

Perinatal Statistics in Western Australia, 2007

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FURTHER INFORMATION

Enquiries or comments on this publication and/or requests for additional information should be addressed to:

Mr. Max Le
 Manager, Maternal and Child Health
 Information Management and Reporting
 Department of Health, Western Australia
 189 Royal Street
 EAST PERTH WA 6004

Telephone: (08) 9222 2417
 Facsimile: (08) 9222 4236
 Email: max.le@health.wa.gov.au
 Internet: http://www.health.wa.gov.au/publications/subject_index/a-z_index.cfm#p

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ACKNOWLEDGEMENTS	2
EXECUTIVE SUMMARY	6
INTRODUCTION	9
1 MATERNAL DEMOGRAPHIC INFORMATION	10
1.1 Age	10
1.2 Aboriginality	11
1.3 Place of Birth	11
1.4 Conjugal State	12
1.5 Health Region of Residence	12
1.6 Place of Birth	13
2 PREGNANCY PROFILE	16
2.1 Previous Pregnancies	16
2.2 Socio-economic Status	17
2.3 Age-Specific Birth Rates	18
2.4 Complications of Pregnancy	18
2.5 Medical Conditions	19
2.6 Procedures and Treatments	20
3 LABOUR AND DELIVERY	21
3.1 Onset of Labour	21
3.2 Augmentation of Labour	22
3.3 Induction of Labour	22
3.4 Analgesia	22
3.5 Anaesthesia	23
3.6 Presentation	23
3.7 Type of Birth	24
3.8 Hours of Established Labour	25
3.9 Complications of Labour and Delivery	26
3.10 Accoucheur	26
3.11 Repair of Perineum and/or Vagina	27
4 BABY CHARACTERISTICS	28
4.1 Births	28
4.2 Crude Birth Rate	28
4.3 Gender	28
4.4 Condition at Birth	28
4.5 Plurality of Birth	28
4.6 Apgar Score at One Minute and Five Minutes	29
4.7 Time to Spontaneous Respiration	29
4.8 Resuscitation	29
4.9 Birthweight	29
4.10 Gestational Age	30
4.11 Birth Trauma	30
4.12 Birth Defects	30
4.13 Special Care	30
4.14 Neonatal Transfers	31
4.15 Length of Stay	31
4.16 Perinatal Mortality	31

REFERENCES	33
APPENDIX A — GLOSSARY	34
APPENDIX B — TABLES	36
APPENDIX C — ASSOCIATED RECENT REPORTS	81
APPENDIX D — NOTIFICATION OF CASE ATTENDED FORM	82

LIST OF TABLES

Table 1. Age and Aboriginality of women who gave birth in Western Australia, 2007	10
Table 2. Place of birth of women who gave birth in Western Australia, 2007	11
Table 3. Health region of residence and Aboriginality of women who gave birth in Western Australia, 2007	12
Table 4. Parity and age of women who gave birth in Western Australia, 2007	17
Table 5. Socio-economic status and age of women who gave birth in Western Australia, 2007	17
Table 6. Selected complications of pregnancy of women who gave birth in Western Australia, 2007	19
Table 7. Selected pre-existing medical conditions for women who gave birth in Western Australia, 2007	19
Table 8. Procedures and treatments provided to women who gave birth in Western Australia, 2007	20
Table 9. Analgesia for women who had vaginal births in Western Australia, 2007	22
Table 10. Anaesthesia for women who had vaginal births in Western Australia, 2007	23
Table 11. Anaesthesia for women who had caesarean births in Western Australia, 2007	23
Table 12. Caesarean births in other States and Territories of Australia, 2006	24
Table 13. Frequently recorded complications of labour and delivery for women who gave birth by caesarean section in Western Australia, 2007	25
Table 14. Complications of labour and delivery for women who gave birth in Western Australia, 2007	26
Table 15. Resuscitation methods for liveborn babies in Western Australia, 2007	29
Table 16. Birth defects of babies born in Western Australia, 2007	30

LIST OF FIGURES

Figure 1. Trends in maternal age in Western Australia, 1993–2007	10
Figure 2. Age distribution by Aboriginality for women giving birth in Western Australia, 2007	11
Figure 3. Place of birth for women resident in metropolitan Health Regions in Western Australia, 2007	13
Figure 4. Trend in use of public and private facilities for women giving birth in Western Australia, 1993–2007	14
Figure 5. Place of birth for singleton births in Western Australia, 2007	14
Figure 6. Place of birth for multiple births in Western Australia, 2007	15
Figure 7. Parity and Aboriginality of women who gave birth in Western Australia, 2007	16
Figure 8. Age-specific birth rates by five-year age groups and Aboriginality in Western Australia, 2007	18
Figure 9. Onset of labour for singleton and multiple births in Western Australia, 2007	21
Figure 10. Onset of labour for singleton births in Western Australia, 1993–2007	21
Figure 11. Hours of established labour for spontaneous and induced onsets in Western Australia, 2007	25
Figure 12. Repair of perineum and/or vagina for vaginal births in Western Australia, 2007	27
Figure 13. Live births and crude birth rates in Western Australia, 1993–2007	28
Figure 14. Perinatal mortality by Aboriginality in Western Australia, 1993–2007	31

The Midwives' Notification System compiles information on all births in Western Australia. This report presents an overview of data on births for 2007 in terms of maternal demography, procedures and infant outcomes. It also describes trends over the 15 year period from 1993 to 2007. Information on women resident in this state who gave birth outside Western Australia during 2007 is not included in this report.

Maternal Demographic Information

- In 2007, 29,622 women gave birth in Western Australia, and the average age of the mothers was 29.5 years.
- Teenage mothers (≤19 years) represented 5.1% (n=1512) and mothers aged 35 years or more represented 21.0% (n=6215) of women who gave birth. While the proportion of teenage mothers has remained stable, the group of older mothers increased significantly during the last 15 years. The proportion of women giving birth aged 35 or more has increased every year since 1993 rising from 11.2% to its current level of 21.0%.
- Aboriginal mothers represented 6.1% (n=1805) of women who gave birth. Aboriginal women had a higher birth rate (100.7 per 1000) than non-Aboriginal women (66.3 per 1000).
- Of births to teenage mothers, the birth rate for Aboriginal mothers (94.3 per 1000) was nearly six times the rate for non-Aboriginal mothers (16.5 per 1000).
- The majority (98.9%) of women gave birth in hospitals. Non-hospital births included 127 (0.4%) mothers who gave birth before arrival at hospital (BBA) and 192 (0.6%) mothers who gave birth at home.

Pregnancy Profile

- First time mothers, with an average age of 27.6 years, represented 42.0% of women who gave birth in 2007. Trend data shows that there has been no substantial variation in this proportion over the last 15 years.
- Among women aged 35 years or more giving birth, 26.1% (n=1625) had their first baby.
- The age-specific birth rate of women aged 15–19 years has varied over the past 15 years from a high of 25.7 births per 1000 women in 1994 to a low of 18.7 per 1000 in 2003. The 2007 figure was 21.0.
- The rate for women aged 35–44 years increased from 21.6 births per 1000 women in 1993 to 41.0 births per 1000 women in 2007, but more than half of the increase has occurred since 2004.
- Complications of pregnancy were recorded for 31.9% of women. The most common complications were gestational diabetes (4.6%), premature rupture of membranes (4.1%), threatened abortion in early pregnancy (3.5%), urinary tract infection (3.1%), and pre-eclampsia (2.8%).
- A significant proportion of women who gave birth in 2007 had pre-existing medical conditions recorded. The most frequent were diseases of the respiratory system (11.1%) and mental and behavioural disorders (5.1%).

Labour and Delivery

- Labour was spontaneous in onset for 52.3% of women and was induced for 27.5%. A further 20.2% of mothers did not experience labour, being delivered by caesarean section. Among women with a singleton pregnancy, there has been a significant increase over the past 15 years in those who did not experience labour (from 12.0% in 1995 to a high of 21.6% in 2005). The 2007 figure was 19.7%.
- The caesarean section rate in 2007 was 32.7%. This figure has risen from a low of 20.1% in 1995, to a high of 33.9% in 2005. Of the women recorded as having had a previous caesarean section, 87.3% (n=4317) were again delivered by caesarean section.

- Among women who established labour spontaneously (52.3% of all births), only 23.5% proceeded through labour without augmentation and achieved a spontaneous vaginal birth. Thus, less than a quarter of births occurred without intervention to the processes of labour or delivery.

Baby Characteristics

- In 2007, 30,066 babies were born in Western Australia. This was the first occurrence of more than 30,000 babies in one year.
- The crude birth rate declined steadily from 15.0 per 1000 total population in 1993 to 12.6 per 1000 total population in 2003 but has since risen to 14.0 per 1000 total population in 2007.
- Singleton pregnancies occurred in 29,188 (98.5%) of the total 29,622 women who gave birth in 2007. The 434 (1.5%) women with a multiple pregnancy gave birth to 878 twin or triplet babies. There were no quadruplet or quintuplet pregnancies recorded in 2007. There has been minimal difference in these proportions over the previous 15 year period.
- In 2007, almost two-thirds of babies (66.7%) weighed 3000–3999 grams at birth, and the average birth weight was 3343 grams. The percentage of low birth weight (<2500 grams) babies was 6.8%.
- In 2007, the percentage of low birth weight babies born to Aboriginal mothers (16.4%) was more than twice that of babies born to non-Aboriginal women (6.2%). The Aboriginal rate has not improved in the last 15 years.
- There were 399 (1.3%) babies born as low pre-term (23–31 weeks gestation) in 2007. Of these, the majority were born in public Teaching hospitals (89.0%), reflecting high referral rates to these institutions.
- Perinatal mortality among the babies born in 2007 indicated that there were 189 fetal deaths and 61 neonatal deaths, providing a perinatal mortality rate of 8.3 perinatal deaths per 1000 total births. The perinatal mortality rate has generally declined over the past 15 years from a high of 11.5 per 1000 total births in 1996.
- The perinatal mortality rate in 2007 for babies of Aboriginal mothers was 14.8 per 1000 compared with the rate of 7.9 per 1000 for babies of non-Aboriginal women. The perinatal mortality rate for both babies of Aboriginal and non-Aboriginal mothers in 2007 are the lowest recorded during the 15 year period from 1993.

This is the Twenty-fifth 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 2007 and their babies. Pregnancies that resulted in a final product of conception at 20 weeks or more gestation have been included. These criteria are in accordance with national reporting methods.

Western Australia's statutory reporting requirements are outlined in the *Health Act 1911*, Section 335 (1). Under the Health (Notifications by Midwives) Regulations 1994, midwives are required to provide the Department of Health with notifications of cases attended (Downey and Gee, 2006). 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 International Statistical Classification of Disease and Related Health Problems, with Revision Australia Modification (ICD- 10-AM) 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.

1.1 Age

In 2007, 29,622 women gave birth in Western Australia in 2007. This represented an increase of 4.8% on 2006 (Gee et al, 2008) and is the highest number of births on record for the state (Table 1).

Maternal age ranged between 13 and 50 years with a mean of 29.5 years, while the average age of first-time mothers was 27.6 years.

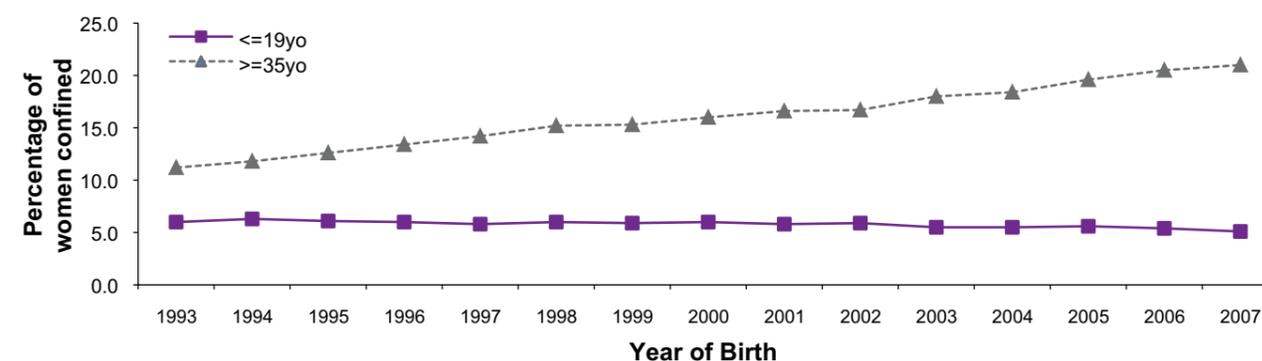
Table 1. Age and Aboriginality of women who gave birth in Western Australia, 2007

	Aboriginality of mother				Total
	Aboriginal		Non-Aboriginal		
	No.	%	No.	%	No.
≤19	392	21.7	1120	4.0	1512
20–24	574	31.8	4257	15.3	4831
25–29	439	24.3	7534	27.1	7973
30–34	242	13.4	8849	31.8	9091
35–39	136	7.5	5128	18.4	5264
40–44	22	1.2	901	3.2	923
≥45	-	-	28	0.1	28
Total	1805	100.0	27817	100.0	29622

The proportion of births to teenage mothers has remained fairly constant over the past decade being 6.0% or less since 1996. The 2007 figure of 5.1% 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 11.2% in 1993 to 21.0% in 2007 (Figure 1).

Figure 1. Trends in maternal age in Western Australia, 1993–2007



1.2 Aboriginality

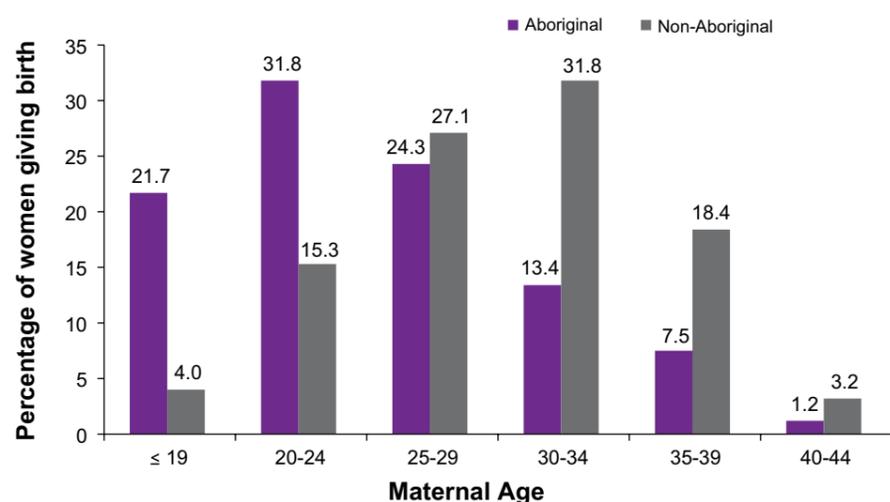
In 2007, Aboriginal women represented 6.1% of all women who gave birth in Western Australia and 10.0% of all Aboriginal women aged 15–44.

Child-bearing usually occurs at an earlier age among Aboriginal women.

Among births to teenage mothers, the proportion of Aboriginal mothers (21.7%) was more than five times greater than for non-Aboriginal mothers (4.0%) (Figure 2).

Among Aboriginal women, 53.5% of births occurred in women aged 24 years or less (Table 1).

Figure 2. Age distribution by Aboriginality for women giving birth in Western Australia, 2007



1.3 Place of Birth

The place of birth was recorded for 28,985 (97.8%) women who gave birth in Western Australia. Of these more than one-quarter were born overseas (Table 2).

Table 2: Place of birth of women who gave birth in Western Australia, 2007

Place of birth	Percentage (n=28,985)
Australia	71.5
United Kingdom & Ireland	7.7
Asia	7.5
Africa & Middle East	4.3
New Zealand	3.2
Other Europe	2.3
Americas & Pacific Islands	1.3

1.4 Conjugal State

At the time of giving birth, 89.9% of women in Western Australia were reported as being in a married or de-facto relationship.

Single women represented 8.3% and the remaining women (1.7%) were either separated, divorced or widowed.

1.5 Health Region of Residence

More than three-quarters (75.5%) of women who gave birth in 2007 provided their usual residential address as being within a metropolitan health region, while 24.4% reported their usual place of residence as within one of the seven non-metropolitan health regions, and 0.2% women were non-residents of Western Australia.

Among birthing Aboriginal women, 35.5% were metropolitan residents and 64.3% were resident in a non-metropolitan region (Table 3).

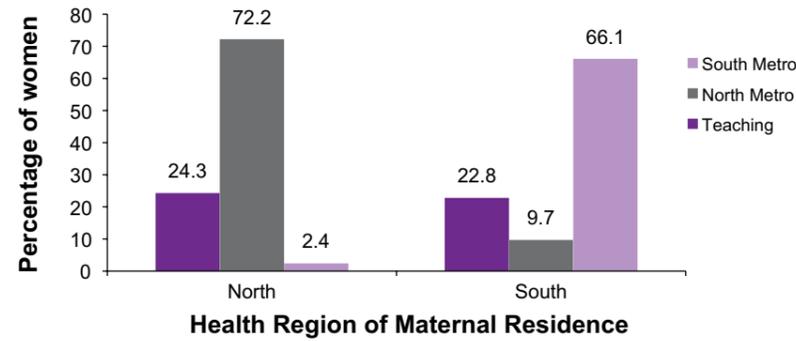
Conversely, 78.1% of non-Aboriginal women were resident in a metropolitan health region, 21.8% were resident in a non-metropolitan health region, and 0.2% were not usual residents of Western Australia (Table 3).

Table 3. Health region of residence and Aboriginality of women who gave birth in Western Australia, 2007

Health region of residence	Total	Aboriginality of mother	
		Aboriginal %	Non-Aboriginal %
Metropolitan			
North Metro	11,802	16.2	41.4
South Metro	10,550	19.2	36.7
Total Metropolitan	22,352	35.5	78.1
Non-Metropolitan			
Kimberley	723	25.0	1.0
Pilbara	793	8.9	2.3
Midwest	954	12.0	2.6
Wheatbelt	969	4.8	3.2
Goldfields	1027	8.2	3.2
Great Southern	719	2.5	2.4
South West	2028	2.8	7.1
Total Non-Metropolitan	7213	64.3	21.8
Outside WA	57	0.2	0.2
Overall State	29,622	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 at a metropolitan teaching hospital (Figure 3).

Figure 3. Place of birth for women resident in metropolitan Health Regions in Western Australia, 2007



Nearly one-fifth, 5615 (19.0%), of women gave birth at a hospital outside the metropolitan area.

A further 1561 (5.3%) women with a non-metropolitan residential address gave birth in a metropolitan hospital.

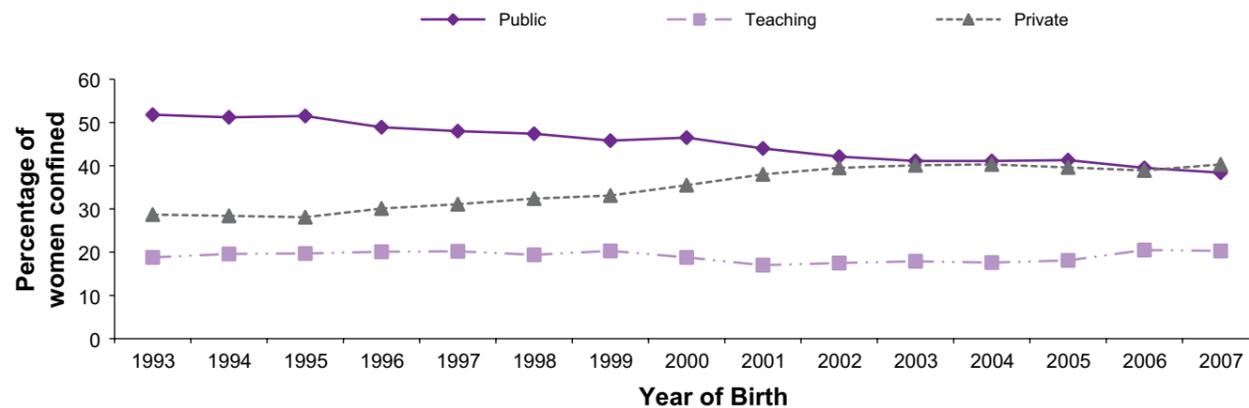
1.6 Place of Birth

Of the 29,622 women who gave birth in Western Australia in 2007, 98.9% gave birth in a hospital.

Non-hospital births included 127 (0.4%) mothers who gave birth before arrival (BBA) at hospital and 192 (0.6%) mothers who gave birth at home.

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 (Figure 4).

Figure 4. Trend in use of public and private facilities for women giving birth in Western Australia, 1993–2007



Plurality of pregnancy influenced the place of birth, with metropolitan teaching hospitals being the place of birth for 48.8% of women with multiple pregnancy and 19.9% of those with a singleton pregnancy (Figures 5 and 6).

Figure 5. Place of birth for singleton births in Western Australia, 2007

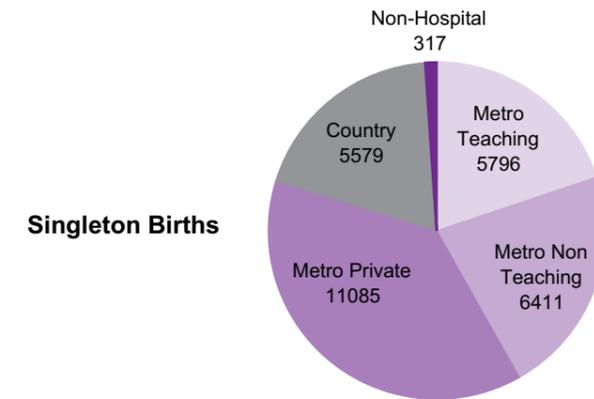
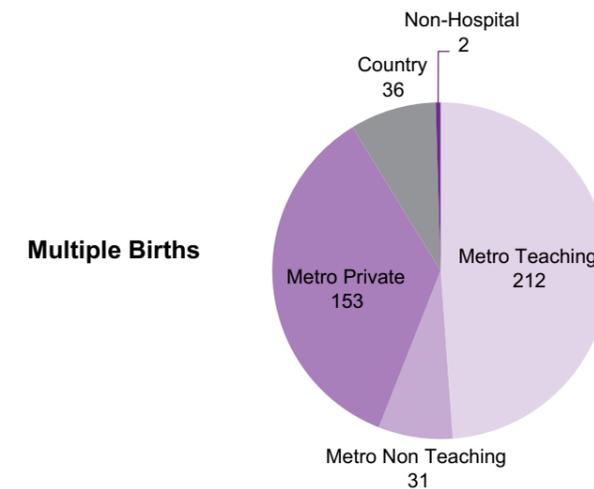


Figure 6. Place of birth for multiple births in Western Australia, 2007



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 received notification of a further 41 women in 2007 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 2007 is available in Appendix B (Tables 1–10).

2. Pregnancy profile

2.1 Previous Pregnancies

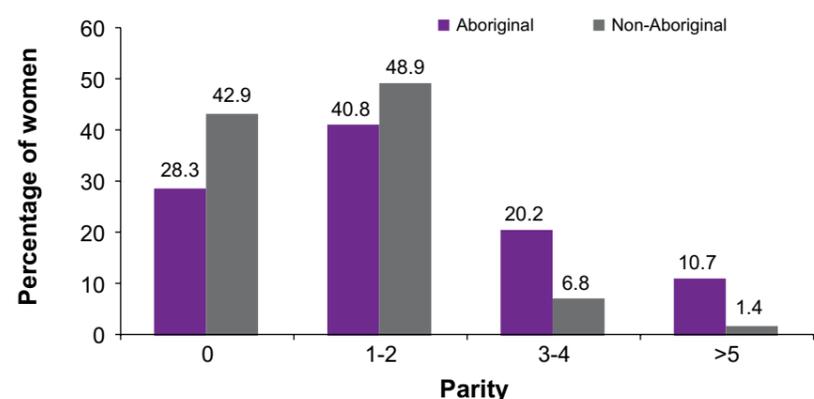
Forty two percent of women who gave birth in Western Australia during 2007 were giving birth for the first time.

In 2007, the average number of previous pregnancies was 1.5 per women while the average number of previous births was 1.0.

The percentage of non-Aboriginal women giving birth for the first time (42.9%) was higher than for Aboriginal first-time mothers (28.3%) (Figure 7).

Of women giving birth, the percentage having their fifth or more children among Aboriginal women (10.7%) was more than seven times the percentage (1.4%) among non-Aboriginal women (Figure 7).

Figure 7. Parity and Aboriginality of women who gave birth in Western Australia, 2007



Of the 12,433 women giving birth for the first time (Table 4):

- 10.0% were teenage (<20 years)
- 76.9% were aged 20–34 years
- 13.1% were aged 35 years or more.

Among the 6215 women giving birth who were aged 35 years or more, 1625 (26.1%) were having their first baby (Table 4).

Women with either one or two previous births comprised:

- 1.9% teenage women
- 73.2% women aged 20–34
- 24.9% women aged 35 or more.

Table 4. Parity and age of women who gave birth in Western Australia, 2007

Parity	Total No.	Maternal age (years)		
		≤ 19 %	20–34 %	≥ 35 %
0	12,433	82.3	43.7	26.1
1–2	14,350	17.6	48.0	57.5
3–4	2,243	0.1	6.8	12.0
≥5	596	-	1.5	4.3
Total	29,622	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 1993 to 2007, ranging between 1.00 and 1.06, with the average parity remaining low for 2007 at 1.00.

2.2 Socio-economic Status

Socio-economic status was assessed for all women who gave birth in Western Australia in 2007 according to their Socio-Economic-Index-For-Areas (SEIFA) Disadvantage Index.

Group I has the highest socio-economic status and the highest proportion (31.0%) of births to women aged ≥35 years old. Conversely, group V has the lowest socio-economic status and the highest proportion (9.1%) of births to teenage women (≤19 years old) (Table 5).

Table 5. Socio-economic status and age of women who gave birth in Western Australia, 2007

SEIFA index	Total No.	Maternal age (years)		
		≤ 19 %	20–34 %	≥ 35 %
I	7,149	1.6	67.4	31.0
II	4,248	4.2	75.3	20.5
III	5,538	4.8	75.1	20.1
IV	6,542	6.4	76.1	17.5
V	5,667	9.1	77.4	13.5
Total	29,144	5.1	73.9	21.0

Note: 478 women could not be classified using this index.

2.3 Age-Specific Birth Rates

Overall the age-specific birth rate of Aboriginal women was 100.7 per 1000 women of child-bearing age (15–44 years old) compared with the age-specific rate for non-Aboriginal women of 66.3 per 1000 women of child-bearing age (15–44 years old) (Figure 8).

Among the 15–19 year age group, the age-specific birth rate for Aboriginal women (94.3 per 1000) was nearly six times the rate for non-Aboriginal women (16.5 per 1000).

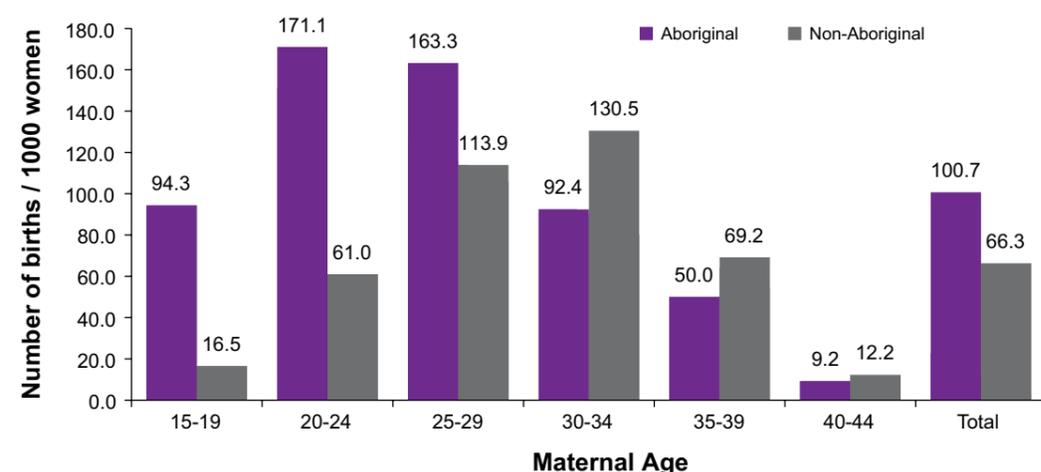
For women in the 20–24 year age group, the age-specific birth rate for Aboriginal women (171.1 per 1000) was nearly three times the rate for non-Aboriginal women (61.0 per 1000).

For women in the 30–34 year age group, the age-specific birth rate for Aboriginal women (92.4 per 1000) was lower than the rate for non-Aboriginal women (130.5 per 1000).

Trend data indicates that the age-specific birth rate for women 15–19 years varied over the past 15 years from 24.2 births per 1000 in 1993 to 21.0 per 1000 in 2007.

Trend data also indicates that the birth rate for women aged 35–44 increased from 21.6 births per 1000 women in 1993 to 41.0 per 1000 women in 2007.

Figure 8. Age-specific birth rates¹ by five-year age groups and Aboriginality in Western Australia, 2007



¹ Age-specific rates are the total births per 1000 women in each age group.

2.4 Complications of Pregnancy

Over two-thirds (68.1%) of the women who gave birth during 2007 were recorded as having had no complications of pregnancy (Table 6).

Of the women who did experience complications, the highest proportions were gestational diabetes (each 4.6%) and premature rupture of membranes (4.1%).

Table 6. Selected complications of pregnancy of women who gave birth in Western Australia, 2007

Complications of pregnancy ¹	No.	% of women
Threatened abortion	1029	3.5
Threatened preterm labour	773	2.6
Urinary Tract Infection	924	3.1
Pre-eclampsia	837	2.8
Antepartum haemorrhage		
– placenta praevia	192	0.6
– placental abruption	116	0.4
– other	741	2.5
Premature rupture of membranes	1226	4.1
Gestational Diabetes	1370	4.6
Other	4397	14.8
No complications of pregnancy	20,168	68.1

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

2.5 Medical Conditions

There were 10,913 reported instances of pre-existing medical conditions recorded among the 29,622 women who gave birth during 2007. The most frequent were diseases of the respiratory system (11.1%) and mental and behavioural disorders (5.1%) (Table 7).

No pre-existing medical condition was recorded for 21,476 women (72.5%).

Table 7. Selected pre-existing medical conditions for women who gave birth in Western Australia, 2007

Medical conditions ¹	No.	% of women
Respiratory system diseases (J00–J99)	3289	11.1
Mental and behavioural disorders (F00–F99)	1510	5.1
Infectious and parasitic diseases (A00–B99)	1242	4.2
Endocrine, nutritional and metabolic diseases (E00–E89)	836	2.8
Blood and blood-forming organs and disorders involving the immune mechanism (D50–D89)	697	2.4
Circulatory system diseases (I00–I99)	649	2.2
Pregnancy, childbirth and puerperial disorders (O00–O99)	552	1.9
Genito-urinary system diseases (N00–N99)	492	1.7
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00–R99)	302	1.0
Other ICD category	1344	4.5
Total	10,913	

¹A woman may have more than one medical condition

2.6 Procedures and Treatments

There were 50,625 procedures and treatments provided to 28,639 women who gave birth in 2007 (Table 8). A further 983 women were recorded as having received no procedures or treatments.

The most common procedure was uterine ultrasound, with 94.6% of all women giving birth having undergone this procedure.

Table 8. Procedures and treatments provided to women who gave birth in Western Australia, 2007

Procedures and treatments ¹	No.	% of women
Ultrasound	28,027	94.6
² CTG intrapartum	12,484	42.1
CTG antepartum	8701	29.4
Fertility treatment	676	2.3
Amniocentesis	562	1.9
³ CVS/placental biopsy	85	0.3
Cervical suture	90	0.3
Total	50,625	

¹A Woman may have more than one procedure or treatment

²CTG – Cardiotocography.

³CVS – Chorionic Villus Sampling.

Further information on Pregnancy Profiles 2007 is available in Appendix B (Tables 11–18).

3.1 Onset of Labour

Labour established spontaneously for more than 52.3% of the women who gave birth in Western Australia in 2007.

Induction of labour occurred for 27.5% of all women who gave birth and 20.2% did not experience labour, being delivered by caesarean section.

Figure 9 shows that among those women with a multiple pregnancy:

- 31.3% had a spontaneous onset of labour,
- 19.8% had labour induced and
- 48.8% did not experience labour

Figure 9. Onset of labour for singleton and multiple births in Western Australia, 2007

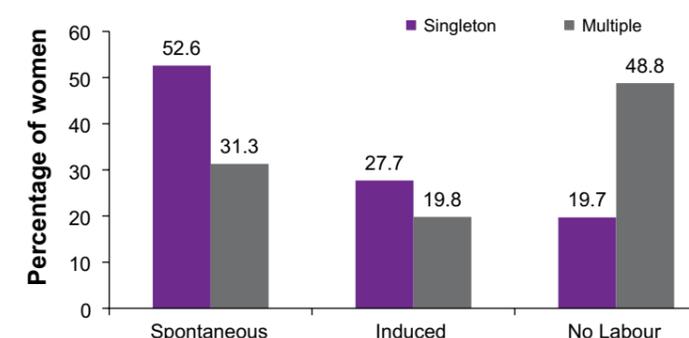
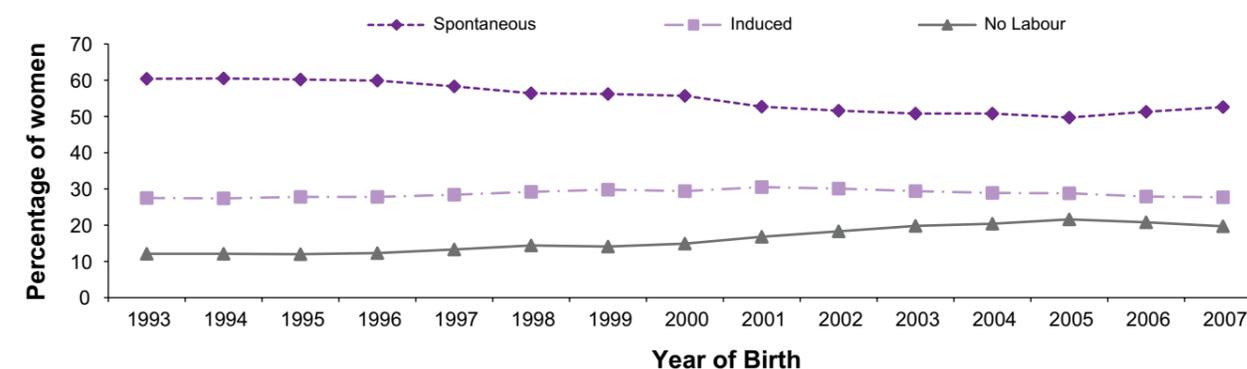


Figure 10. Onset of labour for singleton births in Western Australia, 1993–2007



Trend data for the past 15 years shows no significant change in the proportion of women with a singleton pregnancy for whom labour was induced (27.5% in 1993 to 27.7% in 2007). However, there was a large increase in those who did not experience labour (12.1% in 1993 to 19.7% in 2007) (Figure 10).

There was a general decrease in the proportion of women with a singleton pregnancy who established labour spontaneously from a high of 60.5% in 1994 to a low of 49.7% in 2005. The 2007 figure was 52.6%

3.2 Augmentation of Labour

Augmentation of spontaneous labour by surgical and/or medical intervention was administered to 6413 (41.4%) of women who established labour spontaneously.

Of the women for whom labour was augmented, 3899 (60.8%) progressed to a spontaneous vaginal birth, 1539 (24.0%) to a vaginal birth with assistance and 975 (15.2%) required a caesarean section delivery.

Women who established labour and gave birth without obstetric intervention comprised only 23.5% of all women who gave birth in 2007.

3.3 Induction of Labour

Labour was induced by medical and/or surgical means for 8158 (27.5%) women who gave birth.

The methods of induction were usually combined. Artificial rupture of membranes combined with an oxytocin infusion was recorded for 43.7% of the women whose labour was induced, while artificial rupture of membranes alone and oxytocin infusion alone were 5.8% and 7.4%, respectively.

3.4 Analgesia

Of the 18,796 women who did receive analgesia, a lumbar epidural block was administered to 49.4%, nitrous oxide and oxygen inhalation was provided to 25.4%, narcotic sedation to 20.0%, and spinal analgesic block to 2.4%.

Among the 19,927 women who gave birth vaginally, 20.3% received no pharmacological analgesia (Table 9).

Table 9. Analgesia for women who had vaginal births in Western Australia, 2007

Vaginal births		
Type of analgesia	No.	% of women
None	4044	20.3
Nitrous oxide & oxygen	4588	23.0
Narcotic sedation	3442	17.3
Epidural	7287	36.6
Spinal	174	0.9
Other	392	2.0
Total	19,927	100.0

3.5 Anaesthesia

Among the 19,927 women who gave birth vaginally, 10,874 (54.6%) received no anaesthesia at time of birth (Table 10).

Epidural and/or spinal anaesthesia was the most frequently administered (33.3%) form of anaesthesia to those women who required pain relief.

Table 10. Anaesthesia for women who had vaginal births in Western Australia, 2007

Vaginal births		
Type of analgesia	No.	% of women
None	10,874	54.6
Local anaesthesia to perineum	1275	6.4
Pudendal	190	1.0
Epidural &/or spinal	6638	33.3
General/ other	950	4.8
Total	19,927	100.0

Among the 9695 women who were delivered by caesarean section, epidural and/or spinal anaesthesia was the preferred option (81.2%) (Table 11).

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 1993 general anaesthesia was used in 17.4% of elective caesareans compared with 2.5% in 2007.

Table 11. Anaesthesia for women who had caesarean births in Western Australia, 2007

Caesarean Births		
Type of analgesia	No.	% of women
Epidural &/or spinal	7871	81.2
General with Epidural or Spinal	352	3.6
General	71	0.7
Other	1401	14.5
Total	9695	100.0

3.6 Presentation

The majority of the singleton pregnancy babies (95.3%) were cephalic presentations, of which 70.3% delivered vaginally.

Breech presentations among babies of singleton pregnancies (3.8%) were delivered by caesarean section in 90.7% of cases.

3.7 Type of Birth

Spontaneous vaginal birth occurred for just over half (53.7%) of women who gave birth in 2007. A further 13.6% required an assisted vaginal birth.

Among women who delivered per vaginam, 16.0% were assisted by vacuum extraction and 3.7% were assisted by forceps extraction. Among women with breech presentation, 103 (9.3%) gave birth vaginally with or without assistance.

Caesarean section was the method of birth for 9695 (32.7%) women. Elective caesarean births made up 17.9% of births while 14.9% were emergency procedures.

Women with multiple birth pregnancies have a higher probability of caesarean section delivery. In 2007, there were 270 (63.7%) women with a twin pregnancy and 9 of the 10 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 87.3% of women for whom previous caesarean section was recorded having a repeat caesarean in 2007.

Caesarean section to optimise birth outcome is the preferred choice of delivery of preterm births (<37 weeks). In 1993, 36.1% of preterm babies were delivered by caesarean section while in 2007 this proportion has risen to 42.3%.

Trend data indicates that the occurrence of caesarean sections has increased significantly over the past 15 years from 20.9% in 1993 to 32.7% in 2007. The national proportion of caesarean section in 2006 was 30.8% (Table 12).

Table 12. Caesarean births in other States and Territories of Australia, 2006

Caesarean Births		
States and Territories	Year	% of women
Western Australia	2006	32.7
South Australia	2006	32.9
Queensland	2006	33.2
Victoria	2006	30.5
Northern Territory	2006	28.8
New South Wales	2006	28.8
Australian Capital Territory	2006	30.0
Tasmania	2006	26.9
Australia	2006	30.8

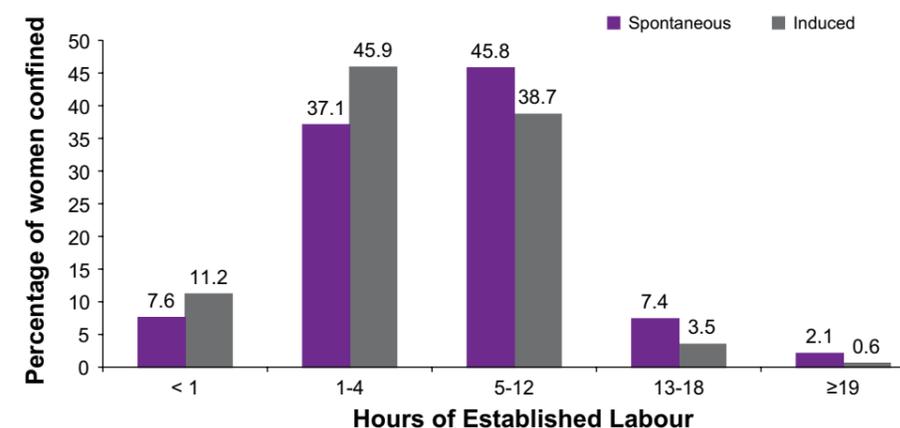
(Source: Laws, et al, 2008)

3.8 Hours of Established Labour

For the majority of women who experienced spontaneous labour, the duration was between 1–4 hours for 37.1% of births and between 5–12 hours for 45.8% of births (Figure 11).

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, 2007



3.9 Complications of Labour and Delivery

There were no complications of labour and delivery recorded for over one-third (38.9%) of women who gave birth in 2007.

Of women who had a multiple pregnancy, only 6.2% of women reported having no complications of labour and delivery.

Table 13. Complications of labour and delivery for women who gave birth in Western Australia, 2007

Complications of Labour and Delivery ¹	No.	% of women
Previous caesarean section	4701	15.9
Fetal distress	3721	12.6
Postpartum haemorrhage	3526	11.9
Precipitate delivery	1520	5.1
Failure to progress >3cms	1696	5.7
Cord tight around neck	1049	3.5
Failure to progress ≤3cms	1229	4.1
Persistent occipito posterior	816	2.8
Cephalopelvic disproportion	468	1.6
Shoulder dystocia	438	1.5
Retained placenta manual removal	371	1.3
Prolapsed cord	40	0.1
Other	7409	25.0
Total	26,984	

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

The most common complications experienced by women who gave birth in 2007 were previous caesarean section (15.9%), fetal distress (12.6%), and post partum haemorrhage (11.9%) (Table 13).

Differences in complications of labour and delivery exist between singleton and multiple births. For example, post partum haemorrhage was recorded for 11.6% of singleton pregnancies and 34.8% of multiple pregnancies for an overall figure of 11.9% of all births.

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 14).

Table 14. Frequently recorded complications of labour and delivery for women who gave birth by caesarean section in Western Australia, 2007

Caesarean Births		
Complications of Labour and Delivery ¹	No.	% of caesarean section
Vaginal delivery following previous caesarean section	4281	44.2
Labour and delivery complicated by fetal distress	1762	18.2
Postpartum haemorrhage	1751	18.1
Long labour	1444	14.9
Maternal care — known/suspected malpresentation of fetus	1122	11.6
Maternal care — known/suspected abnormality of pelvic organs	636	6.6
Abnormalities of forces of labour	672	6.9

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

3.10 Accoucheur

Obstetricians were accoucheurs in 40.0% of all births, midwives in 35.7%, other medical officers in 20.0% and midwives supervising a student in 3.8%.

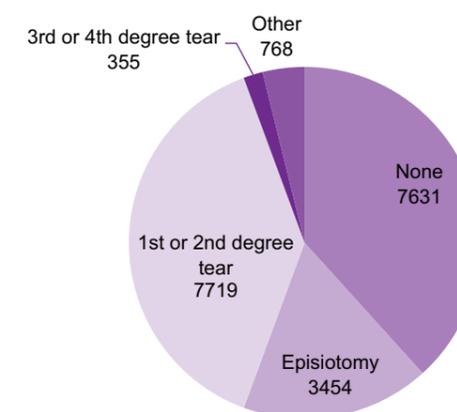
A midwife or a midwife supervising a student was the accoucheur for 11,606 women (72.9%) who had a spontaneous vaginal birth.

Obstetricians and other medical officers were reported to be the accoucheur for 40.5% of women who gave birth vaginally.

3.11 Repair of Perineum and/or Vagina

Among the 19,927 women who gave birth vaginally, 38.3% did not require a repair procedure; 17.3% had an episiotomy repaired; and 38.7% 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, 2007



Further information on Labour and Delivery 2007 is available in Appendix B (Tables 19–39).

4. Baby characteristics

4.1 Births

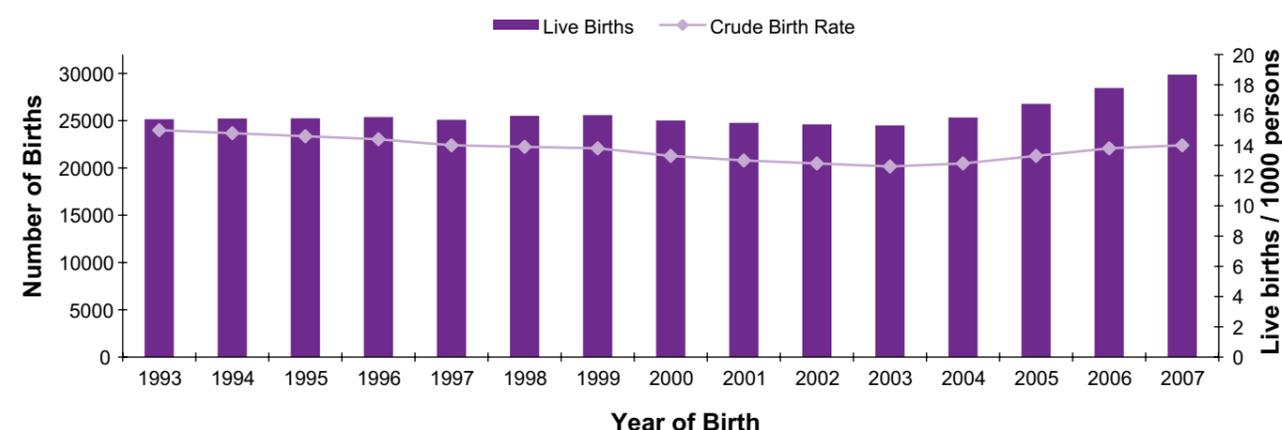
Notification forms (Appendix D) were received for 30,066 births of 20 weeks or more gestation in 2007, an increase of 4.9% from 2006 births.

4.2 Crude Birth Rate

The crude birth rate in 2007 was 14.0 per 1000 population.

Trend data indicates that the rate gradually declined during the past 15 years from 15.0 per 1000 in 1993 to 12.6 in 2003 with rises each year since to 14.0 in 2007 (Figure 13).

Figure 13. Live births and crude birth rates in Western Australia, 1993–2007



4.3 Gender

The gender of births was male (51.4%) and female (48.6%) during 2007 (male-female birth ratio of 1.06).

4.4 Condition at Birth

There were 29,877 (99.4%) live births and 189 (0.6%) fetal deaths during 2007 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 more than two-thirds of fetal deaths (70.4%) were delivered in a metropolitan teaching hospital.

4.5 Plurality of Birth

Single births represented 97.1% and multiple birth babies 2.9% of total births. There were 848 twin babies and 30 triplet babies (10 sets) born during 2007.

The proportion of multiple births has varied over the past 15 years from a low of 2.7% in 1995 to a high of 3.5% of total births in 2001. This figure was 2.9% in 2007.

4.6 Apgar Score at One Minute and Five Minutes

An Apgar score at one minute of 8–10 was recorded for 84.5% of live births while only 472 (1.6%) of live births had an Apgar score of less than 4 at one minute.

At five minutes 97.4% 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

Nearly one-third (30.3%) of live births received some form of resuscitation. Oxygen therapy was provided to 10.7% and suction only to 9.2% (Table 15).

Other babies required more active resuscitation using bag and mask technique (6.8%) and endotracheal intubation either alone or with external cardiac massage (0.9%).

Table 15. Resuscitation methods for liveborn babies in Western Australia, 2007

Resuscitation method ¹	No.	% of live births
None	20,822	69.7
Suction Only	2761	9.2
Oxygen Therapy	3189	10.7
Bag & Mask	2027	6.8
Intubation	224	0.7
External Cardiac Massage	72	0.2
Other	782	2.6
Total	29,877	100.0

¹Resuscitation methods of live births.

4.9 Birthweight

An average birthweight of 3343 grams with a standard deviation of 609 grams was recorded.

Two-thirds (66.8%) of babies weighed between 3000 and 3999 grams at birth. Low birthweight babies (<2500 grams) represented 6.8% of births.

Among babies of women identified as Aboriginal, the proportion of low birthweight was higher (16.4%) than the proportion among babies of women who did not identify as Aboriginal (6.2%).

Trend data indicates that the proportion of low birthweight among babies of Aboriginal mothers ranged between a low of 13.1% in 1993 to a high of 16.5% in 2005. The 2007 figure (16.4%) represents a significant increase on 2006 (14.9%). The proportion of low birthweight among babies of non-Aboriginal women has not changed significantly over the same period ranging between 6.0% in 1994 and 6.6% in 2004.

4.10 Gestational Age

Births of less than 37 weeks gestation occurred for 8.5% of the total births in 2007.

Plurality affected gestational age outcome with 7.0% of singleton births and 58.7% of multiple births being born at less than 37 weeks gestation.

Among all lower preterm births of 23 to 31 weeks gestation, 89.0% were born in a metropolitan teaching hospital and 2.5% in a private hospital.

Trend data for the period 1993–2007 indicates that the proportion of live births among 23–31 week gestation babies has increased from a low of 77.6% in 1993 to 86.7% in 2007.

4.11 Birth Trauma

Cephalhaematoma and other soft tissue trauma to the skull were reported in 5.3% 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, 2007

Birth defects	No.	Rate/1000 births
Nervous system anomalies (74000 - 74299)	86	2.9
Congenital eye anomalies (74300 - 74399)	13	-
Congenital anomalies of ear face and neck	64	2.1
Cardiovascular defects (74500 - 74799)	268	8.9
Respiratory defects (74800 - 74899)	30	1.0
Gastro-intestinal defects (74900 - 75199)	121	4.0
Uro-genital defects (75200 - 75399)	263	8.7
Musculo-skeletal defects (75400 - 75699)	309	10.3
Congenital defects of integument (75700 - 75799)	28	0.9
Chromosome defects (75800 - 75899)	4.0	119

Recording of a birth defect in the Midwives Notification System data provides an initial data source for the Birth Defect Registry. More detailed information is available upon request to the Birth Defects Registry (Bower et al, 2007).

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 9.3%.

4.14 Neonatal Transfers

Inter-hospital transfers were made for 1242 (4.2%) of live births. This was to provide care at tertiary hospitals (36.5%) 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 (79.9%) stayed in their hospital of birth from two to seven days and a further 14.1% stayed for less than 24 hours following birth. An additional 4.0% stayed between 8 and 14 days while 1.0% stayed for more than 28 days.

4.16 Perinatal Mortality

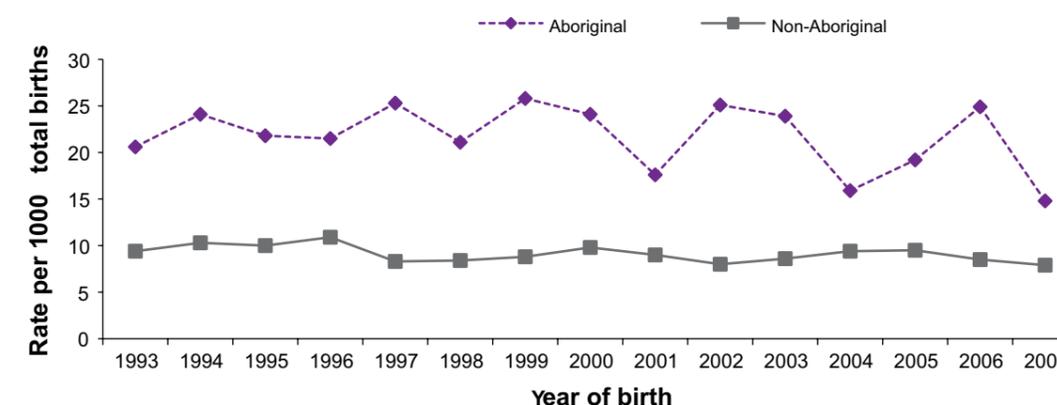
There were 250 perinatal deaths of 20 weeks or more gestation recorded during 2007 (189 fetal deaths plus 61 neonatal deaths).

This represented a perinatal mortality rate of 8.3 per 1000 total births, a fetal death rate of 6.3 per 1000 total births and a neonatal mortality rate of 2.0 per 1000 live births for 2007.

The perinatal death rate among babies of Aboriginal women (14.8 per 1000) was nearly twice the rate for non-Aboriginal babies (7.9 per 1000).

Trend data indicated that there has been a gradual reduction in the perinatal mortality rate over the past 15 years from a high of 11.5 per 1000 total births in 1996 to 8.3 per 1000 total births in 2007, the lowest figure in the period. For this period, the rate reduction for babies of Aboriginal mothers was from a high of 25.8 per 1000 total births in 1999 to 14.8 in 2007 (Figure 14).

Figure 14. Perinatal mortality by Aboriginality in Western Australia, 1993–2007



Low birthweight and early gestational age influence perinatal mortality rates.

Nearly two-fifths (39.2%) of the perinatal deaths in 2007 were in babies with a birthweight less than 500 grams and four-fifths (80.4%) 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 31.9 per 1000 was more than four times the rate for singleton births of 7.6 per 1000 in 2007.

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. In 2007, 45.9% of deaths occurred in babies aged less than one day.

Autopsy requests were made for 60.8% of perinatal deaths, 66.7% of fetal deaths and 42.6% of neonatal deaths. There were 17 perinatal deaths for which it was not known if an autopsy had been requested.

The principal causes of fetal deaths were extremely low birthweight (<1000 grams) (40.7%) and lethal birth defects (31.2%). Among neonatal deaths, extremely low birthweight (44.3%) was the most prevalent cause.

Further information on Baby Characteristics 2007 is available in Appendix B (Tables 40–75).

1. Bower C, Rudy E, Callaghan A, Cosgrove P and Quick J. (2007). *Report of the Birth Defects Registry in Western Australia 1980–2006*, No 14. King Edward Memorial Hospital. Perth, Western Australia.
2. Downey F and Gee V (2006). *Guidelines for Completion of the Notification of Case Attended Midwives' Form 2*. Department of Health Western Australia. Perth, Western Australia.
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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.	Mortality rates	<u>Fetal death rate</u> : the number of fetal deaths per 1000 total births in a year.
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.		<u>Neonatal mortality</u> : the number of neonatal deaths per 1000 live births in a year.
Born before arrival (BBA)	A birth that occurs prior to arrival of the mother at the intended place of birth.		<u>Perinatal mortality</u> : the number of stillbirths and neonatal deaths per 1000 total births in a year.
Birth defects	Any defect present at birth, probably of developmental origin.	Neonatal death	The death of a liveborn infant within 28 days of birth.
Birthweight	The first weight, measured to the nearest five grams, of the newborn, which is usually obtained within the first hour of birth. <u>Low Birthweight</u> : a birthweight of less than 2500 grams. <u>Very Low Birthweight</u> : a birthweight of less than 1500 grams.	Parity	The total number of live births and fetal deaths of the mother prior to the parturition under consideration. <u>Nulliparous</u> : never having completed a pregnancy beyond 20 weeks gestation. <u>Multiparous</u> : having completed one or more pregnancies beyond 20 weeks gestation.
Caesarean section	A delivery of the fetus through an incision in the abdominal wall. <u>Elective caesarean section</u> : a planned procedure prior to onset of labour and before spontaneous rupture of membranes or without any induction procedure. <u>Emergency caesarean section</u> : an unplanned procedure, performed because of a complication. May be performed before the onset of labour or during labour.	Perinatal death	A fetal death or neonatal death.
Confinement	Pregnancy resulting in at least one birth.	Perineal status	<u>First degree tear</u> : a perineal graze-laceration-tear involving the fourchette, hymen, labia, skin, vagina or vulva. <u>Second degree tear</u> : a perineal laceration or tear involving the pelvic floor or perineal muscles or vagina muscles. <u>Third degree tear</u> : a perineal laceration-tear involving the anal sphincter or rectovaginal septum. <u>Fourth degree tear</u> : a third degree perineal laceration or tear which also involves the anal mucosa or rectal mucosa.
Crude birth rate	The number of live births per 1000 total population.	Plurality	The number of fetuses or babies resulting from the pregnancy. On this basis pregnancy may be classified as singleton or multiple.
Epidural	Injection of analgesic agent outside the dura mater which covers the spinal canal.	SEIFA index	Using 2001 census data, Statistical Local Areas were allocated to five 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 V as the group with the lowest socio-economic status.
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 home births 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.		

Maternal Demographic Information

1. Age and Aboriginality of women who gave birth in Western Australia, 2007	39
2. Age of women who gave birth in Western Australia, 1993–2007	39
3. Country of birth and age of women who gave birth in Western Australia, 2007	40
4. Conjugal state and plurality of women who gave birth in Western Australia, 2007	40
5. Health region of residence and Aboriginality of women who gave birth in Western Australia, 2007	41
6. Place of birth for women resident in metropolitan health regions in Western Australia, 2007	41
7. Place of birth for women resident in country health regions in Western Australia, 2007	42
8. Place of birth and intended place of birth for women who gave birth in Western Australia, 2007	43
9. Place of birth and plurality of women who gave birth in Western Australia, 2007	44
10. Place of birth for women who gave birth in Western Australia, 1993–2007	44

Pregnancy Profile

11. Parity and Aboriginality of women who gave birth in Western Australia, 2007	45
12. Parity and age of women who gave birth in Western Australia, 2007	45
13. Parity of women who gave birth in Western Australia, 1993–2007	46
14. Socio-economic status and age of women who gave birth in Western Australia, 2007	46
15. Age-specific birth rates and Aboriginality for women who gave birth in Western Australia, 2007	47
16. Age-specific birth rates by age and Aboriginality of women who gave birth in Western Australia, 1993–2007	47
17. Selected complications of pregnancy and plurality of women who gave birth in Western Australia, 2007	48
18. Selected pre-existing medical conditions for women who gave birth in Western Australia, 2007	49

Labour and Delivery

19. Onset of labour and plurality of women who gave birth in Western Australia, 2007	50
20. Onset and augmentation of labour and type of delivery for women who gave birth in Western Australia, 2007	50
21. Augmentation of labour and hours of established labour for women with a spontaneous onset who gave birth in Western Australia, 2007	51
22. Type of induction and delivery for women who were induced in Western Australia, 2007	52
23. Onset of labour for singleton births of women who gave birth in Western Australia, 1993–2007	52
24. Analgesia and type of delivery for women who gave birth in Western Australia, 2007	53
25. Anaesthesia and type of delivery for women who gave birth in Western Australia, 2007	53
26. Epidural and general anaesthesia/analgesia for women who gave birth by caesarean section in Western Australia, 1993–2007	54
27. Presentation and type of delivery for singleton births in Western Australia, 2007	54
28. Type of delivery and plurality of women who gave birth in Western Australia, 2007	55
29. Type of delivery and parity of women who gave birth in Western Australia, 2007	55
30. Type of delivery and type of previous delivery of women who gave birth in Western Australia, 2007	55
31. Place of confinement and type of delivery for women who gave birth in Western Australia, 2007	56
32. Type of delivery for women who gave birth in Western Australia, 1993–2007	57
33. Frequency of complications of labour and delivery for women who gave birth by caesarean section in Western Australia, 2007	57

34. Complications of labour and delivery for women who gave birth by caesarean section in Western Australia, 2007	58
35. Hours of established labour and onset of labour for women who gave birth in Western Australia, 2007	59
36. Type of delivery and hours of established labour for women who gave birth in Western Australia, 2007	59
37. Selected complications of labour and delivery and plurality for women who gave birth in Western Australia, 2007	60
38. Type of delivery and accoucheur of women who gave birth in Western Australia, 2007	60
39. Type of delivery and repair of perineum and/or vagina for women who gave birth in Western Australia, 2007	61

Baby Characteristics

40. Condition at birth and crude birth rate in Western Australia, 1993–2007	62
41. Condition at birth and gender of births in Western Australia, 2007	62
42. Condition at birth and Aboriginality of mother for births in Western Australia, 2007	62
43. Condition at birth and place of birth for births in Western Australia, 2007	63
44. Plurality of all births in Western Australia, 1993–2007	64
45. Apgar score at one minute and time to spontaneous respiration of live births in Western Australia, 2007	64
46. Apgar score at five minutes and time to spontaneous respiration of live births in Western Australia, 2007	65
47. Apgar score at five minutes and resuscitation methods of live births in Western Australia, 2007	65
48. Birthweight and resuscitation methods of live births in Western Australia, 2007	66
49. Birthweight distribution and Aboriginality of mother for births in Western Australia, 2007	66
50. Low birthweight and very low birthweight by Aboriginality of mother for births in Western Australia, 1993–2007	67
51. Birthweight distribution and condition at birth for total births in Western Australia, 2007	68
52. Birthweight distribution and condition at birth for singleton births in Western Australia, 2007	68
53. Birthweight distribution and condition at birth for multiple births in Western Australia, 2007	69
54. Birthweight distribution and gestation for total births in Western Australia, 2007	69
55. Birthweight distribution and gestation for singleton births in Western Australia, 2007	70
56. Birthweight distribution and gestation for multiple births in Western Australia, 2007	70
57. Condition at birth and place of birth for births for pre-term births (23–31 weeks gestation) in Western Australia, 2007	71
58. Condition at birth and place of birth for births for pre-term births (23–31 weeks gestation) in Western Australia, 1993–2007	71
59. Births identified with birth defects in Western Australia, 2003–2007	72
60. Length of stay in special care and plurality for live births in Western Australia, 2007	73
61. Length of stay in hospital of birth and birthweight distribution of live births in Western Australia, 2007	74
62. Length of stay in hospital of birth and birthweight distribution of surviving live births in Western Australia, 2007	75
63. Length of stay in hospital of birth and gestational age of live births in Western Australia, 2007	76
64. Length of stay in hospital of birth and gestational age of surviving live births in Western Australia, 2007	76

Perinatal Mortality

65. Perinatal mortality in Western Australia using birthweight criteria, 2007	77
66. Perinatal mortality in Western Australia using gestational age criteria, 2007	77
67. Fetal, neonatal and perinatal mortality rates by Aboriginality of mother in Western Australia, 2007	77
68. Fetal mortality by Aboriginality of mother in Western Australia, 1993–2007	78
69. Neonatal mortality by Aboriginality of mother in Western Australia, 1993–2007	79
70. Perinatal mortality by Aboriginality of mother in Western Australia, 1993–2007	80
71. Birthweight distribution of fetal, neonatal and perinatal deaths in Western Australia, 2007	80
72. Plurality of fetal, neonatal and perinatal deaths in Western Australia, 2007	81
73. Age at death for neonatal deaths in Western Australia, 2007	81
74. Causes of fetal and neonatal deaths in Western Australia, 2007	82
75. Autopsy requests for fetal, neonatal and perinatal deaths in Western Australia, 2007	82

Maternal Demographic Information

Table 1. Age and Aboriginality of women who gave birth in Western Australia, 2007

Maternal age	Aboriginality of mother					Total	
	Aboriginal		Non-Aboriginal		No.		%
	No.	%	No.	%			
≤ 14	6	0.3	2	0.0	8	0.0	
15	23	1.3	22	0.1	45	0.2	
16	51	2.8	89	0.3	140	0.5	
17	91	5.0	185	0.7	276	0.9	
18	101	5.6	321	1.2	422	1.4	
19	120	6.6	501	1.8	621	2.1	
≤ 19	392	21.7	1120	4.0	1512	5.1	
20–24	574	31.8	4257	15.3	4831	16.3	
25–29	439	24.3	7534	27.1	7973	26.9	
30–34	242	13.4	8849	31.8	9091	30.7	
35–39	136	7.5	5128	18.4	5264	17.8	
40–44	22	1.2	901	3.2	923	3.1	
≥ 45	-	-	28	0.1	28	0.1	
Total	1805	100.0	27,817	100.0	29,622	100.0	

Mean = 29.5 years, standard deviation = 5.8 years.

Table 2. Age of women who gave birth in Western Australia, 1993–2007

Year of birth	Maternal age						Total	
	≤ 19		20–34		≥ 35		No.	%
	No.	%	No.	%	No.	%		
1993	1496	6.0	20,670	82.8	2807	11.2	24,973	100.0
1994	1592	6.3	20,515	81.8	2964	11.8	25,071	100.0
1995	1522	6.1	20,395	81.3	3173	12.6	25,090	100.0
1996	1521	6.0	20,297	80.6	3374	13.4	25,192	100.0
1997	1446	5.8	19,899	80.0	3524	14.2	24,869	100.0
1998	1519	6.0	19,938	78.8	3847	15.2	25,294	100.0
1999	1509	5.9	19,979	78.7	3890	15.3	25,378	100.0
2000	1479	6.0	19,367	78.0	3972	16.0	24,818	100.0
2001	1422	5.8	19,005	77.6	4065	16.6	24,492	100.0
2002	1438	5.9	18,872	77.4	4084	16.7	24,394	100.0
2003	1340	5.5	18,566	76.5	4375	18.0	24,281	100.0
2004	1389	5.5	19,091	76.0	4631	18.4	25,111	100.0
2005	1486	5.6	19,857	74.8	5195	19.6	26,538	100.0
2006	1515	5.4	20,958	74.2	5781	20.5	28,254	100.0
2007	1512	5.1	21,895	73.9	6215	21.0	29,622	100.0

Table 3. Country of birth and age of women who gave birth in Western Australia, 2007

Place of birth	Maternal age						Total	
	≤ 19		20–34		≥ 35			
	No.	%	No.	%	No.	%	No.	%
Australia	1338	89.5	15901	74.3	3927	64.6	21166	73.0
New Zealand	66	4.4	681	3.2	206	3.4	953	3.3
Other Pacific	2	0.1	39	0.2	23	0.4	64	0.2
United Kingdom and Ireland	42	2.8	1465	6.8	786	12.9	2293	7.9
Other Europe	5	0.3	478	2.2	208	3.4	691	2.4
Vietnam	1	0.1	238	1.1	68	1.1	307	1.1
Malaysia	1	0.1	207	1.0	91	1.5	299	1.0
Other SE Asia	6	0.4	618	2.9	186	3.1	810	2.8
Other Asia	3	0.2	587	2.7	203	3.3	793	2.7
North America	2	0.1	130	0.6	67	1.1	199	0.7
South and Central America	1	0.1	94	0.4	32	0.5	127	0.4
South Africa and Zimbabwe	3	0.2	338	1.6	115	1.9	456	1.6
Other Africa and Middle East	25	1.7	636	3.0	166	2.7	827	2.9
Total	1495	100.0	21,412	100.0	6078	100.0	28,985	100.0

Excludes 637 women whose place of birth is unknown.

Table 4. Conjugal state and plurality of women who gave birth in Western Australia, 2007

Conjugal state	Plurality				Total	
	Singleton		Multiple			
	No.	%	No.	%	No.	%
Single	2446	8.4	27	6.2	2473	8.3
Married/De facto	26232	89.9	399	91.9	26631	89.9
Other ¹	510	1.7	8	1.8	518	1.7
Total	29,188	100.0	434	100.0	29,622	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, 2007

Health region of residence	Aboriginality of mother				Total	
	Aboriginal		Non-Aboriginal			
	No.	%	No.	%	No.	%
Metropolitan						
North	293	16.2	11,509	41.4	11,802	39.8
South	347	19.2	10,203	36.7	10,550	35.6
Total Metro	640	35.5	21,712	78.1	22,352	75.5
Country						
Kimberley	452	25.0	271	1.0	723	2.4
Pilbara	161	8.9	632	2.3	793	2.7
Midwest	217	12.0	737	2.6	954	3.2
Wheatbelt	86	4.8	883	3.2	969	3.3
Goldfields	148	8.2	879	3.2	1027	3.5
South West	51	2.8	1977	7.1	2028	6.8
Great Southern	46	2.5	673	2.4	719	2.4
Total Country	1161	64.3	6052	21.8	7213	24.4
Outside WA	4	0.2	53	0.2	57	0.2
Total	1805	100.0	27,817	100.0	29,622	100.0

Table 6. Place of birth for women resident in metropolitan health regions in Western Australia, 2007

Health region of residence	Birth hospital in health region					Total
	Teaching	North Metro	South Metro	Country	Non-hospital	
North	2870	8525	281	8	118	11,802
South	2407	1024	6972	12	135	10,550
Total	5277	9549	7253	20	253	22,352
Percentage						
North	24.3	72.2	2.4	0.1	1.0	100.0
South	22.8	9.7	66.1	0.1	1.3	100.0
Total	23.6	42.7	32.4	0.1	1.1	100.0

Table 7: Place of birth for women resident in country health regions in Western Australia, 2007

Health region of residence	Birth hospital in health region			Non-hospital	Total
	Internal	Metro			
		Teaching	Other		
	Number				
Kimberley	612	86	15	10	723
Pilbara	507	116	165	5	793
Midwest	740	139	68	7	954
Wheatbelt	337	155	469	8	969
Goldfields	912	78	33	4	1027
South West	1846	97	57	28	2028
Great Southern	633	49	34	3	719
Total	5587	720	841	65	7213
	Percentage				
Kimberley	84.6	11.9	2.1	1.4	100.0
Pilbara	63.9	14.6	20.8	0.6	100.0
Midwest	77.6	14.6	7.1	0.7	100.0
Wheatbelt	34.8	16.0	48.4	0.8	100.0
Goldfields	88.8	7.6	3.2	0.4	100.0
South West	91.0	4.8	2.8	1.4	100.0
Great Southern	88.0	6.8	4.7	0.4	100.0
Total	77.5	10.0	11.7	0.9	100.0

Table 8: Place of birth and intended place of birth for women who gave birth in Western Australia, 2007

Actual place of birth	Intended place of birth			Total
	Hospital	Birth centre	Home	
	Number			
Teaching hospital ¹	5233	391	30	5654
Departmental hospital ²	11,298	55	9	11,362
Private hospital ³	11,912	15	2	11,929
Birth centre	30	278	-	308
Home	3	1	188	192
BBA ⁴	112	3	6	121
Total	28,588	743	235	29,566
	Percentage			
Teaching hospital	92.6	6.9	0.5	100.0
Public hospital	99.4	0.5	0.1	100.0
Private hospital	99.9	0.1	0.0	100.0
Birth centre	9.7	90.3	-	100.0
Home	1.6	0.5	97.9	100.0
BBA	92.6	2.5	5.0	100.0
Total	96.7	2.5	0.8	100.0

Excludes 56 women for whom intended place of birth was not recorded.

¹ Teaching hospital — University Medical School (Teaching Hospitals Act 1955).

² Metropolitan Departmental hospital — public hospital in metropolitan area.

³ Private hospital — includes some Private hospitals with both private and public beds.

⁴ BBA — born before arrival at hospital.

Table 9. Place of birth and plurality of women who gave birth in Western Australia, 2007

Place of birth	Plurality				Total	
	Singleton		Multiple			
	No.	%	No.	%	No.	%
Metropolitan						
Teaching hospital	5796	19.9	212	48.8	6008	20.3
Departmental hospital	6411	22.0	31	7.1	6442	21.7
Private hospital	11,085	38.0	153	35.3	11,238	37.9
Total	2,3292	79.9	396	91.2	23,688	79.9
Country						
Regional hospital ¹	3506	12.0	34	7.8	3540	12.0
Private hospital	690	2.4	2	0.5	692	2.3
Other ²	1383	4.7	-	-	1383	4.7
Total	5579	19.1	36	8.3	5615	19.0
Non-hospital						
Home births	191	0.7	1	0.2	192	0.6
BBA	126	0.4	1	0.2	127	0.4
Grand Total	29,188	100.0	434	100.0	29,622	100.0

¹Country Regional hospital — public hospital in regional centre.

²Other Country hospital — other public hospital.

Table 10. Place of birth of women who gave birth in Western Australia, 1993–2007

Year of birth	Place of birth									
	Teaching		Public		Private		Home birth		BBA	
	No.	%	No.	%	No.	%	No.	%	No.	%
1993	4694	18.8	12,935	51.8	7161	28.7	102	0.4	81	0.3
1994	4917	19.6	12,841	51.2	7111	28.4	109	0.4	93	0.4
1995	4931	19.7	12,913	51.5	7055	28.1	96	0.4	95	0.4
1996	5074	20.1	12,331	48.9	7583	30.1	120	0.5	84	0.3
1997	5025	20.2	11,925	48.0	7742	31.1	113	0.5	64	0.3
1998	4912	19.4	11,980	47.4	8201	32.4	102	0.4	99	0.4
1999	5150	20.3	11,634	45.8	8398	33.1	126	0.5	70	0.3
2000	4671	18.8	11,313	46.5	8633	35.5	122	0.5	79	0.3
2001	4166	17.0	10,785	44.0	9317	38.0	144	0.6	80	0.3
2002	4267	17.5	10,277	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	10,324	41.1	10,130	40.3	150	0.6	82	0.3
2005	4811	18.1	10,959	41.3	10,520	39.6	155	0.6	93	0.4
2006	5792	20.5	11,164	39.5	10,997	38.9	194	0.7	107	0.4
2007	6008	20.3	11,365	38.4	11,930	40.3	192	0.6	127	0.4

Pregnancy Profile

Table 11. Parity and Aboriginality of women who gave birth in Western Australia, 2007

Parity	Aboriginality of mother				Total	
	Aboriginal		Non-Aboriginal			
	No.	%	No.	%	No.	%
0	510	28.3	11923	42.9	12433	42.0
1–2	736	40.8	13614	48.9	14350	48.4
3–4	365	20.2	1878	6.8	2243	7.6
≥ 5	194	10.7	402	1.4	596	2.0
Total	1805	100.0	27,817	100.0	29,622	100.0

Table 12. Parity and age of women who gave birth in Western Australia, 2007

Parity	Maternal age						Total	
	≤ 19		20–34		≥ 35			
	No.	%	No.	%	No.	%	No.	%
0	1245	82.3	9563	43.7	1625	26.1	12433	42.0
1–2	266	17.6	10509	48.0	3575	57.5	14350	48.4
3–4	1	0.1	1497	6.8	745	12.0	2243	7.6
≥ 5	-	-	326	1.5	270	4.3	596	2.0
Total	1512	100.0	21,895	100.0	6215	100.0	29,622	100.0

Table 13. Parity of women who gave birth in Western Australia, 1993–2007

Year of birth	Number of women	Parity				Average parity
		0	1–2	3–4	≥ 5	
		%	%	%	%	
1993	24,973	38.7	50.9	8.9	1.6	1.06
1994	25,071	40.0	49.7	8.8	1.5	1.04
1995	25,090	40.6	49.2	8.6	1.6	1.03
1996	25,192	40.0	49.9	8.5	1.5	1.03
1997	24,869	40.3	49.6	8.6	1.6	1.03
1998	25,294	40.0	49.7	8.7	1.6	1.03
1999	25,378	40.4	49.6	8.4	1.6	1.02
2000	24,818	41.2	48.5	8.5	1.9	1.03
2001	24,492	40.7	49.4	8.2	1.8	1.02
2002	24,394	40.6	49.3	8.3	1.8	1.02
2003	24,281	41.3	49.0	7.8	1.9	1.01
2004	25,111	41.9	48.6	7.8	1.8	1.00
2005	26,538	41.9	48.4	7.8	1.9	1.01
2006	28,254	41.8	48.2	8.0	2.0	1.02
2007	29,622	42.0	48.4	7.6	2.0	1.00

Table 14. Socio-economic status and age of women who gave birth in Western Australia, 2007

Socio-economic status ¹	Maternal age						Total	
	≤ 19		20–34		≥ 35			
	No.	%	No.	%	No.	%	No.	%
I	117	1.6	4818	67.4	2214	31.0	7149	100.0
II	180	4.2	3199	75.3	869	20.5	4248	100.0
III	264	4.8	4161	75.1	1113	20.1	5538	100.0
IV	418	6.4	4976	76.1	1148	17.5	6542	100.0
V	514	9.1	4389	77.4	764	13.5	5667	100.0
Total	1493	5.1	21,543	73.9	6108	21.0	29,144	100.0

¹ Socio-economic status is in accord with the Socio-economic Indices for Areas (SEIFA) disadvantage index, constructed by the Australian Bureau of Statistics using 2001 Census data. Group I has the highest socio-economic status and group V has the lowest disadvantage index. Index ranges used are:

Group I = 1045.000–1999.999 Group II = 1012.000–1044.999 Group III = 984.000–1011.999
 Group IV = 952.000–983.999 Group V = 100.000–951.999

Excludes 478 women could not be classified using this index.

Table 15. Age-specific birth rates and Aboriginality for women who gave birth in Western Australia, 2007

Age	Aboriginality of mother						Total		
	Aboriginal			Non-Aboriginal					
	Births	Pop'n	Birth rate ¹	Births	Pop'n	Birth rate ¹	Births	Pop'n	Birth rate ¹
15–19	390	4,136	94.3	1127	68,154	16.5	1517	71,106	21.0
20–24	578	3,378	171.1	4,296	70,379	61.0	4,874	71,909	66.1
25–29	444	2,719	163.3	7,623	66,952	113.9	8,067	67,457	115.8
30–34	251	2,716	92.4	8,996	68,917	130.5	9,247	72,298	129.1
35–39	138	2,762	50.0	5,244	75,771	69.2	5,382	76,499	68.5
40–44	22	2,399	9.2	920	75,464	12.2	942	77,868	12.1
Total	1823	18,110	100.7	28,206	425,637	66.3	30,029	437,137	67.7

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, June 2007, and Epidemiology Branch, Analysis and Performance Reporting, Department of Health WA, 2008.

Table 16. Age-specific birth rates¹ by age and Aboriginality of women who gave birth in Western Australia, 1993–2007

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
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	106.3	141.4	24.7	16.1	97.2	37.7	21.4	99.0	37.3
2007	94.3	144.4	31.0	16.5	101.4	40.8	21.0	104.8	41.0

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, 2007

Complications of pregnancy ¹	Plurality				Total	
	Singleton		Multiple			
	No.	% ²	No.	% ³	No.	% ⁴
Threatened abortion	1010	3.5	19	4.4	1029	3.5
Threatened preterm labour	701	2.4	72	16.6	773	2.6
Urinary tract infection	912	3.1	12	2.8	924	3.1
Pre-eclampsia	807	2.8	30	6.9	837	2.8
Antepartum haemorrhage						
— placenta praevia	187	0.6	5	1.2	192	0.6
— abruption	113	0.4	3	0.7	116	0.4
— other	725	2.5	16	3.7	741	2.5
Premature rupture of membranes	1177	4.0	49	11.3	1226	4.1
Gestational diabetes	1339	4.6	31	7.1	1370	4.6
Other	4109	14.1	288	66.4	4397	14.8
No complications of pregnancy	20,059	68.7	109	25.1	20,168	68.1

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

²Percentage of women with a singleton pregnancy (n=29188).

³Percentage of women with a multiple pregnancy (n=434).

⁴Percentage of women who gave birth (n=29622).

Table 18. Selected pre-existing medical conditions for women who gave birth in Western Australia, 2007

Medical conditions ¹	No.	% of women ²
Respiratory system diseases	3289	11.1
Mental and behavioural disorders	1510	5.1
Infectious and parasitic diseases	1242	4.2
Endocrine, nutritional and metabolic diseases	836	2.8
Blood and blood-forming organs and disorders involving the immune mechanism	697	2.4
Circulatory system diseases	649	2.2
Pregnancy, childbirth and puerperial disorders	552	1.9
Genito-urinary system diseases	492	1.7
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	302	1.0
Factors influencing health status and contact with health services	301	1.0
Digestive system diseases	294	1.0
Nervous system diseases	242	0.8
Musculo skeletal system and connective tissue diseases	196	0.7
Skin and subcutaneous tissue diseases	90	0.3
Congenital malformations, deformations and chromosomal abnormalities	72	0.2
Injury poisoning and certain other consequences of external causes	59	0.2
Neoplasms	58	0.2
Ear and mastoid process diseases	17	0.1
Certain conditions originating in the perinatal period	10	0.0
Eye and adnexa diseases	5	0.0
No medical conditions	21,476	72.5

¹A woman may have more than one medical condition.

²Percentage of women who gave birth (n=29622).

Labour and Delivery

Table 19. Onset of labour and plurality of women who gave birth in Western Australia, 2007

Onset of labour	Plurality				Total	
	Singleton		Multiple		No.	%
	No.	%	No.	%		
Spontaneous	15,352	52.6	136	31.3	15,488	52.3
Induced	8072	27.7	86	19.8	8158	27.5
No labour	5764	19.7	212	48.8	5976	20.2
Total	29,188	100.0	434	100.0	29,622	100.0

Table 20. Onset and augmentation of labour and type of delivery for women who gave birth in Western Australia, 2007

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	6955	23.5	886	3.0	-	-	1234	4.2	9075	30.6
Spontaneous onset and augmentation	3899	13.2	1539	5.2	-	-	975	3.3	6413	21.6
Induced onset	5058	17.1	1590	5.4	-	-	1510	5.1	8158	27.5
No labour	-	-	-	-	5289	17.9	687	2.3	5976	20.2
Total	15,912	53.7	4015	13.6	5289	17.9	4406	14.9	29,622	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, 2007

Type of augmentation	Hours of Established labour							Total
	< 1	1–4	5–12	13–18	19–24	> 24	n/r ¹	
Number								
None	783	4130	3674	368	68	32	20	9075
Oxytocin	150	396	922	251	71	23	-	1813
Artificial rupture of membranes (ARM)	132	904	1703	229	43	16	-	3027
Oxytocin and ARM	97	284	749	280	70	12	-	1492
Prostaglandin	6	6	12	5	-	-	-	29
Other	7	15	22	6	1	1	-	52
Total	1175	5735	7082	1139	253	84	20	15,488
Percentage								
None	66.6	72.0	51.9	32.3	26.9	38.1	100.0	58.6
Oxytocin	12.8	6.9	13.0	22.0	28.1	27.4	-	11.7
Artificial rupture of membranes (ARM)	11.2	15.8	24.0	20.1	17.0	19.0	-	19.5
Oxytocin and ARM	8.3	5.0	10.6	24.6	27.7	14.3	-	9.6
Prostaglandin	0.5	0.1	0.2	0.4	-	-	-	0.2
Other	0.6	0.3	0.3	0.5	0.4	1.2	-	0.3
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.

¹ n/r = not recorded.

Table 22. Type of induction and delivery for women who were induced in Western Australia, 2007

Type of Induction	Type of delivery						Total	
	Spontaneous vaginal		Assisted vaginal		Emergency caesarean			
	No.	%	No.	%	No.	%	No.	%
Oxytocin	373	62.1	100	16.6	128	21.3	601	100.0
Prostaglandin	518	60.7	143	16.7	193	22.6	854	100.0
Artificial rupture of membrane (ARM)	364	76.6	53	11.2	58	12.2	475	100.0
Oxytocin and ARM	2462	69.0	696	19.5	411	11.5	3569	100.0
Prostaglandin and ARM	347	67.1	87	16.8	83	16.1	517	100.0
Prostaglandin and Oxytocin	100	41.5	74	30.7	67	27.8	241	100.0
Prostaglandin, oxytocin and ARM	584	47.6	313	25.5	331	27.0	1228	100.0
Other	310	46.1	124	18.4	239	35.5	673	100.0
Total	5058	62.0	1590	19.5	1510	18.5	8158	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, 1993–2007

Year of birth	Onset of labour						Total	
	Spontaneous		Induced		No labour			
	No.	%	No.	%	No.	%	No.	%
1993	14,868	60.4	6766	27.5	2991	12.1	24,625	100.0
1994	14,958	60.5	6777	27.4	2993	12.1	24,728	100.0
1995	14,890	60.2	6879	27.8	2975	12.0	38,950	100.0
1996	14,856	59.9	6898	27.8	3063	12.3	24,817	100.0
1997	14,279	58.3	6945	28.4	3263	13.3	24,487	100.0
1998	14,047	56.4	7288	29.2	3583	14.4	24,918	100.0
1999	14,043	56.2	7442	29.8	3518	14.1	25,003	100.0
2000	13,603	55.7	7170	29.4	3646	14.9	24,419	100.0
2001	12,672	52.7	7341	30.5	4046	16.8	24,059	100.0
2002	12,391	51.6	7227	30.1	4391	18.3	24,009	100.0
2003	12,131	50.8	7017	29.4	4739	19.8	23,887	100.0
2004	12,539	50.8	7129	28.9	5034	20.4	24,702	100.0
2005	12,962	49.7	7505	28.8	5629	21.6	26,096	100.0
2006	14,297	51.3	7768	27.9	5787	20.8	27,852	100.0
2007	15,352	52.6	8072	27.7	5764	19.7	29,188	100.0

Table 24. Analgesia and type of delivery for women who gave birth in Western Australia, 2007

Type of Analgesia	Type of delivery								Total	
	Spontaneous vaginal		Assisted vaginal		Elective caesarean		Emergency caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
None	3824	12.9	220	0.7	5289	17.9	1493	5.0	10826	36.5
Nitrous oxide & oxygen inhalation	4176	14.1	412	1.4	-	-	185	0.6	4773	16.1
Intra-muscular narcotics	2962	10.0	480	1.6	-	-	323	1.1	3765	12.7
Epidural	4541	15.3	2746	9.3	-	-	1998	6.7	9285	31.3
Spinal	92	0.3	82	0.3	-	-	278	0.9	452	1.5
Other	317	1.1	75	0.3	-	-	129	0.4	521	1.8
Total	15,912	53.7	4015	13.6	5289	17.9	4406	14.9	29,622	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, 2007

Type of Anaesthesia	Type of delivery								Total	
	Spontaneous vaginal		Assisted vaginal		Elective caesarean		Emergency caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
None	10,362	35.0	512	1.7	-	-	-	-	10,874	36.7
Local anaesthesia to perineum	807	2.7	468	1.6	-	-	-	-	1275	4.3
Pudendal	22	0.1	168	0.6	-	-	-	-	190	0.6
Epidural	3909	13.2	2590	8.7	1548	5.2	2114	7.1	10,161	34.3
Spinal	62	0.2	77	0.3	2947	9.9	1262	4.3	4348	14.7
General with epidural or spinal	9	0.0	3	0.0	90	0.3	262	0.9	364	1.2
General	1	0.0	1	0.0	27	0.1	44	0.1	73	0.2
Other	740	2.5	196	0.7	677	2.3	724	2.4	2337	7.9
Total	15,912	53.7	4015	13.6	5289	17.9	4406	14.9	29,622	100

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, 1993–2007

Year of birth	Type of delivery								Number of caesareans	
	Elective caesarean				Emergency caesarean					
	Epidural		General		Epidural		General		Elective	Emergency
No.	%	No.	%	No.	%	No.	%	No.	No.	
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	97.6	113	2.4	3219	90.9	323	9.1	4816	3542
2007	4495	97.5	117	2.5	3488	91.9	306	8.1	4612	3794

Excludes 1289 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, 2007

Type of delivery	Presentation						Total	
	Vertex		Breech		Other			
	No.	%	No.	%	No.	%	No.	%
Spontaneous vaginal	15,718	56.5	-	-	81	30.8	15,801	54.1
Vacuum	3126	11.2	-	-	21	8.0	3147	10.8
Forceps	713	2.6	-	-	10	3.8	723	2.5
Breech manoeuvre	-	-	103	9.3	-	-	101	0.3
Elective caesarean	4435	15.9	652	58.8	46	17.5	5133	17.6
Emergency caesarean	3825	13.8	353	31.9	105	39.9	4283	14.7
Total	27,817	100.0	1108	100.0	263	100.0	29,188	100.0

Table 28. Type of delivery and plurality of women who gave birth in Western Australia, 2007

Type of delivery	Plurality						Total	
	Singleton		Twin		Triplet			
	No.	%	No.	%	No.	%	No.	%
Spontaneous vaginal	15,801	54.1	111	26.2	-	-	15,912	53.7
Vacuum	3147	10.8	31	7.3	1	10.0	3179	10.7
Forceps	723	2.5	5	1.2	-	-	728	2.5
Breech manoeuvre	101	0.3	7	1.7	-	-	108	0.4
Elective caesarean	5133	17.6	153	36.1	3	30.0	5289	17.9
Emergency caesarean	4283	14.7	117	27.6	6	60.0	4406	14.9
Total	29,188	100.0	424	100.0	10	100.0	29,622	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, 2007

Type of delivery	Parity								Total	
	0		1–2		3–4		≥ 5			
	No.	%	No.	%	No.	%	No.	%	No.	%
Spontaneous vaginal	5356	43.1	8477	59.1	1616	72.1	463	77.6	15,912	53.7
Assisted vaginal	3019	24.3	902	6.3	80	3.6	14	2.3	4015	13.6
Elective caesarean	1302	10.5	3613	25.2	323	14.4	51	8.5	5289	17.9
Emergency caesarean	2756	22.2	1358	9.5	223	9.9	69	11.6	4406	14.9
Total	12,433	100.0	14,350	100.0	2242	100.0	597	100.0	29,622	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, 2007

Previous delivery	Type of delivery								Total	
	Spontaneous vaginal		Assisted vaginal		Elective		Emergency caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
First delivery	5356	43.1	3019	24.3	1302	10.5	2756	22.2	12,433	100.0
Previous deliveries no caesareans	10,095	82.4	831	6.8	601	4.9	719	5.9	12,246	100.0
Previous caesarean, last delivery vaginal	193	61.7	19	6.1	48	15.3	53	16.9	313	100.0
Previous caesarean, last delivery caesarean	268	5.8	146	3.2	3338	72.1	878	19.0	4630	100.0
Total	15,912	53.7	4015	13.6	5289	17.9	4406	14.9	29,622	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, 2007

Place of Birth	Type of delivery								Total	
	Spontaneous vaginal		Assisted vaginal		Elective		Emergency caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
Metropolitan										
Teaching hospital	3276	54.5	751	12.5	670	11.2	1311	21.8	6008	100.0
Departmental hospital	4115	63.9	757	11.8	782	12.1	788	12.2	6442	100.0
Private hospital	4577	40.7	1,823	16.2	3203	28.5	1635	14.5	11238	100.0
Country										
Regional hospital	2293	64.8	417	11.8	376	10.6	454	12.8	3540	100.0
Private hospital	333	48.1	122	17.6	143	20.7	94	13.6	692	100.0
Other	1000	72.3	144	10.4	115	8.3	124	9.0	1383	100.0
Non-hospital	318	99.7	1	0.3	-	-	-	-	319	100.0
Total	15,912	53.7	4015	13.6	5289	17.9	4406	14.9	29,622	100.0

Women with multiple pregnancies are classified according to the features of the first multiple delivered.
Non-hospital includes home births and births before arrival.

Table 32. Type of delivery for women who gave birth in Western Australia, 1993–2007

Year of Birth	Type of delivery								Total	
	Spontaneous vaginal		Assisted vaginal		Elective		Emergency caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
1993	15,873	63.6	3878	15.5	2,763	11.1	2459	9.8	24,973	100.0
1994	15,935	63.6	3913	15.6	2,729	10.9	2494	9.9	25,071	100.0
1995	16,208	64.6	3824	15.2	2,740	10.9	2318	9.2	25,090	100.0
1996	16,119	64.0	3925	15.6	2,865	11.4	2283	9.1	25,192	100.0
1997	15,756	63.4	3657	14.7	3,042	12.2	2414	9.7	24,869	100.0
1998	15,794	62.4	3594	14.2	3,270	12.9	2636	10.4	25,294	100.0
1999	15,772	62.1	3677	14.5	3,310	13.0	2619	10.3	25,378	100.0
2000	15,098	60.8	3440	13.9	3,520	14.2	2760	11.1	24,818	100.0
2001	14,619	59.7	3107	12.7	3,744	15.3	3022	12.3	24,492	100.0
2002	14,139	58.0	3090	12.7	4,004	16.4	3161	13.0	24,394	100.0
2003	13,837	57.0	2939	12.1	4,327	17.8	3178	13.1	24,281	100.0
2004	13,758	54.8	3228	12.9	4,535	18.1	3590	14.3	25,111	100.0
2005	14,191	53.5	3361	12.7	5,070	19.1	3916	14.8	26,538	100.0
2006	15,376	54.4	3643	12.9	5,280	18.7	3955	14.0	28,254	100.0
2007	15,912	53.7	4015	13.6	5,289	17.9	4406	14.9	29,622	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, 2007

Number of Complications of labour and delivery	Elective caesarean		Emergency caesarean		Total	
	No.	%	No.	%	No.	%
1	4187	79.2	2056	46.7	6243	64.4
2	745	14.1	1276	29.0	2021	20.8
3	322	6.1	615	14.0	937	9.7
4	34	0.6	292	6.6	326	3.4
5	1	0.0	100	2.3	101	1.0
6	-	-	46	1.0	46	0.5
7	-	-	17	0.4	17	0.2
8	-	-	4	0.1	4	0.0
Total	5289	100.0	4406	100.0	9695	100.0

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

Table 34. Complications of labour and delivery for women who gave birth by caesarean section in Western Australia, 2007

Complications of labour and delivery ¹	Elective caesarean		Emergency caesarean		Total	
	No.	% ²	No.	% ³	No.	% ⁴
Multiple gestation	130	2.5	110	2.1	240	2.5
Complications specific to multiple gestation	3	0.1	1	0.0	4	0.0
Maternal care — known/suspected malpresentation of fetus	727	13.7	395	7.5	1122	11.6
Maternal care — known/suspected disproportion	101	1.9	41	0.8	142	1.5
Maternal care — known/suspected abnormality of pelvic organs	496	9.4	140	2.6	636	6.6
Placental disorders	2	0.0	4	0.1	6	0.1
Placenta praevia	82	1.6	40	0.8	122	1.3
Abnormalities of forces of labour	71	1.3	601	11.4	672	6.9
Long labour	1	0.0	1443	27.3	1444	14.9
Labour and delivery affected by malposition and malpresentation of fetus	39	0.7	403	7.6	442	4.6
Labour and delivery affected by maternal pelvic abnormality	148	2.8	302	5.7	450	4.6
Other factors affecting labour and delivery	1	0.0	56	1.1	57	0.6
Labour and delivery complicated by fetal stress	72	1.4	1690	32.0	1762	18.2
Labour and delivery complicated by umbilical cord complications	41	0.8	210	4.0	251	2.6
Postpartum haemorrhage	652	12.3	1099	20.8	1751	18.1
Retained placenta and membranes, without haemorrhage	2	0.0	16	0.3	18	0.2
Delayed delivery after spontaneous or unspecified rupture of membranes	3	0.1	66	1.2	69	0.7
Previous caesarean section	3407	64.4	874	16.5	4281	44.2
Supervision of pregnancy with other poor reproductive or obstetric history	124	2.3	15	0.3	139	1.4
Other	673	12.7	586	11.1	1259	13.0
Total	6775	-	8232	-	15,007	-

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

²Percentage of women who had elective caesarean (n=5289)

³Percentage of women who had emergency caesarean (n=4406)

⁴Percentage of women who had a caesarean section (n=9695)

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, 2007

Hours of labour	Onset of labour			
	Spontaneous		Induction	
	No.	%	No.	%
< 1	1175	7.6	914	11.2
1–4	5735	37.1	3746	45.9
5–12	7082	45.8	3160	38.7
13–18	1139	7.4	286	3.5
19–24	253	1.6	34	0.4
> 24	84	0.5	18	0.2
Total	15,468	100.0	8158	100.0

Excludes 5976 women who did not experience labour and 20 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, 2007

Type of delivery	Hours of Established labour							Total
	No labour	< 1	1–4	5–12	13–18	19–24	> 24	
Number								
Spontaneous vaginal	-	321	8117	6680	618	101	55	15,892
Vacuum	-	3	743	2000	357	63	13	3179
Forceps	-	-	112	453	132	27	4	728
Breech manoeuvre	-	6	59	34	4	3	2	108
Elective caesarean	5289	-	-	-	-	-	-	5289
Emergency caesarean	687	1759	450	1075	314	93	28	4406
Total	5976	2089	9481	10,242	1425	287	102	29,602
Percentage								
Spontaneous vaginal	-	15.4	85.6	65.2	43.4	35.2	53.9	53.7
Vacuum	-	0.1	7.8	19.5	25.1	22.0	12.7	10.7
Forceps	-	-	1.2	4.4	9.3	9.4	3.9	2.5
Breech manoeuvre	-	0.3	0.6	0.3	0.3	1.0	2.0	0.4
Elective caesarean	88.5	-	-	-	-	-	-	17.9
Emergency caesarean	11.5	84.2	4.7	10.5	22.0	32.4	27.5	14.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Excludes 20 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, 2007

Complications of labour and delivery ¹	Plurality				Total	
	Singleton		Multiple			
	No.	% ²	No.	% ³	No.	% ⁴
Precipitate delivery	1512	5.2	8	1.8	1520	5.1
Fetal distress	3675	12.6	46	10.6	3721	12.6
Prolapsed cord	37	0.1	3	0.7	40	0.1
Cord tightly around neck	1042	3.6	7	1.6	1049	3.5
Cephalopelvic disproportion	466	1.6	2	0.5	468	1.6
Post partum haemorrhage	3375	11.6	151	34.8	3526	11.9
Retained placenta — manual removal	368	1.3	3	0.7	371	1.3
Persistent occipito posterior	812	2.8	4	0.9	816	2.8
Shoulder dystocia	438	1.5	0	0.0	438	1.5
Failure to progress <= 3cms	1197	4.1	32	7.4	1229	4.1
Failure to progress > 3cms	1676	5.7	20	4.6	1696	5.7
Previous caesarean section	4619	15.8	82	18.9	4701	15.9
Other	7043	24.1	366	84.3	7409	25.0
No complications of labour and delivery	11,495	39.4	27	6.2	11,522	38.9

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

²Percentage of women with singleton birth (n=29188)

³Percentage of women with multiple birth (n=434)

⁴Percentage of women who gave birth (n=29622)

Table 38. Type of delivery and accoucheur of women who gave birth in Western Australia, 2007

Accoucheur	Type of delivery								Total	
	Spontaneous vaginal		Assisted vaginal		Elective caesarean		Emergency caesarean			
	No.	%	No.	%	No.	%	No.	%	No.	%
Obstetrician	2421	15.2	2369	59.0	4377	82.8	2678	60.8	11,845	40.0
Other medical officer	1716	10.8	1571	39.1	912	17.2	1728	39.2	5927	20.0
Midwife	10,495	66.0	75	1.9	-	-	-	-	10,570	35.7
Student	1111	7.0	-	-	-	-	-	-	1111	3.8
Self/no attendant	74	0.5	-	-	-	-	-	-	74	0.2
Other	95	0.6	-	-	-	-	-	-	95	0.3
Total	15,912	100.0	4015	100.0	5289	100.0	4406	100.0	29,622	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, 2007

Type of delivery	Repair of perineum and/or Vagina					Total
	None	Episiotomy	1st or 2nd degree tear	3rd or 4th degree tear	Other	
Number						
Spontaneous vaginal	7095	1446	6473	215	683	15,912
Vacuum	421	1450	1138	94	76	3179
Forceps	28	545	101	45	9	728
Breech manoeuvre	87	13	7	1	-	108
Elective caesarean	5289	-	-	-	-	5289
Emergency caesarean	4368	13	8	-	17	4406
Total	17,288	3467	7,727	355	785	29,622
Percentage						
Spontaneous vaginal	41.0	41.7	83.8	60.6	87.0	53.7
Vacuum	2.4	41.8	14.7	26.5	9.7	10.7
Forceps	0.2	15.7	1.3	12.7	1.1	2.5
Breech manoeuvre	0.5	0.4	0.1	0.3	-	0.4
Elective caesarean	30.6	-	-	-	-	17.9
Emergency caesarean	25.3	0.4	0.1	-	2.2	14.9
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, 1993–2007

Year of birth	Condition at birth				Total No.	Crude birth rate ¹
	Live birth		Fetal death			
	No.	%	No.	%		
1993	25,159	99.3	176	0.7	25,335	15.0
1994	25,237	99.3	188	0.7	25,425	14.8
1995	25,254	99.2	191	0.8	25,445	14.6
1996	25,385	99.2	199	0.8	25,584	14.4
1997	25,096	99.3	171	0.7	25,267	14.0
1998	25,516	99.4	164	0.6	25,680	13.9
1999	25,592	99.3	179	0.7	25,771	13.8
2000	25,022	99.2	206	0.8	25,228	13.3
2001	24,773	99.3	166	0.7	24,939	13.0
2002	24,607	99.3	175	0.7	24,782	12.8
2003	24,499	99.3	184	0.7	24,683	12.6
2004	25,340	99.3	188	0.7	25,528	12.8
2005	26,781	99.3	200	0.7	26,981	13.3
2006	28,457	99.3	208	0.7	28,665	13.8
2007	29,877	99.4	189	0.6	30,066	14.0

¹Crude birth rate is the number of live births per 1000 total population.

Table 41. Condition at birth and gender of births in Western Australia, 2007

Gender	Condition at birth				Total	
	Live birth		Fetal death		No.	%
	No.	%	No.	%		
Male	15,354	51.4	100	52.9	15,454	51.4
Female	14,523	48.6	88	46.6	14,611	48.6
Indeterminate	-	-	1	0.5	1	0.0
Total	29,877	100.0	189	100.0	30,066	100.0

Table 42. Condition at birth and Aboriginality of mother for births in Western Australia, 2007

Aboriginality of mother	Condition at birth				Total		Fetal death rate/1000
	Live birth		Fetal death		No.	%	
	No.	%	No.	%			
Aboriginal	1810	6.1	19	10.1	1829	6.1	10.4
Non-Aboriginal	28,067	93.9	170	89.9	28,237	93.9	6.0
Total	29,877	100.0	189	100.0	30,066	100.0	6.3

Table 43. Condition at birth and place of birth for births in Western Australia, 2007

Place of birth	Condition at birth				Total		Fetal death rate/1000
	Live birth		Fetal death		No.	%	
	No.	%	No.	%			
Metropolitan							
Teaching hospital	6097	20.4	133	70.4	6230	20.7	21.3
Departmental hospital	6461	21.6	12	6.3	6473	21.5	1.9
Private hospital	11,366	38.0	25	13.2	11,391	37.9	2.2
Country							
Regional hospital	3561	11.9	13	6.9	3574	11.9	3.6
Private hospital	693	2.3	1	0.5	694	2.3	1.4
Other	1379	4.6	4	2.1	1383	4.6	2.9
Non-hospital							
Home births	193	0.6	-	-	193	0.6	N/A
BBA	127	0.4	1	0.5	128	0.4	7.8
Total	29,877	100.0	189	100.0	30,066	100.0	6.3

Table 44. Plurality of all births in Western Australia, 1993–2007

Year of birth	Plurality							
	Singleton		Twins		Triplets		Other multiple	
	No.	%	No.	%	No.	%	No.	%
1993	24,625	97.2	668	2.6	42	0.2	-	-
1994	24,728	97.3	666	2.6	27	0.1	4	0.0
1995	24,744	97.2	674	2.6	27	0.1	-	-
1996	24,817	97.0	720	2.8	39	0.2	8	0.0
1997	24,487	96.9	738	2.9	30	0.1	12	0.0
1998	24,918	97.0	732	2.9	30	0.1	-	-
1999	25,003	97.0	720	2.8	39	0.2	9	0.0
2000	24,419	96.8	774	3.1	36	0.1	-	-
2001	24,059	96.5	842	3.4	36	0.1	-	-
2002	24,009	96.9	764	3.1	9	0.0	-	-
2003	23,887	96.8	774	3.1	18	0.1	4	0.0
2004	24,702	96.8	802	3.1	24	0.1	-	-
2005	26,096	96.7	860	3.2	36	0.1	-	-
2006	27,852	97.2	786	2.7	27	0.1	-	-
2007	29,188	97.1	848	2.8	30	0.1	-	-

Table 45. Apgar score at one minute and time to spontaneous respiration of live births in Western Australia, 2007

Time to spontaneous respiration	Apgar score at one minute								Total	
	0		1-3		4-7		8-10			
	No.	%	No.	%	No.	%	No.	%	No.	%
≤ 1	2	20.0	32	6.9	2482	59.7	24,746	98.1	27,262	91.3
2-3	-	-	97	21.0	1269	30.5	340	1.3	1,706	5.7
4-6	1	10.0	171	37.0	252	6.1	110	0.4	534	1.8
7-10	-	-	33	7.1	31	0.7	1	0.0	65	0.2
> 10	-	-	15	3.2	10	0.2	1	0.0	26	0.1
Intubation ¹	7	70.0	114	24.7	114	2.7	16	0.1	251	0.8
Total	10	100.0	462	100.0	4158	100.0	25,214	100.0	29,844	100.0

Excludes 33 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, 2007

Time to spontaneous respiration	Apgar score at five minutes								Total	
	0		1-3		4-7		8-10			
	No.	%	No.	%	No.	%	No.	%	No.	%
≤ 1	6	100.0	7	12.1	161	22.9	27,090	93.2	27,264	91.3
2-3	-	-	-	-	179	25.4	1527	5.3	1706	5.7
4-6	-	-	5	8.6	172	24.4	357	1.2	534	1.8
7-10	-	-	4	6.9	57	8.1	4	0.0	65	0.2
> 10	-	-	4	6.9	19	2.7	3	0.0	26	0.1
Intubation ¹	-	-	38	65.5	116	16.5	97	0.3	251	0.8
Total	6	100.0	58	100.0	704	100.0	29,078	100.0	29,846	100.0

Excludes 31 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, 2007

Resuscitation	Apgar score at five minutes								Total	
	0		1-3		4-7		8-10			
	No.	%	No.	%	No.	%	No.	%	No.	%
None	4	66.7	13	22.4	20	2.8	20,758	71.4	20,795	69.7
Suction only	-	-	-	-	27	3.8	2734	9.4	2761	9.3
Oxygen therapy	-	-	1	1.7	109	15.5	3077	10.6	3187	10.7
Bag & mask	-	-	7	12.1	341	48.4	1679	5.8	2027	6.8
Intubation	-	-	15	25.9	98	13.9	110	0.4	223	0.7
Ext card mass	2	33.3	14	24.1	32	4.5	24	0.1	72	0.2
Other	-	-	8	13.8	77	10.9	696	2.4	781	2.6
Total	6	100.0	58	100.0	704	100.0	29,078	100.0	29,846	100.0

Excludes 31 live births for whom an Apgar score at five minutes was unknown.

Table 48. Birthweight and resuscitation methods of live births in Western Australia, 2007

Resuscitation	Birthweight (grams)					Total
	< 500	500-1499	1500-1999	2000-2499	≥ 2500	
Number						
None	7	17	129	687	19982	20822
Suction only	-	7	20	104	2630	2761
Oxygen therapy	1	23	87	200	2878	3189
Bag & mask	-	72	112	167	1676	2027
Intubation	7	103	23	9	82	224
Ext card mass	1	6	3	2	60	72
Other	1	46	27	39	669	782
Total	17	274	401	1208	27,977	29,877
Percentage						
None	41.2	6.2	32.2	56.9	71.4	69.7
Suction only	-	2.6	5.0	8.6	9.4	9.2
Oxygen therapy	5.9	8.4	21.7	16.6	10.3	10.7
Bag & mask	-	26.3	27.9	13.8	6.0	6.8
Intubation	41.2	37.6	5.7	0.7	0.3	0.7
Ext card mass	5.9	2.2	0.7	0.2	0.2	0.2
Other	5.9	16.8	6.7	3.2	2.4	2.6
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, 2007

Birthweight (grams)	Aboriginality of mother				Total	
	Aboriginal		Non-Aboriginal			
	No.	%	No.	%	No.	%
< 500	10	0.5	94	0.3	104	0.3
500–999	25	1.4	136	0.5	161	0.5
1000–1499	15	0.8	151	0.5	166	0.6
1500–1999	74	4.0	337	1.2	411	1.4
2000–2499	176	9.6	1039	3.7	1215	4.0
< 2500	300	16.4	1757	6.2	2057	6.8
2500–2999	406	22.2	4238	15.0	4644	15.4
3000–3499	611	33.4	10,345	36.6	10,956	36.4
3500–3999	373	20.4	8751	31.0	9124	30.3
4000–4499	122	6.7	2703	9.6	2825	9.4
≥ 4500	17	0.9	443	1.6	460	1.5
Total	1829	100.0	28,237	100.0	30,066	100.0

Mean = 3343 grams. Standard deviation = 609 grams.

Table 50. Low birthweight and very low birthweight by Aboriginality of mother for births in Western Australia, 1993–2007

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.	%
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
2007	300	16.4	50	2.7	1757	6.2	381	1.3

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, 2007

Birthweight (grams)	Condition at birth				Total	
	Live birth		Fetal Death			
	No.	%	No.	%	No.	%
< 500	17	0.1	87	46.0	104	0.3
500–999	115	0.4	46	24.3	161	0.5
1000–1499	159	0.5	7	3.7	166	0.6
1500–1999	401	1.3	10	5.3	411	1.4
2000–2499	1208	4.0	7	3.7	1215	4.0
< 2500	1900	6.4	157	83.1	2057	6.8
2500–2999	4629	15.5	15	7.9	4644	15.4
3000–3499	10,946	36.6	10	5.3	10,956	36.4
3500–3999	9119	30.5	5	2.6	9124	30.3
4000–4499	2823	9.4	2	1.1	2825	9.4
≥ 4500	460	1.5	-	-	460	1.5
Total	29,877	100.0	189	100.0	30,066	100.0

Table 52. Birthweight distribution and condition at birth for singleton births in Western Australia, 2007

Birthweight (grams)	Condition at birth				Total	
	Live birth		Fetal Death			
	No.	%	No.	%	No.	%
< 500	16	0.1	77	45.6	93	0.3
500–999	89	0.3	38	22.5	127	0.4
1000–1499	109	0.4	6	3.6	115	0.4
1500–1999	294	1.0	10	5.9	304	1.0
2000–2499	954	3.3	6	3.6	960	3.3
< 2500	1462	5.0	137	81.1	1599	5.5
2500–2999	4317	14.9	15	8.9	4332	14.8
3000–3499	10,840	37.4	10	5.9	10,850	37.2
3500–3999	9117	31.4	5	3.0	9122	31.3
4000–4499	2823	9.7	2	1.2	2825	9.7
≥ 4500	460	1.6	-	-	460	1.6
Total	29,019	100.0	169	100.0	29,188	100.0

Table 53. Birthweight distribution and condition at birth for multiple births in Western Australia, 2007

Birthweight (grams)	Condition at birth				Total	
	Live birth		Fetal Death			
	No.	%	No.	%	No.	%
< 500	1	0.1	10	50.0	11	1.3
500–999	26	3.0	8	40.0	34	3.9
1000–1499	50	5.8	1	5.0	51	5.8
1500–1999	107	12.5	-	-	107	12.2
2000–2499	254	29.6	1	5.0	255	29.0
< 2500	438	51.0	20	100.0	458	52.2
2500–2999	312	36.4	-	-	312	35.5
3000–3499	106	12.4	-	-	106	12.1
3500–3999	2	0.2	-	-	2	0.2
4000–4499	858	100.0	20	100.0	878	100.0
≥ 4500	-	-	-	-	-	-
Total	858	100.0	20	100.0	878	100.0

Table 54. Birthweight distribution and gestation for total births in Western Australia, 2007

Birthweight (grams)	Gestation (weeks)								Total	
	20–27		28–32		33–36		37–43			
	No.	%	No.	%	No.	%	No.	%	No.	%
< 500	101	40.1	1	0.3	-	-	2	0.0	104	0.3
500–999	137	54.4	23	6.3	1	0.1	-	-	161	0.5
1000–1499	14	5.6	126	34.3	26	1.3	-	-	166	0.6
1500–1999	-	-	172	46.9	214	11.0	25	0.1	411	1.4
2000–2499	-	-	36	9.8	653	33.7	526	1.9	1215	4.0
< 2500	252	100.0	358	97.5	894	46.2	553	2.0	2057	6.8
2500–2999	-	-	9	2.5	692	35.7	3943	14.3	4644	15.4
3000–3499	-	-	-	-	279	14.4	10,677	38.8	10,956	36.4
3500–3999	-	-	-	-	56	2.9	9068	33.0	9124	30.3
4000–4499	-	-	-	-	13	0.7	2811	10.2	2824	9.4
≥ 4500	-	-	-	-	3	0.2	457	1.7	460	1.5
Total	252	100.0	367	100.0	1937	100.0	27,509	100.0	30,065	100.0

Excludes one birth having more than 43 weeks gestation.

Table 55. Birthweight distribution and gestation for singleton births in Western Australia, 2007

Birthweight (grams)	Gestation (weeks)								Total	
	20–27		28–32		33–36		37–43			
	No.	%	No.	%	No.	%	No.	%	No.	%
< 500	93	42.9	-	-	-	-	-	-	93	0.3
500–999	111	51.2	15	5.6	1	0.1	-	-	127	0.4
1000–1499	13	6.0	85	31.6	17	1.1	-	-	115	0.4
1500–1999	-	-	130	48.3	155	10.0	19	0.1	304	1.0
2000–2499	-	-	32	11.9	470	30.2	458	1.7	960	3.3
< 2500	217	100.0	262	97.4	643	41.4	477	1.8	1599	5.5
2500–2999	-	-	7	2.6	583	37.5	3742	13.8	4332	14.8
3000–3499	-	-	-	-	257	16.5	10,593	39.0	10,850	37.2
3500–3999	-	-	-	-	56	3.6	9066	33.4	9122	31.3
4000–4499	-	-	-	-	13	0.8	2811	10.4	2824	9.7
≥ 4500	-	-	-	-	3	0.2	457	1.7	460	1.6
Total	217	100.0	269	100.0	1555	100.0	27,146	100.0	29,187	100.0

Excludes one birth having more than 43 weeks gestation.

Table 56. Birthweight distribution and gestation for multiple births in Western Australia, 2007

Birthweight (grams)	Gestation (weeks)								Total	
	20–27		28–32		33–36		37–43			
	No.	%	No.	%	No.	%	No.	%	No.	%
< 500	8	22.9	1	1.0	-	-	2	0.6	11	1.3
500–999	26	74.3	8	8.2	-	-	-	-	34	3.9
1000–1499	1	2.9	41	41.8	9	2.4	-	-	51	5.8
1500–1999	-	-	42	42.9	59	15.4	6	1.7	107	12.2
2000–2499	-	-	4	4.1	183	47.9	68	18.7	255	29.0
< 2500	35	100.0	96	98.0	251	65.7	76	20.9	458	52.2
2500–2999	-	-	2	2.0	109	28.5	201	55.4	312	35.5
3000–3499	-	-	-	-	22	5.8	84	23.1	106	12.1
3500–3999	-	-	-	-	-	-	2	0.6	2	0.2
4000–4499	-	-	-	-	-	-	-	-	-	0.0
≥ 4500	-	-	-	-	-	-	-	-	-	0.0
Total	35	100.0	98	100.0	382	100.0	363	100.0	878	100.0

Table 57. Condition at birth and place of birth for births for pre-term births (23–31 weeks gestation) in Western Australia, 2007

Place of birth	Live births				Stillbirths				All		
	23–25 weeks		26–28 weeks		29–31 weeks		23–31 weeks		23–31 weeks		
	No.	%									
Public											
Teaching hospital	45	93.8	98	93.3	174	90.2	38	71.7	355	89.0	
Departmental hospital	1	2.1	-	-	5	2.6	2	3.8	8	2.0	
Regional hospital	1	2.1	6	5.7	7	3.6	8	15.1	22	5.5	
Private	-	-	1	1.0	4	2.1	5	9.4	10	2.5	
Non-hospital	1	2.1	-	-	3	1.6	-	-	4	1.0	
Total	48	100.0	105	100.0	193	100.0	53	100.0	399	100.0	

Table 58. Condition at birth and place of birth for births for pre-term births (23–31 weeks gestation) in Western Australia, 1993–2007

Year of birth	Teaching				Other				Total			
	Live births		Stillbirths		Live births		Stillbirths		Live births		Stillbirths	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
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
2007	317	79.4	38	9.5	29	7.3	15	3.8	346	86.7	53	13.3

Includes babies born before arrival at hospital and home births

Table 59. Births identified with birth defects in Western Australia, 2003–2007

Diagnostic category (and British Paediatric Association Code)	Year of birth									
	2003		2004		2005		2006		2007	
	No.	Rate ¹	No.	Rate ¹	No.	Rate ¹	No.	Rate ¹	No.	Rate ¹
Nervous system anomalies (74000–74299)	98	4.0	105	4.1	126	4.7	104	3.6	86	2.9
Congenital eye anomalies (74300–74399)	22	0.9	25	1.0	26	1.0	14	0.5	13	-
Congenital anomalies of ear face and neck	104	4.2	88	3.4	110	4.1	99	3.5	64	2.1
Cardiovascular defects (74500–74799)	283	11.5	297	11.6	287	10.7	306	10.7	268	8.9
Respiratory defects (74800–74899)	25	1.0	25	1.0	24	0.9	31	1.1	30	1.0
Gastro-intestinal defects (74900–75199)	165	6.7	157	6.1	176	6.5	149	5.2	121	4.0
Uro-genital defects (75200–75399)	390	15.8	401	15.7	386	14.3	323	11.3	263	8.7
Musculo-skeletal defects (75400–75699)	342	13.9	348	13.6	394	14.6	400	14.0	309	10.3
Congenital defects of integument (75700–75799)	82	3.3	86	3.4	64	2.4	56	2.0	28	0.9
Chromosome defects (75800–75899)	122	4.9	148	5.8	156	5.8	158	5.5	119	4.0

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, 2007

Length of stay ¹ (days)	Plurality				Total	
	Singleton		Multiple			
	No.	%	No.	%	No.	%
1	586	24.4	27	7.4	613	22.2
2	428	17.8	19	5.2	447	16.2
3	281	11.7	22	6.0	303	11.0
4	176	7.3	21	5.7	197	7.1
5	105	4.4	18	4.9	123	4.4
6	87	3.6	18	4.9	105	3.8
7	72	3.0	14	3.8	86	3.1
8–14	286	11.9	87	23.7	373	13.5
15–20	114	4.8	39	10.6	153	5.5
21–28	65	2.7	27	7.4	92	3.3
29–60	113	4.7	57	15.5	170	6.1
61–90	59	2.5	9	2.5	68	2.5
91–180	28	1.2	9	2.5	37	1.3
> 180	-	0.0	-	-	-	0.0
Total	2400	100.0	367	100.0	2767	100.0

¹Excludes 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, 2007

Birthweight (grams)	Length of stay (days)						Total
	≤ 1	2–7	8–14	15–20	21–28	> 28	
Number							
< 500	9	1	-	-	1	6	17
500–999	18	8	2	4	-	83	115
1000–1499	9	2	13	12	17	106	159
1500–1999	25	71	104	79	50	72	401
2000–2499	82	735	306	54	22	9	1208
< 2500	143	817	425	149	90	276	1900
2500–2999	622	3674	293	22	9	9	4629
3000–3499	1542	9128	261	10	-	5	10,946
3500–3999	1390	7556	160	8	2	3	9119
4000–4499	444	2316	59	3	-	1	2823
≥ 4500	66	378	12	1	3	-	460
Total	4,207	23,869	1,210	193	104	294	29,877
Percentage							
< 500	0.2	0.0	-	-	1.0	2.0	0.1
500–999	0.4	0.0	0.2	2.1	-	28.2	0.4
1000–1499	0.2	0.0	1.1	6.2	16.3	36.1	0.5
1500–1999	0.6	0.3	8.6	40.9	48.1	24.5	1.3
2000–2499	1.9	3.1	25.3	28.0	21.2	3.1	4.0
< 2500	3.4	3.4	35.1	77.2	86.5	93.9	6.4
2500–2999	14.8	15.4	24.2	11.4	8.7	3.1	15.5
3000–3499	36.7	38.2	21.6	5.2	-	1.7	36.6
3500–3999	33.0	31.7	13.2	4.1	1.9	1.0	30.5
4000–4499	10.6	9.7	4.9	1.6	-	0.3	9.4
≥ 4500	1.6	1.6	1.0	0.5	2.9	-	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Includes home births in midwife's care.

Table 62. Length of stay in hospital of birth and birthweight distribution of live births in Western Australia, 2007

Birthweight (grams)	Length of stay (days)						Total
	≤ 1	2–7	8–14	15–20	21–28	> 28	
Number							
< 500	-	-	-	-	-	3	3
500–999	-	1	-	-	-	61	62
1000–1499	1	-	-	3	4	52	60
1500–1999	1	33	34	40	26	49	183
2000–2499	37	628	228	42	20	9	964
< 2500	39	662	262	85	50	174	1272
2500–2999	530	3,592	273	21	6	9	4431
3000–3499	1412	9063	253	9	-	5	10,742
3500–3999	1272	7500	157	7	2	3	8941
4000–4499	411	2287	59	3	-	1	2761
≥ 4500	56	369	12	1	3	-	441
Total	3720	23,473	1016	126	61	192	28,588
Percentage							
< 500	-	-	-	-	-	1.6	0.0
500–999	-	0.0	-	-	-	31.8	0.2
1000–1499	0.0	-	-	2.4	6.6	27.1	0.2
1500–1999	0.0	0.1	3.3	31.7	42.6	25.5	0.6
2000–2499	1.0	2.7	22.4	33.3	32.8	4.7	3.4
< 2500	1.0	2.8	25.8	67.5	82.0	90.6	4.4
2500–2999	14.2	15.3	26.9	16.7	9.8	4.7	15.5
3000–3499	38.0	38.6	24.9	7.1	-	2.6	37.6
3500–3999	34.2	32.0	15.5	5.6	3.3	1.6	31.3
4000–4499	11.0	9.7	5.8	2.4	-	0.5	9.7
≥ 4500	1.5	1.6	1.2	0.8	4.9	-	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Excludes 1,242 inter-hospital transfers and 47 deaths in hospital of birth.

Table 63. Length of stay in hospital of birth and gestational age of live births in Western Australia, 2007

Birthweight (grams)	Length of stay (days)						Total
	≤ 1	2–7	8–14	15–20	21–28	> 28	
Number							
20–27	25	8	1	4	1	86	125
28–32	26	20	42	39	52	172	351
33–36	140	1088	511	126	40	19	1924
37–43	4016	22,752	656	24	11	17	27,476
Total	4207	23,868	1210	193	104	294	29,876
Percentage							
20–27	0.6	0.0	0.1	2.1	1.0	29.3	0.4
28–32	0.6	0.1	3.5	20.2	50.0	58.5	1.2
33–36	3.3	4.6	42.2	65.3	38.5	6.5	6.4
37–43	95.5	95.3	54.2	12.4	10.6	5.8	92.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Includes home births in midwife's care.

Excludes one birth having more than 43 weeks gestation.

Table 64. Length of stay in hospital of birth and gestational age of surviving live births in Western Australia, 2007

Birthweight (grams)	Length of stay (days)						Total
	≤ 1	2–7	8–14	15–20	21–28	> 28	
Number							
20–27	-	-	-	-	-	58	58
28–32	1	9	4	4	20	98	136
33–36	55	928	370	100	30	19	1502
37–43	3664	22,535	642	22	11	17	26,891
Total	3720	23,472	1016	126	61	192	28,587
Percentage							
20–27	-	-	-	-	-	30.2	0.2
28–32	0.0	0.0	0.4	3.2	32.8	51.0	0.5
33–36	1.5	4.0	36.4	79.4	49.2	9.9	5.3
37–43	98.5	96.0	63.2	17.5	18.0	8.9	94.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Includes home births in midwife's care.

Excludes 1,242 inter-hospital transfers, 47 deaths in hospital of birth and one birth having more than 43 weeks gestation.

Perinatal Mortality

Table 65. Perinatal mortality in Western Australia using birthweight criteria, 2007

Gestation	Fetal death rate	Neonatal death rate	Perinatal death rate
≥ 400 grams	4.3	1.9	6.2
≥ 500 grams	3.4	1.7	5.1

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

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

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

Table 66. Perinatal mortality in Western Australia using gestational age criteria, 2007

Gestation	Fetal death rate	Neonatal death rate	Perinatal death rate
≥ 20 weeks	6.3	2.0	8.3
≥ 22 weeks	4.4	1.9	6.2

Table 67. Fetal, neonatal and perinatal mortality rates by Aboriginality of mother in Western Australia, 2007

Type of Death	Aboriginality of mother		Total
	Aboriginal	Non-Aboriginal	
Fetal death rate	10.4	6.0	6.3
Neonatal death rate	4.4	1.9	2.0
Perinatal death rate	14.8	7.9	8.3

Table 68. Fetal mortality by Aboriginality of mother in Western Australia, 1993–2007

Year of birth	Aboriginality of mother		Total rate
	Aboriginal rate	Non-Aboriginal rate	
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
2007	10.4	6.0	6.3

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

Table 69. Neonatal mortality by Aboriginality of mother in Western Australia, 1993–2007

Year of birth	Aboriginality of mother		Total rate
	Aboriginal rate	Non-Aboriginal rate	
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
2007	4.4	1.9	2.0

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

Table 70. Perinatal mortality by Aboriginality of mother in Western Australia, 1993–2007

Year of birth	Aboriginality of mother		Total rate
	Aboriginal rate	Non-Aboriginal rate	
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
2007	14.8	7.9	8.3

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

Table 71. Birthweight distribution of fetal, neonatal and perinatal deaths in Western Australia, 2007

Birthweight	Fetal deaths		Neonatal deaths		Perinatal deaths	
	No.	%	No.	%	No.	%
< 500	87	46.0	11	18.0	98	39.2
500–999	46	24.3	22	36.1	68	27.2
1000–1499	7	3.7	3	4.9	10	4.0
1500–1999	10	5.3	4	6.6	14	5.6
2000–2499	7	3.7	4	6.6	11	4.4
< 2500	157	83.1	44	72.1	201	80.4
2500–2999	15	7.9	4	6.6	19	7.6
3000–3499	10	5.3	8	13.1	18	7.2
3500–3999	5	2.6	3	4.9	8	3.2
4000–4499	2	1.1	2	3.3	4	1.6
≥ 4500	-	0.0	0.0	0.0	-	0.0
Total	189	100.0	61	100.0	250	100.0

Table 72. Plurality of fetal, neonatal and perinatal deaths in Western Australia, 2007

Plurality	Fetal deaths		Neonatal deaths		Perinatal deaths	
	No.	Rate	No.	Rate	No.	Rate
Singleton	169	5.8	53	1.8	222	7.6
Multiple	20	22.8	8	9.3	28	31.9
Total	189	6.3	61	2.0	250	8.3

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

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

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

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

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

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

Table 73. Age at death for neonatal deaths in Western Australia, 2007

Age at neonatal death	No.	% of neonatal deaths
< Day 1	28	45.9
Day 1	6	9.8
Day 2	8	13.1
Day 3	1	1.6
Day 4	1	1.6
Day 5	3	4.9
Day 6	3	4.9
Day 7	1	1.6
Day 8–14	4	6.6
Day 15–21	3	4.9
Day 22–28	3	4.9
Total	61	100.0

Table 74. Causes of fetal and neonatal deaths in Western Australia, 2007

Causes of death	Fetal deaths		Neonatal deaths	
	No.	%	No.	%
Lethal birth defects	59	31.2	15	24.6
Extremely low birthweight (< 1000 grams) ¹	77	40.7	27	44.3
Low birthweight (1000–2499 grams) ²	6	3.2	6	9.8
Asphyxia	-	-	3	4.9
Maternal — Obstetric	5	2.6	-	-
— Medical	-	-	-	-
— Hypertension	-	-	-	-
Placenta and cord	5	2.6	0	0.0
Hydrops fetalis	-	-	-	-
Infection	-	-	1	1.6
Sudden Infant Death Syndrome	-	-	-	-
Other	-	-	2	3.3
Unknown	37	19.6	7	11.5
Total	189	100.0	61	100.0

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

²Any 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, 2007

Autopsy request	Fetal deaths		Neonatal deaths		Perinatal deaths	
	No.	%	No.	%	No.	%
Yes	126	66.7	26	42.6	152	60.8
No	56	29.6	25	41.0	81	32.4
Unknown	7	3.7	10	16.4	17	6.8
Total	189	100.0	61	100.0	250	100.0

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 2007).
2. Perinatal, Infant and Maternal Mortality in WA – A Triennial Cohort of 1999–2001 births. (December 2005).
3. Perinatal Statistics in Western Australia, 2006. Twenty-fourth Annual Report of the Western Australian Midwives' Notification System. (September 2008).
4. The 11th Report of the Perinatal and Infant Mortality Committee of Western Australia 2000–01. (July 2005).

