

**Supporting
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of wellbeing**

Pregnancy Outcome

in South Australia 2018



**Government
of South Australia**

Wellbeing SA

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Abbreviations and symbols

Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ARM	artificial rupture of membranes
ASFR	age-specific fertility rate
APH	ante-partum haemorrhage
BMI	body mass index
CTG	cardiotocography
ENMR	early neonatal mortality rate
IPPV	intermittent positive pressure ventilation
IUGR	intrauterine growth restriction
LSCS	lower segment caesarean section
PPH	post-partum haemorrhage
SA	South Australia
SACC	Standard Australian Classification of Countries
SBR	Supplementary Birth Record
WHO	World Health Organization

Symbols

n/a	not available
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Executive Summary

Number of births and fertility rates

The number of births notified in South Australia in 2018 was 19,332 which was 153 less births than in 2017. The number of women who gave birth was 19,043. The total fertility rate was 1.68 live births per woman, slightly lower than the rate of 1.71 in 2017. Fertility rates increased slightly in the 25-29, 30-34, and 35-39 year age groups.

Aboriginal mothers and babies

Seven hundred and thirty five Aboriginal women gave birth in South Australia in 2018, accounting for 3.9% of all women who gave birth in the state. In 2018, 9.8% of Aboriginal women who gave birth were teenagers (compared with 1.6% of non-Aboriginal women).

Of the Aboriginal women for whom week of gestation at the first antenatal visit was reported, 60.9% attended for antenatal care within the first 14 weeks of pregnancy (compared with 82.7% of non-Aboriginal women). Of the Aboriginal women for whom the number of antenatal visits was reported, 65.9% attended at least seven antenatal visits during pregnancy (compared with 82.9% of non-Aboriginal women).

In 2018, at the first antenatal visit, 42.7 % of Aboriginal women reported that they smoked, a slight increase from 41.6% in 2017, while in non-Aboriginal women this proportion was 7.1%. In 2018, the proportion of preterm births (<37 weeks gestation) was 17.9% among babies of Aboriginal women compared with 9.4% among babies of non-Aboriginal women. The proportion of low birthweight babies was 17.0% among babies of Aboriginal women compared with 7.3% among babies of non-Aboriginal women.

The perinatal mortality rate of babies of Aboriginal women was 20.1 per 1,000 births in 2018 compared with 8.7 per 1,000 births for births to non-Aboriginal women. The Aboriginal status of the baby was also collected independently of the mother. There were 1,023 Aboriginal babies, representing 5.3% of all babies born in South Australia in 2018.

Teenage women

Three hundred and sixty-six teenage women gave birth in 2018; accounting for 1.9% of women who gave birth in South Australia. The teenage pregnancy rate has been steadily declining from 2002, with a low in 2018 of 15.2 per 1,000 women. A further 402 teenage women had medical terminations of pregnancy, accounting for 9.0% of terminations in South Australia.

Women aged 35 and over

The proportion of women aged 35 years and over who gave birth remained relatively stable at 22.5% in 2018. The mean age of women giving birth has been increasing over the previous decade and reached its highest at 30.8 in 2016 plateauing at 30.4 in 2018. As with previous years, more women gave birth in the 30-34 year age group than in the 25-29 year age group.

Place of birth

Compared with 2017, the total number of births remained relatively stable at the three metropolitan teaching hospitals (61.8% of all births). The total number of births in metropolitan private hospitals decreased slightly from 19.9% of all births in 2017, to 19.2% in 2018. There were 96 women (0.5%) who gave birth at home (96 babies), and among these women 86 (88.7%) had planned home births.

Country of birth

Seventy-two percent of women who gave birth in 2018 were Australian-born. Of women born overseas who gave birth, the largest proportions came from India (5.0%), China (2.3%) and the United Kingdom (2.2%).

Smoking during pregnancy and Body Mass Index

The proportion of women smoking at their first antenatal visit has declined steadily and was 8.5% in 2018. Additionally, 2.3% of women quit smoking before their first antenatal visit.

Statistics on Body Mass Index were available for 97.1% of women who gave birth in 2018. They indicated that 56.7% of these women giving birth were overweight. Of the overweight women giving birth, 14.8% were classified as obese and 11.5% severely or morbidly obese.

Antenatal care and length of stay

Eighty-one percent of women attended antenatal care within the first 14 weeks of pregnancy. Of the women for whom the number of antenatal visits was reported, 85.7% attended seven or more antenatal visits. Many women had more than one type of antenatal care. However, the most common care types were public hospital clinics (45.2%), obstetricians in private practice (22.8%) and GP and public hospital shared care (14.4%).

The median length of stay in hospital for all women after birth was three days; the median length of stay was two days for women who had a vaginal birth and four days for women who had a caesarean section. Amongst private patients, the median length of stay was two days longer for vaginal births and one day longer for caesarean sections.

Procedures

At least one ultrasound examination was performed for 97.5% of women who gave birth in 2018. Over a third of all labours were induced (37.4%) and 16.8% of women giving birth had labour augmented. The main reasons for induction of labour were pre-existing diabetes or gestational diabetes (17.3%), maternal choice (14.6%), prolonged pregnancies (11.0%), and hypertension (10.3%). Almost 10% of inductions of labour were performed for other than defined indications. Epidurals were used for pain relief during labour for 32.2% of women. Of women who gave birth vaginally, 25.2% had an episiotomy.

Method of birth

In 2018, 53.1% of women had normal spontaneous vaginal births, a further 5.6% were delivered by forceps and 5.7% were delivered by ventouse. The proportion of women giving birth by caesarean section was 35.2%, similar to the proportion in 2017 (34.8%). The main reasons given for caesarean section were previous caesarean section (41.3%), failure to progress in labour (22.4%) and fetal compromise (16.3%).

Plurality

In 2018 multiple births accounted for 3.0% of all births, while women with twins or triplets accounted for 1.5% of all women who gave birth.

Perinatal mortality

The perinatal mortality rate for all births of at least 400g birthweight or 20 weeks gestation in 2018 was 9.2 per 1,000 births. The perinatal mortality rate includes terminations of pregnancy and their exclusion would have resulted in a perinatal mortality rate of 6.3 deaths per 1,000 births. The stillbirth rate was 6.9 per 1,000 births and the neonatal mortality rate was 2.2 per 1,000 live births.

Terminations of pregnancy

There were 4,415 terminations of pregnancy recorded, compared with 4,349 terminations in 2017. The termination of pregnancy rate has been declining steadily since 2008. The termination rate was 13.4 per 1,000 women aged 15-44 years, similar to the rate in 2017. In 2018, 95.5% of terminations were performed in metropolitan public hospitals, including the Pregnancy Advisory Centre, and 43.8% were performed by medical practitioners in family advisory clinics.

Ninety-one percent of terminations were performed within the first 14 weeks of pregnancy and 8.9% were performed at or after 20 weeks gestation. Of the terminations performed at or after 20 weeks gestation; 51.1% were for congenital anomalies.

Background

Data Collection

The *South Australian Health Care Regulations 2008 – Part 5 Pregnancy Outcome Data and Statistics* require the notification of all births occurring in South Australia to the Minister for Health and Wellbeing. This includes births to women who normally reside interstate. Births of South Australian residents which occur in other states are not included. The perinatal data have been collected since 1981, with some changes to the data items collected over the years.

The perinatal data are compiled from notifications submitted by hospital midwives, privately practising midwives attending homebirths, and neonatal nurses using either the Supplementary Birth Record (SBR) data collection form (Appendix 1), or its electronic equivalent. For a more complete picture of pregnancy outcome in South Australia, data from the Medical Termination of Pregnancy collection are also included.

The *Criminal Law Consolidation (Medical Termination of Pregnancy) Regulations 2011* require the notification of medical terminations of pregnancy to the Chief Executive of the Department for Health and Wellbeing. It is from these notifications that the medical termination of pregnancy statistics are collated each year.

This annual report also includes data on perinatal mortality, as supplied to the South Australian Perinatal Statistics Collection. All maternal and perinatal deaths in South Australia are subsequently reviewed by the Maternal and Perinatal Mortality Committee, using the perinatal data statistics in addition to death certificates, pathology reports, autopsy reports and findings from the State Coroner. Key Learning Areas advised by the Maternal and Perinatal Mortality Committee are released annually to inform practice and reduce maternal and perinatal mortality in South Australia¹.

Data on congenital anomalies detected at birth or in the neonatal period (within 28 days of birth) are also provided as part of the perinatal statistics collection using the Congenital Abnormality Form (Appendix 2) or its electronic equivalent. Limited statistics on birth defects are included in this report as these are reported annually by the South Australian Birth Defects Register at the Women's and Children's Hospital². The Register complements statistics on birth defects from the perinatal and medical termination collections with statistics on birth defects detected and notified after discharge from the birth hospital, up to the child's fifth birthday.

In addition to this annual report, Pregnancy and Neonatal Care Bulletins, comparing selected pregnancy characteristics and outcomes are also provided to all South Australian hospitals with at least 100 births per year and aggregate reports are provided for hospitals with smaller numbers of births. Comparisons of maternity performance indicators are also provided to hospitals with at least 550 births per year.

Annual Report

The births described in this report include live births, stillbirths and terminations of pregnancy of at least 400g birthweight or 20 weeks gestation. Forty births of less than 400g birthweight have been included, consisting of 36 stillbirths and 4 live births. The 4 live births were born at 20-22 weeks gestation and died in the neonatal period. The 19,332 births in South Australia in 2018 comprised of 19,198 live births and 134 stillbirths. The number of women who gave birth was 19,043 (152 fewer women than in 2017). Definitions used in this report are provided in the Methods and Terminology section.



The term Aboriginal is used respectfully in this report as an all-encompassing term for Aboriginal or Torres Strait Islander mothers or babies. Data relating to Aboriginal mothers and babies have been italicised for easy identification in response to the request of the Aboriginal Health Council of South Australia.



Mothers

1.1 Place of residence

This table uses the ABS Australian Statistical Geography Standard boundaries (ASGS 2016), with Statistical Area Level 4 boundaries for the four Adelaide metropolitan regions, and Statistical Area Level 3 boundaries to present the nine non-metropolitan regions in South Australia. The distribution of births according to the mother's place of residence by these regions is provided in Table 1 together with the estimated resident population and crude birth rate. The crude birth rate in 2018 for South Australia was 11.1 per 1,000 population. It was lowest in the Yorke Peninsula and highest in the Adelaide - North.

Table 1: Births and crude birth rate by ABS Statistical Geographical Boundaries (ASGS 2016), South Australia, 2018

Mother's residence	Total births		Live births	Estimated resident population, June 30, 2018+	Crude birth rate per 1,000 population
	Number	Percent	Number	Number	
Adelaide - Central and Hills	2,724	14.1	2,707	302,346	9.0
Adelaide - North	5,856	30.3	5,808	438,493	13.4
Adelaide - South	3,906	20.2	3,877	367,837	10.6
Adelaide - West	2,665	13.8	2,649	237,101	11.2
Barossa	347	1.8	345	37,172	9.3
Eyre Peninsula and South West	720	3.7	719	57,823	12.5
Fleurieu - Kangaroo Island	418	2.2	416	52,684	7.9
Limestone Coast	716	3.7	714	66,863	10.7
Lower North	215	1.1	214	23,013	9.3
Mid North	314	1.6	312	27,638	11.4
Murray and Mallee	792	4.1	785	72,339	10.9
Outback - North and East	314	1.6	313	26,937	11.7
Yorke Peninsula	185	1.0	182	26,176	7.1
Interstate	160	0.8	157		
Total	19,332	100.0	19,198	1,736,422	11.1

+ Australian Bureau of Statistics. Population estimates by age and sex, Regions of South Australia, 2018. Canberra: ABS, 2019 (Catalogue No 3235.0).

1.2 Maternal Aboriginal status

The distribution of women who gave birth, by Aboriginal status is provided in Table 2. In 2018 there were 748 births to Aboriginal mothers which represented 3.9% of all women. The Aboriginal status of the baby was also collected independently of the mother. There were 1023 Aboriginal babies, representing 5.3% of all babies born in South Australia in 2018. They comprised 959 (93.7%) Aboriginal, 16 (1.6%) Torres Strait Islander and 48(4.7%) Aboriginal and/or Torres Strait Islander babies.

Table 2: Aboriginal status of women who gave birth, South Australia, 2018

Aboriginal status	Number of women	% Women
Aboriginal	735	3.9
Non-Aboriginal	18,308	96.1
Total	19,043	100.0

1.3 Maternal age

Table 3 shows the age and Aboriginal status of women who gave birth in South Australia in 2018. The largest number of women who gave birth were in the 30-34 year age group. The proportion of women in this age group (36.0%) has exceeded that of the 25-29 years age group (27.4%) since 2001. Teenage women accounted for 1.9% of women who gave birth and women aged 35 years or more accounted for 22.5%. *Aboriginal women were generally younger than non-Aboriginal women: 9.8% were teenagers and only 8.6% were 35 years or older.*

Table 3: Age and Aboriginal status of women who gave birth, South Australia, 2018

Age Group	Non-Aboriginal		Aboriginal		Total	
	Number	%	Number	%	Number	%
<20	294	1.6	72	9.8	366	1.9
20-24	2,099	11.5	232	31.6	2,331	12.2
25-29	4,995	27.3	221	30.1	5,216	27.4
30-34	6,702	36.6	147	20.0	6,849	36.0
35-39	3,486	19.0	49	6.7	3,535	18.6
40-44	669	3.7	13	1.8	682	3.6
45+	63	0.3	1	0.1	64	0.3
Total	18,308	100.0	735	100.0	19,043	100.0

The five year age-specific fertility rate was highest in the 30-34 year age group (117.3 per 1,000 women), followed by the 25-29 year age group (91.1 per 1,000 women, Table 4). When compared with the age-specific fertility rates for 2017, the only slight increases were in the 40-44 year age groups (from 12.8 per 1,000 women in 2017 to 13.2 per 1,000 women in 2018). The general fertility rate (see Methods and Terminology) was 58.2 per 1,000 women aged 15-44 years, which is lower than the general fertility rate in 2017 (58.9 per 1,000 women). The total fertility rate in 2018 was 1.68 live births per woman, which remains below replacement level of 2.1 children per woman³.

Table 4: Age-specific fertility rates (ASFR), South Australia, 2018

Age (years)	Number of live births	Estimated resident female population ⁺	Age-specific fertility rate per 1,000 women (ASFR) ^{#†}
15-19	363	50,192	7.2
20-24	2,337	56,141	41.6
25-29	5,255	57,655	91.1
30-34	6,908	58,896	117.3
35-39	3,584	55,002	65.2
40-44	687	52,075	13.2
45+	64	na	na
Total	19,198	329,961	58.2

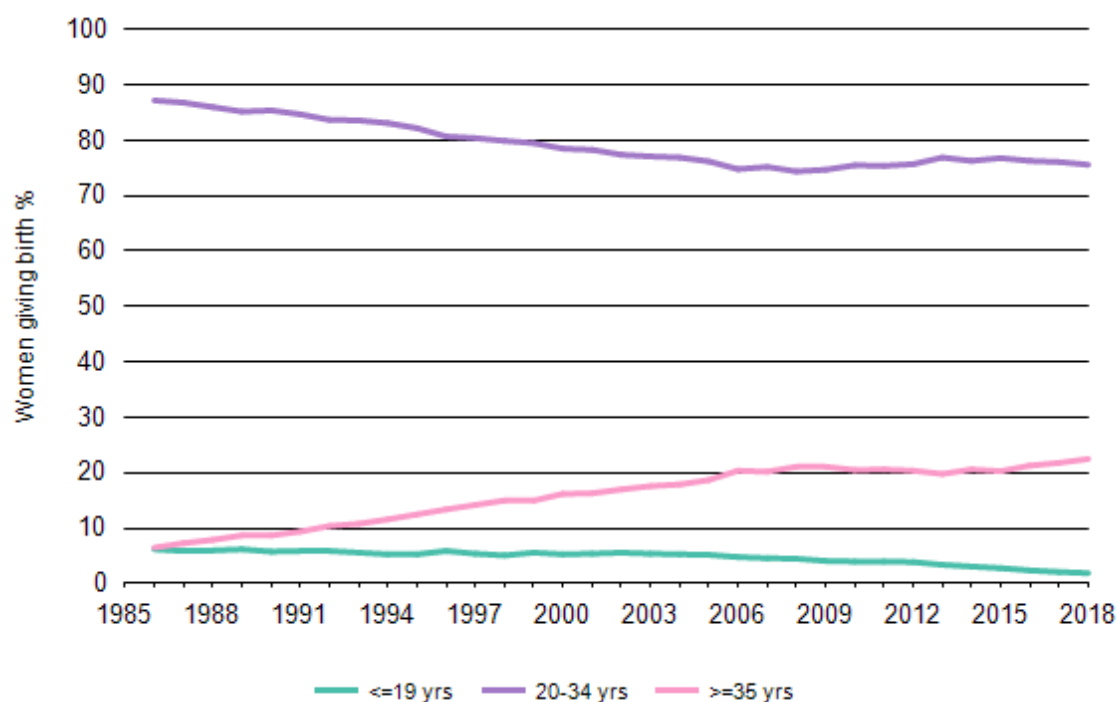
⁺ Australian Bureau of Statistics. Population estimates by age and sex, Regions of South Australia, 2018. Canberra: ABS, 2019 (Catalogue No 3235.0).

[#] the number of live births and fertility rate for women aged 15-19 years include live births for younger ages, and the number and rate for women aged 40-44 years include live births for older ages. The total number and rate include all live births and excludes terminations of pregnancy.

[†] Sum of 5-year ASFRs = 335.6 per 1,000 women. Total fertility rate = $335.6 \times 5 = 1678.0$ live births per 1,000 women = 1.68 live births per woman.

Figure 1 presents the proportion of women giving birth by age group, since 1986. The proportion of women aged 35 years or older has increased each year from 6.5% in 1986 to 22.5% in 2018.

Figure 1: Age groups of women who gave birth in South Australia, 1986-2018



1.4 Country of birth

The distribution of mother's country of birth is provided in Table 5 by group, and in Table 6 by specified country. Of the 27.8% of women born outside of Australia, the largest proportion were born in India (5.0%) and China (2.3%) and the United Kingdom (2.2%).

Table 5: Country of birth group* for women who gave birth, South Australia, 2018

	Country of birth group	Number	%
1	Oceania	13,931	73.2
2	North-West Europe	819	4.3
3	Southern and Eastern Europe	422	2.2
4	North Africa and Middle East	858	4.5
5	South-East Asia	612	3.2
6	North-East Asia	1,702	8.9
7	Southern and Central Asia	99	0.5
8	Americas	101	0.5
9	Sub-Saharan Africa	445	2.3
	Unknown	54	0.3
	Total	19,043	100.0

* Australian Bureau of Statistics. Standard Australian Classification of Countries 2008 (SACC). Cat No. 1269.0. Canberra: ABS

Table 6: Specified country of birth¹ for women who gave birth, South Australia, 2018

Specified country of birth		Number	% of women	% of migrant women who gave birth (n=5,303)
1100	Australia	13,740	72.2	
6104	India	960	5.0	18.1
5101	China	443	2.3	8.4
2100	United Kingdom	420	2.2	7.9
6101	Afghanistan	266	1.4	5.0
4107	Philippines	229	1.2	4.3
4110	Vietnam	211	1.1	4.0
6106	Nepal	169	0.9	3.2
1301	New Zealand	153	0.8	2.9
6107	Pakistan	147	0.8	2.8
3207	Sudan	115	0.6	2.2
4105	Malaysia	112	0.6	2.1
9220	South Africa	98	0.5	1.8
3103	Iran	87	0.5	1.6
4102	Cambodia	84	0.4	1.6
4109	Thailand	74	0.4	1.4
6102	Bangladesh	70	0.4	1.3
4106	Myanmar	69	0.4	1.3
6108	Sri Lanka	66	0.3	1.2
7104	United States Of America	57	0.3	1.1
0003	Unknown	54	0.3	1.0
9106	Congo	53	0.3	1.0
5105	Korea South	52	0.3	1.0
3104	Iraq	46	0.2	0.9
4103	Indonesia	46	0.2	0.9
5103	Japan	43	0.2	0.8
2305	Germany	42	0.2	0.8
9114	Liberia	40	0.2	0.8
	All Other Countries	1,097	5.8	20.7
Total		19,043	100.0	100.0

¹ Australian Bureau of Statistics. Standard Australian Classification of Countries 2008 (SACC). Cat No. 1269.0. Canberra: ABS

1.5 Occupation of father and mother

The distribution of occupations for both mothers giving birth in 2018, and fathers is presented in Table 7. The most common occupation type for mothers were home duties (21.0%), professionals (19.8%), salespersons and personal service workers (15.8%). The most common occupations for fathers were tradespersons (19.7%), professionals (16.6%) and managers and administrators (14.3%).

Table 7: Occupation¹ of father and mother, South Australia, 2018

Occupation		Father		Mother	
		Number	%	Number	%
1	Managers and administrators	2,729	14.3	1,460	7.7
2	Professionals	3,169	16.6	3,764	19.8
3	Para professionals	1,281	6.7	1,522	8.0
4	Tradespersons	3,745	19.7	637	3.3
5	Clerks	457	2.4	1,921	10.1
6	Salespersons and personal service workers	1,144	6.0	3,002	15.8
7	Plant and machine operators and drivers	1,243	6.5	75	0.4
8	Labourers and related workers	2,539	13.3	555	2.9
9	Students	338	1.8	635	3.3
	Invalid pensioner	10	0.1	4	0.0
	Pensioners	26	0.1	16	0.1
	Home duties	93	0.5	4,001	21.0
	Unemployed	950	5.0	944	5.0
	Other	371	1.9	327	1.7
	Unknown	948	5.0	180	0.9
Total		19,043	100.0	19,043	100.0

¹ Australian Bureau of Statistics. ASCO. First Edition. Occupation Definitions. Canberra: ABS,1990. (Catalogue No. 1223.0)

1.6 Body mass index (BMI)

Reported height and weight at the first antenatal visit were used to calculate the Body Mass Index (BMI) for women who gave birth. This was considered valid only for women who attended the first antenatal visit before 20 weeks gestation. Among these 17,645 women (92.5% of all women who gave birth), height and weight were not reported for 515 women (2.9%). Therefore, BMI could only be calculated for 17,130 women who gave birth in 2018 (97.1% of women who attended the first antenatal visit before 20 weeks gestation). Table 8 shows that 56.7% of these women recorded a BMI of 25 or higher, which is above the normal weight range.

Table 8: BMI of women at the first antenatal visit, South Australia, 2018

BMI ¹		Number	%	Adjusted % (excluding unknown n=17,130)
<18.5	underweight	402	2.3	2.3
18.5 – 24.9	normal	7,015	39.8	41.0
25.0 – 29.9	overweight	5,204	29.5	30.4
30.0 – 34.9	obese	2,542	14.4	14.8
35.0 – 39.9	severely obese	1,212	6.9	7.1
>40	morbidly obese	755	4.3	4.4
Unknown		515	2.9	
Total		17,645	100.0	100.0

¹ based on height and weight at first antenatal visit, where gestation at first antenatal visit was <20 weeks

1.7 Tobacco smoking status

In 2018, 8.5% of all women were reported to be tobacco smokers at their first antenatal visit, and 2.3% had quit smoking before their first visit (Table 9). Smoking status was unknown for 0.5% of women. The proportion of all women smoking during pregnancy has been declining in South Australia, from 25.0% in 1998 to 8.5% in 2017.

The proportion of Aboriginal women who reported that they smoked at the first antenatal visit has increased slightly from 41.6% in 2017 to 42.7% in 2018. This was considerably higher than the proportion of non-Aboriginal women smoking at first antenatal visit in 2018 (7.1%). Additionally, 5.2% of Aboriginal women reported that they quit smoking in pregnancy prior to their first antenatal visit, compared to 2.2% of non-Aboriginal women.

Table 9: Tobacco smoking status at first antenatal visit by Aboriginal status, South Australia, 2018

Smoking status	Non-Aboriginal		Aboriginal		Total	
	Number	%	Number	%	Number	%
Smoker	1,308	7.1	314	42.7	1,622	8.5
Quit before 1st visit	401	2.2	38	5.2	439	2.3
Non-smoker	16,518	90.2	365	49.7	16,883	88.7
Unknown smoking status	81	0.4	18	2.4	99	0.5
Total	18,308	100.0	735	100.0	19,043	100.0

The highest rates of smoking at the first antenatal visit were among teenagers (24.6%) and women aged 20-24 years (16.7%). *Smoking rates were high among all age groups of Aboriginal women especially among women aged 35-39 years (53.1%, Table 10).*

Table 10: Tobacco smoking status at first antenatal visit by age and Aboriginal status, South Australia, 2018

Age	Smoker		Quit before 1st visit		Non-smoker		Unknown smoking status		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Total										
≤20	90	24.6	14	3.8	258	70.5	4	1.1	366	100.0
20-24	390	16.7	111	4.8	1,809	77.6	21	0.9	2,331	100.0
25-29	470	9.0	131	2.5	4,595	88.1	20	0.4	5,216	100.0
30-34	416	6.1	108	1.6	6,299	92.0	26	0.4	6,849	100.0
35-39	210	5.9	57	1.6	3,248	91.9	20	0.6	3,535	100.0
≥ 40	46	6.2	18	2.4	674	90.3	8	1.1	746	100.0
Total	1,622	8.5	439	2.3	16,883	88.7	99	0.5	19,043	100.0
Non-Aboriginal										
≤20	60	20.4	12	4.1	219	74.5	3	1.0	294	100.0
20-24	297	14.1	97	4.6	1,691	80.6	14	0.7	2,099	100.0
25-29	382	7.6	118	2.4	4,478	89.6	17	0.3	4,995	100.0
30-34	344	5.1	103	1.5	6,234	93.0	21	0.3	6,702	100.0
35-39	184	5.3	54	1.5	3,229	92.6	19	0.5	3,486	100.0
≥ 40	41	5.6	17	2.3	667	91.1	7	1.0	732	100.0
Total	1,308	7.1	401	2.2	16,518	90.2	81	0.4	18,308	100.0
Aboriginal										
≤20	30	41.7	2	2.8	39	54.2	1	1.4	72	100.0
20-24	93	40.1	14	6.0	118	50.9	7	3.0	232	100.0
25-29	88	39.8	13	5.9	117	52.9	3	1.4	221	100.0
30-34	72	49.0	5	3.4	65	44.2	5	3.4	147	100.0
35-39	26	53.1	3	6.1	19	38.8	1	2.0	49	100.0
≥ 40	5	35.7	1	7.1	7	50.0	1	7.1	14	100.0
Total	314	42.7	38	5.2	365	49.7	18	2.4	735	100.0

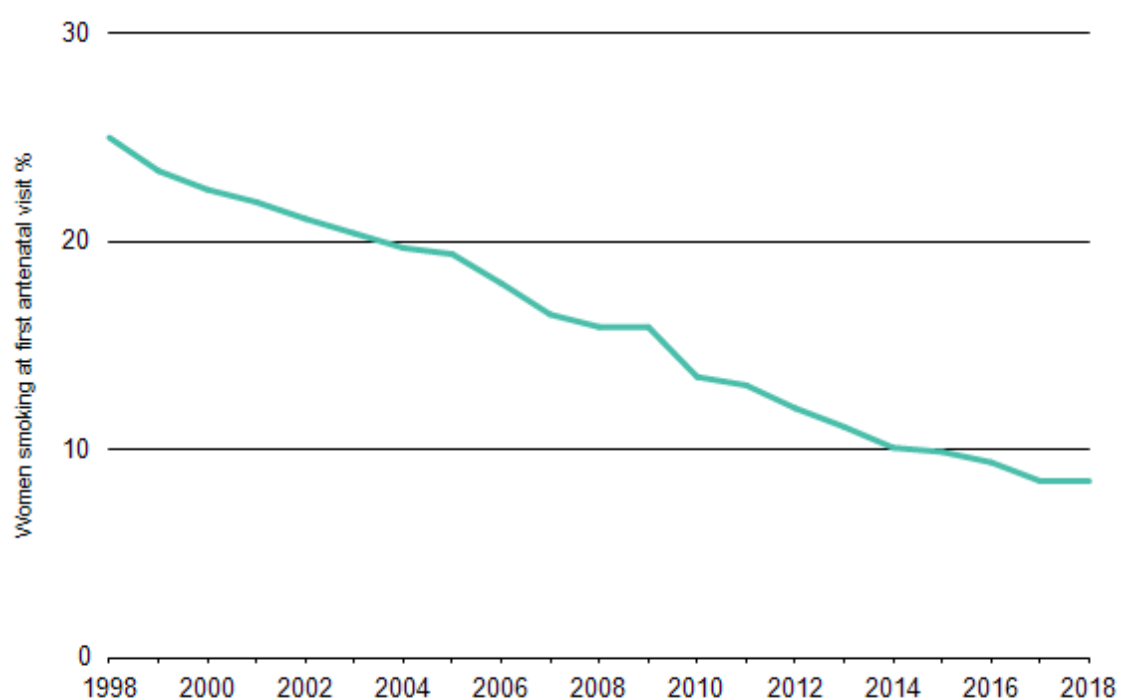
In the second half of pregnancy, 7.2% of women were reported to be smokers and 0.2% of those women smoked more than 20 cigarettes per day. In the second half of pregnancy, *36.1% of Aboriginal women smoked*, compared with 6.0% of non-Aboriginal women. *A higher proportion of Aboriginal women (1.1% compared with 0.1%) smoked more than 20 cigarettes per day*, although the numbers are small (Table 11). *In 2018 the proportion of women who ceased smoking from the first to second half of their pregnancy was higher for Aboriginal women (6.4%) than non-Aboriginal women (1.1%).*

Table 11: Tobacco smoking status in second half of pregnancy by Aboriginal status, South Australia, 2018

Average number of tobacco cigarettes	Non-Aboriginal		Aboriginal		Total	
	Number	%	Number	%	Number	%
None	16,992	92.8	406	55.2	17,398	91.4
Occasional (<1)	10	0.1	4	0.5	14	0.1
1-20	1,064	5.8	255	34.7	1,319	6.9
≥ 21	24	0.1	8	1.1	32	0.2
Unknown number	218	1.2	62	8.4	280	1.5
Total	18,308	100.0	735	100.0	19,043	100.0

The proportion of women who reported smoking at the first antenatal visit has declined consistently since 1998 from 25.0% to its lowest in 2017 and 2018 at 8.5% (Figure 2).

Figure 2: Proportion of women smoking at first antenatal visit, South Australia, 1998-2018



Pregnancy profile

2.1 Parity and previous pregnancy outcomes

In 2018, 41.6% of women who gave birth had no previous births and 29.9% were pregnant for the first time. *Among Aboriginal women, 32.0% who gave birth had no previous births, and 21.4% were pregnant for the first time* (Table 12).

The proportion of women with a parity of 4 or greater was higher among Aboriginal women (10.0%) than among non-Aboriginal women (3.1%).

Table 12: Parity by Aboriginal status of women who gave birth, South Australia, 2018

Parity ¹	Non-Aboriginal		Aboriginal		Total	
	Number	%	Number	%	Number	%
0-primigravida	5,539	30.3	157	21.4	5,696	29.9
0-multigravida	2,151	11.7	78	10.6	2,229	11.7
1	6,603	36.1	204	27.8	6,807	35.7
2	2,662	14.5	143	19.5	2,805	14.7
3	792	4.3	79	10.7	871	4.6
4	325	1.8	34	4.6	359	1.9
≥ 5	236	1.3	40	5.4	276	1.4
Total	18,308	100.0	735	100.0	19,043	100.0

¹ Number of previous pregnancies reaching 20 weeks gestational age (including live birth and stillbirth)

Among women with previous pregnancies (multigravidae women), the proportions who had previous specified adverse pregnancy outcomes are shown in Table 13. In total, 39.1% of the multigravidae women had experienced a previous adverse pregnancy outcome.

Table 13: Previous adverse pregnancy outcomes, multigravidae women, South Australia, 2018 (n= 13,347)

Previous adverse pregnancy outcome	Number	%
Miscarriage	4,860	36.4
Ectopic pregnancy	355	2.7
Stillbirth	201	1.5
Neonatal death	67	0.5

2.2 Antenatal visits

Women who gave birth are grouped in Table 14 according to their number of reported antenatal visits. However, for 4.0% of women (5.3% of Aboriginal women), the number of antenatal visits attended was not reported. *If women for whom the number of antenatal visits was not reported are excluded, 69.5% of Aboriginal women compared with 86.4% of non-Aboriginal women attended at least seven antenatal visits during pregnancy.*

A low frequency of antenatal visits may be taken, particularly in term births, as an indication of inadequate antenatal care. Although the exact number of antenatal visits was reported for 18,275 (96.0%) women, 18,241 (99.8% out of 18,275) women report having attended at least one antenatal visit.

Table 14: Antenatal visits by Aboriginal status of women who gave birth, South Australia, 2018

Antenatal visits	Maternal Aboriginal status					
	Non-Aboriginal		Aboriginal		Total	
	Number	%	Number	%	Number	%
None	22	0.1	12	1.6	34	0.2
1-6	2,377	13.0	200	27.2	2,577	13.5
≥ 7	15,180	82.9	484	65.9	15,664	82.3
Unknown number of visits	729	4.0	39	5.3	768	4.0
Total	18,308	100.0	735	100.0	19,043	100.0

2.3 Gestation at first antenatal visit

Of the women for whom week of gestation at the first antenatal visit was reported, 81.9% attended antenatal care within the first 14 weeks of pregnancy. *Of the Aboriginal women for whom week of gestation at the first antenatal visit was reported, 60.9% attended antenatal care within the first 14 weeks of pregnancy (compared with 82.7% of non-Aboriginal women).* Gestation at the first antenatal visit was reported as unknown for 1.7% of all women (Table 15).

Table 15: Gestation at first antenatal visit, women who gave birth by Aboriginal status, South Australia, 2018

Gestation at first antenatal visit	Non-Aboriginal			Aboriginal			Total		
	Number	%	Adjusted % excluding unknown (n=18,020)	Number	%	Adjusted % excluding unknown (n=696)	Number	%	Adjusted % excluding unknown (n=18,716)
<14 weeks gestation	14,907	81.4	82.7	424	57.7	60.9	15,331	80.5	81.9
14 weeks or greater*	3,113	17.0	17.3	272	37.0	39.1	3,385	17.8	18.1
Unknown	288	1.6		39	5.3		327	1.7	
Total	18,308	100.0	735.0	735	100.0	100.0	19,043	100.0	100.0

2.4 Type of antenatal care

Table 16 describes the main types of antenatal care used in South Australia. The most common types of antenatal care were specialist led public hospital clinics (45.2%), obstetricians in private practice (22.8%), general practitioners and public hospital shared care (14.4%, Table 16). There were 61 women (0.3%) who had no antenatal care.

Table 16: Type of antenatal care, women who gave birth, South Australia, 2018

Type of care ¹	Number	% of antenatal care
Public clinic (specialist led)	8,615	45.2
Obstetrician +/- midwife in private practice	4,336	22.8
GP and public hospital (shared care)	2,738	14.4
Midwifery group practice at birth hospital	2,228	11.7
GP led	1,397	7.3
Birth Unit/Centre	1,021	5.4
Other	255	1.3
Aboriginal Family Birthing Program (includes metropolitan and rural locations)	149	0.8
Eligible midwife in private practice	116	0.6
No care	61	0.3
Not stated	3	0.0

¹ Individual women may have used more than one type of antenatal care

2.5 Medical conditions

Medical conditions were recorded in the current pregnancy for 10,997 women (57.7%). The frequencies of specified medical conditions are provided in Table 17. Multiple conditions can be reported for each pregnancy.

Table 17: Medical conditions in current pregnancy, women who gave birth, South Australia, 2018

Medical condition	Number	% of women (n = 19,043)
None	8,046	42.3
Anaemia	2,395	12.6
Urinary tract infection	605	3.2
Hypertension (pre-existing)	281	1.5
Diabetes (pre-existing)	193	1.0
Epilepsy	133	0.7
Asthma	1,920	10.1
Other	8,929	46.9

2.6 Obstetric complications

Obstetric complications were recorded for 9,521 women who gave birth (50.0%). The reported frequencies of the most common complications that occur during pregnancies are presented in Table 18. Multiple complications can be reported for each pregnancy. For births from 2018 onwards refinements were made to the process in which obstetric complications data were collected. This change resulted in the proportion of women with one or more obstetric complications increasing from 43.7% in 2017 to 50.0% in 2018, however the long term trend in the number of women with obstetric complications has been steadily rising since the 1990s.

Table 18: Most common obstetric complications in current pregnancy, women who gave birth, South Australia, 2018

Obstetric complication	Number	% of women (n= 19,043)
No complication	9,521	50.0
Threatened miscarriage	252	1.3
Ante-partum haemorrhage (APH) – abruption	84	0.4
APH – placenta praevia	151	0.8
APH – other & unknown causes	460	2.4
Pregnancy hypertension	1,262	6.6
Intrauterine growth restriction (suspected)	1,263	6.6
Gestational diabetes	2,924	15.4
Other complications	6,147	32.3

2.7 Procedures performed in current pregnancy

Procedures performed in the current pregnancy that are collected on the Supplementary Birth Record are presented in Table 19. At least one ultrasound examination was performed for 97.5% of women in 2018. Amniocentesis was performed for 1.3%, and chorion villus sampling for 0.4% of women who gave birth. Multiple procedures can be reported for each pregnancy.

Table 19: Procedures performed in current pregnancy, women who gave birth, South Australia, 2018

Procedure	Number	% of women (n= 19,043)
Ultrasound morphology scan	16,843	88.4
First trimester anomaly screen (ultrasound & biochemical)	14,526	76.3
Ultrasound dating scan	11,324	59.5
Other ultrasound scan	11,127	58.4
Second trimester anomaly screen (biochemical only)	2,387	12.5
Non invasive prenatal testing	1,786	9.4
Amniocentesis	249	1.3
Chorion villus biopsy	70	0.4
Antenatal fetal blood sampling	37	0.2
Other surgical procedure	1	0.0

Labour

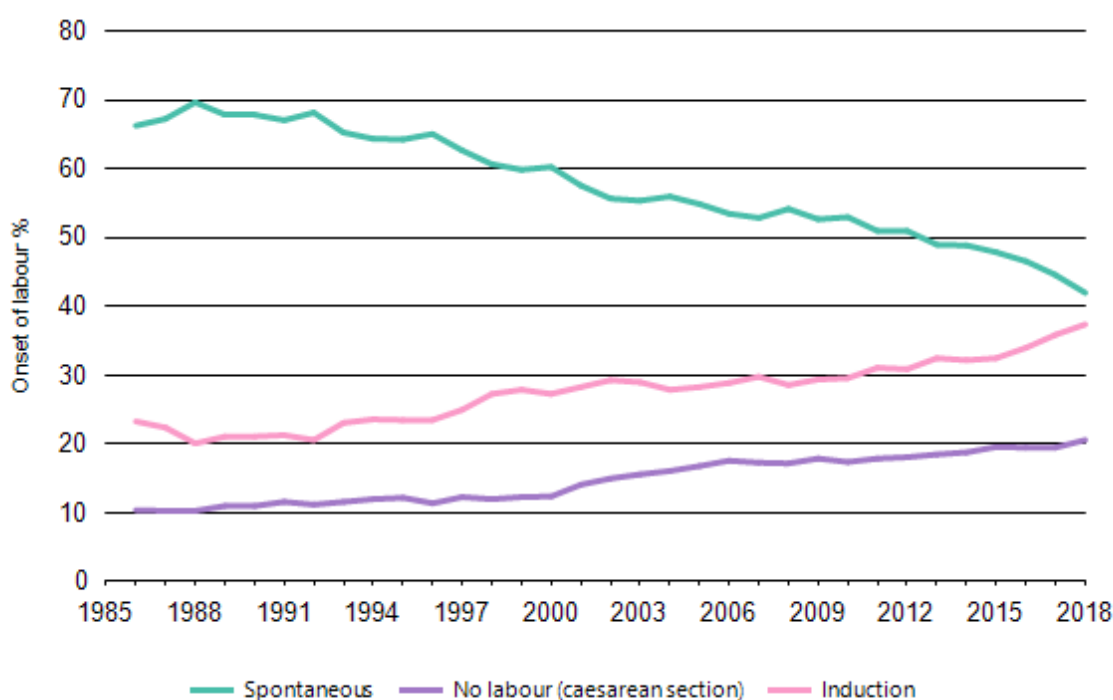
3.1 Onset of Labour

Labour occurred spontaneously in 42.0% of women who gave birth in 2018 (Table 20), which has been decreasing over time since 1982 (Figure 3). Induction of labour has increased over this same time period from 20.6% in 1982 to 37.4% in 2018. The proportion of women with no labour due to caesarean sections has increased from 9.3% to 20.6%, over the same time period.

Table 20: Onset of labour, women who gave birth, South Australia, 2018

Onset of labour	Number	%
Spontaneous	8,005	42.0
Induction	7,117	37.4
No labour – caesarean section	3,921	20.6
Total	19,043	100.0

Figure 3: Trend for onset of labour for women who gave birth in South Australia, 1986-2018



3.2 Induction of labour

Labour was induced for 37.4% of women who gave birth in 2018. The methods of induction used were artificial rupture of membranes in 77.9% of inductions, oxytocics in 58.8%, prostaglandins in 47.1% and other methods (for example Cook's Catheter) in 11.7% of inductions (Table 21). Up to four methods of induction were reported on the Supplementary Birth Record. Multiple methods can be reported for each pregnancy, and in many cases more than one method was used.

Table 21: Method of induction of labour, women who gave birth, South Australia, 2018

Method of induction	Number	% of women (n =19,043)	% of inductions (n =7,117)
Any induction	7,117	37.4	
Artificial rupture of membranes	5,547	29.1	77.9
Oxytocics	4,184	22.0	58.8
Prostaglandins	3,350	17.6	47.1
Other	832	4.4	11.7

The most common reasons for induction are presented in Table 22. Multiple reasons can be reported for each pregnancy. In 2018, 17.3% of women were induced for diabetes (including pre-existing, gestational diabetes), 14.6% maternal choice, 11.0% for prolonged pregnancy (41 or more completed weeks), 10.3% for hypertension, and 8.8% for suspected IUGR.

Table 22: Reasons for induction of labour, South Australia, 2018 (n=7,117)

Reason for induction	Number	% of women (n=7,117)
Other obstetric or medical condition	1,393	19.6
Diabetes ¹	1,230	17.3
Maternal choice	1,040	14.6
Prolonged pregnancy	784	11.0
Hypertension	732	10.3
IUGR	623	8.8
Large for dates	604	8.5
Premature or prolonged rupture of membranes	580	8.1
Fetal distress	185	2.6
Fetal death	46	0.6
Other ²	714	10.0

¹includes diabetes mellitus and gestational diabetes

²includes Isoimmunisation, Chorioamnionitis, BMI (high), Mental Health, Previous adverse perinatal outcome, Fetal congenital anomaly, multiple pregnancy, Cholestasis, APH, Maternal age, Administrative or geographical indication

3.3 Augmentation of labour

The proportion of women giving birth who had labour augmented after spontaneous labour onset was 16.7% (Table 23). Of the 8,005 women who went into spontaneous labour, augmentation was used for 3,203 (40.0%). Methods used in augmentation were artificial rupture of membranes (78.0%), oxytocics (37.7%) and prostaglandins (0.8%). Up to four methods of augmentation were reported on the Supplementary Birth Record for 2018. In some cases more than one method was used.

Table 23: Augmentation after spontaneous labour onset, women who gave birth, South Australia, 2018

Method of augmentation	Number	% of women (n=19,043)	% of augmentations (n=3,203)
Any augmentation	3,203	16.8	
Artificial rupture of membranes	2,497	13.1	78.0
Oxytocics	1,206	6.3	37.7
Prostaglandins	25	0.1	0.8
Other	8	0.0	0.2

3.4 Method of birth and fetal presentation

Of the women who gave birth, 53.1% had normal spontaneous vaginal births (Table 24). Caesarean section was performed for 35.2% of women, with 16.7% of women having elective section. Forceps and ventouse were used for 5.6% and 5.7% of births, respectively. The method of birth reported for women who had multiple births is that of the first birth.

Table 24: Method of birth, women who gave birth, South Australia, 2018

Method of birth ¹	Number	% of women
Normal spontaneous	10,111	53.1
Caesarean (emergency)	3,523	18.5
Caesarean (elective)	3,187	16.7
Forceps (vaginal)	1,069	5.6
Ventouse	1,093	5.7
Breech spontaneous	35	0.2
Assisted Breech (no forceps)	18	0.1
Assisted Breech (with forceps for head)	3	0.0
Breech extraction	4	0.0
Total	19,043	100.0

¹ Birth method is for the singleton infant or first infant of a multiple birth

Fetal presentation is presented in Table 25, and the method of birth by presentation is provided in Table 26. Caesarean section was the method of birth for 91.2% of breech presentations (Table 27).

Table 25: Fetal presentation, all births, South Australia, 2018

Fetal presentation	Number	% of births
Vertex	18,215	94.2
Breech	877	4.5
Face	13	0.1
Brow	25	0.1
Other	169	0.9
Unknown	33	0.2
Total	19,332	100.0

Table 26: Method of birth by fetal presentation, all births, South Australia 2018

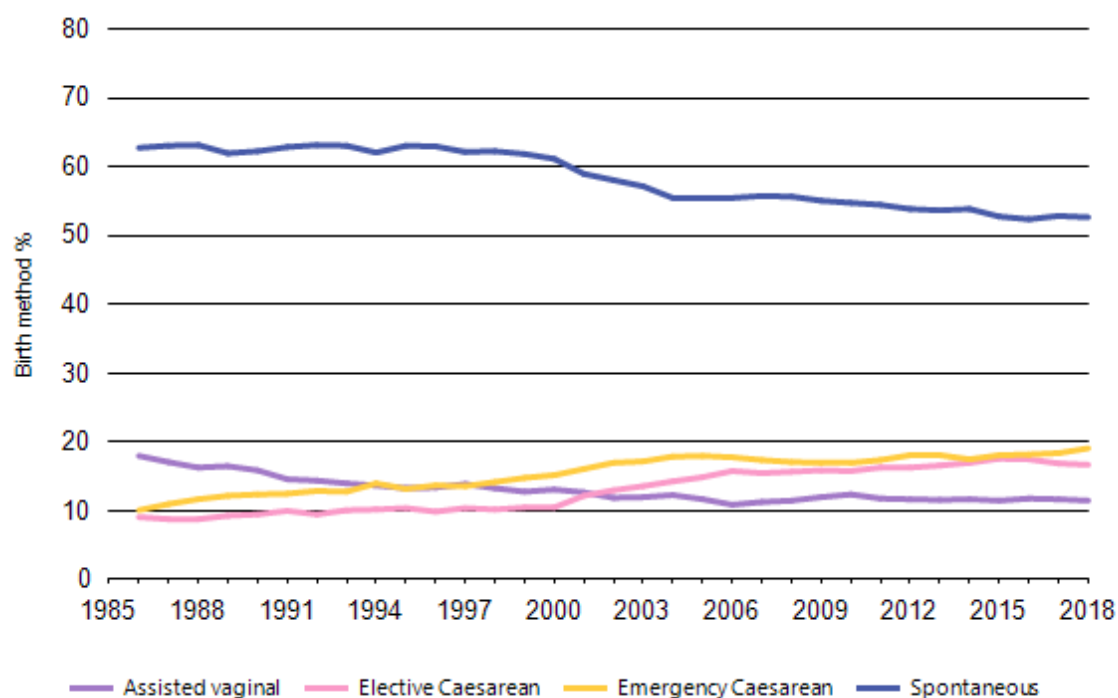
Method of Delivery	Fetal presentation								Total	
	Vertex		Breech		Other		Unknown			
	Number	%	Number	%	Number	%	Number	%	Number	%
Normal spontaneous	10,086	55.4	0	0.0	49	23.7	16	48.5	10,151	52.5
Forceps	1,068	5.9	0	0.0	10	4.8	0	0.0	1,078	5.6
Assisted Breech (no forceps)	0	0.0	23	2.6	0	0.0	0	0.0	23	0.1
Elective Caesarean	2,801	15.4	385	43.9	35	16.9	3	9.1	3,224	16.7
Emergency Caesarean	3,166	17.4	409	46.6	107	51.7	14	42.4	3,696	19.1
Ventouse	1,094	6.0	0	0.0	6	2.9	0	0.0	1,100	5.7
Breech extraction	0	0.0	15	1.7	0	0.0	0	0.0	15	0.1
Breech spontaneous	0	0.0	41	4.7	0	0.0	0	0.0	41	0.2
Assisted Breech (forceps)	0	0.0	4	0.5	0	0.0	0	0.0	4	0.0
Total	18,215	100.0	877	100.0	207	100.0	33	100.0	19,332	100.0

Table 27: Method of birth by plurality, breech births, South Australia, 2018

Method of birth	Plurality							
	Singleton		Twins		Triplets		Total	
	Number	%	Number	%	Number	%	Number	%
Assisted breech (no forceps)	17	2.4	6	3.3	0	0.0	23	2.6
LSCS (elective)	352	50.6	33	18.3	0	0.0	385	43.9
LSCS (emergency)	287	41.2	121	67.2	1	100.0	409	46.6
Breech extraction	4	0.6	11	6.1	0	0.0	15	1.7
Breech spontaneous	33	4.7	8	4.4	0	0.0	41	4.7
Assisted breech (forceps)	3	0.4	1	0.6	0	0.0	4	0.5
Total	696	100.0	180	100.0	1	100.0	877	100.0

Figure 4 shows the trend in methods of birth in South Australia over time. The proportion of elective caesarean sections has been 15% or more of all births since 2006. In the past 3 years elective caesarean sections have plateaued at around 16.7%, and emergency caesarean sections have increased slightly to 19.1% of all births.

Figure 4: Method of birth for all births in South Australia, 1986-2018



3.5 Analgesia for labour and anaesthesia for birth

Analgesia for labour was used by 61.8% of women who gave birth in South Australia in 2018. The most commonly used methods for analgesia were nitrous oxide and oxygen (42.4%), epidurals (32.2%) and narcotics (14.3%, Table 28). Anaesthesia for birth was used by 50.5% of women who gave birth in South Australia in 2018. The most common methods were spinal anaesthetic (26.3%), epidurals (15.2%), and local anaesthesia (6.9%, Table 29). The proportion of women who had an epidural for either analgesia or anaesthesia was 33.0% (6,292 women). General anaesthesia was used for 2.1% of births, and 5.8% of all caesarean sections. Multiple methods for analgesia and anaesthesia can be reported for each pregnancy.

Table 28: Analgesia for labour, women who gave birth, South Australia, 2018

Analgesia	Number	% of women (n=19,043)
None	7,265	38.2
Nitrous oxide and oxygen	8,074	42.4
Epidural (lumbar/caudal)	6,137	32.2
Narcotic (parenteral)	2,718	14.3
Other	642	3.4
Spinal	1	0.0
Combined spinal-epidural	40	0.2

Table 29: Anaesthesia for birth, women who gave birth, South Australia, 2018

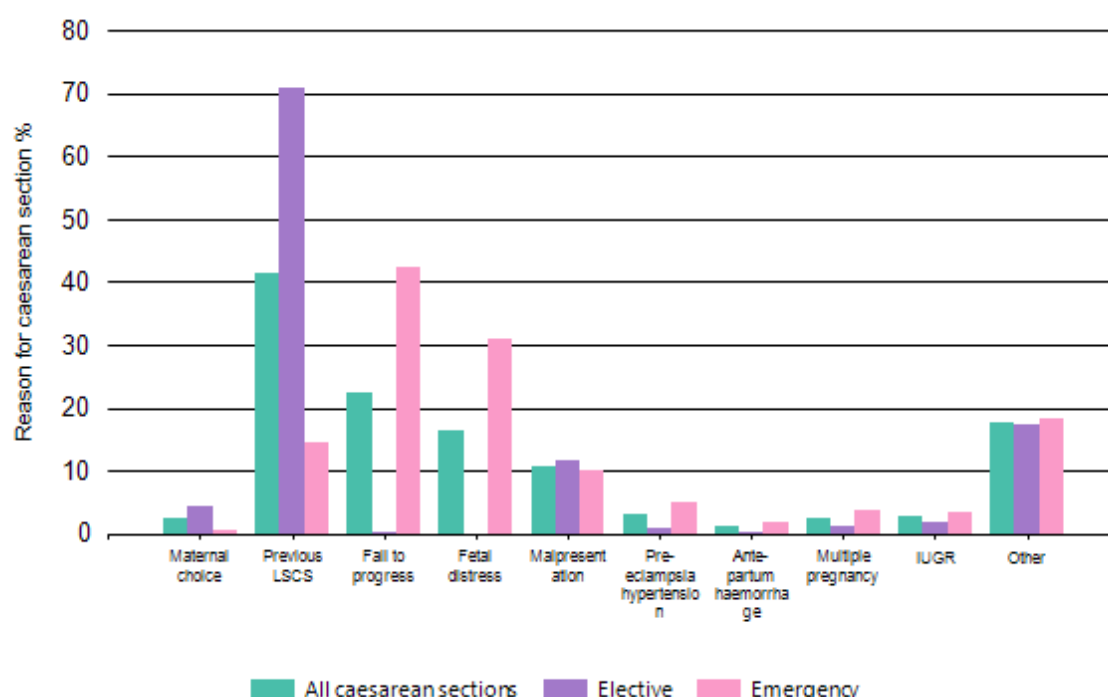
Anaesthesia	Number	% of women (n=19,043)
None	9,433	49.5
Epidural (lumbar/caudal)	2,902	15.2
Spinal	5,013	26.3
Local anaesthesia	1,309	6.9
General anaesthesia	391	2.1
Pudendal	155	0.8
Combined spinal-epidural	85	0.4
Other	23	0.1

3.6 Reason for caesarean section

Multiple reasons for caesarean section can be recorded on the Supplementary Birth Record. In 2018 the most common reasons for caesarean section were previous caesarean section (41.3%), failure to progress or cephalopelvic disproportion (22.4%), fetal compromise (16.3%) and malpresentation (10.7%, Figure 5). Maternal choice accounted for 2.3% of all caesarean sections (an increase from 2017 (1.3%).

The most common reasons for elective caesarean sections were previous caesarean section (70.9%), malpresentation (11.7%) and hypertensive disease (0.7%). The most common reasons given for emergency caesarean sections were failure to progress (42.4%), fetal distress (31.0%) and previous caesarean section (14.5%).

Figure 5: Reason for caesarean section in South Australia, 2018 (n=6,710)



3.7 Caesarean section by maternity service

Just over a third of all women in South Australia gave birth by caesarean section in 2018 (35.4%, Table 30). The proportion of emergency caesarean section births were similar across all levels of maternity services ranging from 18.1% to 19.1%. However, the metropolitan private hospitals had much higher proportion of elective caesarean section births (27.2%) compared to the other maternity services, leading to a higher overall proportion of caesarean births at metropolitan private hospitals (46.3%).

Table 30: Caesarean section by maternity service* in South Australia, 2018

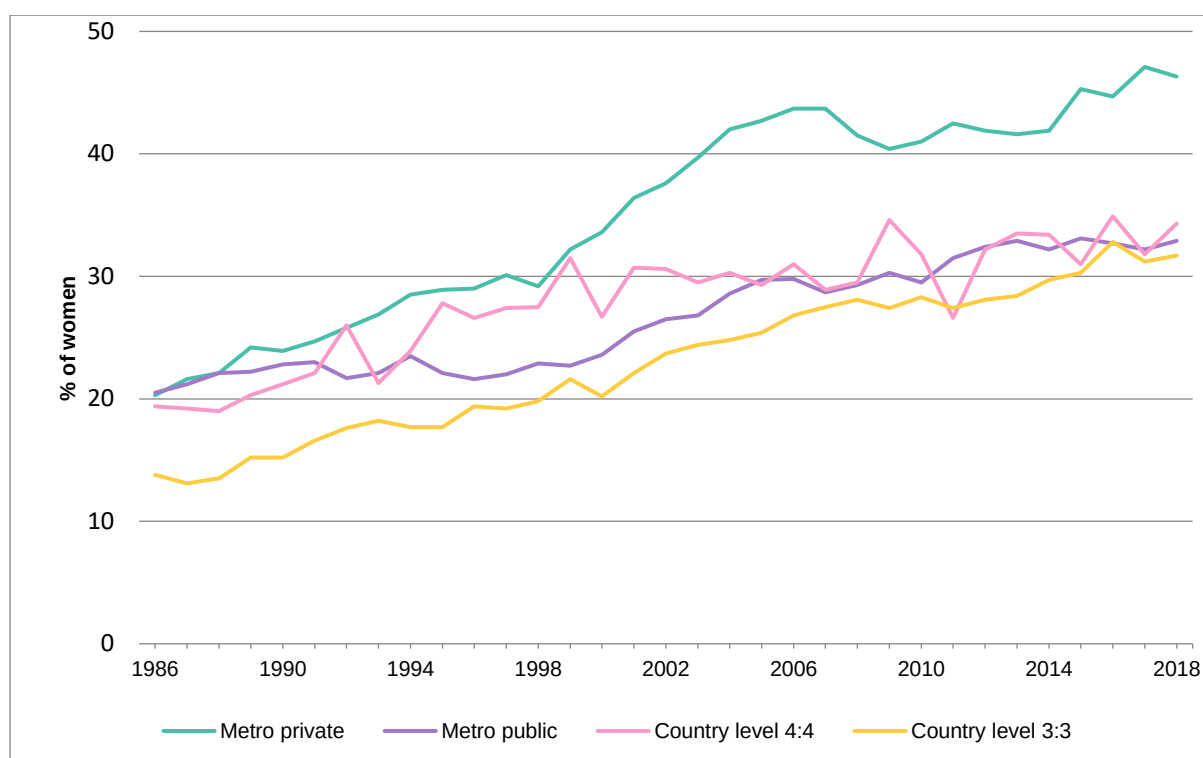
Maternity Service	Total women	Elective caesarean		Emergency caesarean		Elective & emergency caesarean	
	Number	Number	%	Number	%	Number	%
Metro teaching hospitals	11,715	1,684	14.4	2,176	18.6	3,860	32.9
Metro private hospitals	3,671	997	27.2	702	19.1	1,699	46.3
Country hospitals level 4:4	863	140	16.2	156	18.1	296	34.3
Country hospitals level 3:3	2,698	366	13.6	489	18.1	855	31.7
Total	18,947	3,187	16.8	3,523	18.6	6,710	35.4

Excludes home births (n=96)

The proportion of women having a caesarean section has been increasing since the mid-1980s, across all maternity services. The largest increase is within metropolitan private hospitals (20.3% in 1986 to 46.3% of women in 2018, Figure 6). The proportion of women having a caesarean section at

metropolitan teaching hospitals and both country hospital service categories has also increased over time but remain lower than the proportion of women at metropolitan private hospitals.

Figure 6: Caesarean section by maternity service in South Australia, 1986-2018



3.8 Complications of labour and birth

Multiple complications can be recorded for women who gave birth with 46.2% of women experiencing complications in 2018. The most common complications are presented in Table 31. The main complications of labour and birth were primary post-partum haemorrhage (PPH $\geq$ 600ml, 19.3%), fetal distress (14.7%) and failure to progress (10.7%).

Table 31: Most common complications of labour and birth, women who gave birth, South Australia, 2018

Complication	Number of women	% of women (n=19,043)
None	10,236	53.8
Primary post-partum haemorrhage		
500-599ml	112	0.6
600-999ml	2,283	12.0
1,000 ml or more	1,394	7.3
Unspecified mls	7	0.0
Fetal distress	2,802	14.7
Retained placenta	327	1.7
Prolonged labour	148	0.8
Cord prolapse	40	0.2
Wound infection	71	0.4
Failure to progress	2,034	10.7
Third degree tear or fourth degree tear	420	2.2
Other	5,658	29.7

3.9 Primary post-partum haemorrhage (PPH)

Previously, Primary PPH was reported if the blood loss within 24 hours of birth was at least 600mls and reported as such on the SBR form. In 2017, the definition of PPH was amended to a blood loss of at least 500mls within 24 hours of birth to better align with national coding guidelines however data reported in the 2017 Pregnancy Outcome Report reflected the previous definition. In 2018, changes to coding practice led to more rigorous investigations into PPH and due to these changes data prior to 2018 are not reported as the trend has been broken. In 2018 the proportion of women with a PPH of 500mls or more was 19.9%.

3.10 Perineal status after birth

Of the 19,043 women who gave birth, episiotomy was performed for 3,106 women (16.3% of all women and 25.2% of women who gave birth vaginally, Table 32). Among the 12,333 women who gave birth vaginally 22.8% had an intact perineum after birth, 53.8% had a first or second degree tear, and 3.4% of women had a third or a fourth degree tear. Forceps births had the highest proportion of third and fourth degree tears (10.8%). Among women who had an episiotomy, 21.4% (n=665) had a tear that extended the episiotomy. In total, 5,286 women (42.9% of vaginal births and 74.8% of births with a tear) had a repair of a perineal tear.

Table 32: Method of birth* and perineal status for women gave birth vaginally in South Australia, 2018

Method of birth*	Total Births	Perineal status							
		Intact		1-2 degree tear†		3-4 degree tear†		Episiotomy	
		Number	% of method	Number	% of method	Number	% of method	Number	% of method
Spontaneous	10,111	2,662	26.3	5,980	59.1	266	2.6	1,445	14.3
Ventouse	1,093	88	8.1	399	36.5	38	3.5	687	62.9
Forceps	1,072	19	1.8	248	23.1	116	10.8	965	90.0
Breech	57	40	70.2	8	14.0	0	0.0	9	15.8
Total	12,333	2,809	22.8	6,635	53.8	420	3.4	3,106	25.2

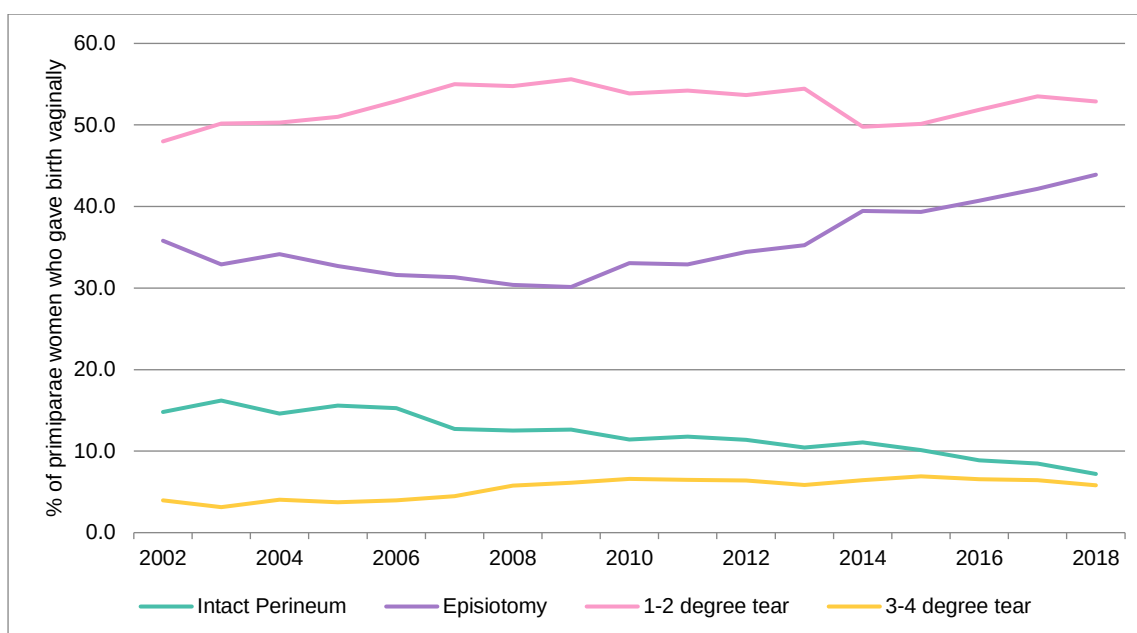
* Birth method is for the singleton infant or first infant of a multiple birth. Forceps includes cases of assisted breech with forceps for head (n=3).

† Including cases with extended tear after episiotomy

The trend in perineal status among primiparae women who gave birth vaginally are shown in

Figure 7. The proportion of primiparae women who gave birth vaginally and had an episiotomy had been decreasing over time, to a low of 30.1 in 2009. Since 2009 this proportion has been increasing, and in 2018 was 43.9%. The proportion of women with third or fourth degree tears has increased gradually from 4.0% in 2002 to 5.8% in 2018, but has remained relatively stable since 2010.

Figure 7: Perineal status among primiparae women who gave birth vaginally in South Australia, 2002-2018



3.11 Fetal monitoring during labour

Cardiotocography (CTG) was performed during labour for 60.6% of women who gave birth. The majority of these were external CTGs (40.6%) while a scalp clip was used for 20.0% of women who gave birth (Table 33). A fetal scalp pH was taken during labour in 86 women who gave birth (0.5%, Table 34).

Table 33: Cardiotocography performed during labour, women who gave birth, South Australia, 2018

CTG during labour	Number of women	% of women (n=19,043)
None	7,501	39.4
External	7,736	40.6
Scalp clip	3,806	20.0
Total	19,043	100.0

Table 34: Fetal scalp pH taken during labour, women who gave birth, South Australia, 2018

Fetal scalp pH taken	Number of women	% of women (n=19,043)
No	18,957	99.5
Yes	86	0.5
Total	19,043	100.0

3.12 Postnatal length of stay

The distribution of length of stay for women who gave birth in hospitals are presented in Table 35 for public and private patients. The median duration for all women was three days (interquartile range (IQR, 2-4 days). Homebirths have been excluded from postnatal length of stay statistics (Table 36).

Table 35: Postnatal length of stay by patient type, women who gave birth in South Australian hospitals¹, 2018

Length of stay (days)	Public		Private		Total	
	Number	%	Number	%	Number	%
<1	591	4.1	4	0.1	595	3.1
1	3,120	21.4	67	1.5	3,187	16.8
2	4,053	27.9	197	4.5	4,250	22.4
3	3,270	22.5	491	11.2	3,761	19.9
4	1,724	11.8	1,320	30.0	3,044	16.1
5	796	5.5	1,533	34.9	2,329	12.3
6	410	2.8	514	11.7	924	4.9
7 or more	586	4.0	271	6.2	857	4.5
Total	14,550	100.0	4,397	100.0	18,947	100.0

¹ Excludes homebirths (n=96)

The median length of stay for all hospital births was two days for vaginal births, and four days for caesarean section (Table 36). Among private patients, the median length of stay was two days longer for vaginal births and one day longer for caesarean births.

Table 36: Postnatal length of stay by patient and birth type, women who gave birth in South Australian hospitals¹, 2018

Length of stay (days)	Public			Private			Total		
	Vaginal	Caesarean	Total	Vaginal	Caesarean	Total	Vaginal	Caesarean	Total
Number of women	9,841	4,709	14,550	2,396	2,001	4,397	12,237	6,710	18,947
Mean	2.3	3.9	2.8	4.2	5.3	4.7	2.7	4.3	3.3
Standard deviation	2.1	3.8	2.9	1.6	2.9	2.3	2.1	3.6	2.9
Median	2.0	3.0	2.0	4.0	5.0	5.0	2.0	4.0	3.0
IQR	1-3	2-4	1-3	3-5	4-6	4-5	1-4	3-5	2-4

¹ Excludes homebirths (n=96)

Babies

4.1 Crude birth rate

In 2018 there were 19,332 births in South Australia, 153 fewer births than in 2017. Of the births in 2018, 99.3% were live births and 0.7% were stillbirths (Table 37). The crude birth rate has generally been declining since the early 1980s to a low of 11.5 per 1000 population in 2004. The crude birth rate increased slightly between 2005 to 2008, and has been declining since to the rate of 11.1 per 1,000 population in 2018.

Table 37: Crude birth rate for infants born in South Australia, 1986-2018

Year	Live Birth		Stillbirth		Total		Total Population†	Crude Birth Rate‡
	Number	%	Number	%	Number	%		
1986	19,650	99.2	149	0.8	19,799	100.0	1,382,550	14.3
1987	19,272	99.4	123	0.6	19,395	100.0	1,392,764	13.9
1988	19,400	99.3	131	0.7	19,531	100.0	1,404,909	13.9
1989	19,653	99.1	170	0.9	19,823	100.0	1,419,029	14.0
1990	19,855	99.3	133	0.7	19,988	100.0	1,432,056	14.0
1991	19,612	99.4	127	0.6	19,739	100.0	1,446,299	13.6
1992	20,003	99.3	148	0.7	20,151	100.0	1,455,442	13.8
1993	19,841	99.4	123	0.6	19,964	100.0	1,458,632	13.7
1994	19,670	99.4	128	0.6	19,798	100.0	1,463,089	13.5
1995	19,470	99.2	148	0.8	19,618	100.0	1,465,340	13.4
1996	18,979	99.3	132	0.7	19,111	100.0	1,469,079	13.0
1997	18,533	99.3	139	0.7	18,672	100.0	1,475,658	12.7
1998	18,612	99.4	121	0.6	18,733	100.0	1,483,270	12.6
1999	18,403	99.4	115	0.6	18,518	100.0	1,490,934	12.4
2000	17,766	99.4	106	0.6	17,872	100.0	1,497,503	11.9
2001	17,584	99.3	120	0.7	17,704	100.0	1,503,461	11.8
2002	17,623	99.3	122	0.7	17,745	100.0	1,511,567	11.7
2003	17,707	99.2	134	0.8	17,841	100.0	1,520,399	11.7
2004	17,408	99.4	113	0.6	17,521	100.0	1,528,189	11.5
2005	18,067	99.3	129	0.7	18,196	100.0	1,538,804	11.8
2006	18,660	99.3	140	0.7	18,800	100.0	1,552,529	12.1
2007	19,623	99.3	132	0.7	19,756	100.0	1,570,619	12.6
2008	19,819	99.2	151	0.8	19,970	100.0	1,588,665	12.6
2009	19,760	99.3	140	0.7	19,900	100.0	1,608,902	12.4
2010	19,883	99.4	119	0.6	20,002	100.0	1,627,322	12.3
2011	20,191	99.3	152	0.7	20,343	100.0	1,639,614	12.4
2012	20,525	99.3	138	0.7	20,663	100.0	1,656,035	12.5
2013	20,124	99.3	138	0.7	20,262	100.0	1,670,689	12.1
2014	20,602	99.3	145	0.7	20,747	100.0	1,685,550	12.3
2015	20,001	99.2	153	0.8	20,154	100.0	1,698,921	11.9
2016	19,931	99.3	136	0.7	20,067	100.0	1,708,183	11.7
2017	19,356	99.3	129	0.7	19,485	100.0	1,723,671	11.3
2018	19,198	99.3	134	0.7	19,332	100.0	1,736,422	11.1

† ABS Estimated Resident Populations (ERP) for South Australia

‡ Crude birth rate per 1,000 population

4.2 Place of birth

Of the 19,332 births notified in 2018, 96 (0.5%) were home births and of those, 86 were planned homebirths. The remaining 18,649 births occurred in hospitals, including 127 births born before arrival at hospitals into which the women had been booked. The 'Born Before Arrival' births have been included in the statistics for the booked birthing hospital. The distribution of all births by place of birth (home or hospital) and plurality is provided in Table 38.

Table 38: Total births notified by place of birth and plurality, South Australia, 2018

Condition at birth	Home births		Hospital births			Total births
	Singleton	Twin	Singleton	Twin	Triplet	
Live birth	96	-	18,540	559	3	19,198
Stillbirth	-	-	119	15	-	134
Total births	96	-	18,659	574	3	19,332

4.3 Place of birth by Aboriginal status of mother

Of all births, 61.8% occurred in metropolitan teaching hospitals, 19.2% in metropolitan private hospitals and 18.5% in country hospitals (Table 39). In 2018 there were 96 homebirths accounting for 0.5% of all births in South Australia. *Aboriginal women had the highest percentage of births in country hospitals (31.0%).*

Table 39: Place of birth by Aboriginal status of mother, South Australia, 2018

Hospital	Aboriginal		Non-Aboriginal		Total	
	Number	%	Number	%	Number	%
Metropolitan teaching hospital	507	67.8	11,444	61.6	11,951	61.8
Metropolitan private hospital	7	0.9	3,709	20.0	3,716	19.2
Country hospital	232	31.0	3,337	18.0	3,569	18.5
Home	2	0.3	94	0.5	96	0.5
Total	748	100.0	18,584	100	19,332	100

4.4 Hospital birth by perinatal service

Maternity and neonatal services at SA hospitals are delineated according to six levels of service, as defined in the Standards for Maternal and Neonatal Services in South Australia policy document⁴. In 2018, the Women's and Children's Hospital was defined as providing Level 5 maternity services and Level 6 neonatal services, as it provided a high risk pregnancy service and neonatal intensive care, but had no maternity intensive care facility on site. In 2018, the Lyell McEwin Hospital provided Level 6 maternity services and Level 5 neonatal services with maternity intensive care services and special care neonatal services. In 2018 the Flinders Medical Centre provided Level 6 maternity and neonatal services with both maternity and neonatal intensive care services. All the metropolitan private maternity hospitals had special care nurseries, as did Mount Gambier and Port Augusta hospitals.

The numbers of births in the six levels of hospital categories (levels 5 & 6 combined) are presented in Table 40, by Aboriginal status of the mother. Among the 19,236 hospital births in South Australia in 2018, 62.1% occurred in metropolitan teaching hospitals, 19.3% in metropolitan private hospitals and 18.6% in country hospitals.

Of the Country hospital births, 4.5% occurred in the Level 4:4 Country Hospitals, 11.3% occurred in country hospitals with 100 births or more in 2018, and 2.7 in country hospitals with less than 100 births per annum. Aboriginal women had the highest percentage of births in Level 4:4 country hospitals (16.1%), compared to non-Aboriginal women (4.1%).

Table 40: Hospital births by perinatal service delineation and Aboriginal status of mother, South Australia, 2018

Hospital	Aboriginal		Non-Aboriginal		Total births		Total women	
	Number	%	Number	%	Number	%	Number	%
Metropolitan teaching	507	68.0	11,444	61.9	11,951	62.1	11,715	61.8
Metropolitan private	7	0.9	3,709	20.1	3,716	19.3	3,671	19.4
Total (Country)	232	31.1	3,337	18.0	3,569	18.6	3,561	18.8
Level 4:4 ¹ Country	120	16.1	750	4.1	870	4.5	863	4.6
Level 3:3 ¹ Country ≥ 100 births per annum	89	11.9	2,085	11.3	2,174	11.3	2,173	11.5
Level 3:3 ¹ Country < 100 births per annum	23	3.1	502	2.7	525	2.7	525	2.8
Grand total	746	100.0	18,490	100.0	19,236	100.0	18,947	100.0

4.5 Home birth

Supplementary Birth Records were received from home birth midwives regarding planned home births for 86 women which occurred at home in 2018. There were 10 unplanned home births, and 1 not booked. The unplanned births have been excluded from the planned home birth statistics below.

Ascertainment of planned home births occurring at home in South Australia for the year 2018 is estimated to be 75.7% (78 out of an estimated 103 home births). This estimate has been derived from a comparison of information supplied via the Supplementary Birth Record, with data from the Births, Deaths and Marriages Registration Division on births registered. This compares home births that did not occur in hospital (and were not babies born before arrival at the hospital into which the woman had been booked). This proportion has increased from last year (73.6%).

In addition, 30 women (30 births) who planned to birth at home were transferred to hospital care before birth. Statistics for all 86 planned home births (86 women) in 2018 are provided in Table 41 – Table 44. The age profile of women who planned a home birth in 2018 was similar to all births, with most women in the 30-34 year age category. Of the 86 babies that were birthed at home, all (100.0%) were normal spontaneous vaginal deliveries.

Table 41: Age of women in planned home births, South Australia, 2018

Age	Birthed at home		Birthed in hospital		Total	
	Number of women	%	Number of women	%	Number of women	%
<20	-	-	-	-	-	-
20-24	2	2.3	7	23.3	9	7.8
25-29	17	19.8	9	30.0	26	22.4
30-34	41	47.7	6	20.0	47	40.5
35-39	22	25.6	7	23.3	29	25.0
40-44	4	4.7	1	3.3	5	4.3
Total	86	100.0	30	100.0	116	100.0

Table 42: Method of birth in planned home births, South Australia, 2018

Method of birth	Birthed at home		Birthed in hospital		Total	
	Number of births	%	Number of births	%	Number of births	%
Normal spontaneous vaginal	86	100.0	22	73.3	108	93.1
Forceps (vaginal)	0	0.0	1	3.3	1	0.9
Caesarean (emergency)	0	0.0	3	10.0	3	2.6
Ventouse	0	0.0	4	13.3	4	3.4
Total	86	100.0	30	100.0	116	100.0

Table 43: Birthweight of planned home births, South Australia, 2018

Birthweight (g)	Birthed at home		Birthed in hospital		Total	
	Number of births	%	Number of births	%	Number of births	%
1,500-1,999	0	0	1	3.3	1	0.9
2,000-2,499	0	0	1	3.3	1	0.9
2,500-2,999	5	5.8	7	23.3	12	10.3
3,000-3,499	25	29.1	9	30.0	34	29.3
3,500-3,999	40	46.5	10	33.3	50	43.1
4,000-4,499	16	18.6	1	3.3	17	14.7
4,500+	0	0	1	3.3	1	0.9
Total	86	100.0	30	100.0	116	100.0

Table 44: Perinatal outcome in planned home births, South Australia, 2018

Perinatal outcome	Birthed at home		Birthed in hospital		Total	
	Number of births	%	Number of births	%	Number of births	%
Stillbirth	0	0.0	0	0.0	0	0.0
Discharged within 28 days	86	100.0	29	96.7	115	99.1
In hospital at 28 days	0	0.0	0	0.0	0	0.0
Neonatal death	0	0.0	1	3.3	1	0.9
Total	86	100.0	30	100.0	116	100.0

4.6 Sex

Of all infants born, 51.1% were male with a male-female birth ratio of 1.04, which is the slightly lower than 2017 (1.07). There were 415 more male infants born than female (Table 45). The outcomes of male and female babies were the same as shown in Table 46.

Table 45: Sex of baby, all births, South Australia, 2018

Sex of baby	Number	%
Male	9,873	51.1
Female	9,458	48.9
Indeterminate	1	0.0
Total	19,332	100.0

Table 46: Sex of baby by birth status, South Australia, 2018

Birth Status	Sex of baby							
	Male		Female		Indeterminate		Total	
	Number	%	Number	%	Number	%	Number	%
Live birth	9,806	99.3	9,391	99.3	1	100.0	19,198	99.3
Stillbirth	67	0.7	67	0.7	0	0.0	134	0.7
Total	9,873	100.0	9,458	100.0	1	100.0	19,332	100.0

4.7 Plurality

In 2018, there were 18,755 singleton infants born in South Australia, 97.0% of the total infants born. The total number of multiple births was 577 (3.0% of total births) with 574 twin infants (3.0%) and 3 triplets (0.0%). *The proportion of multiple infants born to Aboriginal women was 3.5%, slightly higher than the proportion for non-Aboriginal women (2.9%) and is shown in Table 47.*

Among women who gave birth there were 288 twin and 1 triplet pregnancy in 2018. Thus there was one twin pregnancy in every 66 pregnancies, and one triplet pregnancy in every 19,043 pregnancies. Women who gave birth to twins and triplets comprised 1.5% of all women who gave birth.

Table 47: Plurality of birth by maternal Aboriginal status for infants born in South Australia, 2018

Plurality	Maternal Aboriginal status					
	Non-Aboriginal		Aboriginal		Total	
	Number	%	Number	%	Number	%
Singleton	18,033	97.0	722	96.5	18,755	97.0
Twin	548	2.9	26	3.5	574	3.0
Triplet	3	0.0	0	0	3	0.0
Total	18,584	100.0	748	100.0	19,332	100.0

4.8 Gestational age

Gestational age is the duration of pregnancy in completed weeks. In 2018, the average gestational age for all babies was 38.4 weeks (SD 2.2 weeks), with the majority of infants (90.1%) born at term (37-41 weeks, Table 48). *Preterm birth occurred for 9.7% of all infants born, and this proportion was higher for infants of Aboriginal women (17.9%).*

Table 48: Gestation at birth by Aboriginal status of women, South Australia, 2018

Gestation at birth (weeks)	Maternal Aboriginal status					
	Non-Aboriginal		Aboriginal		Total	
	Number	%	Number	%	Number	%
Preterm births (20-36)	1,742	9.4	134	17.9	17.9	1876
Term births (37-41)	16,804	90.4	613	82.0	82.0	17417
Post-term births (42+)	35	0.2	1	0.1	0.1	36
Unknown	3	0.0	0	0.0	0.0	3
Total	18,584	100.0	748	100.0	100.0	19,332

Gestation at birth varied between singleton and multiple births. Three quarters of multiple births (76.4%) were preterm, while the vast majority of singleton births were term births (92.1%, Table 49).

Table 49: Gestation at birth by plurality, South Australia, 2018

Gestation at birth (weeks)	Singleton births		Multiple births		Total	
	Number	%	Number	%	Number	%
<24	82	0.4	4	0.7	86	0.4
24-27	67	0.4	20	3.5	87	0.5
28-31	115	0.6	38	6.6	153	0.8
32-36	1,171	6.2	379	65.7	1,550	8.0
37-41	17,281	92.1	136	23.6	17,417	90.1
42+	36	0.2	0	0.7	36	0.2
Unknown	3	0.0	0	0.7	3	0.0
Total	18,755	100.0	577	100.0	19,332	100.0

Among singleton births, the majority of stillbirths occurred before 37 weeks gestation (86.6%), with the highest proportion occurring before 24 weeks gestation (56.3%, Table 50). Among live births, only 7.7% of babies were born preterm.

Table 50: Gestational age at birth for singleton infants by birth status, South Australia, 2018

Gestation at birth (weeks)	Birth status					
	Stillbirth		Live birth		Total	
	Number	%	Number	%	Number	%
<24	67	56.3	15	0.1	82	0.4
24-27	12	10.1	55	0.3	67	0.4
28-31	6	5.0	109	0.6	115	0.6
32-36	18	15.1	1,153	6.2	1,171	6.2
37-41	16	13.4	17,265	92.6	17,281	92.1
42+	0	0	36	0.2	36	0.2
Unknown	0	0	3	0.0	3	0.0
Total	119	100	18,636	100	18,755	100.0

4.9 Birthweight

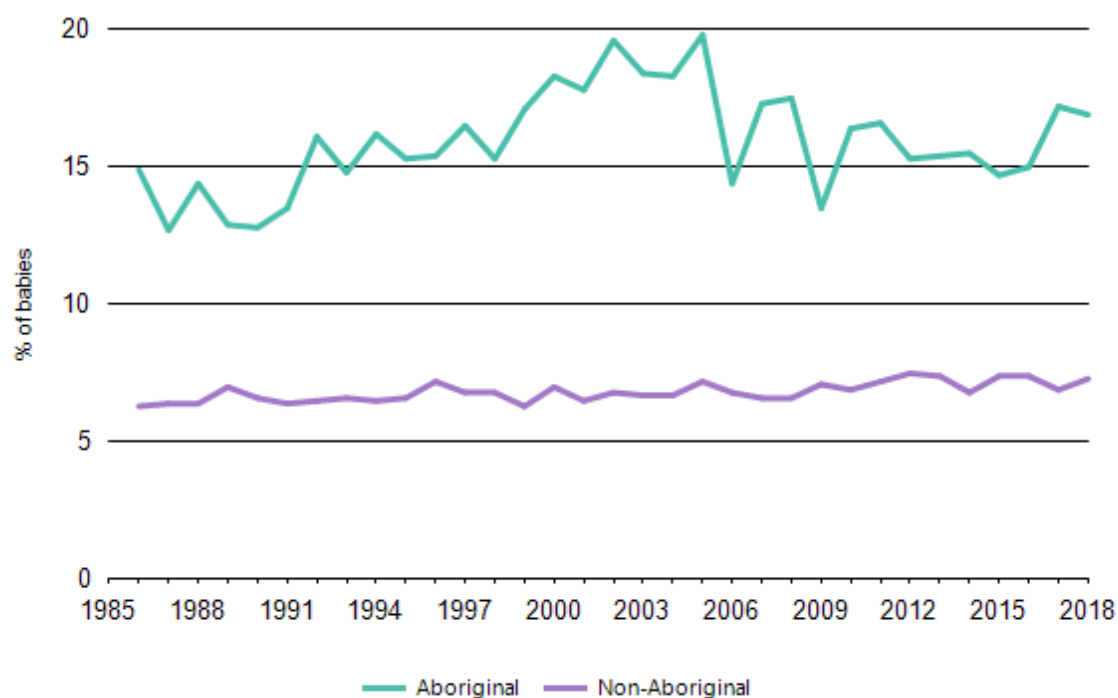
The distribution of birthweight for all births in South Australia is presented in Table 51. The percentage of low birthweight babies (<2,500g) was 7.7%, and that of very low birthweight babies (<1,500g) was 1.5%. The mean birthweight was 3,299g (SD 605.3g), with birthweights ranging from 106g to 5,400g. *The proportion of low birthweight babies was 17.0% among babies of Aboriginal women compared with 7.3% among babies of non-Aboriginal women. Among liveborn babies and excluding terminations of pregnancy, these proportions were 15.8% and 6.8% respectively.*

Table 51: Birthweight distribution of all births, South Australia, 2018

Birthweight (grams)	Maternal Aboriginal status					
	Non-Aboriginal		Aboriginal		Total	
	Number	%	Number	%	Number	%
<400	39	0.2	1	0.1	40	0.2
400-499	26	0.1	0	0.0	26	0.1
500-749	47	0.3	10	1.3	57	0.3
750-999	38	0.2	6	0.8	44	0.2
1,000-1,499	117	0.6	14	1.9	131	0.7
1,500-1,999	255	1.4	21	2.8	276	1.4
2,000-2,499	835	4.5	75	10.0	910	4.7
2,500-2,999	3,067	16.5	164	21.9	3,231	16.7
3,000-3,499	7,011	37.7	245	32.8	7,256	37.5
3,500-3,999	5,451	29.3	155	20.7	5,606	29.0
4,000-4,499	1,495	8.0	48	6.4	1,543	8.0
4,500+	201	1.1	9	1.2	210	1.1
Unknown	2	0.0	0	0.0	2	0.0
Total	18,584	100.0	748	100.0	19,332	100.0

The proportion of infants of low birthweight born to non-Aboriginal women has been relative stable for the past three decades, increasing gradually from 6.3% of all non-Aboriginal babies in 1986 to 7.3% in 2018 (Figure 8). The *proportion of infants with low birthweight born to Aboriginal women has fluctuated over time, with an increasing trend from 12.7% in 1987 to a peak of 19.9% in 2005, generally declining since then to 13.6% in 2009. In 2018 this proportion increased to 17.0%.*

Figure 8: Proportion of low birthweight babies by maternal Aboriginal status, all births, 1986-2018



4.10 Birthweight, plurality and gestational age

A comparison of multiple births with singletons shows that 58.2% multiple births were of low birthweight compared with only 6.1% for singleton (Table 52). Among singleton births, only 2.1% of infants with gestational age 37 weeks or over were lower birthweight, but this proportion was 44.7% for infants with gestational age of 32-36 weeks (Table 53).

Table 52: Birthweight by plurality, all births, South Australia, 2018

Birthweight (grams)	Singleton births		Multiple births	
	Number	%	Number	%
<400	34	0.2	6	1.0
400-499	24	0.1	2	0.3
500-749	50	0.3	7	1.2
750-999	35	0.2	9	1.6
1,000-1,499	91	0.5	40	6.9
1,500-1,999	201	1.1	75	13.0
2,000-2,499	713	3.8	197	34.1
2,500-2,999	3,039	16.2	192	33.3
3,000-3,499	7,209	38.4	47	8.1
3,500-3,999	5,604	29.9	2	0.3
4,000-4,499	1,543	8.2	0	0
4,500+	210	1.1	0	0
Unknown	2	0.0	0	0
Total	18,755	100.0	577	100.0

Table 53: Birthweight by gestation for singleton infants¹ born in South Australia, 2018

Birthweight (grams)	Gestation (weeks)									
	20-27		28-31		32-36		37-43		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
<1000	132	89.2	10	8.7	1	0.1	0	0.0	143	0.8
1000-1499	15	10.1	52	45.2	22	1.9	2	0.0	91	0.5
1500-1999	0	0.0	49	42.6	140	12.0	12	0.1	201	1.1
2000-2499	0	0.0	3	2.6	360	30.8	350	2.0	713	3.8
2500-2999	1	0.7	1	0.9	427	36.5	2,609	15.1	3,038	16.2
3000-3499	0	0.0	0	0.0	173	14.8	7,034	40.6	7,207	38.4
3500-3999	0	0.0	0	0.0	30	2.6	5,574	32.2	5,604	29.9
4000-4499	0	0.0	0	0.0	12	1.0	1,531	8.8	1,543	8.2
≥ 4500	0	0.0	0	0.0	5	0.4	205	1.2	210	1.1
Total	148	100.0	115	100.0	1,170	100.0	17,317	100.0	18,750	100.0

¹Excludes singleton infants with unknown birthweight or gestational age (n=5)

4.11 Apgar scores

The Apgar score is a method to summarise the health of a newborn infant. It is determined by evaluating the infant's heart rate, respiratory effort, muscle tone, skin colour and reflexes. Each criterion is scored from 0 to 2, then summing the five values to obtain the Apgar score. For all liveborn infants with an Apgar score reported one minute after birth, 90.7% had a score of 7-10 and 1.8% had a score less than 4 (Table 54). For liveborn infants with an Apgar score reported at five minutes, 98.4% had an Apgar score of 7-10 and only 0.3% had an Apgar score less than 4. Among all liveborn infants with an Apgar score reported one minute after birth, 91.3% established spontaneous respirations within the first minute of life.

Table 54: Apgar scores¹ at one and five minutes after birth for infants born alive, South Australia, 2018

Apgar Score	1 min after birth		5 min after birth	
	Number	%	Number	%
0-3	338	1.8	49	0.3
4-6	1,438	7.5	261	1.4
7-10	17,397	90.7	18,862	98.4
Total	19,173	100.0	19,172	100.0

¹ Excludes infants with missing Apgar score reported one minute (n=25) or five minutes (n=26) after birth

4.12 Infant resuscitation

Multiple methods of infant resuscitation can be reported for each infant on the SBR. Among all liveborn infants, 14.5% received some form of resuscitation. The proportion that received endotracheal intubation was 0.5% and 0.1% received external cardiac massage (Table 55). In 2018, 8.7% of liveborn infants received one type of resuscitation, 4.7% received two types, 1.0% received three types and 0.1% received four types of resuscitation methods. Other resuscitation methods may include medications such as adrenaline or intravenous therapy.

Table 55: Resuscitation received by infants born alive in South Australia, 2018

Method of resuscitation	Liveborn infants (n=19,198)	
	Number	%
None	16,410	85.5
IPPV - bag and mask	1,895	9.9
Oxygen therapy	1,146	6.0
Aspiration	861	4.5
IPPV - intubation	100	0.5
CPAP	79	0.4
Other	45	0.2
External cardiac massage	22	0.1
Narcotic antagonist	8	0.0
Sodium bicarbonate	2	0.0

4.13 Birth injuries

Birth injuries were reported in 1.3% of liveborn infants in 2018 (n=244). The most common injury reported was injury to scalp (0.7%). Nerve injury and fracture occurred less frequently (Table 56). More than one birth injury can be reported per infant.

Table 56: Birth injuries among liveborn infants, South Australia, 2018

Birth injury	Liveborn infants (n=19,198)	
	Number	%
None	18,954	98.7
Injury to scalp	129	0.7
Subdural and cerebral haemorrhage	34	0.2
Nerve injury	27	0.1
Fracture	11	0.1
Severe birth asphyxia	4	0.0
Dislocation	3	0.0
Other	46	0.2

4.14 Congenital anomalies

Among the 19,332 births in 2018 there were 540 births (2.8%) notified with congenital anomalies at birth or in the neonatal period, a similar proportion to 2017 (2.7%). In South Australia births notified on the SBR with a congenital anomaly are coded according to the British Paediatric Association (BPA) Classification of Diseases. This is a 5-digit extension of the 4-digit classification of the International Classification of Diseases (ICD9). Table 57 presents the most common congenital anomalies used for international monitoring (sentinel defects) that were notified to the perinatal statistics collection over the past ten years. For coding ranges see Methods and Terminology.

Terminations of pregnancy are not included in this table unless they meet the criteria for inclusion in the perinatal data collection of at least 400g birthweight or 20 weeks gestation. Notifications of congenital anomalies identified after discharge from the hospital of birth, but within the first five years of life are made directly to the South Australian Birth Defects Register at the Women's and Children's Hospital. More complete statistics on congenital anomalies in South Australia are available from the Birth Defect Register Annual Report².

Table 57: Selected congenital anomalies, South Australia, 2009-2018

Congenital Anomaly	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Number of births	19,900	20,002	20,343	20,663	20,262	20,747	20,154	20,067	19,486	19,332
Anencephalus	3	1	2	2	2	1	1	0	1	1
Spina bifida	18	10	3	4	7	6	9	5	7	8
Encephalocele	0	1	0	1	2	2	0	1	1	2
Hydrocephalus	15	5	4	10	13	12	10	9	2	3
Cleft palate	11	13	8	13	12	13	17	10	9	17
Cleft lip and palate	25	18	11	12	14	16	14	20	17	19
Tracheo-oesophageal fistula, oesophageal atresia and stenosis	7	3	4	5	7	8	10	4	1	2
Atresia and stenosis of large intestine, rectum and anal canal	8	9	7	3	8	5	2	10	7	8
Hypospadias and epispadias	40	44	36	32	44	42	32	28	45	56
Renal agenesis and dysgenesis	10	8	11	8	7	5	12	16	12	12
Limb reduction defects	8	13	7	13	17	10	10	17	10	10
Anomalies of diaphragm	9	6	4	1	8	8	4	13	11	7
Anomalies of abdominal wall	18	7	12	13	8	17	12	10	12	8
Trisomy 21	22	14	6	16	17	15	13	18	14	26

4.15 Treatment given in neonatal period

The proportions of live births that received specified treatments in the neonatal period are provided in Table 58. In some cases more than one treatment was given. The most common treatments in the neonatal period were intravenous therapies (11.7%) and gavage feeding (7.9%).

Table 58: Neonatal treatment given, all live births, South Australia, 2018

Neonatal treatment	Number	% of live births (n=19,198)
None	15,995	83.3
Any intravenous therapy	2,239	11.7
Gavage feeding more than once	1,521	7.9
Phototherapy for jaundice	1,345	7.0
Oxygen therapy for more than 4 hours	1,011	5.3

4.16 Level of neonatal care utilised

Table 59 outlines the neonatal levels of care utilised in 2018, as defined in the Standards for Maternal and Neonatal Services policy document⁴. In 2018, 82.0% of neonates utilised Level 1-3 care only. Level 4-5 care was used by 17.9% of neonates, Level 6 neonatal intensive care at the Women's and Children's Hospital or Flinders Medical Centre, and paediatric intensive care at the Women's and

Children's Hospital by 3.0% of neonates. As would be expected, with decreasing birthweight, an increasing percentage of babies required higher level care.

Table 59: Level of nursery care by birthweight, all live births¹, South Australia, 2018

Level of care utilised	Birthweight (grams)							
	<1,500		1,500-2,499		2,500+		Total	
	Number (n=187)	% of care	Number (n=1,168)	% of care	Number (n=17,824)	% of care	Number (n=19,179)	% of care
Well baby care (level 1-3)	4	2.1	251	21.4	15,481	86.9	15,736	82.0
Nursery/special care (level 4-5)	171	91.4	912	78.1	2,345	13.2	3,428	17.9
Neonatal intensive care/Paediatric intensive care unit FMC/WCH (level 6)	164	87.7	194	16.6	219	1.2	577	3.0

¹A baby can be under more than one type of care after birth

4.17 Perinatal outcome by plurality

The proportion of live births in hospital at 28 days was 18.2% for multiple births compared with 1.5% for singletons (Table 60). The proportion of combined stillbirth and neonatal deaths were 0.8% for singletons, and 3.1% for multiple births. *The proportion of live births in hospital at 28 days was also higher in babies born to Aboriginal women (3.7%) compared to non-Aboriginal women (1.9%, Table 61). This may be due to the higher proportion of low birthweight babies born to Aboriginal women.*

Table 60: Perinatal outcome by plurality, all births, South Australia, 2018

Perinatal outcome	Singleton births		Multiple births		Total	
	Number	%	Number	%	Number	%
Stillbirth	119	0.6	15	2.6	134	0.7
Discharged within 28 days	18,319	97.7	454	78.7	18,773	97.1
In hospital at 28 days	277	1.5	105	18.2	382	2.0
Neonatal death	40	0.2	3	0.5	43	0.2
Total	18,755	100.0	577	100.0	19,332	100.0

Table 61: Perinatal outcome by Aboriginal status of mother, all births, South Australia, 2018

Perinatal Outcome	Aboriginal		Non-Aboriginal		Total	
	Number	%	Number	%	Number	%
Stillbirth	12	1.6	122	0.7	134	0.7
Discharged within 28 days	705	94.3	18068	97.2	18773	97.1
In hospital at 28 days	28	3.7	354	1.9	382	2.0
Neonatal death	3	0.4	40	0.2	43	0.2
Total	748	100.0	18584	100.0	19332	100.0

4.18 Length of stay of live born babies

Table 62 shows the distribution of length of stay of liveborn babies in hospital for preterm (<37 weeks gestation) and term births (≥ 37 weeks gestation). The mean duration of stay for all liveborn babies was 4.3 days (SD 10.3) and the median duration was 2 days. The mean duration was 2.7 days (SD 3.0) for term births, 19.4 days (SD 28.5) for preterm births, while the median durations were 2 and 11 days respectively.

Table 62: Length of stay of liveborn babies in hospital¹, South Australia, 2018

Length of stay (days)	Preterm births		Term births		Total	
	Number	%	Number	%	Number	%
<1	26	1.5	963	5.6	989	5.2
1	42	2.4	4,219	24.5	4,261	22.5
2	102	5.8	4,228	24.5	4,330	22.8
3	118	6.7	2,974	17.3	3,092	16.3
4	127	7.3	2,426	14.1	2,553	13.5
5	132	7.5	1,629	9.5	1,761	9.3
6	71	4.1	352	2.0	423	2.2
7-13	373	21.3	320	1.9	693	3.7
14-20	258	14.8	62	0.4	320	1.7
21-27	153	8.7	26	0.2	179	0.9
28 or more	347	19.8	28	0.2	375	2.0
Total	1,749	100.0	17,227	100.0	18,976	100.0

¹ excludes n=1 unknown gestational age

Perinatal Mortality

5.1 Perinatal mortality rates

High crude perinatal mortality rates are often associated with low and high birthweight births, low gestation births and multiple births⁵. The perinatal mortality rate for all births (live births of any gestation and stillbirths of at least 400g birthweight or 20 weeks gestation) in 2018 was 9.2 per 1,000 births. Fifty five of the 177 perinatal deaths (31.1%) were induced terminations of pregnancy and their exclusion would have resulted in a perinatal mortality rate of 6.3 deaths per 1,000 births.

The stillbirth rate was 6.9 per 1,000 births and the neonatal mortality rate was 2.2 per 1,000 live births (Table 63).

More detail regarding perinatal mortality is available in the 'Maternal and Perinatal Mortality in South Australia' reports⁶. The global average neonatal mortality rate reported by the World Health Organization (WHO) was 17.7 per 1,000 births in 2018, with the lowest regional average in Europe (4.6 per 1,000), followed by the Western Pacific (5.8 per 1,000)⁷.

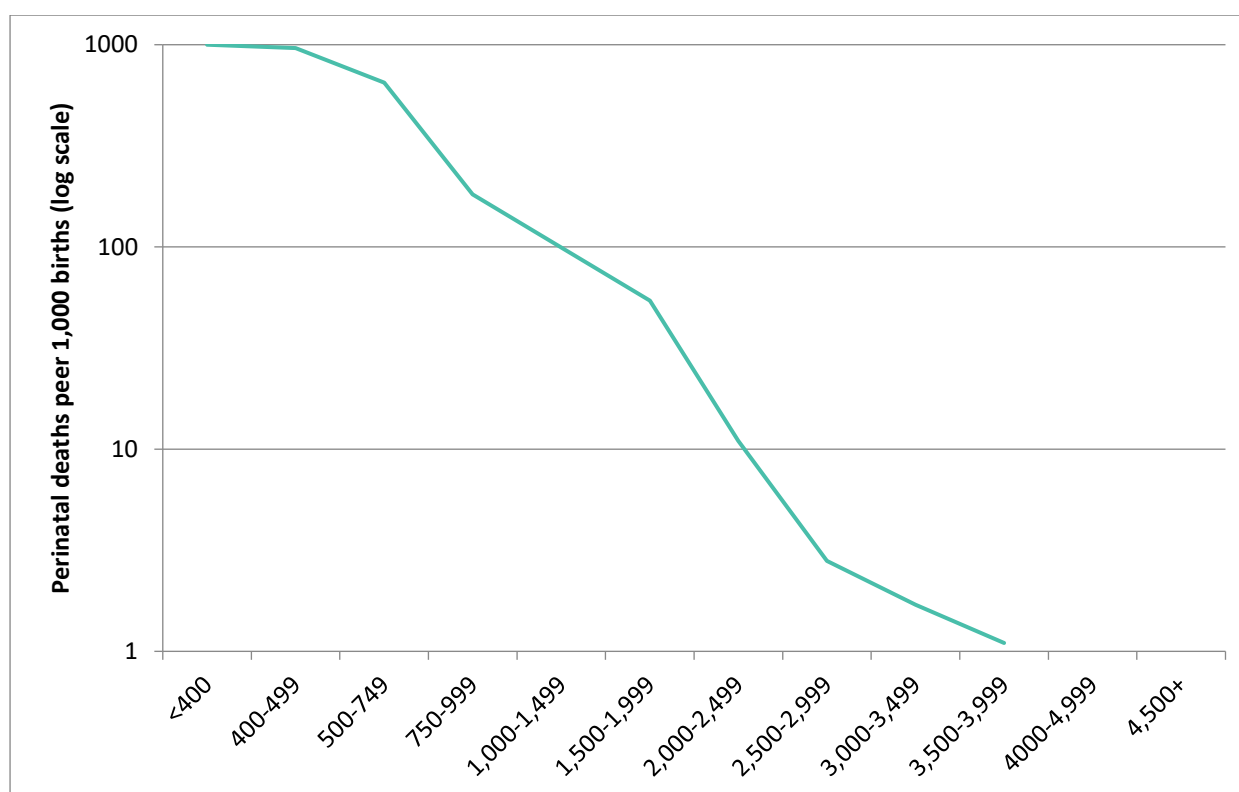
Table 63: Perinatal mortality by birthweight, all births, South Australia, 2018

Baby Weight (grams)	Total Births	Live Births	Stillbirths		Neonatal deaths		Perinatal Deaths	
			Number	Deaths per 1,000 births	Number	Deaths per 1,000 births	Number	Deaths per 1,000 births
<400	40	4	36	900.0	4	100.0	40	1000.0
400-499	26	8	18	692.3	7	269.2	25	961.5
500-749	57	28	29	508.8	8	140.4	37	649.1
750-999	44	38	6	136.4	2	45.5	8	181.8
1,000-1,499	131	121	10	76.3	3	22.9	13	99.2
1,500-1,999	276	268	8	29.0	7	25.4	15	54.3
2,000-2,499	910	902	8	8.8	2	2.2	10	11.0
2,500-2,999	3,231	3,224	7	2.2	2	0.6	9	2.8
3,000-3,499	7,256	7,249	7	1.0	5	0.7	12	1.7
3,500-3,999	5,606	5,603	3	0.5	3	0.5	6	1.1
4,000-4,499	1,543	1,543	0	0.0	0	0.0	0	0.0
4,500+	210	210	0	0.0	0	0.0	0	0.0
Unknown	2	0	2	1000.0	0	0.0	2	1000.0
Total	19,332	19,198	134	6.9	43	2.2	177	9.2

5.2 Perinatal mortality by birthweight

The relationship between perinatal mortality and birthweight is demonstrated in Table 63 and Figure 9. The highest perinatal mortality rate was observed for the lowest birthweight group weighing <400g with all births in this birthweight group resulting in a death (1,000 deaths per 1,000 births). The perinatal mortality rate among the highest birthweight group of 4,500 grams or more was 0.0 per 1,000 births.

Figure 9: Perinatal mortality rate by birthweight, all births, South Australia, 2018



5.3 Perinatal mortality by gestational age at birth

The decline in perinatal mortality with increasing gestational age is demonstrated in Table 64. The perinatal mortality rate was 1.4% for infants with a gestational age at birth of 37-41 weeks. There were no neonatal deaths or perinatal deaths for infants with a gestational age at birth of 42 weeks or more.

Table 64: Perinatal mortality by gestational age at birth, South Australia, 2018

Gestation at birth (weeks)	Total births	Live births	Stillbirths		Neonatal deaths		Perinatal deaths	
			Number	Deaths per 1,000 births	Number	Deaths per 1,000 live births	Number	Deaths per 1,000 births
<24	86	15	71	825.6	12	800.0	83	965.1
24-27	87	72	15	172.4	10	138.9	25	287.4
28-31	153	140	13	85.0	5	35.7	18	117.6
32-36	1,550	1,531	19	12.3	7	4.6	26	16.8
37-41	17,417	17,401	16	0.9	9	0.5	25	1.4
42+	36	36	0	0.0	0	0.0	0	0.0
Unknown	3	3	0	0.0	0	0.0	0	0.0
Total	19,332	19,198	134	6.9	43	2.2	177	9.2

5.4 Perinatal mortality by birthweight and gestation

The WHO recommends that fetuses and infants weighing between 500 and 1,000 grams should be included in national perinatal mortality statistics, and that for international rate comparisons, the classification to be used should be fetuses and infants weighing at least 1000 grams or 28 weeks gestation⁸. Therefore, three birthweight and gestation categories are presented in Table 65 comparing perinatal mortality rates using local and international definitions. Using the WHO definition (at least 1,000 grams or 28 weeks gestation) the perinatal mortality rate was 3.9 per 1,000 births in 2018 in South Australia, with a stillbirth rate of 2.7 per 1,000 births, and neonatal mortality rate of 1.2 per 1,000 live births. The early neonatal mortality rate in South Australia (for infants weighing at least 1000 grams or 28 weeks gestation that died during the first seven days of life) was 0.9 per 1,000 live births.

Table 65: Perinatal mortality by birthweight and gestation, South Australia, 2018

Birthweight/ gestation	Total births	Live births	Stillbirths		Neonatal deaths		Perinatal deaths	
			Number	Deaths per 1,000 births	Number	Deaths per 1,000 live births	Number	Deaths per 1,000 births
≥ 400g/20 weeks	19,332	19,198	134	6.9	43	2.2	177	9.2
≥ 500g/22 weeks	19,298	19,193	105	5.4	38	2.0	143	7.4
≥ 1,000g/28 weeks	19,183	19,132	51	2.7	23	1.2	74	3.9

5.5 Perinatal mortality by plurality

The perinatal death rate for multiple births was 31.2 compared with 8.5 deaths per 1,000 births for singletons (Table 66). In 2018, all triplets that reached 20 weeks of gestational age at birth were born alive, and there were no neonatal deaths among the triplets.

Table 66: Perinatal mortality by plurality, all births, South Australia, 2018

Plurality	Total births	Live births	Stillbirths		Neonatal deaths		Perinatal deaths	
			Number	Deaths per 1,000 births	Number	Deaths per 1,000 live births	Number	Deaths per 1,000 births
Singleton	18,755	18,636	119	6.3	40	2.1	159	8.5
Twins	574	559	15	26.1	3	5.4	18	31.4
Triplets	3	3	0	0.0	0	0.0	0	0.0
Multiple birth	577	562	15	26.0	3	5.3	18	31.2
Total	19,332	19,198	134	6.9	43	2.2	177	9.2

5.6 Perinatal mortality by Aboriginal status of mother

The perinatal mortality rate for births to Aboriginal women was 20.1 per 1,000 births in 2018 compared with 8.7 per 1,000 births for births to non-Aboriginal women (Table 67 and Table 68). Perinatal mortality rates have fluctuated for babies born to Aboriginal women, with a general declining trend since the mid-1980s however this rate has been slowly increasing since 2014. The rates for babies born to non-Aboriginal women have been relatively stable (Figure 10).

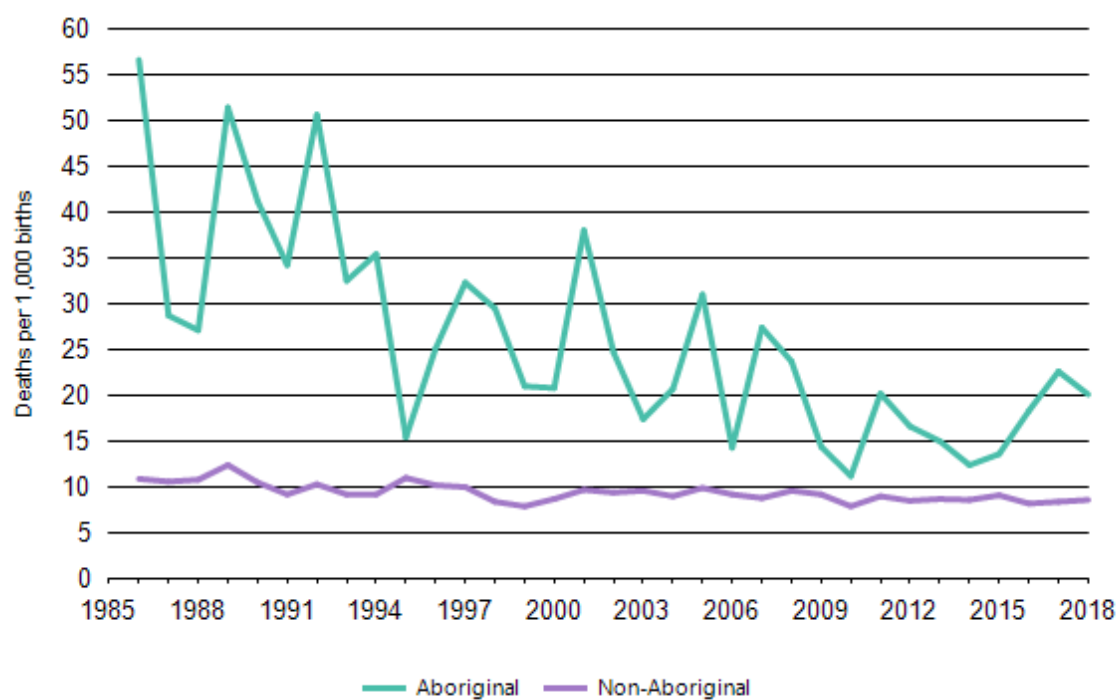
Table 67: Perinatal mortality by maternal Aboriginal status, all births, South Australia, 2018

Aboriginal status of mother	Total births	Stillbirths	Neonatal deaths	Alive at 28 days	Perinatal deaths	
	Number	Number	Number	Number	Number	Deaths per 1,000 births
Aboriginal	748	12	3	733	15	20.1
Non-Aboriginal	18584	122	40	18422	162	8.7
Total	19332	134	43	19155	177	9.2

Table 68: Perinatal mortality by maternal Aboriginal status, all births, South Australia, 2009-2018

Year	Maternal Aboriginal status					
	Non-Aboriginal		Aboriginal		Total	
	Number of deaths	Perinatal death per 1,000 births	Number of deaths	Perinatal death per 1,000 births	Number of deaths	Perinatal death per 1,000 births
2009	180	9.3	9	14.5	189	9.5
2010	156	8.0	7	11.3	163	8.1
2011	180	9.1	13	20.3	193	9.5
2012	173	8.6	11	16.7	184	8.9
2013	172	8.8	11	15.1	183	9.0
2014	175	8.7	9	12.5	184	8.9
2015	178	9.2	10	13.7	188	9.3
2016	161	8.3	14	18.4	175	8.7
2017	159	8.5	17	22.7	176	9.0
2018	162	8.7	15	20.1	177	9.2

Figure 10: Perinatal mortality rate by maternal Aboriginal status, all births, South Australia, 1986-2018



Terminations of Pregnancy

6.1 Numbers and rates

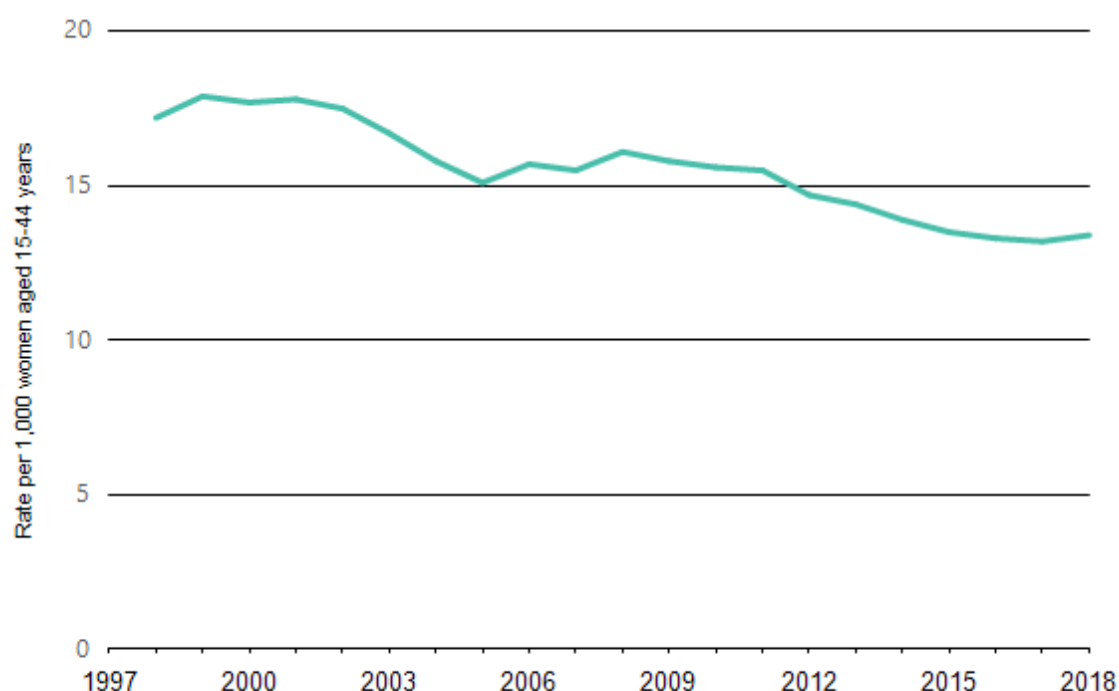
There were 4,415 terminations of pregnancy notified in South Australia in 2018, compared with 4,349 in 2017. This equates to no change with the termination rate remaining stable at 13.4 terminations of pregnancy per 1,000 women aged 15-44 years (Table 69).

Table 69: Number of pregnancy terminations, and rate per 1,000 women aged 15-44 years, South Australia, 1999-2018

Year	Number	Termination rate	Year	Number	Termination rate
1999	5,670	17.9	2009	5,049	15.8
2000	5,571	17.7	2010	5,049	15.6
2001	5,575	17.8	2011	5,009	15.5
2002	5,455	17.5	2012	4,765	14.7
2003	5,205	16.7	2013	4,683	14.4
2004	4,926	15.8	2014	4,650	13.9
2005	4,710	15.1	2015	4,441	13.5
2006	4,887	15.7	2016	4,348	13.3
2007	4,883	15.5	2017	4,349	13.2
2008	5,099	16.1	2018	4,415	13.4

Since 1999, there has been a steady decline in the rate of pregnancy terminations in South Australia from 17.9 in 1999 to 13.4 per 1,000 women aged 15-44 years in 2018 (Figure 11).

Figure 11: Pregnancy termination rate per 1,000 women aged 15-44 years, South Australia, 1998-2018



6.2 Age of women

The age distribution of women who had pregnancies terminated in 2018 is shown in Table 70. Among the five-year age groups, the highest pregnancy termination rate was among women aged 25-29 years (19.5 terminations per 1,000 women). Pregnancy termination rates continued to fall for teenage women, from 7.6 per 1,000 women in 2017 to 8.0 per 1,000 women aged 15-19 years in 2018.

Table 70: Number and rate of pregnancy terminations by age group, South Australia, 2018

Age group	Number	%	Estimated resident female population 30 June 2018 ³	Termination rate per 1,000 women
Under 15	3	0.1	-	n/a
15-19	399	9.0	50,192	8.0 ¹
20-24	1,046	23.7	56,141	18.6
25-29	1,127	25.5	57,655	19.5
30-34	967	21.9	58,896	16.4
35-39	630	14.3	55,002	11.5
40-44	227	5.1	52,075	4.7 ²
45 and over	16	0.4	-	n/a

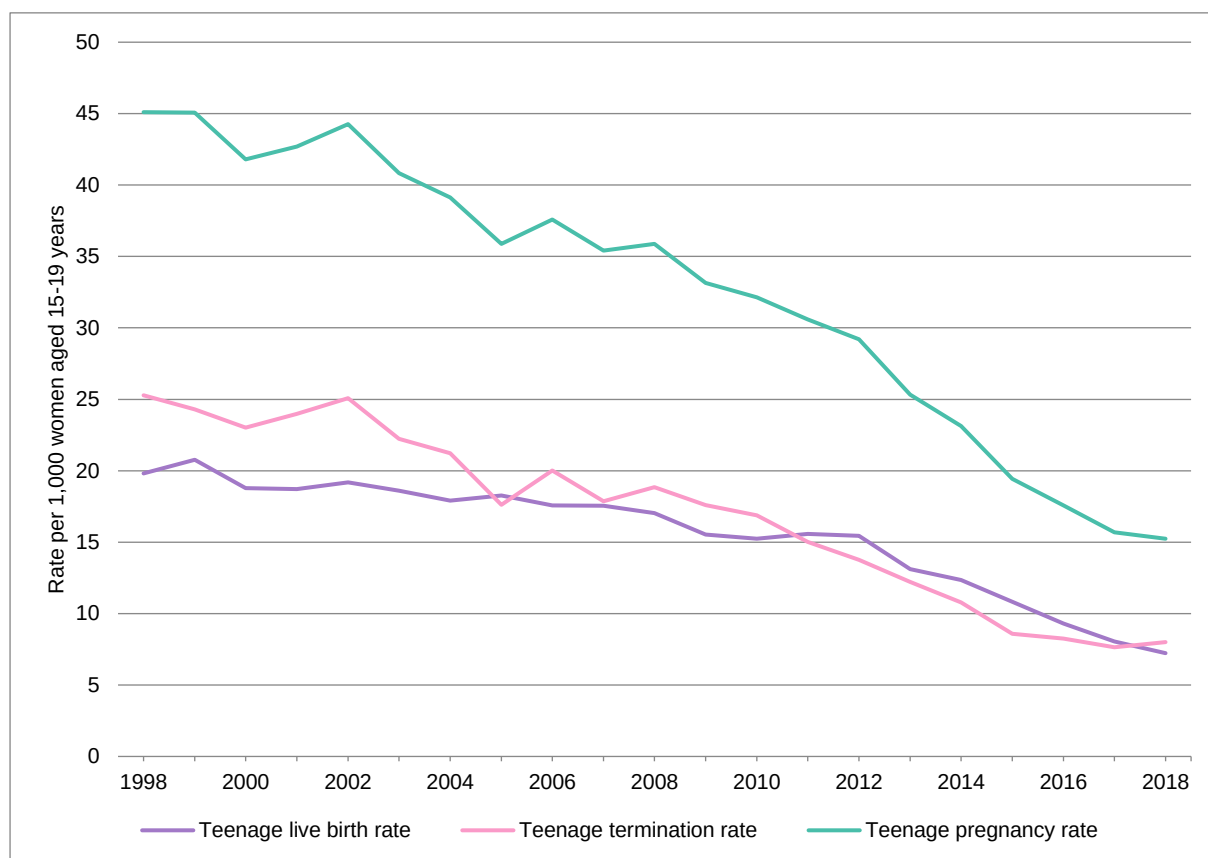
¹ includes terminations for women aged under 15

² includes terminations for women aged 45 and over

³ Australian Bureau of Statistics. Population estimates by age and sex, Regions of South Australia, 2018. Canberra: ABS, 2019 (Catalogue No 3235.0).

The teenage pregnancy rate (including live births and induced terminations) has been declining steadily since 2002, and in the most recent period remained relatively stable decreasing slightly from 15.7 in 2017 to 15.2 per 1,000 women aged 15-19 years in 2018 (Figure 12).

Figure 12: Teenage pregnancy, termination and birth rates¹, SA, 1998-2018



¹Terminations and births to women aged less than 15 years are included in the numerators

6.3 Residential region and health service category

The proportion of women residing in the Metropolitan Adelaide region who had their termination in a metropolitan hospital (either private or public) was very high at 99.1%. However, only 17.4% of women residing in Country South Australia had their termination in a country hospital, with most women travelling to metropolitan areas (Table 71).

Most terminations were conducted in metropolitan public hospitals (95.5%), followed by country hospitals (4.0%) and metropolitan private hospitals (0.5%). The distribution of terminations by health service category has been stable over the past 5 years.

Table 71: Pregnancy terminations by residential region and health service category, South Australia, 2018

	Health Service Category						Total
	Metro Public		Metro Private		Country		
Residential Region	Number	% of residential region	Number	% of residential region	Number	% of residential region	Number
Metropolitan	3,529	98.6	18	0.5	33	0.9	3,580
Country	669	82.1	4	0.5	142	17.4	815
Unknown	19	95.0	1	5.0	0	0.0	20
Total	4,217	95.5	23	0.5	175	4.0	4,415

Of the terminations conducted in a metropolitan public hospital, 66.0% (2,785) were conducted by the Pregnancy Advisory Centre. A full list of terminations by metropolitan public hospitals is presented below (Table 72).

Table 72: Pregnancy terminations in metropolitan public hospitals, South Australia, 2018

Metropolitan public hospital	Number	% terminations in metropolitan public hospitals	% all terminations
Pregnancy Advisory Centre	2,785	66.0	63.1
Flinders Medical Centre	462	11.0	10.5
Women's and Children's Hospital	362	8.6	8.2
Lyell McEwin Hospital	310	7.4	7.0
Noarlunga Health Services	298	7.1	6.7

6.4 Clinicians performing terminations

Medical practitioners in family advisory clinics conducted 43.8% of the terminations in South Australia in 2018. Obstetrician/gynaecologists conducted 22.5% of all terminations, followed by trainee obstetricians (3.3%) and general practitioners (30.4%, Table 73).

Table 73: Pregnancy terminations by category of doctor, South Australia, 2018

Category of doctor performing termination	Number	%
Medical practitioner in family advisory clinic	1,935	43.8
Obstetrician/gynaecologist	993	22.5
Trainee obstetrician	144	3.3
General practitioner	1,343	30.4
Total	4,415	100.0

6.5 Reported reason for termination

In 2018, 95.3% of terminations conducted were for the woman's mental health, 4.1% for congenital anomalies and 0.6% for specified medical conditions (Table 74). Of the 180 terminations for congenital anomalies, 75 (41.7%) were for other fetal abnormalities and 105 terminations (58.3%) were for chromosomal abnormalities detected or suspected prenatally (Table 75).

Table 74: Reported reason for termination of pregnancy, South Australia, 2018

Reason	Number	%
Mental health of woman	4,206	95.3
Congenital anomaly	180	4.1
Specified medical condition	28	0.6
Pre-existing psychiatric	1	0.0
Total	4,415	100.0

Table 75: Reported reason for termination for congenital anomalies, South Australia, 2018

Reason for termination	Number	%
Chromosomal abnormality	105	58.3
Other fetal abnormality	75	41.7
Total	180	100.0

6.6 Termination by gestational age

In 2018, the majority of pregnancy terminations were conducted in the first trimester (91.1%). The proportion conducted in the second trimester was 8.9% (Table 76), similar to the average over the past five years (8.9%).

Table 76: Gestation of termination by age of women and trimester, South Australia, 2018

Age of women (years)	First trimester		Second trimester		Total Number
	Number	% of age group	Number	% of age group	
Under 15	2	66.7	1	33.3	3
15–19	362	90.7	37	9.3	399
20–24	978	93.5	68	6.5	1,046
25–29	1,029	91.3	98	8.7	1,127
30–34	865	89.5	102	10.5	967
35–39	565	89.7	65	10.3	630
40 and over	222	91.4	21	8.6	243
Total	4,023	91.1	392	8.9	4,415

The proportion of terminations conducted at 20 weeks gestation or later was 2.1% (Table 77) slightly lower than the proportion in 2017 (2.6%). Of the 92 pregnancy terminations conducted at 20 weeks gestation or later, 47 were for congenital anomalies (51.1%), 36 were for the mental health of the woman (39.1%) and 8 for specified medical conditions of the woman (8.7%). Terminations for congenital anomalies are often conducted after 20 weeks gestation as many fetal conditions are detected only in the second trimester.

Table 77: Reported reason for termination of pregnancy by gestation, South Australia, 2018

Reason for termination	Gestation (weeks)						Total
	<14		14–19		20+		
	Number	% of reason	Number	% of reason	Number	% of reason	Number
Mental health of woman	3,958	94.1	212	5.0	36	0.9	4,206
Congenital anomalies	55	30.6	78	43.3	47	26.1	180
Specified medical condition of woman	10	35.7	10	35.7	8	28.6	28
Pre-existing psychiatric	0	0.0	0	0.0	1	100.0	1
Total	4,023	91.1	300	6.8	92	2.1	4,415

6.7 Method of pregnancy termination, and associated sterilisation

In 2018 the majority (50.2%) of pregnancy terminations were conducted by vacuum aspiration/dilatation and curettage (Table 78). Procedures with mifepristone as a cervical primer prior to vacuum aspiration or dilatation and curettage were not specifically differentiated. Pharmaceutical termination of pregnancy using Mifepristone and Misoprostol was used in 40.2% of all terminations, increasing in use over the past 5 years (23.7% of all terminations in 2014).

Table 78: Method of pregnancy termination, South Australia, 2018

Method of termination	Number	%
Vacuum aspiration / Dilatation and curettage	2,218	50.2
Mifepristone +/- Misoprostol	1,774	40.2
Dilatation and evacuation	399	9.0
Vaginal prostaglandin	18	0.4
Other	6	0.1
Total	4415	100.0

For terminations of pregnancy conducted in the first trimester, vacuum aspiration/dilatation and curettage was utilised for the majority of cases (54.6%) followed by Mifepristone and Misoprostol (42.0%, Table 79). For terminations of pregnancy conducted in the second trimester, dilatation and evacuation was utilised for the majority of cases (68.9%) followed by Mifepristone and Misoprostol (21.4%).

Table 79: Method of pregnancy termination by trimester, South Australia, 2018

Method of termination	First trimester		Second trimester		Total Number
	Number	% first trimester	Number	% second trimester	
Vacuum aspiration / Dilatation and curettage	2,197	54.6	21	5.4	2,218
Mifepristone +/- misoprostol	1,690	42.0	84	21.4	1,774
Dilatation and evacuation	129	3.2	270	68.9	399
Vaginal prostaglandin	3	0.1	15	3.8	18
Other	4	0.1	2	0.5	6
Total	4,023	100.0	392	100.0	4,415

6.8 Complications

There were 144 (3.3%) women who experienced complications related to their termination of pregnancy, which was similar to the proportion in 2017 (2.9%). Seventy-three (50.7%) of these complications were notified on the data collection form soon after the termination. To improve the ascertainment of complications resulting after the termination, a data linkage was conducted with South Australian hospital morbidity data (Integrated South Australian Activity Collection), which records hospital admissions. A further 71 women with complications (49.3%) were identified through this process.

The most common complication was retained products of conception (124 women), which represented 86.1% of all complications and occurred in 2.8% of all terminations (Table 80). Uterine infection was the second most common complication (7 women), which represented 4.9% of all complications and occurred in 0.2% of all terminations.

Table 80: Complications resulting from termination of pregnancy, South Australia, 2018

Main complication	Number of women with complication	% of all women with complications	% of all women with termination procedures
Retained products of conception	124	86.1	2.8
Uterine infection	7	4.9	0.2
Post-operative haemorrhage	4	2.8	0.1
Bleeding	3	2.1	0.1
Perforation/ trauma to uterus	2	1.4	0.0
Other	4	2.8	0.1
Total	144	100.0	3.3

The two most common termination methods in 2018 were vacuum aspiration, and Mifepristone and Misoprostol. Terminations using these methods resulted in complication rates of 1.2% and 6.2% respectively (Table 81). Overall, 116 (80.6%) women with complications following an initial procedure progressed to a surgical procedure, including 92 women who had a termination of pregnancy with Mifepristone and Misoprostol as the initial procedure.

Table 81: Method of termination resulting in complication, South Australia, 2018

Method of termination	Number of terminations	Number of complications	Number subsequent surgical D&C	% of termination method with complication	% of complication method with subsequent D&C
Vacuum aspiration / Dilatation and curettage	2,218	26	19	1.2	73.1
Mifepristone +/- misoprostol	1,774	110	92	6.2	83.6
Dilatation and evacuation	399	6	4	1.5	66.7
Vaginal prostaglandin	18	2	1	11.1	50.0
Other	6	0	0	0.0	0.0
Total	4,415	144	116	3.3	80.6

Of the 110 women with complications reported following induced abortion with Mifepristone and Misoprostol, 99 (90.0%) were due to retained products of conception. There were no failed procedures with Mifepristone and Misoprostol (Table 82).

Table 82: Complication type and method of termination procedure, South Australia, 2018

Method of termination	Number of complications	Failed procedure	Perforated uterus	Haemorrhage intra-operative	Haemorrhage post-operative	Uterine infection	Retained products conception	Bleeding	Other
Mifepristone + Misoprostol	110	0	0	0	3	2	99	2	4
Dilation-Curettage	8	0	1	0	0	1	5	1	0
Vacuum Aspiration	18	0	0	0	0	4	14	0	0
Vaginal Prostaglandins	2	0	0	0	0	0	2	0	0
Dilation & Evacuation	6	0	1	0	1	0	4	0	0
Total	144	0	2	0	4	7	124	3	4

6.9 Previous pregnancy terminations

Of the 4,415 women who had pregnancy terminations in 2018, 1,590 (36.0%) had undergone a previous termination (Table 83). The proportion of women who had a previous termination generally increased with age. Table 84 (below) shows the number of previous terminations by age group.

Table 83: Women with previous pregnancy terminations by age, South Australia, 2018

Age (years)	Number	% of age group	% of all terminations
< 20	39	9.7	0.9
20 - 24	279	26.7	6.3
25 - 29	455	40.4	10.3
30 - 34	433	44.8	9.8
35 - 39	283	44.9	6.4
40+	101	41.6	2.3
Total	1,590	36.0	36.0

Table 84: Number of previous pregnancy terminations by age of women, South Australia, 2018

Number of previous terminations	Age group							Number	%
	< 15	15–19	20–24	25–29	30–34	35–39	40+		
0	3	360	767	672	534	347	142	2,825	64.0
1	0	33	211	298	268	164	62	1,036	23.5
2	0	6	46	113	105	74	27	371	8.4
3	0	0	15	28	30	31	9	113	2.6
4+	0	0	7	16	30	14	3	70	1.6
Total	3	399	1,046	1,127	967	630	243	4,415	100.0

6.10 Total induced abortion rates

The total first abortion rate (TFAR) is a method used to estimate the proportion of women who will experience a termination of pregnancy in their reproductive lifetime (see Methods and Terminology). The TFAR for 2018 was 203.5 per 1,000 women aged 15-44 years. This suggests that 20.0% of women would have at least one termination of pregnancy in their reproductive lifetime if they experienced the termination of pregnancy rates of the different age groups for 2018. The total induced abortion rate (TAR) is the sum of pregnancy termination rates for each of the five-year age groups multiplied by five. This can be calculated using the rates in Table 70 and in 2018 was 393.6 per 1,000 women aged 15-44. This represents the number of induced abortions 1,000 women would have during their lifetime if they experienced the induced abortion rates of the different age groups for 2018 (Table 85).

Table 85: Calculation of total first induced abortion rate (TFAR), South Australia, 2018

Age (years)	Number of women who had terminations (A)	Number of women who had previous terminations (B)	Number of women who had first termination (A) – (B)	Estimated female resident population 30 June 2018 ¹	First termination of pregnancy rate per 1,000 women
15-19	402	39	363	50,192	7.2 ²
20-24	1,046	279	767	56,141	13.7
25-29	1,127	455	672	57,655	11.7
30-34	967	433	534	58,896	9.1
35-39	630	283	347	55,002	6.3
40-44	243	101	142	52,075	2.7 ³
Total	4,415	1,590	2,825	329,961	8.6

¹ Australian Bureau of Statistics. Population estimates by age and sex, Regions of South Australia, 2018. Canberra: ABS, 2019 (Catalogue No 3235.0)

² includes terminations for women aged under 15

³ includes terminations for women aged 45 and over

Further details of termination of pregnancy in South Australia in 2018 may be obtained from the Annual Report of the South Australian Abortion Reporting Committee for the year 2018⁹.

Obstetric Profiles by Hospital Category

Obstetric profiles for 2018 for the three major metropolitan public hospitals and an additional three hospital categories are provided in Table 86. Obstetric profiles are also reported to birthing hospitals in South Australia via the Pregnancy and Neonatal Care Bulletins.

The hospital categories, as determined by their perinatal service delineation are:

1. SA Public Metropolitan hospitals (Women's and Children's, Flinders Medical Centre and Lyell McEwin hospitals,
2. Metropolitan private hospitals
3. Two Level 4:4 country hospitals (Mount Gambier and Port Augusta)
4. Other country hospitals (perinatal service delineation of 3:3)

A list of maternal and baby characteristics identified either as risk factors for poor perinatal outcome in earlier analyses¹⁰, or of general interest, is provided with mean values for all state hospitals and the six hospital categories outlined above.

Where indicated (+) in Table 86 the mean (number of women who gave birth or births) relates to the 20 hospitals or groups of hospitals for which obstetric profiles have been provided. These are as follows:

1. Women's & Children's Hospital
2. Flinders Medical Centre
3. Lyell McEwin Hospital
4. Ashford Hospital
5. Burnside War Memorial Hospital
6. Calvary Healthcare Adelaide
7. Flinders Private Hospital
8. North Eastern Community Hospital
9. Mount Gambier & District Health Service
10. Port Augusta Hospital & Regional Health Service
11. Gawler Health Service
12. Mount Barker District Soldiers' Memorial Hospital
13. Port Lincoln Health Service
14. Murray Bridge Soldiers' Memorial Hospital
15. Whyalla Hospital & Health Services
16. Riverland General Hospital (Berri)
17. Port Pirie Regional Health Service
18. Naracoorte Health Service
19. South Coast District (Victor Harbour)
20. Country hospitals with <100 births per year

Table 86: Obstetric profiles by hospital category, South Australia, 2018

Factors	All state hospitals ¹	Metropolitan hospitals		Country hospitals	
	Mean	SA Public Teaching ²	Private	Level 4:4	Other
Maternal factors					
Women (n=18,943)	947	11711	3,671	863	2,698
% Aboriginal women	3.9	4.2	0.2	13.8	4.2
% Antenatal visits <7	13.7	20.2	0.9	7.1	5.0
% Teenage women	1.9	2.1	0.0	5.0	2.8
% Women ≥ 35 years	22.4	20.6	36.3	11.1	15.1
% 4+ prior live births	3.1	3.9	0.5	4.8	2.9
% 1+ prior perinatal deaths	1.4	1.7	0.7	1.7	0.9
% Obstetric complications	50.2	58.4	35.4	49.5	34.9
% Labour complications	46.4	55.5	25.4	35.2	39.0
% Induction	37.6	39.1	37.9	35.3	31.1
% Emergency caesarean	18.6	18.6	19.1	18.1	18.1
% Elective caesarean	16.8	14.4	27.2	16.2	13.6
% Any caesarean	35.4	33.0	46.3	34.3	31.7
% Ultrasound examination	97.6	97.8	97.3	96.9	96.9
% Amniocentesis	1.3	1.7	0.8	0.3	0.5
% Episiotomy	16.4	19.7	13.6	10.5	8.0
% Repair of perineal tear	27.9	28.4	28.7	22.4	26.1
% Epidural analgesia	32.4	33.3	40.2	20.2	21.7
% Private patients	23.2	4.0	100.0	13.1	5.3
% Primiparous women	41.7	42.0	45.3	35.0	37.6
% Previous caesarean	19.3	18.5	22.5	21.6	17.5
% PPH	20.0	24.5	11.1	11.9	15.0
Baby factors					
Births (n=19,232)	962	11947	3,716	870	2,699
% Birthweight <2,500g	7.7	10.0	4.7	6.2	2.2
% Gestational age <37 weeks at birth	9.7	12.0	8.0	9.0	2.2
% Prolonged hospitalisation (>27 days)	2.0	2.6	1.7	0.5	0.4
% Neonatal intensive care (Level 6 or W&CH paediatric intensive care)	3.0	4.4	0.6	0.9	1.1
% Birth defect	2.8	3.8	1.2	1.0	1.4

¹ mean number of women who gave birth, or mean number of births for the 20 hospitals or groups of hospitals

² excludes births from metropolitan hospitals that do not provide maternity services

Note: adjusted for missing values (missing values are included in the "no" group)

National Core Maternity Indicators

The National Core Maternity Indicators assist in improving the quality of maternity services in Australia by establishing baseline data for monitoring and evaluating practice change¹¹. This annual report presents the indicators with 95% Confidence Intervals (CI) for South Australian births in 2018. The core maternity indicators are also reported for individual hospitals in the Pregnancy and Neonatal Care Bulletins for 2018. Indicator specifications are in accordance with the National Core Maternity Indicators report.

For the purpose of indicators 5, 6 and 8 'selected primiparae' was defined as:

- woman who was 20-34 years of age at the time of giving birth
- giving birth for the first time at ≥ 20 weeks of gestation
- singleton pregnancy
- cephalic presentation
- 37 to 41 weeks gestation.

Antenatal Period: A1a A1b Smoking in pregnancy

Description: This indicator has two parts: (a) among all women who gave birth, the proportion who reported smoking tobacco at any time within the first 20 weeks of pregnancy; and (b) among women who reported smoking, the proportion who reported smoking after 20 weeks of pregnancy.

Purpose: This indicator is used to monitor public health and assess the effectiveness of smoking cessation advice in the antenatal period.

Indicator A1a: Smoking in the first 20 weeks of pregnancy for all women giving birth

Numerator: The number of women who gave birth and reported smoking tobacco in the first 20 weeks of pregnancy (n=2,061)

Denominator: The total number of women who gave birth (n=19,043)

Indicator A1a 10.8% (95% CI 10.4% - 11.3%)

Indicator A1b: Smoking after the first 20 weeks of pregnancy for all women who gave birth and reported smoking during pregnancy

Numerator: The number of women who gave birth and reported smoking tobacco in the second 20 weeks of pregnancy (n= 1,365)

Denominator: The number of women who gave birth who reported smoking tobacco at any time in the pregnancy (n= 2,061)

Indicator A1b 66.2% (95% CI 64.2% – 68.2%)

Antenatal Period: A2 Antenatal care in the first trimester

Description: Among all women who gave birth, the proportion who commenced antenatal care in the first trimester (before 14 weeks gestation).

Purpose: This indicator is used to assess the accessibility of antenatal services.

Indicator A2: Antenatal care in the first trimester for all women giving birth

Numerator: The number of women who had their first antenatal visit before 14 weeks gestation and went on to give birth (n=15,331)

Denominator: The number of all women who gave birth (n=19,043)

Indicator A2 80.5% (95% CI 79.9% - 81.1%)

Labour and Birth: Induction of labour for selected primiparae

Description: The proportion of all selected primiparae, whose labour was induced.

Purpose: This indicator is used to benchmark practice.

Indicator B1: Induction of labour for selected women giving birth for the first time

Numerator: The number of selected primiparae who had labour induced (n=2,794)

Denominator: All selected primiparae (n=5,604)

Indicator B1 49.8% (95% CI 48.5% - 51.2%)

Labour and Birth: Unassisted vaginal birth for selected primiparae

Description: The proportion of all selected primiparae, who had a normal (non-instrumental) vaginal birth.

Purpose: This indicator is used to benchmark practice.

Indicator B2: Unassisted (non-instrumental) vaginal birth for selected women giving birth for the first time

Numerator: The number of selected primiparae who had a normal (non-instrumental) vaginal birth (n=2,619)

Denominator: All selected primiparae (n=5,604)

Indicator B2 46.7% (95% CI 45.4% - 48.0%)

Labour and Birth: Assisted vaginal birth for selected primiparae

Description: The proportion of all selected primiparae, who had a vaginal birth with the assistance of instruments.

Purpose: This indicator is used to benchmark practice.

Indicator B3: Assisted (instrumental) vaginal birth for selected women giving birth for the first time

Numerator: The number of selected primiparae who had a vaginal birth with the assistance of instruments (n=1,381)

Denominator: All selected primiparae (n=5,604)

Indicator B3 24.6% (95% CI 23.5% - 25.8%)

Labour and Birth: Episiotomy for women having their first baby and giving birth vaginally

Description: This indicator has two parts among women who had their first baby: (a) the proportion who received an episiotomy while giving birth vaginally without instruments; and (b) the proportion who received an episiotomy during an instrumental vaginal birth.

Purpose: This indicator is used to benchmark practice.

Indicator B4a: Episiotomy for women having their first baby and giving birth vaginally unassisted (non-instrumental)

Numerator: The number of women having their first baby who had an episiotomy while giving birth vaginally without instruments (n=895)

Denominator: The number of women having their first baby who gave birth vaginally without instruments (n=3,429)

Indicator B4a 26.1% (95% CI 24.7% - 27.6%)

Indicator B4b: Episiotomy for women having their first baby and giving birth vaginally assisted (instrumental)

Numerator: The number of women having their first baby who had an episiotomy during a vaginal birth with instruments (n=1,410)

Denominator: The number of women having their first baby who gave birth vaginally with instruments (n=1,726)

Indicator B4b 81.7% (95% CI 79.8% - 83.5%)

Labour and birth: Caesarean section for selected primiparae

Description: The proportion of all selected primiparae who gave birth by caesarean section.

Purpose: This indicator is used to benchmark practice.

Indicator B5: Caesarean section for selected women giving birth for the first time

Numerator: The number of selected primiparae who gave birth by caesarean section (n=1,604)

Denominator: All selected primiparae (n=5,604)

Indicator B5 28.6% (95% CI 27.5% - 29.8%)

Labour and birth: Women having their second birth vaginally whose first birth was by caesarean section

Description: The proportion of women having their second birth vaginally whose first birth was by caesarean section.

Purpose: This indicator is used to benchmark practice for vaginal birth following.

Indicator B6: Women having their second birth vaginally whose first birth was by caesarean section

Numerator: The number of women having their second birth vaginally whose first birth was by caesarean section (n=295)

Denominator: The number of women having their second birth whose first birth was by caesarean section (n=2,219)

Indicator B6 13.3% (95% CI 11.9% - 14.8%)

Labour and Birth: General anaesthetic for women giving birth by caesarean section

Description: The proportion of women who gave birth by caesarean section who received a general anaesthetic.

Purpose: This indicator is used to benchmark anaesthetic care in association with caesarean section.

Indicator B7: General anaesthetic for women giving birth by caesarean section

Numerator: The number of women who gave birth by caesarean section and had a general anaesthetic (n=387)

Denominator: The total number of women who gave birth by caesarean section (n=6,710)

Indicator B7 5.8% (95% CI 5.2% - 6.3%)

Birth Outcomes: Third and fourth degree tears for vaginal births

Description: The proportion of women who have a third or fourth degree perineal laceration after giving birth vaginally. This indicator has two parts: (a) for all vaginal first births (b) for all vaginal births.

Purpose: Third and fourth degree perineal lacerations cause significant ongoing maternal morbidity. This is an outcome indicator that measures their occurrence.

Indicator C1a: Third and fourth degree tears for all vaginal first births

Numerator: The number of women who had a third or fourth degree perineal laceration after giving birth for the first time and had a vaginal birth (n=296)

Denominator: The number of women who gave birth for the first time and had a vaginal birth (n=5,155)

Indicator C1a 5.7% (95% CI 5.1% - 6.4%)

Indicator C1b: Third and fourth degree tears for all vaginal births

Numerator: The number of women who had a third or fourth degree perineal laceration after giving birth vaginally (n=420)

Denominator: The number of women who gave birth vaginally (n=12,333)

Indicator C1b 3.4% (95% CI 3.1% - 3.7%)

Birth Outcomes: Apgar score of less than 7 at 5 minutes for births at or after term

Description: The proportion of liveborn term infants with an Apgar score of less than 7 at 5 minutes.

Purpose: This indicator of the condition of the baby after birth provides an outcome measure of intrapartum care and resuscitation of the newborn.

Indicator C2: Apgar score of less than 7 at 5 minutes for births at or after term

Numerator: The number of babies born alive at term with an Apgar score less than 7 at 5 minutes (n=200)

Denominator: The number of live babies born at term (n=17,437)

Indicator C2 1.1% (95% CI 1.0% - 1.3%)

Birth Outcomes: Small babies among births at or after 40 weeks gestation

Description: The proportion of babies born at or after 40 weeks gestation who weighed less than 2,750 grams at birth.

Purpose: This indicator aims to identify intrauterine growth restriction for babies born at or after 40 weeks gestation. This indicator is used to benchmark practice.

Indicator C3: Small babies among births at or after 40 weeks gestation

Numerator: The number of babies born at or after 40 weeks gestation who weighed less than 2,750 grams at birth (n=60)

Denominator: The total number of babies born at or after 40 weeks (n=5,345)

Indicator C3 1.1% (95% CI 0.9% - 1.4%)

Key Statistics and Trends 2009 - 2018

Perinatal statistics are presented in Table 87 and Table 88 for both socio-demographic and obstetric aspects for each year from 2009-2018, and for 1986, when the perinatal data collection was commenced. The trends noted are as follows:

- 1 The total fertility rate was 1.68 live births per woman in 2018, lower than the level in 1986. The highest rate was observed in 2008 and 2012 (1.91 live births per woman).
- 2 *There was a steady increase in the proportion of Aboriginal women giving birth from 1.7% in 1986 to 3.9% in 2018.*
- 3 The proportion of teenage women giving birth decreased from 6.2% in 1986 to 1.9% in 2018. Over the past decade, there has been a general decline in both the teenage birth and termination rates.
- 4 The mean age of women giving birth has increased each year. The proportion of women who gave birth who were 35 years or older increased from 4.6% in 1986 to a peak of 22.5% in 2018. Amongst primiparous women, the proportion aged 35 years or older in 1986 was 2.9%, and in 2018 was 14.3%. The mean age among women giving birth increased from 26.9 years in 1986 to a peak of 30.4 in 2017, remained stable at 30.4 in 2018. The mean age among primiparous women increased from 25.0 years in 1986 to 28.9 in 2018.
- 5 The proportion of multiple births has been relatively stable since 2009 and in 2018 this proportion was 3.0% of all births.
- 6 The induction of labour rate increased from 29.4% in 2009 to 37.4% in 2018. Ten percent of inductions in 2018 were performed for other than defined indications.
- 7 The proportion of normal spontaneous vaginal births decreased from 55.4% in 2009 to 53.1% in 2018. The proportion of caesarean section births has increased gradually but steadily in the past decade, and reached 35.2% in 2018. The proportion of breech and ventouse births were stable in the past decade and were 0.2% and 5.7% respectively in 2018.
- 8 There was a gradual increase in the proportion of low birthweight births (<2,500 grams) from 7.3% in 2009 to 7.7% in 2018. The proportion of preterm births was 9.0% in 2009 and increased to 9.7% in 2018.
- 9 The proportion of births with congenital anomalies identified before discharge from hospital after birth has been relatively stable in the last decade and was 2.8% in 2018.
- 10 In the past decade, the proportion of babies utilising Level 2 care increased from 15.2% in 2009 to 17.9% in 2018. The proportion of births using Level 3 care or paediatric intensive care remained stable over the past decade. The proportion of infants in hospital at 28 days after birth has also been relatively stable over the past decade.
- 11 Using the WHO definition (at least 1,000 grams or 28 weeks gestation) the perinatal mortality rate for international comparison was 3.9 per 1,000 births in 2018. This rate has decreased slightly from the 2009 rate of 4.1 deaths per 1,000 births.

Table 87: Socio-demographic aspects of perinatal statistics, South Australia, 1986 and 2009 – 2018

Characteristic	Year										
	1986	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total births	19,799	19,900	20,002	20,343	20,663	20,262	20,747	20,154	20,067	19,485	19332
Live births	19,650	19,760	19,883	20,191	20,525	20,124	20,602	20,001	19,931	19,356	19198
Women who gave birth	19,562	19,603	19,667	20,042	20,335	19,924	20,446	19,818	19,763	19,195	19043
Total fertility rate per woman	1.75	1.89	1.87	1.89	1.91	1.85	1.87	1.79	1.77	1.71	1.68
Place of birth (%)											
Teaching hospital	45.4	53.7	54.3	55.7	57.1	57.3	58	59.7	60.4	61.4	61.8
Private hospital	15.1	25.7	25.6	24.2	23.3	22.8	22.5	21.5	20.7	19.9	19.2
Country hospital	39.1	19.9	19.3	19.7	19.2	19.3	19.1	18.3	18.4	18.3	18.5
Domiciliary ¹	0.4	0.7	0.7	0.5	0.5	0.6	0.5	0.5	0.5	0.4	0.5
Aboriginal status											
Aboriginal, %	1.7	3.1	3.1	3.1	3.2	3.6	3.5	3.6	3.8	3.8	3.9
Number of women who gave birth	334	608	617	630	653	715	711	716	751	736	735
Number of births to Aboriginal women	335	619	622	640	660	727	719	730	760	748	748
Number of babies identified as Aboriginal					901	960	954	1,003	1,032	962	1023
Age											
Mean age (years)	26.9	29.6	29.6	29.7	29.7	29.8	30	30.1	30.3	30.4	30.44
Teenage (%)	6.2	4.1	4	4	3.9	3.4	3.1	2.8	2.4	2.1	1.9
≥ 35 years (%)	6.5	21.1	20.5	20.6	20.4	19.8	20.6	20.3	21.3	21.8	22.5
Primiparae											
Mean age (years)	25	27.8	27.8	27.9	27.9	28.2	28.4	28.5	28.7	28.8	28.93
Teenage (%)	12.6	8.4	7.8	7.8	7.8	6.7	6.3	5.6	4.6	4.2	3.9
≥ 35 years (%)	2.9	12.8	12.2	12	11.7	12.4	12.9	12.5	12.5	13.7	14.3

Table 88: Obstetric aspects of perinatal statistics, South Australia, 1986 and 2009 – 2018

Characteristic	Year										
	1986	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Plurality											
Multiple births, %	2.4	3.0	3.3	2.9	3.2	3.3	2.9	3.3	3.0	3.0	3.0
Twins, number	450	578	644	586	636	640	574	648	592	568	574
Triplets, number	18	12	15	12	15	27	21	18	12	9	3.0
Quadruplets, number			4								
Induction of labour (%)	23.3	29.4	29.6	31.1	30.9	32.5	32.2	32.5	34	35.9	37.4
Method of birth, %											
Normal spontaneous	63.3	55.4	55.2	54.7	54.2	53.9	54.1	53.1	52.7	53.2	53.1
Elective caesarean	9	15.7	15.5	16	15.9	16.2	16.6	17.2	17.3	16.8	16.7
Emergency caesarean	9.9	16.7	16.7	17.2	17.9	17.8	17.3	17.8	17.8	18.1	18.5
Forceps	14.9	4.6	5.4	5.7	5.5	5.6	5.3	5.6	5.7	5.9	5.6
Breech	0.1	0.3	0.2	0.3	0.4	0.4	0.3	0.3	0.3	0.3	0.2
Ventouse	1.9	7.2	6.9	5.9	6	5.9	6.3	5.9	6.1	5.7	5.7
Total caesarean	19	32.4	32.2	33.2	33.8	34	33.9	35.1	35.1	34.8	35.2
Birthweight <2,500 g, %	6.5	7.3	7.2	7.5	7.7	7.7	7.1	7.6	7.7	7.3	7.7
Singletons	5.4	5.7	5.6	6.2	6.1	5.8	5.7	5.9	6	5.7	6.1
Multiples	52.1	59.8	54.1	52	56.8	63	57.3	59.8	63.1	58.9	58.2
Gestational age <37 weeks, %	6.4	9	8.9	9.2	9.4	9.8	9.2	9.6	9.5	9.6	9.7
Singletons	5.5	7.2	7.2	7.6	7.6	7.7	7.5	7.6	7.5	7.6	7.7
Multiples	44.4	67.5	58.4	61.7	64.7	70.9	69.1	69.4	74.5	75	76.4
Congenital abnormalities, %	2.8	2.8	2.9	2.3	2.3	2.8	2.7	2.6	2.6	2.7	2.8
Level of perinatal care utilised, %											
Level II care	9.5	15.2	15.9	16.1	15.4	16.4	15.8	16.8	17.2	17.6	17.9
Level III or higher care	3.1	3.1	2.7	2.8	2.7	2.9	2.7	3	3.3	3.3	3.0
Hospitalisation for 28 days or more, %	1.8	2.2	2	2.1	2.4	2.4	2.1	2.1	2.1	2	2.0
Neonatal deaths, number	85	49	44	41	46	45	39	35	39	47	43
Stillbirths, number	149	140	119	152	138	138	145	153	136	129	134
Perinatal deaths, number	234	189	163	193	184	183	184	188	175	176	177
Perinatal mortality rate per 1,000 births											
≥ 400g / 20 weeks	11.8	9.3	8.1	9.5	8.9	9	8.9	9.3	8.7	9	9.2
≥ 500g / 22 weeks	11.4	6.4	5.8	7.1	6	6.4	6	6.4	6.2	5.9	7.4
≥ 1000g / 28 weeks	7.4	4.1	3.7	3.8	2.7	3.4	2.8	3.4	3.3	2.9	3.9

Summary Statistics for 2018

These statistics refer to all live births as well as stillbirths of at least 400g birthweight or 20 weeks gestation. Forty babies of less than 400g birthweight have been included.

1. Number of births

Notified births with Supplementary Birth Records: 19,332

Notified women who gave birth on SBRs: 19,043

Crude birth rate: 11.1 live births per 1,000 population

Total fertility rate: 1.68 live births per woman

2. Place of birth

Home births: 96 home births in all (0.4%), of which 86 were planned home births

Metropolitan teaching hospitals: 11,951 (61.8%)

Metropolitan private hospitals: 3,716 (19.2%)

Country hospitals: 3,569 (18.5%)

3. Sex of babies

Males 9,873 (51.1%)

Females 9,458 (48.9%)

Male: Female sex ratio 1.04:1

4. Plurality

Singleton 18,755 (97.0%)

Twin 574 (3.0%)

Triplet 3 (0.0%)

5. Aboriginal status of women

Non-Aboriginal 18,308 (96.1%)

Aboriginal 735 (3.9%)

6. Obstetric interventions

Induction of labour: 7,117 (37.4% of women)

Augmentation of labour: 3,203 (16.8% of women)

Forceps: 1,072 (5.6%)

Ventouse: 1,093 (5.7%)

Episiotomy: 3,106 (25.2% of women who gave birth vaginally)

Caesarean section: 6,710 (35.2%)

Elective caesarean section: 3,187 (16.7%)

Emergency caesarean section: 3,523 (18.5%)

7. Low birthweight (<2,500 g)

Number of all births of low birthweight =1,484 (7.7% of all births)

Number of singleton births of low birthweight =1,148 (6.1% of singleton births)

Number of multiple births of low birthweight =336 (58.2% of multiple births)

8. Congenital anomalies

Births notified with congenital anomalies: 540 (2.8%)

9. Perinatal mortality rates

The perinatal mortality rate for all births (live births of any gestation and stillbirths of at least 400g birthweight or 20 weeks gestation) in 2018 was 9.2 per 1,000 births

10. Terminations of pregnancy

Total terminations of pregnancy: 4,415

Pregnancy termination rate: 13.4 per 1,000 women aged 15-44 years

Teenage pregnancy rate: 15.2 per 1,000 women aged 15-19 years

Methods and Terminology

Age specific fertility rate

The number of live births to women in an age group in a year, divided by the estimated resident population of women of that age group in the same year, expressed per 1,000 population.

Apgar score

The Apgar score is a method used to summarise the health of a newborn infant. It is determined by evaluating the infant's heart rate, respiratory effort, muscle tone, reflexes and skin colour. Each criterion is scored from 0 to 2, then summing the five values to obtain the Apgar score.

Indicator	Score		
	0	1	2
Heart rate	Absent	Slow (below 100)	Over 100
Respiratory effort	Absent	Slow, irregular	Good, crying
Muscle tone	Flaccid	Some flexion of extremities	Active motion
Reflex irritability	No response	Grimace	Vigorous cry
Colour	Blue, pale	Body pink, extremities blue	Completely pink

Birthweight

The first weight of a fetus or newborn obtained after birth. This is preferably measured within the first hour of life before significant post-natal weight loss has occurred. Low birthweight is defined as a birthweight of less than 2,500 grams. Very low birthweight is defined as a birthweight of less than 1,500 grams.

Body Mass Index

A person's weight in kilograms divided by their height in meters squared. A person's BMI can then be used as a guide to determine whether they are underweight, normal weight or overweight for their height, according to the following categories.

BMI range	Category
<18.5	Underweight
18.5 to 24.9	Normal
25.0 to 29.9	Overweight
30.0 to 34.9	Obese
35.0 to 39.9	Severely obese
>40	Morbidly obese

Caesarean section

Birth of a child by an abdominal operation. Elective caesarean section is defined as a caesarean section that takes place after 37 weeks gestation as a planned procedure before the spontaneous onset of labour. Emergency caesarean section is defined as a caesarean section that is undertaken for a complication before the onset of labour, or during labour (whether that labour is of spontaneous onset or following induction).

Congenital Anomalies

Congenital anomalies are coded according to the British Paediatric Association (BPA) Classification of Diseases. Anomalies presented in Table 58 are from the following code ranges:

BPA Code	Category
74000-74029	Anencephalus
74100-74199	Spina bifida
74200-74209	Encephalocele
74230-74239	Hydrocephalus
74900-74909	Cleft palate
74910-74929	Cleft lip and palate
75030-75038	Tracheo-oesophageal fistula, oesophageal atresia and stenosis
75120-75124	Atresia and stenosis of large intestine, rectum and anal canal
75260-75261	Hypospadias and epispadias
75300-75301	Renal agenesis and dysgenesis
75520-75549	Limb reduction defects
75660-75669	Anomalies of diaphragm
75670-75679	Anomalies of abdominal wall
75800-75809	Trisomy 21

Crude birth rate

The number of live births occurring among the ABS Estimated Resident Populations (ERP) for South Australia, per 1,000 population during the same year.

Early Neonatal Mortality Rate

The Early Neonatal Mortality Rate (ENMR) is defined as infants weighing at least 1000 grams or 28 weeks gestation that died during the first seven days of life.

Fetal death

Death prior to the complete expulsion or extraction from a woman of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation the fetus does not breathe or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles.

General fertility rate

The total number of live births in a year, divided by the estimated resident population of women aged 15 to 44 years in the same year, expressed per 1,000 population.

Gestational age

The duration of pregnancy in completed weeks determined by the best obstetric estimate, using ultrasonography and the first day of the last normal menstrual period.

Induction of labour

An intervention undertaken to stimulate the onset of labour by pharmacological or other means.

Live birth

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

This report does not include live births less than 20 weeks gestation and less than 400g birthweight.

Maternal death

Defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Multigravida

A woman who has been pregnant more than once.

Neonatal death

Death of a live born infant within 28 days of birth.

Neonatal death rate

The number of neonatal deaths in a defined time period, divided by the total number of live births in the same time period, multiplied by 1,000.

Parity

The total number of previous pregnancies resulting in live births or stillbirths.

Perinatal deaths

Stillbirths and neonatal deaths combined

Perinatal mortality rate

The number of stillbirths and neonatal deaths in a defined time period, divided by the total number of stillbirths and live births in the same time period, multiplied by 1,000

For South Australian statistics, the rate refers to live births and stillbirths of at least 400g birthweight or 20 weeks gestation.

For national statistics, the rate refers to all births of at least 20 weeks gestation or 400g birthweight, and neonatal deaths occurring within 28 days of birth.

For international comparison, the rate refers to all births of at least 1,000g birthweight or, when birthweight is unavailable, of at least 28 weeks gestation and neonatal deaths occurring within seven days of birth (as recommended by WHO).

Preterm

Less than 37⁺⁰ completed weeks gestation.

Primigravida

A woman pregnant for the first time.

Primipara

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



Pregnancy termination rate

All rates of populations were calculated using the reproductive age range 15 to 44 years. Terminations occurred in women that were younger or older than this age group. These events were added to the numerator for the 15 to 19 years group or the 40 to 44 years group respectively.

Stillbirth

Birth of a fetus at or after 20 weeks gestation or with a birthweight of 400g or more, with no signs of life at birth.

Stillbirth rate

The number of stillbirths in a defined time period, divided by the total number of stillbirths and live births in the same time period, multiplied by 1,000

Termination of pregnancy

The removal or expulsion of a pregnancy from the uterus via surgical or medical intervention, and excludes spontaneous abortions or miscarriages

Total abortion rate (TAR)

The sum of the five-year age-specific termination of pregnancy rates, multiplied by five. This represents the number of induced abortions (or terminations of pregnancy) that 1,000 women would have during their reproductive lifetime if they experienced the induced abortion rates of the different age groups for the current year.

Total fertility rate

The sum of age-specific fertility rates at a given time. It represents the number of children a woman would bear during her lifetime if she experienced current age-specific fertility rates at each age of her reproductive life.

Total first abortion rate (TFAR)

The sum of the five-year age-specific termination of pregnancy rates of women experiencing their first termination, multiplied by five. The total first abortion rate (TFAR) is a method used to estimate the proportion of women who will experience a termination of pregnancy in their reproductive lifetime

Women who gave birth

Women who gave birth after a pregnancy ending with the birth of one or more live births or stillbirths.



References

1. Maternal and Perinatal Mortality Committee, Archived Recommendations <https://www.sahealth.sa.gov.au/wps/wcm/connect/590d2f13-5423-46c1-996f-99a702cb9e41/MPMC+2016+Report+Archived+Recommendations.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-590d2f13-5423-46c1-996f-99a702cb9e41-mMF.hj4>
2. South Australian Birth Defect Register. *Annual Report*. Available from: <http://www.wch.sa.gov.au/services/az/other/phru/birthdefect.html>
3. United Nations, Population Division. *Total fertility rate*. Available from: http://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets/demographics/total_fertility_rate.pdf.
4. Statewide Service Strategy Division, *Standards for Maternal and Neonatal Services in South Australia 2015*. 2015, Department of Health and Wellbeing: Adelaide.
5. South Australia Health Commission Epidemiology Branch, *Risk factors for adverse perinatal outcome: determination from a perinatal statistics collection*. 1986, South Australia Health Commission: Adelaide.
6. Maternal and Perinatal Mortality Committee, *Maternal and Perinatal Mortality in South Australia 2017*. 2019, SA Health, Government of South Australia: Adelaide.
7. World Health Statistics data visualization dashboard. *Newborn and child mortality: Neonatal mortality*. 2017 [cited May 2018; Available from: <http://apps.who.int/gho/data/node.sdg.3-2-viz-3?lang=en>.
8. *Neonatal and perinatal mortality: country, regional and global estimates*. 2006, World Health Organization: Geneva.
9. South Australian Abortion Reporting Committee, *Annual Report of the South Australian Abortion Reporting Committee 2017*. 2019, SA Health, Government of South Australia: Adelaide.
10. South Australia Health Commission Epidemiology Branch, *Risk factors for adverse perinatal outcome: determination from a perinatal statistics collection*. 1986, South Australia Health Commission: Adelaide.
11. AIHW National Perinatal Epidemiology and Statistics Unit, *National Core Maternity Indicators*. 2017, AIHW: Canberra.

Appendix 1



Government of South Australia
Department of Health

2018 SUPPLEMENTARY BIRTH RECORD

FOR COMPLETION BY MIDWIVES AND NEONATAL NURSES

10000

Mother's name (Surname) (Given names) 2 1 8

Child's surname (if different) (Given name - if known) **Hospital/Place of birth**

Mother's address **Mother's Case Record Number**

..... **Postcode** **Plurality** (1=single, 2=twin, 3=triplet, 4=quad)

Personal information above this line is confidential

For multiple births, please complete a separate baby form for each baby.

MOTHER'S INFORMATION

1 Mother's date of birth day month year

2 Ethnicity

1. Caucasian ☐ 2. Aboriginal ☐ 3. Asian ☐ 4. Torres Strait Islander (TSI) ☐ 5. Aboriginal & TSI ☐ 6. Other ☐

3 Country of birth

4 Type of patient

1. Hospital/Public ☐ 2. Private ☐

5 Marital status

1. Never married ☐ 2. Married/De facto ☐ 3. Widowed ☐ 4. Divorced ☐ 5. Separated ☐

OCCUPATION

6 Baby's father

Baby's mother

PREVIOUS PREGNANCY OUTCOMES

7 Number of previous pregnancies

8 Number of previous pregnancies resulting in births >20 weeks (parity)

9 Number of previous outcomes

	Singleton	Multiple
Livebirths, not neonatal deaths	☐	☐
Livebirths, neonatal deaths	☐	☐
Stillbirths	☐	☐
Miscarriages	☐	☐
Ectopic pregnancies	☐	☐
Terminations of pregnancy	☐	☐

10 Outcome of last pregnancy

11 Date of delivery/termination of last pregnancy month year

12 Method of last birth

0. No previous birth ☐ 1. Vaginal ☐ 2. Caesarean ☐ 3. Not known ☐

13 Number of previous caesareans

THIS PREGNANCY

14 Date of last menstrual period day month year

15 Intended place of birth

1. Hospital ☐ 2. Birthing unit / centre ☐ 3. Home ☐ 4. Other (specify) 5. Not booked ☐

16a Number of antenatal visits

16b First antenatal visit

Gestation (weeks) Height (cm) Weight (kg)

Please return top copy to:
Pregnancy Outcome Unit, PO Box 6,
Rundle Mall, Adelaide SA 5000

17 Type of antenatal care

1. No antenatal care ☐ 2. Midwifery Group Practice at birth hospital ☐ 3. Birth unit / centre ☐ 4. Public Clinic (specialist led) ☐ 5. General Practitioner and public hospital (shared care) ☐ 6. General Practitioner led ☐ 7. Obstetrician w/ midwife in private practice ☐ 8. Privately practising midwife ☐ 9. Other (specify)

18 Tobacco smoking status at first visit

1. Smoker ☐ 2. Quit in pregnancy before first visit ☐ 3. Non smoker ☐ 4. Unknown smoking status ☐

19 Average number of tobacco cigarettes smoked per day in 2nd half of pregnancy

☐ None ☐ Number per day = ☐ <1 (occasional) ☐ Unknown number

20 Medical conditions present in this pregnancy

1. None ☐ 2. Anaemia ☐ 3. Urinary tract infection ☐ 4. Hypertension (pre-existing) ☐ 5. Diabetes (pre-existing) ☐ 6. Epilepsy ☐ 7. Asthma ☐ 8. Other (specify)

21 Obstetric complications

1. None ☐ 2. Threatened miscarriage ☐ 3. APH - Abruption ☐ 4. APH - Placenta praevia ☐ 5. APH - Other & unknown cause ☐ 6. Pregnancy hypertension (all types) ☐ 7. Suspected IUGR ☐ 8. Gestational diabetes ☐ 9. Other (specify, including impaired glucose tolerance)

22 Date of admission prior to birth day month year

23 Procedures performed in this pregnancy

Tick if Yes ☐ Tick if Unknown ☐

0. NPT ☐ 1. First trimester anomaly screen (IUS & biochem) ☐ 2. Second trimester anomaly screen (biochem only) ☐ 3. Ultrasound dating scan ☐ 4. Ultrasound morphology scan ☐ 5. Other ultrasound scan ☐ 6. Amniocentesis ☐ 7. Chorion villus biopsy ☐ 8. Antenatal fetal blood sampling ☐ 9. Other surgical procedures (specify)

LABOUR AND BIRTH

24 Onset of labour

1. Spontaneous ☐ 2. No labour (CS) ☐ 3. Induction (evolving augmentation) ☐ Give reasons for induction (If post dates, state T+ days)

25 If induction, or augmentation after spontaneous onset, specify method/s

1. ARM ☐ 2. Oxytocics ☐ 3. Prostaglandins ☐ 4. Other (specify)

26 Presentation prior to birth

1. Vertex ☐ 2. Breech ☐ 3. Face ☐ 4. Brow ☐ 5. Other ☐ 6. Unknown ☐

27 Method of birth

1. Normal spontaneous ☐ 2. Forceps ☐ 3. Assisted breech (no forceps) ☐ 4. CS (elective) ☐ 5. CS (emergency) ☐ If CS state reason/s:

6. Ventouse ☐ 7. Breech extraction ☐ 8. Breech spontaneous ☐ 9. Unknown ☐ 10. Assisted breech (with forceps for head) ☐

28 Complications of labour, birth and puerperium

1. None ☐ 2. PPH Primary > 500 ml ☐ specify ml ☐ Transfusion required ☐ 3. Fetal distress ☐ 4. Retained placenta ☐ 5. Prolonged labour (>18 hrs) ☐ 6. Cord prolapse ☐ 7. Wound infection ☐ 8. Failure to progress (specify) 9. Other (specify)

29 Perineal status after birth

Tick tear, repair & episiotomy if all

1. Intact ☐ 2. 1st degree tear/vaginal graze ☐ 3. 2nd degree tear ☐ 4. 3rd degree tear ☐ 5. 4th degree tear ☐ 6. Repair of tear ☐ 7. Episiotomy ☐ 8. Other (specify) 9. Not stated ☐

30 CTG performed during labour

1. None ☐ 2. External ☐ 3. Scalp clip ☐

31 Fetal scalp pH taken during labour

1. No ☐ 2. Yes ☐

32 Analgesia for labour

1. None ☐ 2. Nitrous oxide and oxygen ☐ 3. Narcotic (parenteral) ☐ 4. Epidural (lumbar/caudal) ☐ 5. Spinal ☐ 6. Other (specify) 7. Combined spinal-epidural ☐

33 Anaesthesia for birth

1. None ☐ 2. Local anaesthesia to perineum ☐ 3. Pudendal ☐ 4. Epidural (lumbar/caudal) ☐ 5. Spinal ☐ 6. General anaesthesia ☐ 7. Other (specify) 8. Combined spinal-epidural ☐

34 Mother's outcome for birth hospital/home birth

1. Discharged ☐ 2. Transferred ☐ 3. Died ☐ Transferred to: day month year

35 MOTHER'S FINAL DISCHARGE/DEATH

Date: day month year

BABY DETAILS

1 Case record number

2 Aboriginal status

1. Aboriginal ☐ 2. Torres Strait Islander (TSI) ☐ 3. Aboriginal & TSI ☐ 4. Not Aboriginal nor TSI ☐ 5. Not stated / inadequately described ☐

3 Place of birth

1. Hospital ☐ 2. BBA ☐ 3. Domiciliary ☐ 4. Birthing unit/centre ☐

4 Date of birth day month year

5 Hour of birth (24 hour clock) day month year

6 Sex

1. Male ☐ 2. Female ☐ 3. Indeterminate ☐

7 Birth weight (grams)

8 Gestation at birth (best clinical estimate in weeks)

CONDITION AT BIRTH

9 Apgar Score 1 minute 5 minute

10 Time to establish regular breathing (to nearest minute)

11 Resuscitation at birth

1. None ☐ 2. Aspiration ☐ 3. Oxygen ☐ 4. IPPV - bag & mask ☐ 5. IPPV - intubation ☐ 6. Narcotic antagonist ☐ 7. Sodium bicarbonate ☐ 8. Ext. cardiac massage ☐ 9. Other (specify)

12 Condition occurring during birth

1. None ☐ 2. Fracture ☐ 3. Dislocation ☐ 4. Nerve injury ☐ 5. Other (specify)

13 Congenital abnormalities

1. Nil apparent ☐ 2. Yes (specify)

14 Treatment given

1. None of the treatments below ☐ 2. Oxygen therapy > 4 hours ☐ 3. Phototherapy for jaundice ☐ 4. Gavage feeding more than once ☐ 5. Any intravenous therapy ☐

15 Nursery care required

1. Well Baby Care (Level 1-3) ☐ 2. Nursery / Special Care (Level 4-5) ☐

Number of days: ☐ Neonatal Intensive Care Unit (NICU) - FMC/WCH (Level 6) ☐

Number of days: ☐ Paediatric Intensive Care Unit (PICU) - WCH ☐

Number of days: ☐

16 Was transfer to NICU/PICU for a congenital abnormality?

☐ Yes ☐ No

OUTCOME OF BABY

17 Outcome of baby

1. Fetal death ☐ 2. Discharged ☐ 3. In hospital at 28 days ☐ 4. Neonatal death ☐

18 Baby transferred to day month year

19 Date of final discharge (or death) day month year

10000

Appendix 2



Government of South Australia
Department of Health

S.A. PREGNANCY OUTCOME STATISTICS UNIT,
PO Box 6, Rundle Mall, Adelaide SA 5000

CONGENITAL ABNORMALITY FORM

SBR No.

ACC NO. 2 1

BABY'S SURNAME.....

BABY'S FIRST NAME.....

SEX IF MULTIPLE BIRTH, BIRTH ORDER.....

DATE OF BIRTH..... / / UR NO.

HOSPITAL.....

ADDRESS OF MOTHER.....

FAMILY HISTORY OF CONGENITAL ABNORMALITY Yes No Not known

1. Parents (specify)..... ☐ ☐ ☐

2. Siblings of this baby (including known stillbirths and 2nd trimester terminations of pregnancy) ☐ ☐ ☐

(specify)

3. Other relatives (specify)..... ☐ ☐ ☐

RESIDENCE OF MOTHER DURING THE FIRST 16 WEEKS OF PREGNANCY

EXPOSURE TO TERATOGENS

DURING THE FIRST 16 WEEKS OF PREGNANCY

This information can be provided by the doctor undertaking antenatal care
Yes If yes, details

1. Infection (including viral) ☐

2. Xrays ☐

3. Environmental chemicals ☐

4. Prescribed drugs ☐

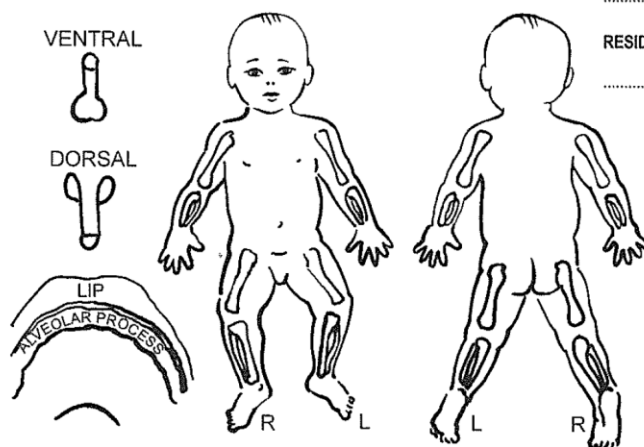
5. Over-the-counter drugs ☐

6. Alcohol ☐

7. Other addictive substances ☐

8. Any other substances ☐

Comments



GEST =

CONGENITAL ABNORMALITIES / BIRTH DEFECTS PRESENT

(Please list all defects & specify where relevant right/left, anterior/posterior)

Office use only

1..... ☐ ☐ ☐ ☐

2..... ☐ ☐ ☐ ☐

3..... ☐ ☐ ☐ ☐

4..... ☐ ☐ ☐ ☐

5..... ☐ ☐ ☐ ☐

6..... ☐ ☐ ☐ ☐

7..... ☐ ☐ ☐ ☐

8..... ☐ ☐ ☐ ☐

9..... ☐ ☐ ☐ ☐

10..... ☐ ☐ ☐ ☐

SPECIFIC SYNDROME/S (if known)..... ☐ ☐ ☐ ☐

..... ☐ ☐ ☐ ☐

HAS THE FATHER OF THIS CHILD A HISTORY OF EXPOSURE TO ANY POTENTIAL TERATOGENS? ☐ Yes ☐ No ☐ Not known

(specify)

ADDITIONAL INFORMATION (eg drinking water supply/local epidemics)

.....

PRENATAL DIAGNOSIS

Please tick all tests performed during this pregnancy

Please tick if abnormal result

1. ☐ MSAFP (NTD etc) ☐

2. ☐ Triple/Quadruple screen (Down's, etc) ☐

3. ☐ Ultrasound (morphology) ☐

4. ☐ Chorion villus sampling ☐

5. ☐ Amniocentesis ☐

6. ☐ Cordocentesis ☐

7. ☐ Other (specify)..... ☐

8. ☐ Not known ☐

Comments

NAME OF NOTIFYING DOCTOR..... Signed..... Date.....

NAME & ADDRESS OF OBSTETRICIAN / MIDWIFE (if not the same)