%		
< 500	20	0.1	93	44.7	113	0.4
500-999	127	0.4	33	15.9	160	0.6
1000-1499	162	0.6	17	8.2	179	0.6
1500-1999	368	1.3	12	5.8	380	1.3
2000-2499	1150	4.0	13	6.3	1163	4.1
< 2500	1827	6.4	168	80.8	1995	7.0
2500-2999	4504	15.8	17	8.2	4521	15.8
3000-3499	10420	36.6	14	6.7	10434	36.4
3500-3999	8621	30.3	4	1.9	8625	30.1
4000-4499	2635	9.3	2	1.0	2637	9.2
≥ 4500	450	1.6	3	-	453	1.6
TOTAL	28457	100.0	208	100.0	28665	100.0

Table 52: Birthweight distribution and condition at birth for singleton births in Western Australia, 2006

Birthweight (grams)	Condition at Birth				Total	
	Live birth		Fetal death		No.	%
	No.	%	No.	%		
< 500	14	0.1	84	44.0	98	0.4
500-999	96	0.3	30	15.7	126	0.5
1000-1499	118	0.4	12	6.3	130	0.5
1500-1999	259	0.9	12	6.3	271	1.0
2000-2499	890	3.2	13	6.8	903	3.2
< 2500	1377	5.0	151	79.1	1528	5.5
2500-2999	4258	15.4	17	8.9	4275	15.3
3000-3499	10331	37.3	14	7.3	10345	37.1
3500-3999	8612	31.1	4	2.1	8616	30.9
4000-4499	2633	9.5	2	1.0	2635	9.5
≥ 4500	450	1.6	3	-	453	1.6
TOTAL	27661	100.0	191	100.0	27852	100.0

Table 53: Birthweight distribution and condition at birth for multiple births in Western Australia, 2006

Birthweight (grams)	Condition at Birth				Total	
	Live birth		Fetal death		No.	%
	No.	%	No.	%		
< 500	6	0.8	9	52.9	15	1.8
500-999	31	3.9	3	17.6	34	4.2
1000-1499	44	5.5	5	29.4	49	6.0
1500-1999	109	13.7	0	0.0	109	13.4
2000-2499	260	32.7	0	0.0	260	32.0
< 2500	450	56.5	17	100.0	467	57.4
2500-2999	246	30.9	0	0.0	246	30.3
3000-3499	89	11.2	0	0.0	89	10.9
3500-3999	9	1.1	0	0.0	9	1.1
4000-4499	2	0.3	0	0.0	2	0.2
≥ 4500	0	0.0	0	0.0	0	0.0
TOTAL	796	100.0	17	100.0	813	100.0

Table 54: Birthweight distribution and gestation for total births in Western Australia, 2006

Birthweight (grams)	Gestation (weeks)								Total	
	20-27		28-32		33-36		37-43		No.	%
	No.	%	No.	%	No.	%	No.	%		
< 500	106	41.2	3	-	2	-	2	-	113	0.4
500-999	128	49.8	30	8.5	1	-	1	-	160	0.6
1000-1499	20	7.8	131	36.9	24	1.2	4	0.0	179	0.6
1500-1999	3	1.2	138	38.9	205	10.7	34	0.1	380	1.3
2000-2499	0	-	41	11.5	648	33.7	474	1.8	1163	4.1
< 2500	257	100.0	343	96.6	880	45.8	515	2.0	1995	7.0
2500-2999	0	-	7	2.0	711	37.0	3804	14.6	4522	15.8
3000-3499	0	0.0	4	1.1	267	13.9	10162	38.9	10433	36.4
3500-3999	0	-	1	-	54	2.8	8570	32.8	8625	30.1
4000-4499	0	-	0	0.0	8	0.4	2629	10.1	2637	9.2
≥ 4500	0	-	0	-	3	0.2	450	1.7	453	1.6
TOTAL	257	100.0	355	100.0	1923	100.0	26130	100.0	28665	100.0

Table 55: Birthweight distribution and gestation for singleton births in Western Australia, 2006

Birthweight (grams)	Gestation (weeks)								Total	
	20-27		28-32		33-36		37-43			
	No.	%	No.	%	No.	%	No.	%	No.	%
< 500	96	45.1	2	-	-	-	-	-	98	0.4
500-999	101	47.4	23	8.6	1	-	1	-	126	0.5
1000-1499	13	6.1	95	35.3	19	1.2	3	0.0	130	0.5
1500-1999	3	1.4	105	39.0	130	8.5	33	0.1	271	1.0
2000-2499	0	-	32	11.9	464	30.3	407	1.6	903	3.2
< 2500	213	100.0	257	95.5	614	40.2	444	1.7	1528	5.5
2500-2999	-	-	7	2.6	611	40.0	3658	14.2	4276	15.4
3000-3499	0	0.0	4	1.5	242	15.8	10098	39.1	10344	37.1
3500-3999	-	-	1	-	51	3.3	8564	33.1	8616	30.9
4000-4499	-	-	0	0.0	8	0.5	2627	10.2	2635	9.5
≥ 4500	-	-	-	-	3	0.2	450	1.7	453	1.6
TOTAL	213	100.0	269	100.0	1529	100.0	25841	100.0	27852	100.0

Table 56: Birthweight distribution and gestation for multiple births in Western Australia, 2006

Birthweight (grams)	Gestation (weeks)								Total	
	20-27		28-32		33-36		37-43			
	No.	%	No.	%	No.	%	No.	%	No.	%
< 500	10	22.7	1	-	2	-	2	-	15	1.8
500-999	27	61.4	7	8.1	0	-	0	-	34	4.2
1000-1499	7	15.9	36	41.9	5	1.3	1	-	49	6.0
1500-1999	0	-	33	38.4	75	19.0	1	0.3	109	13.4
2000-2499	0	-	9	10.5	184	46.7	67	23.2	260	32.0
< 2500	44	100.0	86	100.0	266	67.5	71	24.6	467	57.4
2500-2999	-	-	0	0.0	100	25.4	146	50.5	246	30.3
3000-3499	-	-	-	-	25	6.3	64	22.1	89	10.9
3500-3999	-	-	-	-	3	0.8	6	2.1	9	1.1
4000-4499	-	-	-	-	-	-	2	0.7	2	0.2
≥ 4500	-	-	-	-	-	-	-	-	0	0.0
TOTAL	44	100.0	86	100.0	394	100.0	289	100.0	813	100.0

Table 57: Condition at birth and place of birth for births for pre-term births (23–31 weeks gestation) in Western Australia, 2006

Place of Birth	Live births						Stillbirths		All	
	23-25 weeks		26-28 weeks		29-31 weeks		23-31 weeks		23-31 weeks	
	No.	%	No.	%	No.	%	No.	%	No.	%
Public										
Teaching	46	83.6	89	91.8	167	93.3	43	75.4	345	88.9
Department	1	1.8	3	3.1	1	0.6	1	1.8	6	1.5
Country	3	5.5	2	2.1	7	3.9	5	8.8	17	4.4
Private										
Non-hospital	3	5.5	2	2.1	3	1.7	7	12.3	15	3.9
Non-hospital	2	3.6	1	1.0	1	0.6	1	1.8	5	5.2
TOTAL	55	100.0	97	100.0	179	100.0	57	100.0	388	100.0

Includes 4 live births and 1 stillborn baby born before arrival at hospital.

Table 58: Condition at birth and place of birth for births for pre-term births (23–31 weeks gestation) in Western Australia, 1992–2006

Year of Birth	Teaching				Other				Total			
	Live births		Stillbirths		Live births		Stillbirths		Live births		Stillbirths	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1992	231	77.5	32	10.7	21	7.0	14	4.7	252	84.6	46	15.4
1993	200	69.9	40	14.0	22	7.7	24	8.4	222	77.6	64	22.4
1994	244	74.4	32	9.8	22	6.7	30	9.1	266	81.1	62	18.9
1995	225	75.0	37	12.3	20	6.7	18	6.0	245	81.7	55	18.3
1996	226	71.7	45	14.3	22	7.0	22	7.0	248	78.7	67	21.3
1997	265	78.4	35	10.4	22	6.5	16	4.7	287	84.9	51	15.1
1998	264	78.1	37	10.9	16	4.7	21	6.2	280	82.8	58	17.2
1999	246	79.4	34	11.0	18	5.8	12	3.9	264	85.2	46	14.8
2000	268	76.6	44	12.6	27	7.7	11	3.1	295	84.3	55	15.7
2001	261	77.2	35	10.4	24	7.1	18	5.3	285	84.3	53	15.7
2002	219	73.7	40	13.5	25	8.4	13	4.4	244	82.2	53	17.8
2003	230	76.4	30	10.0	23	7.6	18	6.0	253	84.1	48	15.9
2004	283	78.8	36	10.0	23	6.4	17	4.7	306	85.2	53	14.8
2005	286	77.7	36	9.8	30	8.2	16	4.3	316	85.9	52	14.1
2006	302	77.8	43	11.1	29	7.5	14	3.6	331	85.3	57	14.7

Includes babies born before arrival at hospital and homebirths.

Table 59: Births identified with birth defects in Western Australia, 2002–2006

Diagnostic Category (and British Paediatric Association Code)	Year of Birth									
	2002		2003		2004		2005		2006	
	No.	Rate ¹	No.	Rate ¹	No.	Rate ¹	No.	Rate ¹	No.	Rate ¹
Nervous system defects (74000-74299)	119	4.8	91	3.7	96	3.8	122	4.5	89	3.1
Cardiovascular defects (74500-74799)	321	13.0	280	11.3	296	11.6	282	10.5	284	9.9
Respiratory System defects (74800-74899)	31	1.3	29	1.2	28	1.1	25	0.9	29	1.0
Gastro-Intestinal defects (74900-75199)	147	5.9	165	6.7	156	6.1	171	6.3	125	4.4
Uro-Genital Defects (75200-75399)	388	15.7	378	15.3	382	15.0	359	13.3	248	8.7
Musculo-Skeletal Defects (75400-75699)	389	15.7	337	13.7	342	13.4	386	14.3	378	13.2
Chromosome Defects (75800-75899)	116	1.7	121	4.9	148	5.8	153	5.7	146	5.1

¹ Rate per 1000 births.

SOURCE: Western Australian Birth Defects Registry.

Table 60: Length of stay in special care and plurality for live births in Western Australia, 2006

Length of Stay ¹ (days)	Plurality				Total	
	Singleton		Multiple		No.	%
	No.	%	No.	%		
1	429	19.9	19	5.6	448	17.9
2	409	18.9	13	3.8	422	16.9
3	256	11.9	13	3.8	269	10.8
4	162	7.5	15	4.4	177	7.1
5	117	5.4	20	5.9	137	5.5
6	88	4.1	13	3.8	101	4.0
7	67	3.1	7	2.1	74	3.0
8-14	265	12.3	75	22.0	340	13.6
15-20	103	4.8	64	18.8	167	6.7
21-28	92	4.3	27	7.9	119	4.8
29-60	88	4.1	46	13.5	134	5.4
61-90	44	2.0	22	6.5	66	2.6
91-180	37	1.7	7	2.1	44	1.8
> 180	3	0.1	-	-	3	0.1
TOTAL	2160	100.0	341	100.0	2501	100.0

¹ Excludes births with less than 24 hours stay in Special Care Nurseries.

Table 61: Length of stay in hospital of birth and birthweight distribution of live births in Western Australia, 2006

Birthweight (grams)	Length of Stay (days)						TOTAL
	≤ 1	2-7	8-14	15-20	21-28	> 28	
Number							
< 500	16	0	0	0	1	3	20
500-999	21	7	1	2	3	93	127
1000-1499	20	6	13	9	19	95	162
1500-1999	19	71	107	60	71	40	368
2000-2499	75	656	299	80	25	15	1150
< 2500	151	740	420	151	119	246	1827
2500-2999	511	3580	359	37	10	7	4504
3000-3499	1289	8834	274	12	3	8	10420
3500-3999	1098	7318	190	4	1	10	8621
4000-4499	379	2203	50	2	1	0	2635
≥ 4500	68	362	19	0	0	1	450
TOTAL	3496	23037	1312	206	134	272	28457
Percentage							
< 500	0.5	0.0	0.0	-	-	1.1	0.1
500-999	0.6	0.0	0.1	1.0	2.2	34.2	0.4
1000-1499	0.6	0.0	1.0	4.4	14.2	34.9	0.6
1500-1999	0.5	0.3	8.2	29.1	53.0	14.7	1.3
2000-2499	2.1	2.8	22.8	38.8	18.7	5.5	4.0
< 2500	4.3	3.2	32.0	73.3	88.8	90.4	6.4
2500-2999	14.6	15.5	27.4	18.0	7.5	2.6	15.8
3000-3499	36.9	38.3	20.9	5.8	2.2	2.9	36.6
3500-3999	31.4	31.8	14.5	1.9	0.7	3.7	30.3
4000-4499	10.8	9.6	3.8	1.0	0.7	0.0	9.3
≥ 4500	1.9	1.6	1.4	0.0	0.0	0.3	1.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Includes homebirths in midwife's care.

Table 62: Length of stay in hospital of birth and birthweight distribution of surviving live births in Western Australia, 2006

Birthweight (grams)	Length of Stay (days)						TOTAL
	≤ 1	2-7	8-14	15-20	21-28	> 28	
Number							
< 500	-	-	-	-	-	2	2
500-999	-	1	-	-	-	59	60
1000-1499	1	3	1	0	4	58	67
1500-1999	2	35	42	33	43	25	180
2000-2499	30	563	246	75	23	13	950
< 2500	33	602	289	108	70	157	1259
2500-2999	429	3500	337	36	9	6	4317
3000-3499	1164	8746	271	11	2	6	10200
3500-3999	999	7252	183	4	0	10	8448
4000-4499	336	2186	49	2	1	0	2574
≥ 4500	57	354	19	0	0	0	430
TOTAL	3018	22640	1148	161	82	179	27228
Percentage							
< 500	-	-	-	-	-	1.1	0.0
500-999	-	0.0	-	-	-	33.0	0.2
1000-1499	0.0	0.0	0.1	0.0	4.9	32.4	0.2
1500-1999	0.1	0.2	3.7	20.5	52.4	14.0	0.7
2000-2499	1.0	2.5	21.4	46.6	28.0	7.3	3.5
< 2500	1.1	2.7	25.2	67.1	85.4	87.7	4.6
2500-2999	14.2	15.5	29.4	22.4	11.0	3.4	15.9
3000-3499	38.6	38.6	23.6	6.8	2.4	3.4	37.5
3500-3999	33.1	32.0	15.9	2.5	0.0	5.6	31.0
4000-4499	11.1	9.7	4.3	1.2	1.2	0.0	9.5
≥ 4500	1.9	1.6	1.7	0.0	0.0	0.0	1.6
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 63: Length of stay in hospital of birth and gestational age of live births in Western Australia, 2006

Gestation (weeks)	Length of Stay (days)						TOTAL
	≤ 1	2-7	8-14	15-20	21-28	> 28	
Number							
20-27	37	6	1	1	4	85	134
28-32	27	21	50	37	62	138	335
33-36	130	993	550	142	59	26	1900
37-42	3302	22017	711	26	9	23	26088
TOTAL	3496	23037	1312	206	134	272	28457
Percentage							
20-27	1.1	0.0	0.1	0.5	3.0	31.3	0.5
28-32	0.8	0.1	3.8	18.0	46.3	50.7	1.2
33-36	3.7	4.3	41.9	68.9	44.0	9.6	6.7
37-42	94.5	95.6	54.2	12.6	6.7	8.5	91.7
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Includes homebirths in midwife's care.

Table 64: Length of stay in hospital of birth and gestational age of surviving live births in Western Australia, 2006

Gestation (weeks)	Length of Stay (days)						TOTAL
	≤ 1	2-7	8-14	15-20	21-28	> 28	
Number							
20-27	0	0	0	0	0	53	53
28-32	2	6	7	8	23	86	132
33-36	43	844	446	127	51	19	1530
37-42	2973	21790	695	26	8	21	25513
TOTAL	3018	22640	1148	161	82	179	27228
Percentage							
20-27	-	0.0	0.0	-	-	29.6	0.2
28-32	0.1	0.0	-	5.0	28.0	48.0	0.5
33-36	1.4	3.7	38.9	78.9	62.2	10.6	5.6
37-42	98.5	96.2	60.5	16.1	9.8	11.7	93.7
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Includes homebirths in midwife's care.

Excludes 1159 inter-hospital transfers and 70 deaths in hospital of birth.

Table 65: Perinatal mortality in Western Australia using birthweight criteria, 2006

Birthweight	Fetal death rate	Neonatal death rate	Perinatal death rate
≥ 400 grams	5.2	2.2	7.3
≥ 500 grams	4.0	1.7	5.7

Fetal death rate: the number of fetal deaths per 1000 total births.

Neonatal death rate: the number of neonatal deaths per 1000 live births.

Perinatal death rate: the number of fetal and neonatal deaths per 1000 total births.

Table 66: Perinatal mortality in Western Australia using gestational age criteria, 2006

Gestation	Fetal death rate	Neonatal death rate	Perinatal death rate
≥ 20 weeks	7.3	2.3	9.5
≥ 22 weeks	5.0	2.0	7.0

Fetal death rate: the number of fetal deaths per 1000 total births.

Neonatal death rate: the number of neonatal deaths per 1000 live births.

Perinatal death rate: the number of fetal and neonatal deaths per 1000 total births.

Table 67: Fetal, neonatal and perinatal mortality rates by Aboriginality of mother in Western Australia, 2006

Type of Death	Aboriginality of Mother		TOTAL
	Aboriginal	Non-Aboriginal	
Fetal death rate	14.9	6.7	7.3
Neonatal death rate	10.1	1.8	2.3
Perinatal death rate	24.9	8.5	9.5

Fetal death rate: the number of fetal deaths per 1000 total births.

Neonatal death rate: the number of neonatal deaths per 1000 live births.

Perinatal death rate: the number of fetal and neonatal deaths per 1000 total births.

Table 68: Fetal mortality by Aboriginality of mother in Western Australia, 1992–2006

Year of Birth	Aboriginality of Mother		TOTAL
	Aboriginal	Non-Aboriginal	
	Rate	Rate	Rate
1992	15.3	6.0	6.6
1993	13.7	6.5	6.9
1994	16.5	6.8	7.5
1995	13.0	7.4	7.7
1996	14.5	7.4	7.8
1997	20.9	5.8	6.7
1998	9.9	6.2	6.4
1999	13.5	6.5	6.9
2000	16.7	7.6	8.2
2001	10.9	6.4	6.7
2002	16.1	6.4	7.1
2003	16.2	6.9	7.5
2004	10.8	7.1	7.4
2005	13.9	7.0	7.4
2006	14.9	6.7	7.3

Fetal death rate: the number of fetal deaths per 1000 total births.

Table 69: Neonatal mortality by Aboriginality of mother in Western Australia, 1992–2006

Year of Birth	Aboriginality of Mother		TOTAL
	Aboriginal	Non-Aboriginal	
	Rate	Rate	Rate
1992	12.0	4.0	4.5
1993	7.0	2.9	3.1
1994	7.7	3.5	3.8
1995	9.0	2.6	3.0
1996	7.0	3.6	3.8
1997	4.5	2.5	2.6
1998	11.3	2.2	2.7
1999	12.5	2.3	2.9
2000	7.6	2.3	2.6
2001	6.8	2.7	2.9
2002	9.1	1.7	2.2
2003	7.9	1.8	2.2
2004	5.1	2.2	2.4
2005	5.3	2.6	2.7
2006	10.1	1.8	2.3

Neonatal death rate: the number of neonatal deaths per 1000 live births.

Table 70: Perinatal mortality by Aboriginality of mother in Western Australia, 1992–2006

Year of Birth	Aboriginality of Mother		TOTAL
	Aboriginal	Non-Aboriginal	
	Rate	Rate	Rate
1992	27.2	10.0	11.0
1993	20.6	9.4	10.0
1994	24.1	10.3	11.1
1995	21.8	10.0	10.7
1996	21.5	10.9	11.5
1997	25.3	8.3	9.3
1998	21.1	8.4	9.1
1999	25.8	8.8	9.9
2000	24.1	9.8	10.7
2001	17.6	9.0	9.6
2002	25.1	8.0	9.2
2003	23.9	8.6	9.6
2004	15.9	9.4	9.8
2005	19.2	9.5	10.1
2006	24.9	8.5	9.5

Perinatal death rate: the number of fetal and neonatal deaths per 1000 total births.

Table 71: Birthweight distribution of fetal, neonatal and perinatal deaths in Western Australia, 2006

Birthweight	Fetal deaths		Neonatal deaths		Perinatal deaths	
	No.	%	No.	%	No.	%
< 500	93	44.7	16	24.6	109	39.9
500-999	33	15.9	23	35.4	56	20.5
1000-1499	17	8.2	6	9.2	23	8.4
1500-1999	12	5.8	0	0.0	12	4.4
2000-2499	13	6.3	3	4.6	16	5.9
< 2500	168	80.8	48	73.8	216	79.1
2500-2999	17	8.2	8	12.3	25	9.2
3000-3499	14	6.7	4	6.2	18	6.6
3500-3999	4	1.9	3	4.6	7	2.6
4000-4499	2	1.0	1	1.5	3	1.1
≥ 4500	3	1.4	1	1.5	4	1.5
TOTAL	208	100	65	100	273	100

Table 72: Plurality of fetal, neonatal and perinatal deaths in Western Australia, 2006

Plurality	Fetal deaths		Neonatal deaths		Perinatal deaths	
	No.	Rate	No.	Rate	No.	Rate
Singleton	191	6.9	61	2.2	240	8.6
Multiple	17	20.9	16	20.1	33	40.6
TOTAL	208	7.3	65	2.3	273	9.5

Fetal death rate, singletons: the number of singleton fetal deaths per 1000 singleton births.

Neonatal death rate, singletons: the number of singleton neonatal deaths per 1000 singleton live births.

Perinatal death rate, singletons: the number of singleton fetal and neonatal deaths per 1000 singleton births.

Fetal death rate, multiples: the number of multiple fetal deaths per 1000 multiple births.

Neonatal death rate, multiples: the number of multiple neonatal deaths per 1000 multiple live births.

Perinatal death rate, multiples: the number of multiple fetal and neonatal deaths per 1000 multiple births.

Table 73: Age at death for neonatal deaths in Western Australia, 2006

Age at Neonatal death	No.	% of neonatal deaths
< Day 1	34	52.3
Day 1	8	12.3
Day 2	6	9.2
Day 3	3	4.6
Day 4	1	1.5
Day 5	-	-
Day 6	1	1.5
Day 7	2	3.1
Day 8-14	4	6.2
Day 15-21	4	6.2
Day 22-28	2	3.1
TOTAL	65	100.0

Table 74: Causes of fetal and neonatal deaths in Western Australia, 2006

Causes of Death	Fetal deaths		Neonatal deaths	
	No.	%	No.	%
Lethal birth defects	61	29.3	12	18.5
Extremely low birthweight (< 1000 grams) ¹	58	27.9	35	53.8
Low birthweight (1000-2499 grams) ²	6	2.9	3	4.6
Asphyxia	-	-	6	9.2
Maternal - Obstetric	2	1.0	-	-
- Medical	3	1.4	-	-
- Hypertension	3	1.4	-	-
Placenta and cord	7	3.4	0	0.0
Hydrops fetalis	-	-	-	-
Infection	-	-	-	-
Sudden infant death syndrome	-	-	-	-
Other	18	8.7	4	6.2
Unknown	50	24.0	5	7.7
TOTAL	208	100.0	65	100.0

¹ Any non-malformed perinatal death of birthweight less than 1000 grams was included in the extremely low birthweight category.

² Any non-malformed perinatal death of birthweight greater than or equal to 1000 grams and less than 2500 grams was included in the low birthweight category.

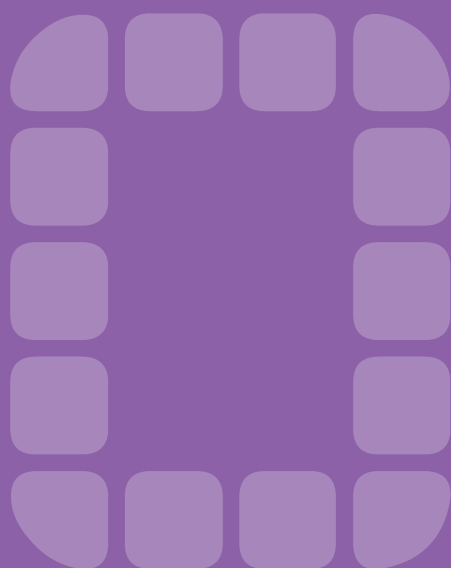
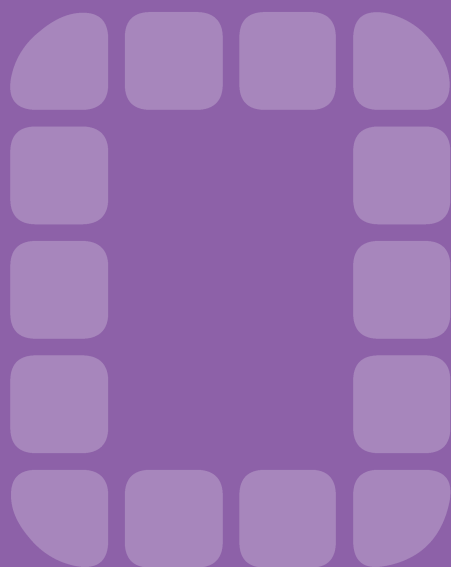
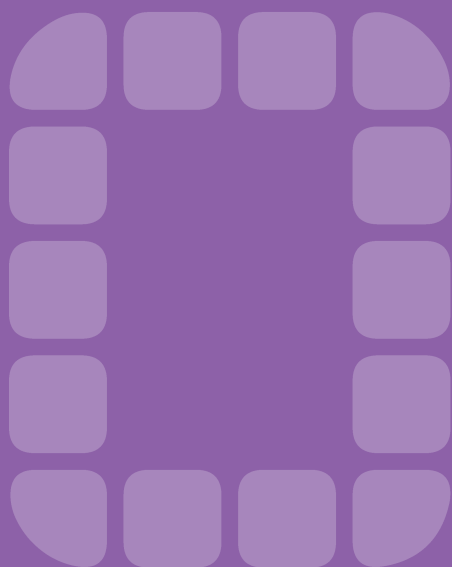
Table 75: Autopsy requests for fetal, neonatal and perinatal deaths in Western Australia, 2006

Autopsy Request	Fetal deaths		Neonatal deaths		Perinatal deaths	
	No.	%	No.	%	No.	%
Yes	145	69.7	22	33.8	167	61.2
No	58	27.9	40	61.5	98	35.9
Unknown	5	2.4	3	4.6	8	2.9
TOTAL	208	100.0	65	100.0	273	100.0

Appendix C - Associated Recent Reports

Available on <http://www.health.wa.gov.au/publications/>

1. *Induced Abortion in Western Australia 1999-2005: Report of The WA Abortion Notification System.* (November 2006).
2. *Perinatal, Infant and Maternal Mortality in WA – A Triennial Cohort of 1999-2001 births.* (December 2005).
3. *Perinatal Statistics in Western Australia, 2005. Twenty-third Annual Report of the Western Australian Midwives' Notification System.* (January 2007).
4. *The 11th Report of the Perinatal and Infant Mortality Committee of Western Australia 2000-01.* (July 2005).





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