



Australian Government

Australian Institute of Health and Welfare



Australia's mothers and babies 2014

in brief



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

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ISBN 978-1-76054-030-2 (PDF)

ISBN 978-1-76054-031-9 (Print)

ISSN 2205-5134 (PDF)

ISSN 1321-8336 (Print)

Suggested citation

Australian Institute of Health and Welfare 2016. Australia's mothers and babies 2014—in brief. Perinatal statistics series no. 32. Cat no. PER 87. Canberra: AIHW.

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Published by the Australian Institute of Health and Welfare.

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

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AIHW information on mothers and babies

Australia's mothers and babies 2014—in brief presents an overview of the key statistics from the Australian Institute of Health and Welfare (AIHW) National Perinatal Data Collection. The AIHW's online perinatal dynamic data display complements this report and is available at <www.aihw.gov.au/perinatal-data/>.

Detailed supplementary tables, including state and territory data, are also available online from the AIHW website at <www.aihw.gov.au/publication-detail/?id=60129557656>. This report and the perinatal dynamic data display are part of a comprehensive program of AIHW work in relation to maternal and perinatal care and outcomes. Other major projects are:

- National Core Maternity Indicators (NCMI) dynamic data display and reports, available at <www.aihw.gov.au/ncmi/>. The NCMI monitor the safety and quality of maternity care to ensure there is continual improvement following the introduction of the National Maternity Services Plan (AHMC 2011)
- National Maternity Data Development Project (NMDDP), latest report available at <<http://www.aihw.gov.au/publication-detail/?id=60129554606>>. The aim of the NMDDP is to build a more comprehensive and consistent national data collection for maternal and perinatal health, including data development of clinical data items and maternity models of care and the establishment of ongoing national maternal and perinatal mortality data collection and reporting.

The National Perinatal Data Collection

The National Perinatal Data Collection (NPDC) began in 1991 and is a collaborative effort by the AIHW and state and territory health departments.

Perinatal data are collected for each birth in each state and territory, most commonly by midwives. The data are collated by the relevant state or territory health department and a standard de-identified extract is provided to the AIHW on an annual basis to form the NPDC.

The NPDC covers both live births and stillbirths, where gestational age is at least 20 weeks or birthweight is at least 400 grams, except in Western Australia, where births are included if gestational age is at least 20 weeks or, if gestation is unknown, birthweight is at least 400 grams.

See Chapter 6 for more information about the NPDC.

1

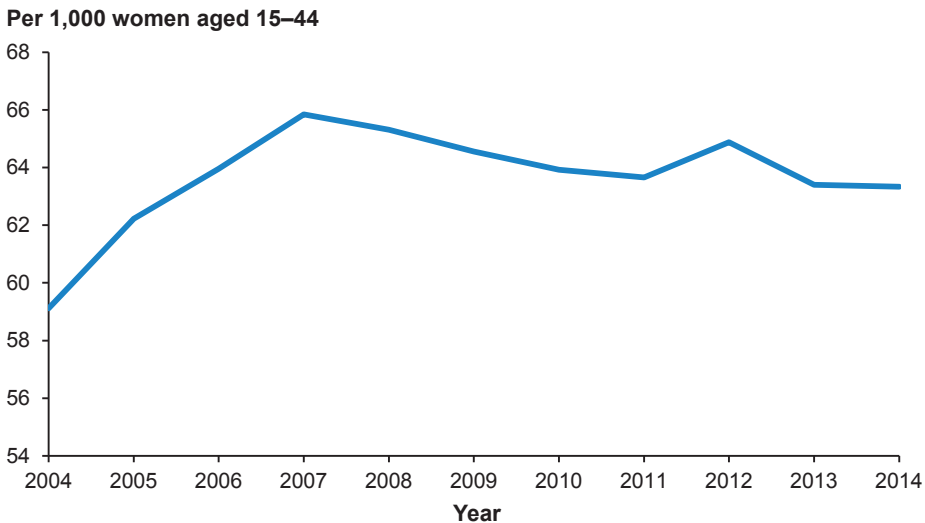
At a glance

Mothers at a glance

More women are giving birth

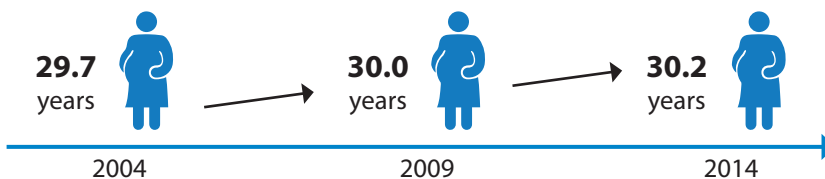
- In 2014, 307,844 women gave birth in Australia—an increase of 18% since 2004 (252,871 women).
- The rate of women giving birth increased from 59 per 1,000 women of reproductive age (15–44 years) in 2004 to 63 per 1,000 in 2014. The rate has declined from a recent peak of 66 per 1,000 women in 2007.

The rate of women of reproductive age giving birth, 2004 to 2014



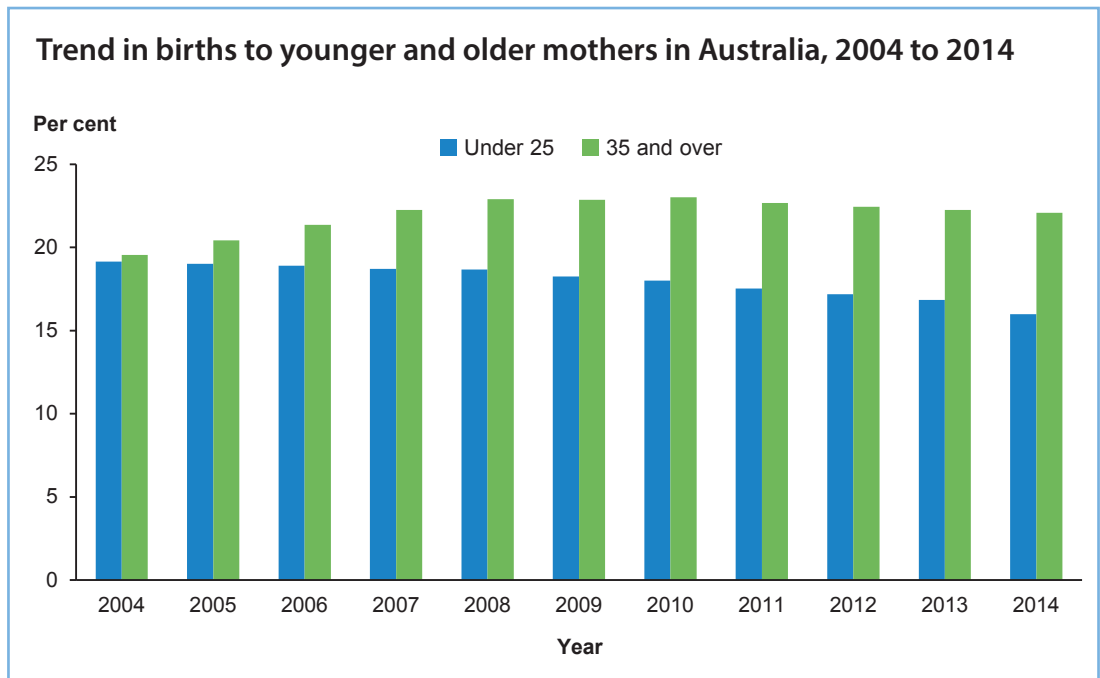
Women are giving birth later in life

- The average age of all women who gave birth continues to rise and was 30.2 in 2014, compared with 29.7 in 2004.



Average age of all mothers, 2004 to 2014

- The average age has also increased for Aboriginal and Torres Strait Islander mothers, from 24.8 in 2004 to 25.5 in 2014.
- The proportion of mothers aged 35 and over has increased from 20% in 2004 to 22% in 2014, while the proportion of mothers aged under 25 has decreased from 19% to 16%.
- The average age of first-time mothers also increased, from 28.0 in 2004 to 28.7 in 2014.



Rate of multiple pregnancies has decreased

In 2014, multiple pregnancies represented 1.5% of all pregnancies. Almost all multiple pregnancies (98%) were twins, while a small proportion (2%) were other multiples (that is, triplets, quadruplets or higher).

From 2004 to 2014, the number of multiple pregnancies increased slightly from 4,253 in 2004 to 4,631 in 2014; however, the rate decreased over this time from 17 per 1,000 mothers to 15 per 1,000 mothers.

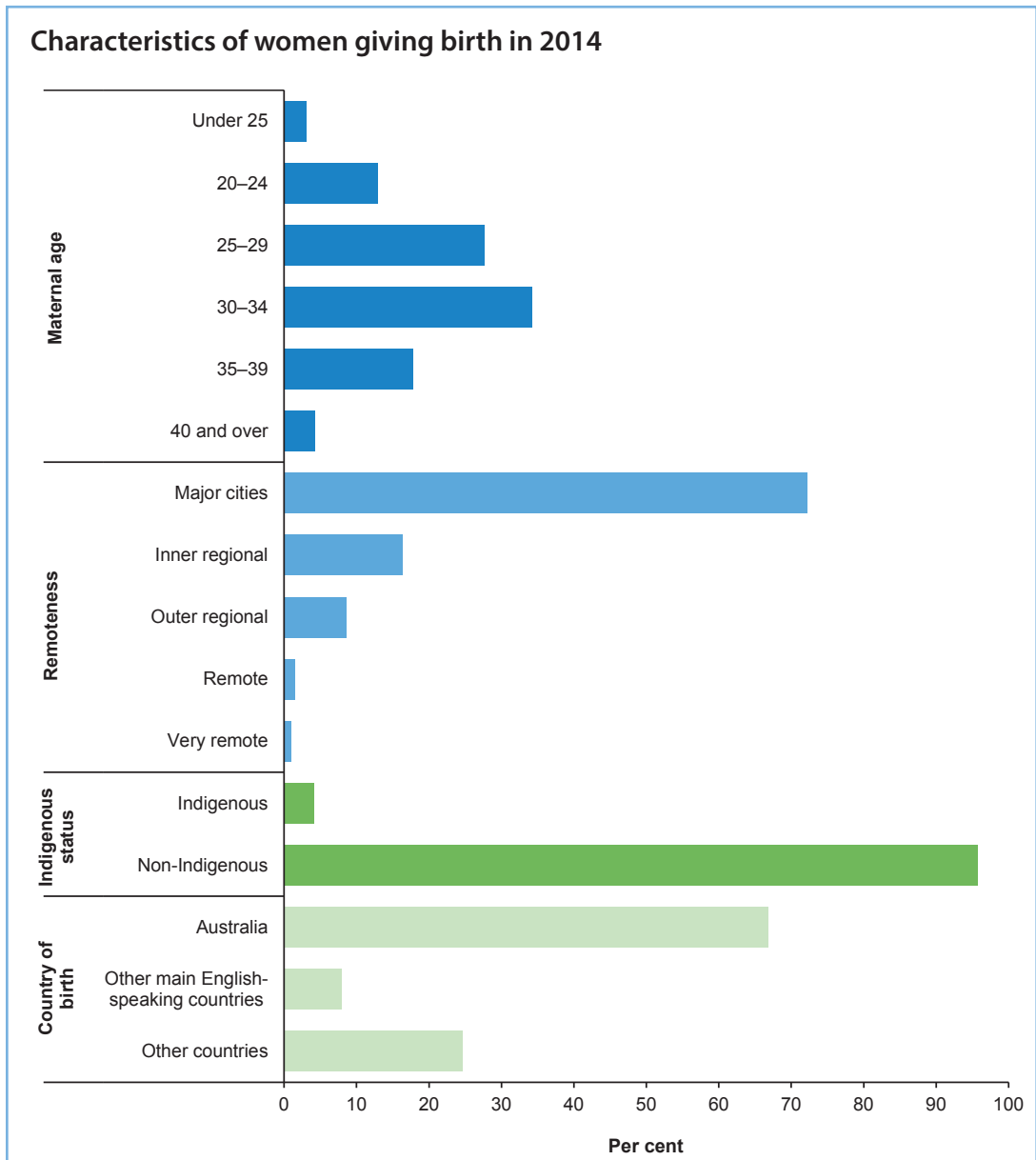
Most mothers live in *Major cities* and were born in Australia

Most mothers lived in *Major cities* (72%) and most were born in Australia (67%)—similar to the proportions of all women of reproductive age in the population.

1 in 24 mothers are Aboriginal and/or Torres Strait Islander

Around 4.2% of all women who gave birth in 2014 were Indigenous—slightly higher than the proportion of Indigenous women of reproductive age in the population (3.4%).

Indigenous mothers were on average younger than non-Indigenous mothers (25.5 compared with 30.4).



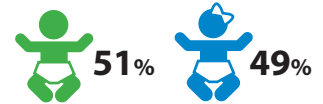
Find out more in the *Perinatal dynamic data display: Overview and demographics*

Babies at a glance

More babies are being born

- There were 312,548 babies born in 2014—an increase of 18% since 2004.
- In all, 310,330 were live births and 2,200 were stillbirths (less than 1%) (birth status is not recorded for a small number of births).
- The stillbirth rate of 7 deaths per 1,000 births has not changed substantially since 2004, remaining between 7.0 and 7.8 per 1,000 births over this time.

Baby boys slightly outnumber baby girls



Slightly more babies were male (51%) than female (49%). The sex ratio, expressed as the number of male liveborn babies per 100 female liveborn babies, was 105.5.

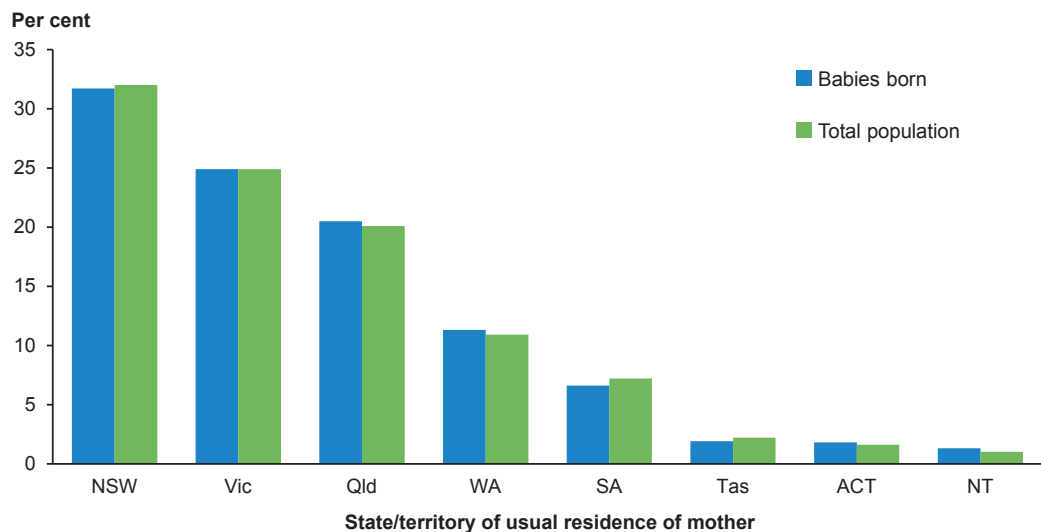
1 in 19 babies are Aboriginal and/or Torres Strait Islander

Around 1 in 19 babies (5.3% or 16,572) were Indigenous in 2014 (based on Indigenous status of the baby).

3 in 4 babies are born to mothers living in New South Wales, Victoria or Queensland

The proportion of babies born in each state and territory closely reflects the distribution of the total population in 2014.

Babies by state/territory of usual residence of mother and distribution of the total population, 2014



Find out more in the *Perinatal dynamic data display: Overview and demographics*

2

Mothers

Antenatal care

Almost all women attend antenatal care, but only two-thirds attend in the first trimester

Antenatal care is associated with positive maternal and child health outcomes—the likelihood of receiving effective health interventions is increased through attending antenatal visits. The World Health Organization recommends receiving antenatal care at least 4 times during pregnancy. The Australian Antenatal Guidelines (AHMAC 2012) recommend that the first antenatal visit occur within the first 10 weeks of pregnancy and that first-time mothers with an uncomplicated pregnancy attend 10 visits (7 visits for subsequent uncomplicated pregnancies).

Almost all women (99.9%) who gave birth in 2014 had at least 1 antenatal visit:

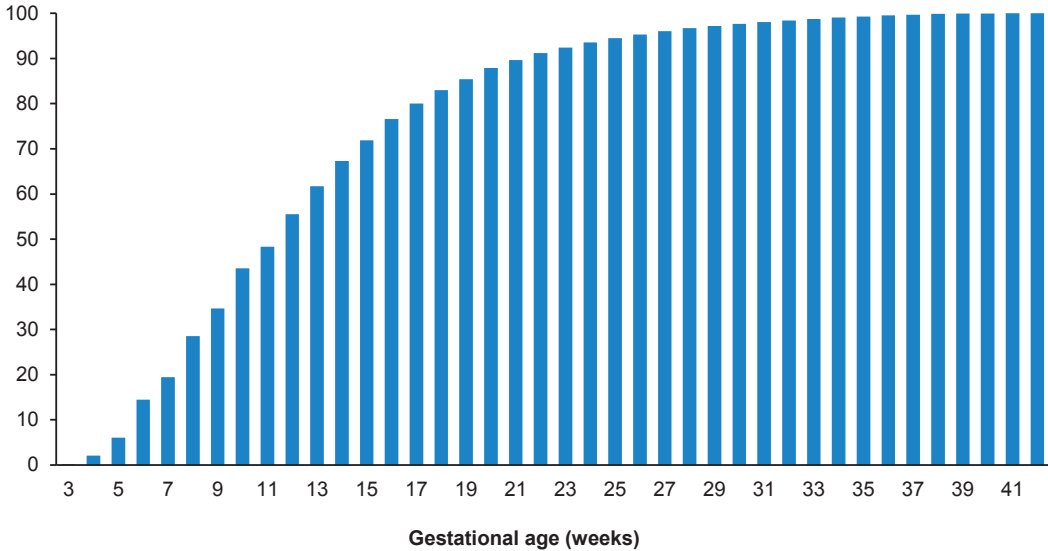
- 95% had 5 or more visits
- 87% had 7 or more visits
- 57% had 10 or more visits (excludes data from Victoria, see Appendix Table C2).

Regular antenatal care in the first trimester (before 14 weeks' gestational age) is associated with better maternal health in pregnancy, fewer interventions in late pregnancy and positive child health outcomes. Nationally, in 2014:

- 43% of women attended at least 1 antenatal visit in the first 10 weeks of pregnancy
- 62% of women attended in the first trimester (less than 14 weeks)
- around 1 in 8 women (12%) did not begin antenatal care until after 20 weeks' gestation.

Time to first antenatal visit, by gestational age, 2014

Cumulative percentage



Trend information on antenatal care is limited due to the relatively recent standardised collection of data; however, the data that are available show little change over time:

- The proportion of mothers who attended 5 or more antenatal visits was 95.0% in 2011 and 95.3% in 2014 (based on women who gave birth at 32 weeks or more gestation from New South Wales, Queensland, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory).
- The proportion who received antenatal care in the first trimester of pregnancy was 62.8% in 2010 compared with 62.4% in 2014 (excludes data from New South Wales due to a change in data collection practice introduced in 2011).

See Chapter 5 for more data on trends.



Find out more in the *Perinatal dynamic data display: Antenatal period*

Antenatal care visits vary by socioeconomic status and Indigenous status

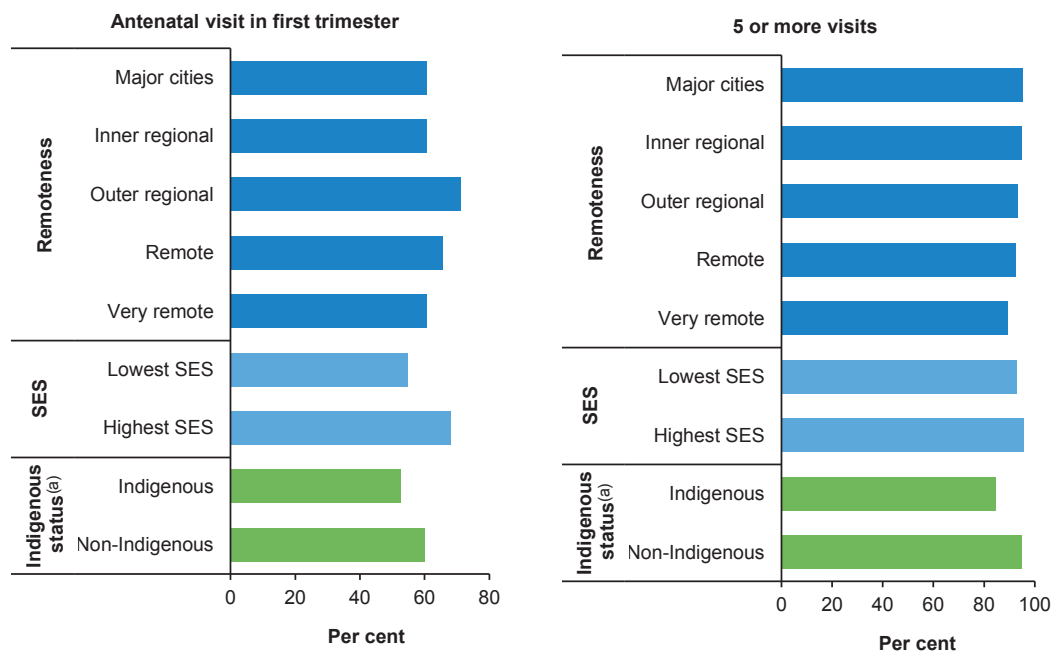
Women living in the lowest socioeconomic status (SES) areas began antenatal care later in pregnancy—just over half (55%) of women living in the lowest SES areas attended antenatal care in the first trimester compared with 68% in the highest SES areas in 2014.

The proportion of women attending 5 or more antenatal visits varied slightly by remoteness and socioeconomic disadvantage (data exclude very pre-term births and data from Victoria, see Appendix Table C2):

- 96% of women living in *Major cities* compared with 90% in *Very remote* areas
- 96% of women living in the highest SES areas compared with 93% in the lowest SES areas.

Indigenous women were less likely to attend either an antenatal visit in the first trimester (53% compared with 60% of non-Indigenous women) or to attend 5 or more visits (86% compared with 95% of non-Indigenous women) (age-standardised). See Chapter 4 for more information on Indigenous mothers.

Antenatal visits in the first trimester and 5 or more antenatal visits, by selected maternal characteristics, 2014



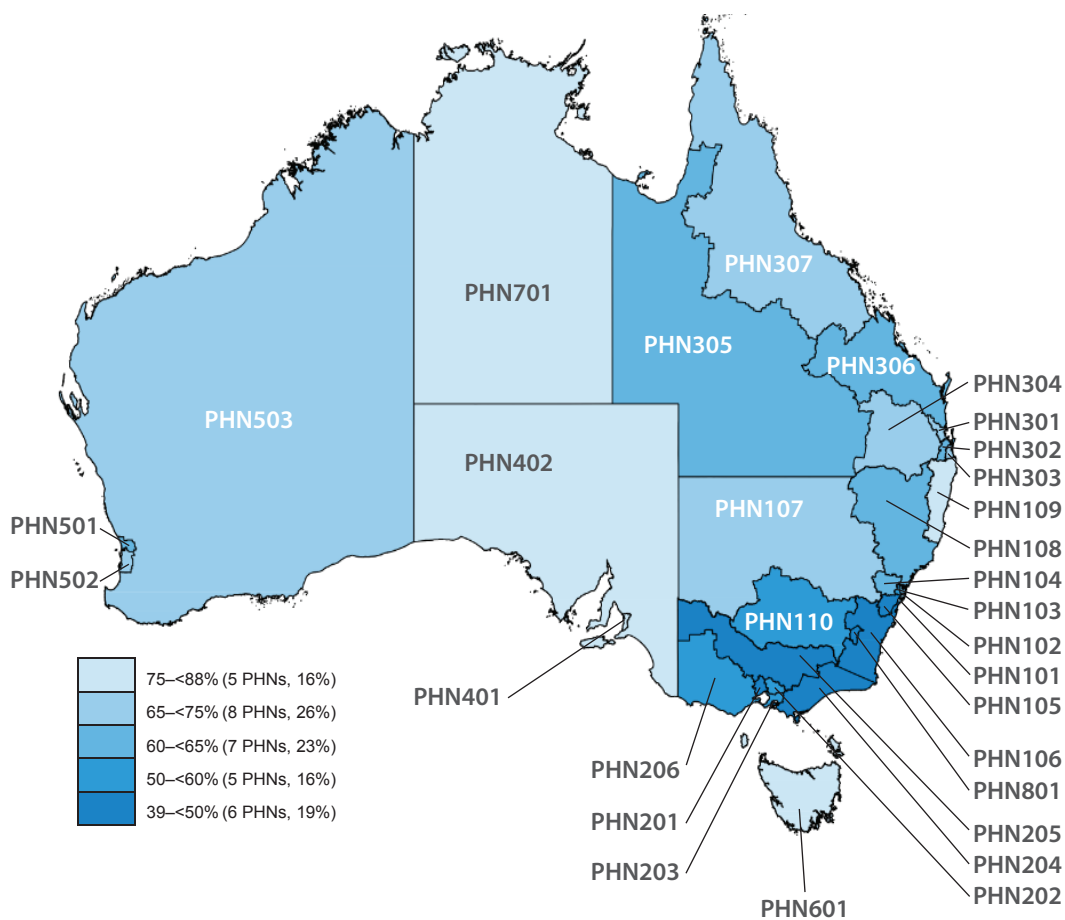
(a) Age-standardised percentages.

Note: Data on 5 or more antenatal visits exclude Victoria (see Appendix Table C2) and very pre-term births (less than 32 weeks' gestation).

Attendance at antenatal care varies depending on where mothers live

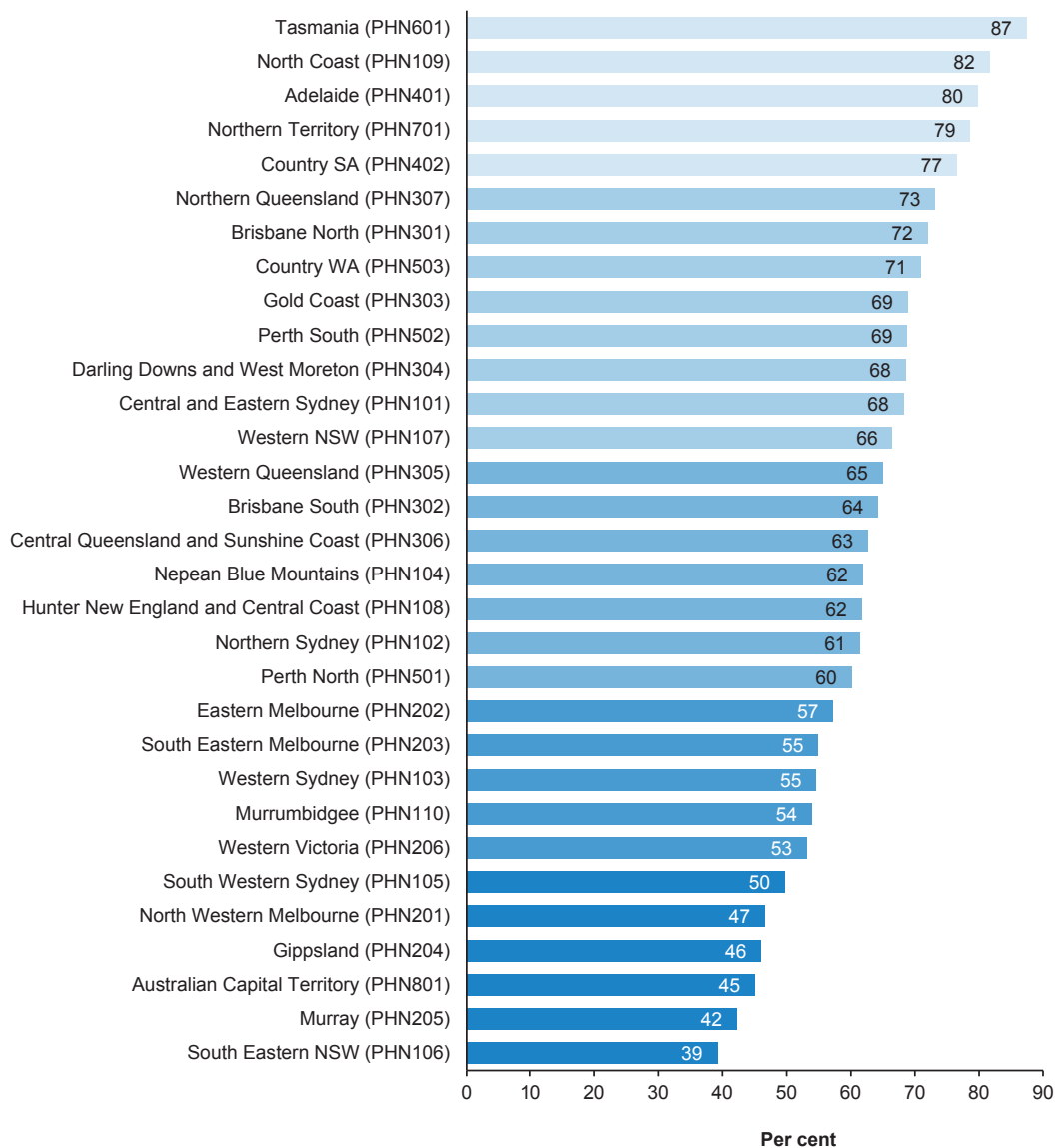
In 2014, the proportion of mothers attending an antenatal visit in the first trimester of pregnancy (less than 14 completed weeks' gestation) nationally was 62% (186,280). However, the proportion varied across the 31 Primary Health Networks (PHNs) in Australia, ranging from 39% in the South Eastern New South Wales PHN to 87% in Tasmania.

Map of percentage of mothers attending an antenatal visit in the first trimester (less than 14 weeks), by Primary Health Network of usual residence, 2014



Note: See Supplementary Table 5.1 for detailed data.

Percentage of mothers attending an antenatal visit in the first trimester (less than 14 weeks), by Primary Health Network of usual residence, 2014

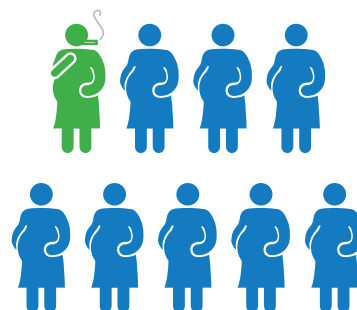


Note: See Supplementary Table 5.1 for detailed data.

Smoking during pregnancy

Rates of smoking during pregnancy continue to fall

Tobacco smoking during pregnancy is the most common preventable risk factor for pregnancy complications, and is associated with poorer perinatal outcomes, including low birthweight, being small for gestational age, pre-term birth and perinatal death.



One in 9 women (33,280 or 11%) who gave birth in 2014 smoked at some time during their pregnancy, a decrease from 15% in 2009. More data on trends are available in Chapter 5.

Rates of smoking were slightly higher in the first 20 weeks of pregnancy (32,379 or 11%) compared with after 20 weeks of pregnancy (24,469 or 8%).

On average, women who smoked during pregnancy:

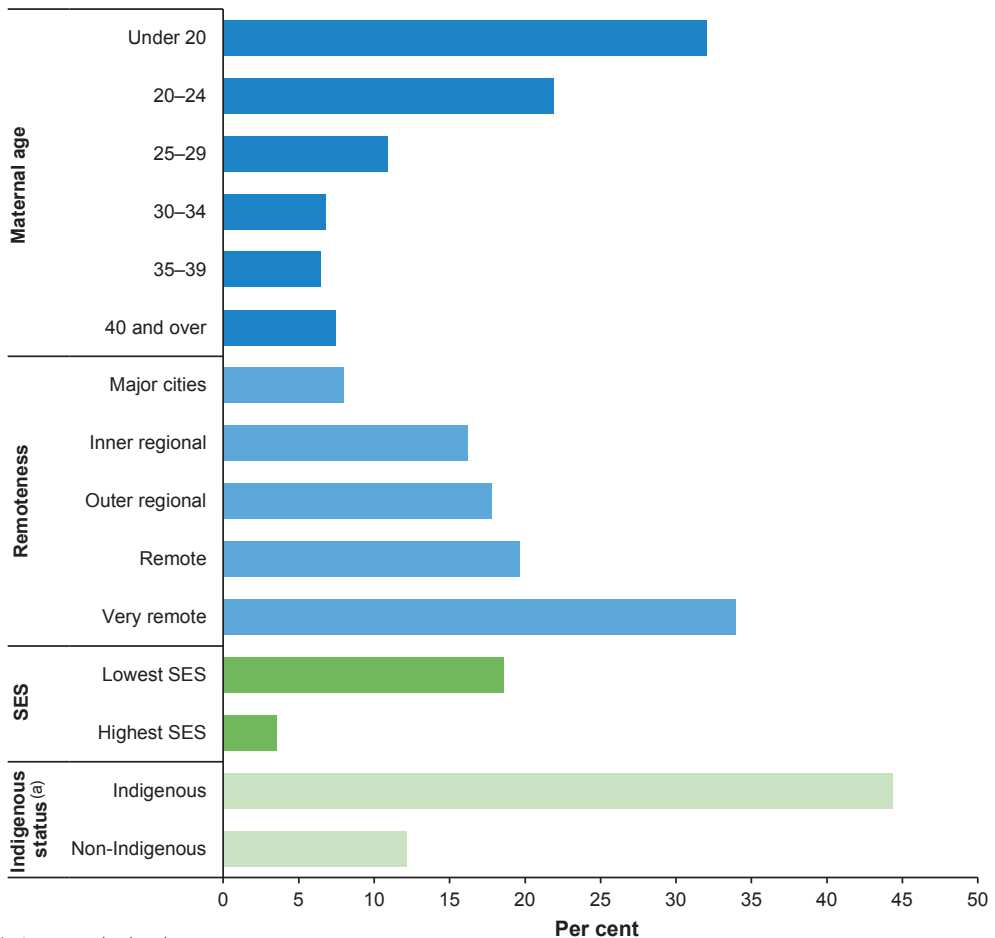
- attended their first antenatal visit later in pregnancy (15 weeks) than those who did not smoke (13 weeks)
- had 1 less antenatal care visit (9 visits) than women who did not smoke (10 visits).

These patterns were present even when taking into account the effect of differences in SES.

Some mothers were more likely than others to smoke in the first 20 weeks of pregnancy. Proportions were highest among the following women, noting that some may fall into more than 1 of these categories:

- younger mothers—almost one-third (32%) of mothers under 20 smoked in the first 20 weeks of pregnancy, compared with rates of 6% and 7% of mothers aged 35–39 and 40 and over, respectively
- mothers living in *Remote* and *Very remote* areas—around one-third (34%) of mothers in *Very remote* and one-fifth (20%) in *Remote* areas smoked, compared with only 8% of women living in *Major cities*
- mothers living in the lowest SES areas—around one-fifth (19%) of mothers living in the lowest SES areas smoked, compared with 4% of mothers in the highest SES areas
- Indigenous mothers—44% of Indigenous mothers smoked in the first 20 weeks of pregnancy, compared with 12% of non-Indigenous mothers (age-standardised percentages).

Smoking in the first 20 weeks of pregnancy by selected maternal characteristics, 2014



(a) Age-standardised percentages.

1 in 5 smokers quit during pregnancy

Women who stop smoking during pregnancy can reduce the risk of adverse outcomes for themselves and their babies. Support for smoking cessation is widely available through antenatal clinics.

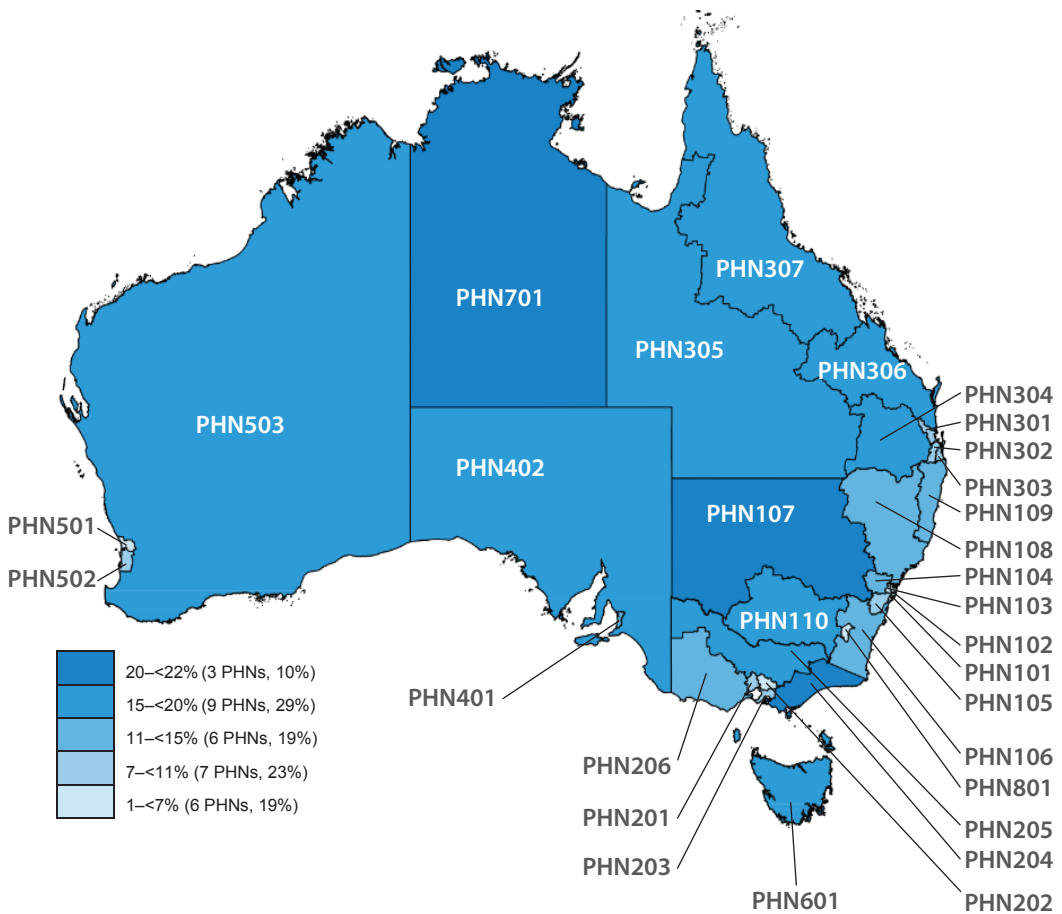
Around one-fifth (7,144 or 22%) of the 32,379 mothers who gave birth in 2014 and who reported smoking during the first 20 weeks of pregnancy did not continue to smoke after 20 weeks of pregnancy.

Some women may continue to smoke before knowing they are pregnant, and cease once they find out they are pregnant. According to data from the 2013 National Drug Strategy Household Survey, around 1 in 6 (17%) women smoked before they knew they were pregnant, and of these women, around 3 in 5 (61%) continued smoking after they found out they were pregnant (AIHW 2014).

Rates of smoking during pregnancy vary across Primary Health Networks

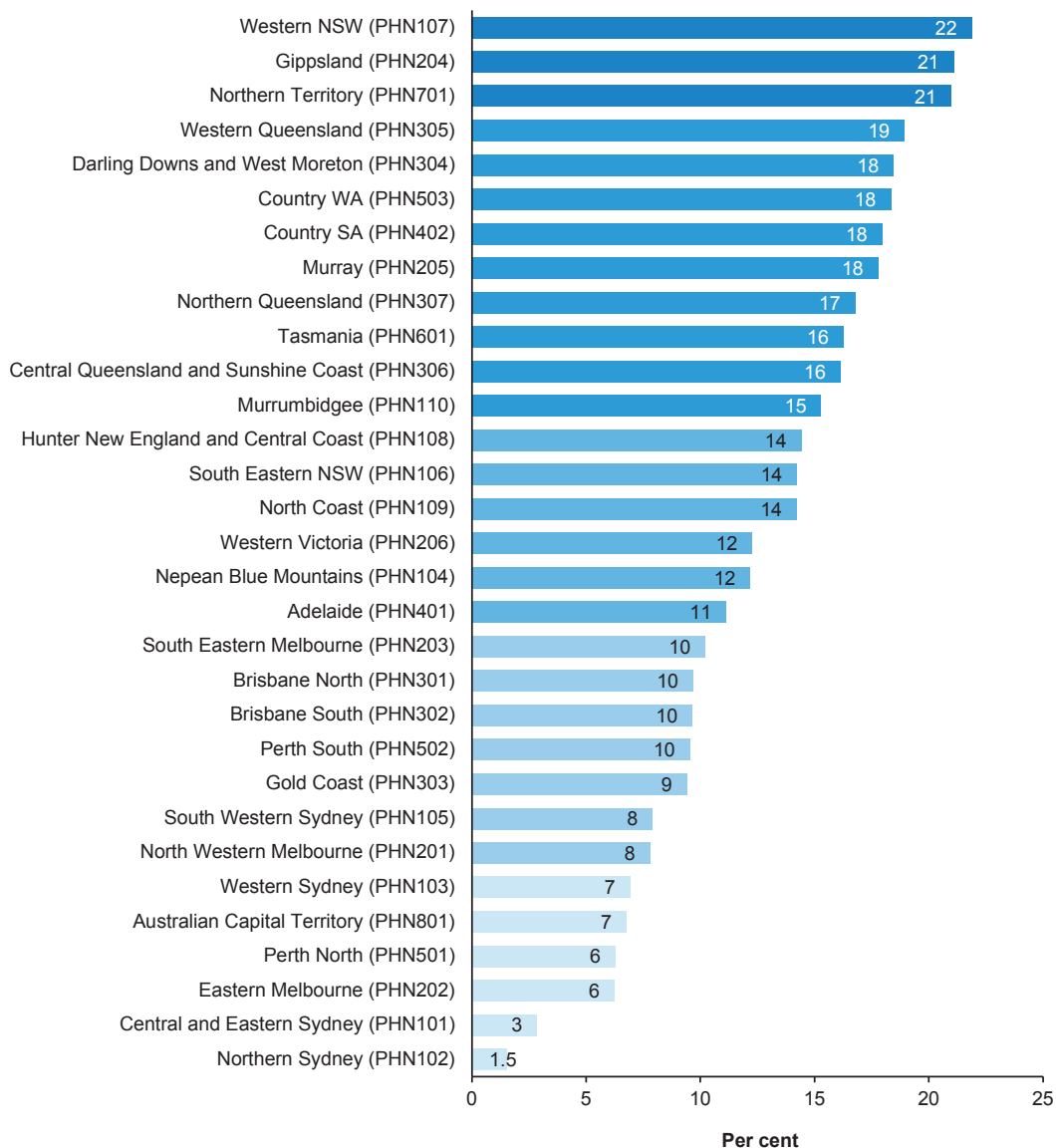
In 2014, 11% (32,379) of mothers smoked in the first 20 weeks of pregnancy; however, this proportion varied across the 31 PHNs in Australia. The proportions ranged from 1.5% in the Northern Sydney PHN to 22% in Western New South Wales.

Map of percentage of mothers smoking during the first 20 weeks of pregnancy, by Primary Health Network of usual residence, 2014



Note: See Supplementary Table 5.2 for detailed data.

Percentage of mothers smoking during the first 20 weeks of pregnancy, by Primary Health Network of usual residence, 2014



Note: See Supplementary Table 5.2 for detailed data.



Find out more in the *Perinatal dynamic data display: Antenatal period*

Maternal health

Almost half of mothers were overweight or obese

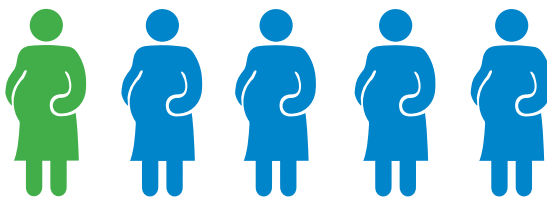
Obesity in pregnancy contributes to increased morbidity and mortality for both mother and baby. Pregnant women who are obese have an increased risk of thromboembolism, gestational diabetes, pre-eclampsia, post-partum haemorrhage and wound infections. They are also more likely to deliver via caesarean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

Body mass index (BMI) is a ratio of weight and height (kg/m^2). The normal range of BMI for non-pregnant women is 18.5 to 24.9. While increases in BMI are expected during pregnancy, a BMI of 30 or more at the first antenatal visit has been defined as obesity in pregnancy.

Data on maternal BMI were available for mothers in all states and territories except New South Wales in 2014. However, data collection methods vary between jurisdictions. These data cover more than two-thirds of women who gave birth in 2014.

Among women who gave birth (excluding those in New South Wales):

- one-fifth (20%) were classified as obese (with a BMI of 30.0 or more)
- one-quarter (26%) were overweight (BMI of 25.0–29.9)
- half (50%) were in the normal weight range (BMI of 18.5–24.9)
- 4% were underweight.



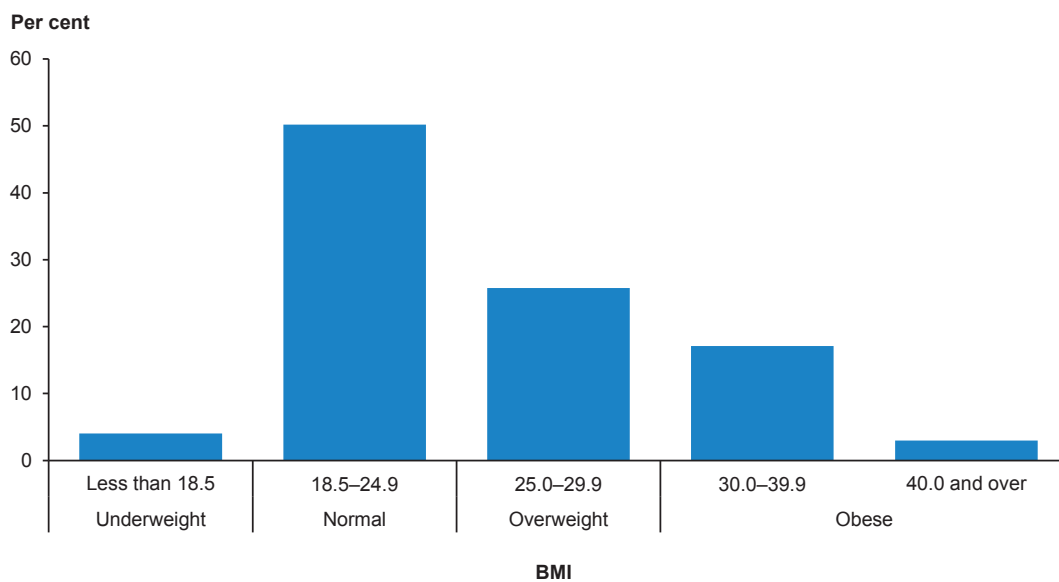
1 in 5 mothers were obese at their first antenatal visit

Information is also available on other maternal health conditions, including pre-existing or gestational hypertension and diabetes. A small number of mothers had these conditions in 2014:

- 8 per 1,000 mothers had chronic hypertension and 34 per 1,000 had gestational hypertension
- 10 per 1,000 had pre-existing diabetes and 83 per 1,000 had gestational diabetes.

Note that data collection methods for hypertension and diabetes vary across jurisdictions and data exclude Victoria (see Appendix Table C2). Data for gestational hypertension include 6 months of data for Western Australia only.

Women who gave birth, by body mass index, selected states and territories, 2014



Note: BMI data exclude New South Wales (see Appendix Table C2). BMI source data and methods used for collection in states and territories are not uniform.



Find out more in the *Perinatal dynamic data display: Antenatal period*

Place of birth



Hospitals are the most common place of birth

Almost all births in Australia occur in hospitals, in conventional labour wards. In 2014, 98% (300,282) of women gave birth in hospitals, while much smaller proportions gave birth in birth centres (1.8% or 5,546), at home (0.3% or 923) or in other settings including births occurring before arrival at hospital (0.4% or 1,080 women).

Of mothers who gave birth in hospital in 2014, most (73%) gave birth in public hospitals, with 27% giving birth in private hospitals. Two-thirds (66%) of women gave birth within 1 day of admission to hospital and 94% within 2 days of admission. The median length of stay after birth was 3 days.

There has been a trend toward shorter postnatal stays—in 2014, 21% of mothers were discharged less than 2 days after giving birth and 65% between 2 and 4 days, compared with 11% and 62% in 2004, respectively (based on mothers who were discharged to home and excludes data from Western Australia, see Appendix Table C2).

Regardless of place of birth, almost all babies were liveborn (more than 99%). The average birthweight of liveborn babies in hospital (3,346 grams) was lower than for those born in birth centres (3,525 grams) and at home (3,634 grams). The average gestational age was also slightly lower for babies born in hospital (38.7 weeks) compared with those born in birth centres (39.4) or at home (39.7) (the gestational age for term births is 37–41 completed weeks). This may in part be due to the fact that babies who are expected to require a higher level of care are more likely to be delivered in hospital than in other settings, and are more likely to be of lower birthweight and pre-term.

Women giving birth at home are older and less likely to be first-time mothers

The average age of mothers who gave birth in hospitals was 30.2 years. Mothers who gave birth in birth centres were younger on average (29.8 years), while those giving birth at home were older (31.6 years).

Nearly half of mothers who gave birth in birth centres (46%) and in hospitals (44%) were aged under 30, compared with only 33% of mothers who gave birth at home.

Only one-quarter (24%) of mothers who gave birth at home were first-time mothers, much lower than the proportions of mothers who gave birth in hospitals and birth centres (44% and 36%, respectively).

Of those who gave birth in hospitals, 21% came from the lowest SES areas. By comparison, women in these areas made up 17% of those who gave birth in birth centres and 11% of those who gave birth at home.



Find out more in the *Perinatal dynamic data display: Labour and birth*

Onset of labour

Younger mothers more likely to have spontaneous labour and least likely to have no labour (caesarean)

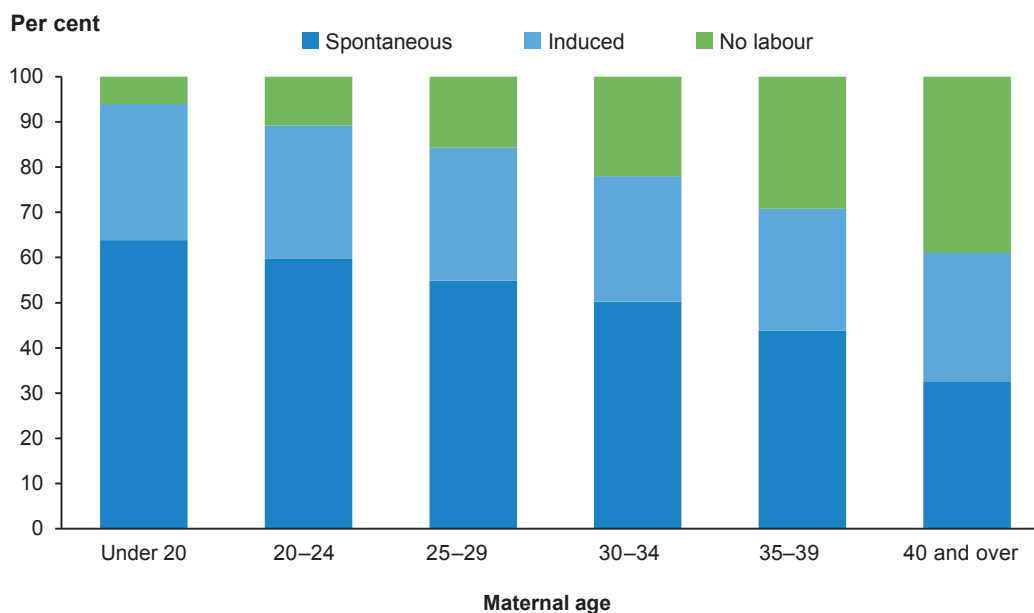
Labour can occur spontaneously or may be induced through medical or surgical intervention. If there is no labour onset, then a caesarean section is performed.

Overall, just over half of women who gave birth in 2014 (51% or 157,820) had a spontaneous labour, more than one-quarter an induced labour (28% or 87,412) and 1 in 5 had no labour onset (20% or 62,562).

However, labour onset varied considerably with maternal age. Younger mothers (under 20) were the most likely to have spontaneous labour onset (64%) and the least likely to have no labour onset (6%). Conversely, mothers aged 40 and over were less likely to have spontaneous labour onset than to have no labour onset (33% and 39%, respectively). There was little difference in the proportion of women with induced labour between the age groups (ranging between 27% and 30%).

There were changes between 2004 and 2014 in the type of labour onset—a decrease in spontaneous labour (from 58% to 51%) and corresponding increases for the induction of labour (from 25% to 28%) and no labour onset (from 17% to 20%). See Chapter 5 for more data on trends.

Women who gave birth, by onset of labour and maternal age, 2014



Induction type and reason

For women who were induced, a combination of medical and/or surgical types of induction were most commonly used (excludes data from Western Australia, see Appendix Table C2).

Several jurisdictions (New South Wales, Queensland, South Australia, Tasmania and the Northern Territory) provided further information on the reason for induction of labour. Within these jurisdictions, prolonged pregnancy and premature rupture of membranes were the main reasons for induction (18% and 14%, respectively).

Augmentation of labour

Once labour starts, it may be necessary to intervene to speed up or augment the labour. Labour was augmented for 16% of mothers in 2014, which was equivalent to 31% of mothers with spontaneous onset of labour (excludes data from Western Australia, see Appendix Table C2).



Find out more in the *Perinatal dynamic data display: Labour and birth*

Method of birth

Two-thirds of mothers had vaginal births, one-third had caesareans

In 2014, 205,927 of women (67%) had a vaginal birth and 101,896 (33%) had a caesarean section. Women who had a caesarean section include all women who had no labour onset, as well as some women who required a caesarean section after labour started.

Most vaginal births (81%) were non-instrumental. When instrumental delivery was required, vacuum extraction was more commonly used than forceps (11% and 8%, respectively).

The overall rate of primary caesarean section (that is, caesarean sections to women with no previous history of caesarean sections) was 23%; this rate was higher for first-time mothers (34%) and lower for mothers who had previously given birth (11%).

The vast majority (85%) of women who had a previous caesarean section had a repeat caesarean section, while the remainder had a vaginal birth (12% had a non-instrumental vaginal birth and almost 4% had an instrumental vaginal birth).

Having had a previous caesarean section was the most common main reason for having a caesarean (based on data from Queensland, Western Australia, Tasmania and the Northern Territory).

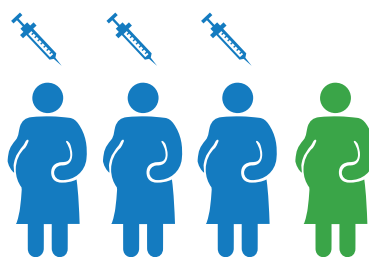
Perineal status after vaginal birth

One-quarter of mothers had an intact perineum after vaginal birth (25%) while around half had either a first degree laceration or vaginal graze (23%) or a second degree laceration (28%). A small proportion of women had a third or fourth degree laceration (3%) or other types of laceration (9%). Around 1 in 5 women had an episiotomy performed (21%), and of these women, 42% also had a laceration of some degree. Therefore, these figures do not sum to 100%.

Pain relief during labour and operative delivery

Analgesia is used to relieve pain during labour (spontaneous or induced), while anaesthesia is used for operative delivery (caesarean section or instrumental vaginal birth). More than 1 type of analgesic or anaesthetic can be administered.

Of the 245,232 women who had labour in 2014, around 3 in 4 received pain relief (77%). The most common types were nitrous oxide (inhaled) (54%), followed by regional analgesic (34%) and systemic opioids (19%). Women who did not receive pain relief were more likely to be older, to have given birth before, to be Indigenous, and to live in the lowest SES areas or more remote areas, compared with women who received pain relief.



3 in 4 women with labour onset received pain relief

All women who have a caesarean section receive a type of anaesthetic. In 2014, the vast majority (95%) of women who had a caesarean section had a regional anaesthetic and 6% had a general anaesthetic (note that some women had both).

Most women who had an instrumental vaginal delivery also received an anaesthetic (88%). A regional anaesthetic was most common (62% of women who had an instrumental vaginal delivery), followed by a local anaesthetic to the perineum (27%).

Caesarean sections are more common among older mothers

The likelihood of vaginal delivery (both non-instrumental and instrumental) and caesarean section differs by maternal age. Small differences were also evident by remoteness and SES after accounting for differences in age structure across these areas.

Non-instrumental vaginal delivery decreased with age and increased slightly with each category of remoteness:

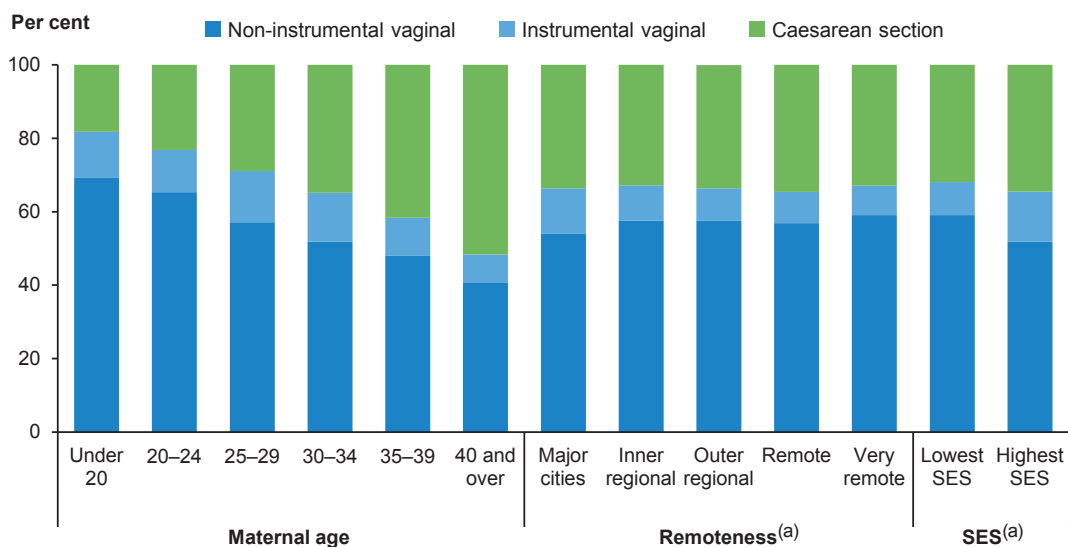
- Non-instrumental vaginal delivery progressively decreased as maternal age increased (from 69% for teenage mothers to 41% for mothers 40 and over).
- Fewer mothers living in *Major cities* had a non-instrumental vaginal delivery (54%) compared with mothers in *Very remote* areas (59%).
- Mothers living in the highest SES areas were less likely to have a non-instrumental vaginal delivery (52%) than those in the lowest SES areas (59%).

Instrumental vaginal delivery decreased with age (from 13% for teenage mothers to 8% for mothers 40 and over) and with increasing remoteness (from 12% in *Major cities* to 8% in *Very remote* areas). Instrumental vaginal delivery was more common among mothers living in the highest SES areas (14%) compared with the lowest SES areas (9%).

Caesarean sections increased with age, but differed little by remoteness and SES:

- Mothers aged 40 and over were almost 3 times as likely to deliver by caesarean section compared with teenage mothers (52% and 18%).
- Remoteness of usual residence made little difference to the proportion of mothers giving birth by caesarean section (34% of those in *Major cities* compared with 33% of those in *Very remote* areas). SES also had little impact (35% of women living in the highest SES areas and 32% in the lowest SES areas).

Women who gave birth, by method of birth and selected maternal characteristics, 2014

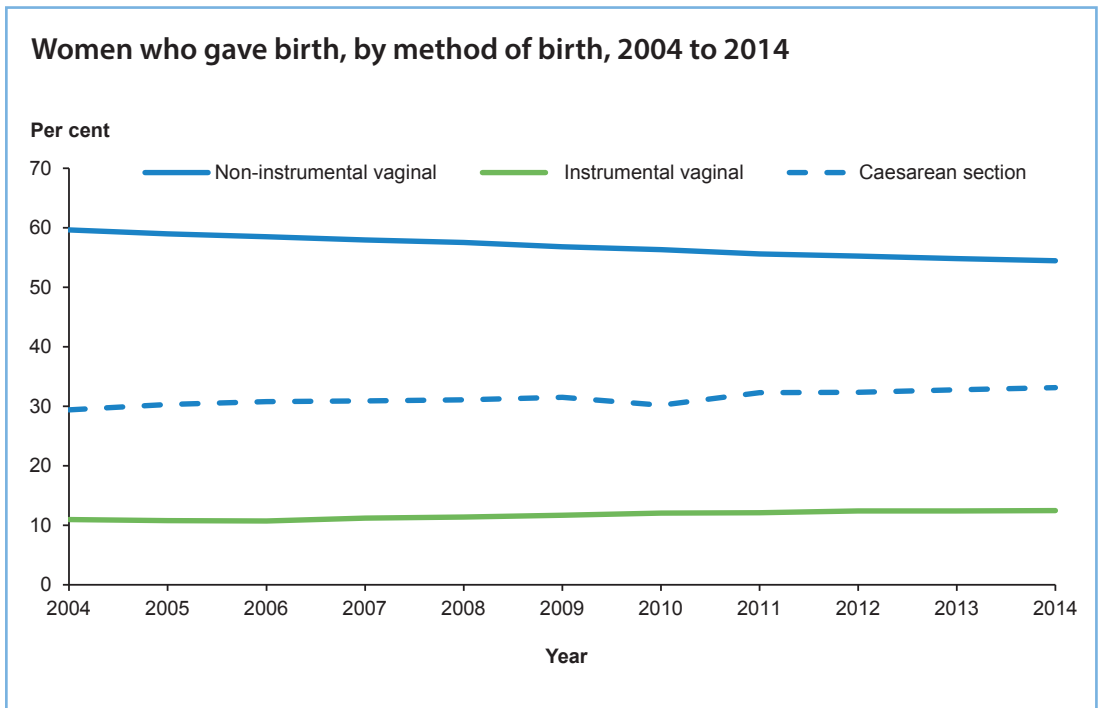


(a) Age-standardised percentages.

Caesarean sections have increased over time

Since 2004, vaginal non-instrumental delivery has fallen 6 percentage points (decreasing from 60% in 2004 to 54% in 2014) whereas the caesarean section rate has increased by 4 percentage points (from 29% in 2004 to 33% in 2014). Vaginal delivery with instruments has remained relatively stable between 11% and 12% throughout this period. These trends remain when changes in maternal age over time are taken into account. See Chapter 5 for more data on trends.

Internationally, the caesarean section rate has been increasing in most Organisation for Economic Co-operation and Development (OECD) countries. The OECD average increased from a rate of 20 per 100 live births in 2000 to 28 per 100 in 2013. Australia's rate remained higher than the OECD average over this time and ranked 22nd out of 32 OECD countries in 2013 with a rate of 32 per 100 live births (caesarean section rates are ranked from lowest to highest). The rate was lowest in Iceland (15 per 100 live births) and highest in Turkey (50 per 100 live births) (OECD 2015).



Find out more in the *Perinatal dynamic data display: Labour and birth*

3

Babies

Gestational age

Vast majority of babies are born at term but 1 in 10 are pre-term

Gestational age is the duration of pregnancy in completed weeks.

In 2014, the average gestational age for all babies was 38.6 weeks, with the vast majority (91%) born at term (37–41 weeks).

Average gestational age varied by birth status—38.7 weeks for liveborn babies, and considerably lower for stillborn babies (27.2 weeks).

Pre-term birth (before 37 completed weeks' gestation) is associated with a higher risk of adverse neonatal outcomes. Overall, 8.6% of babies were born pre-term in 2014, with most of these births (81%) occurring at gestational ages of between 32 and 36 completed weeks. The average gestational age for all pre-term births was 33.3 weeks.

Most stillbirths were pre-term (83%) compared with only 8% of live births. Conversely, the vast majority of live births (91%) were born at term while only 15% of stillbirths occurred at term. Less than 1% of all babies were born post-term (42 weeks and over).

From 2004 to 2014, the proportion of babies born between 37 and 39 weeks increased, while the proportion born from 40 weeks onwards decreased.



8.6% pre-term



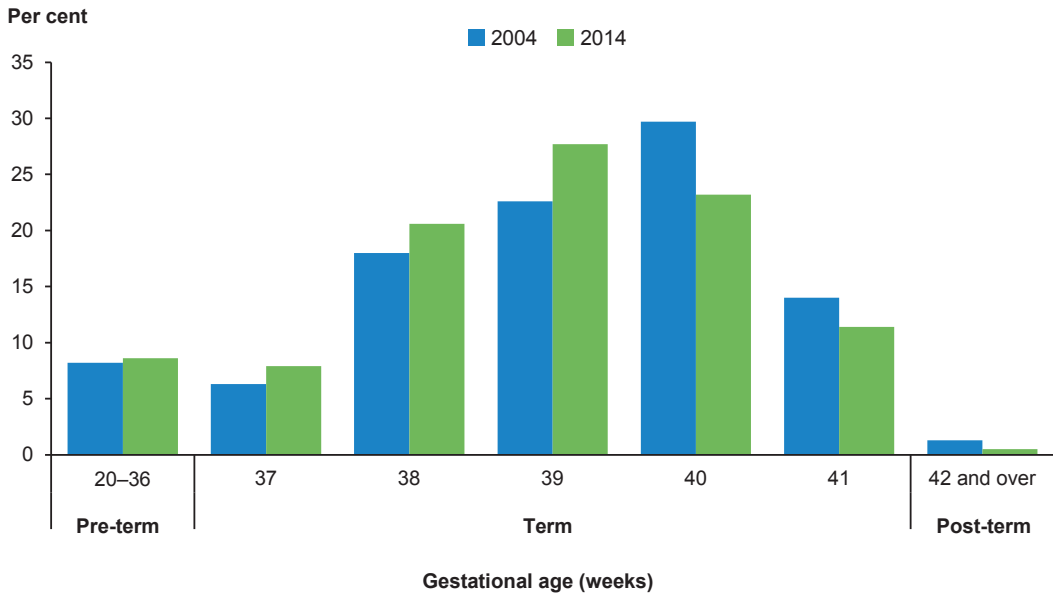
91% born at term



<1% post-term

Gestational age of babies in 2014

Babies, by gestational age, 2004 and 2014



Note: Pre-term births include a small number of births of less than 20 weeks' gestation.

Likelihood of pre-term birth extremely high for multiple births

Babies born in multiple births were vastly more likely to be born pre-term—around 63% of twins and all other multiples (triplets and higher) were born pre-term in 2014. These rates compared with 7% of singleton babies.

Other characteristics were also associated with increased likelihood of pre-term birth, noting that some babies may have more than 1 of these characteristics. These included:

- babies of Indigenous mothers—14% born pre-term compared with 8% of babies of non-Indigenous mothers
- babies whose mothers smoked during pregnancy—13% born pre-term compared with 8% of babies whose mothers did not smoke
- babies born to mothers usually residing in more remote areas—13% in *Very remote* areas compared with 8% in *Major cities*
- babies of younger (under 20) and older (40 and over) mothers—11% and 12% were pre-term, compared with 8% of babies with mothers aged 20–39.



Find out more in the *Perinatal dynamic data display: Baby outcomes*

Birthweight

Vast majority of liveborn babies are in the normal birthweight range

A baby's birthweight is a key indicator of infant health and a determinant of a baby's chances of survival and health later in life. This section provides an overview of birthweight, the following sections focus on low birthweight and small for gestational age babies.

In 2014, the mean birthweight of all babies was 3,335 grams. This was slightly higher for liveborn babies (3,349 grams), with the vast majority of these babies born in the normal birthweight range (92% or 285,797); 6.4% (19,833) were low birthweight; and a small proportion were high birthweight (1.5% or 4,580).

Birthweight differed markedly by birth status—the mean birthweight of stillborn babies (1,178 grams) being far lower than for liveborn babies (3,349 grams). Around 80% of all stillborn babies were low birthweight, and more than half (62%) were extremely low birthweight (under 1,000 grams).

Birthweight ranges

High: 4,500 grams and over

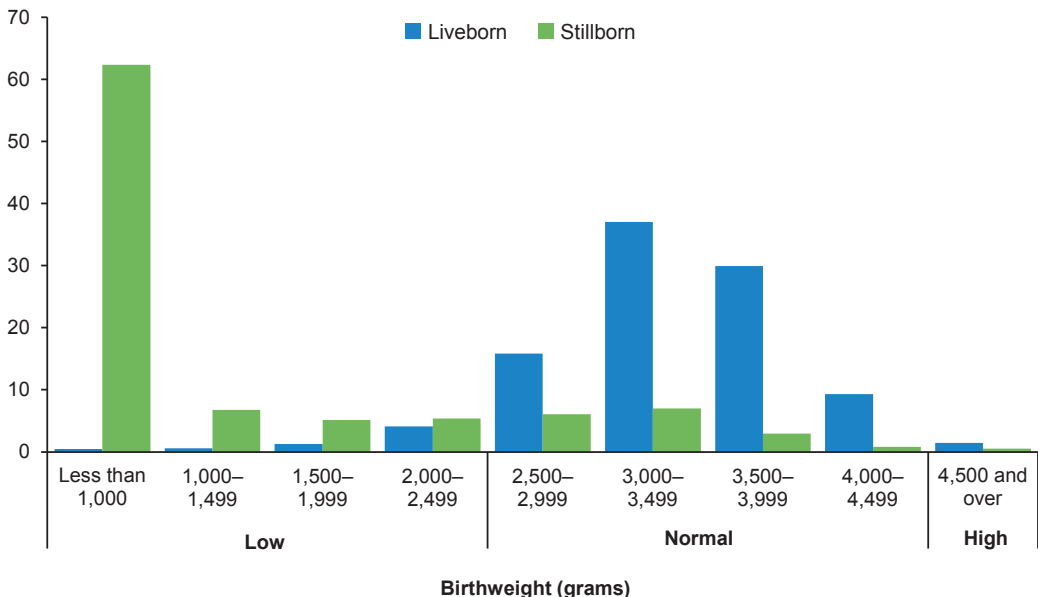
Normal: 2,500 to 4,499 grams

Low: less than 2,500 grams

(WHO 1992)

Babies, by birthweight and birth status, 2014

Per cent



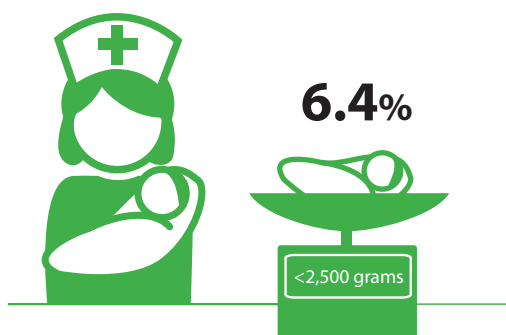
Low birthweight

1 in 16 liveborn babies are low birthweight

Babies are considered to be of low birthweight when their weight at birth is less than 2,500 grams. This section looks at low birthweight in more detail, and relates to live births only.

In 2014, 6.4% (19,833) of liveborn babies were of low birthweight. Of these babies:

- 16% or 3,150 were of very low birthweight (less than 1,500 grams) and
- 7% or 1,396 were extremely low birthweight (less than 1,000 grams).



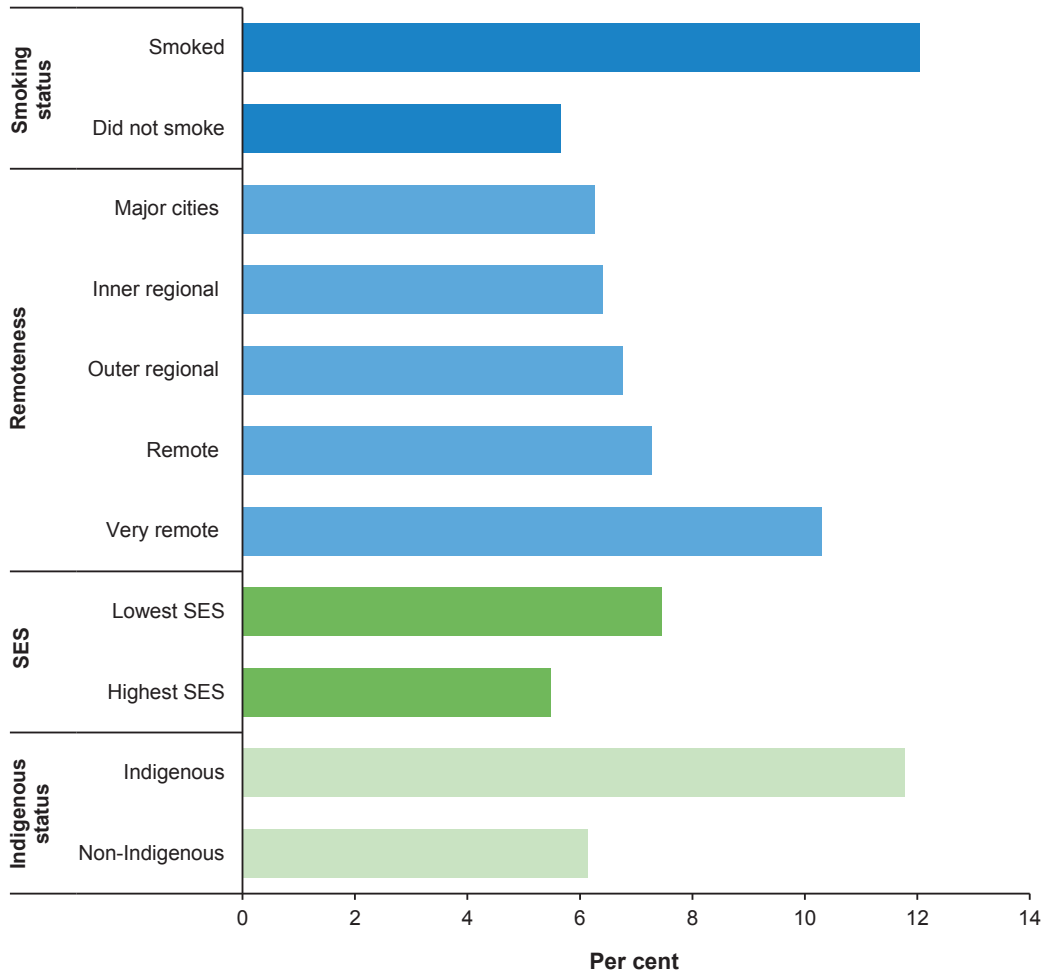
Between 2004 and 2014, there was little change in the proportion of low birthweight babies, with the proportion remaining at between 6.1% and 6.4% over this time.

The proportion of low birthweight babies was higher among:

- female babies (6.9%) compared with male babies (5.9%)
- twins (55%) and other multiples (99%) compared with singletons (4.9%)
- babies born in public hospitals (7.0%) compared with private hospitals (4.7%)
- babies with mothers who smoked during pregnancy (12.1%) compared with babies whose mothers did not (5.7%)
- babies of Indigenous mothers (11.8%) compared with those of non-Indigenous mothers (6.2%) (see Chapter 4 for more information).

Internationally, the proportion of low birthweight babies in Australia in 2012 (6.2%) was lower than the OECD average (6.6%), with Australia ranked 15th out of 34 OECD countries. The rate was lowest in Iceland (3.7%) and highest in Japan (9.6%) (OECD 2015).

Low birthweight liveborn babies, by selected maternal characteristics, 2014



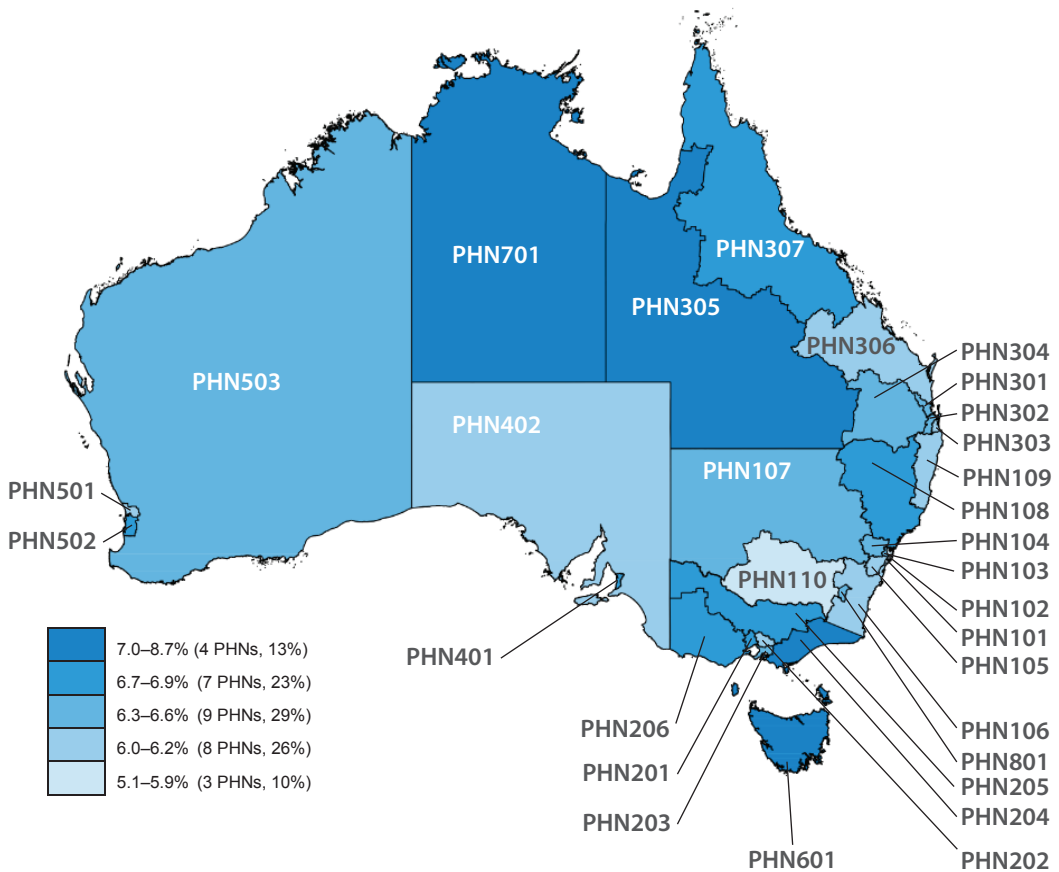
Rates of low birthweight babies vary depending on where mothers live

The proportion of liveborn low birthweight babies increased with increasing remoteness and disadvantage:

- 6.3% of babies born to mothers living in *Major cities* were low birthweight, increasing to 10.3% in *Very remote* areas
- 5.5% of babies born to mothers living in the highest SES areas were of low birthweight compared with 7.5% in the lowest SES areas.

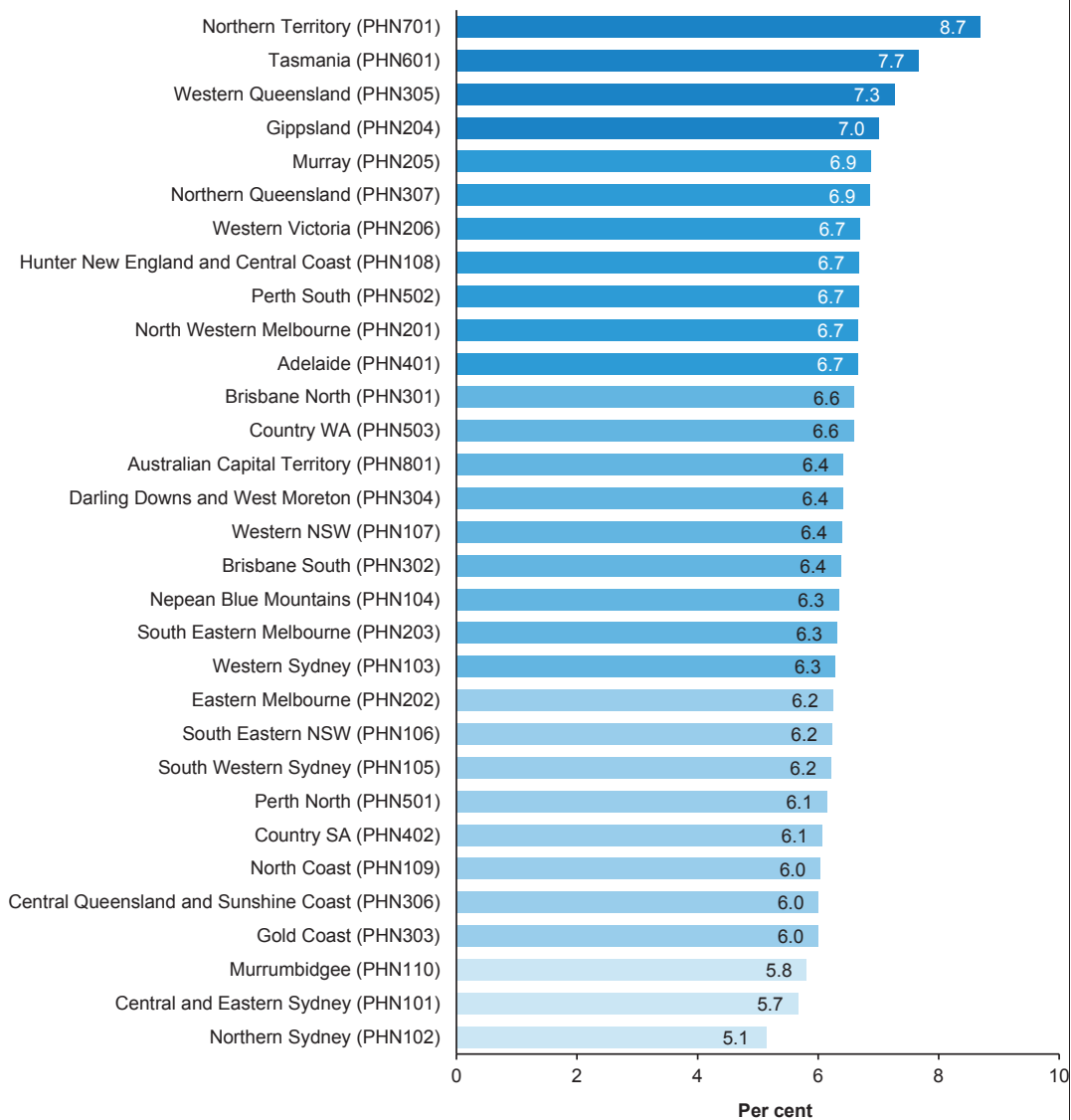
The proportion of liveborn babies of low birthweight varied across the 31 PHNs in Australia in 2014. The proportions ranged from 5.1% in the Northern Sydney PHN to 8.7% in the Northern Territory.

Map of percentage of liveborn low birthweight babies, by Primary Health Network of mother's usual residence, 2014



Note: See Supplementary Table 5.3 for detailed data.

Percentage of liveborn low birthweight babies, by Primary Health Network of mother's usual residence, 2014



Note: See Supplementary Table 5.3 for detailed data.



Find out more in the *Perinatal dynamic data display: Baby outcomes*

Small for gestational age

Babies of mothers who smoked during pregnancy were more likely to be small for gestational age

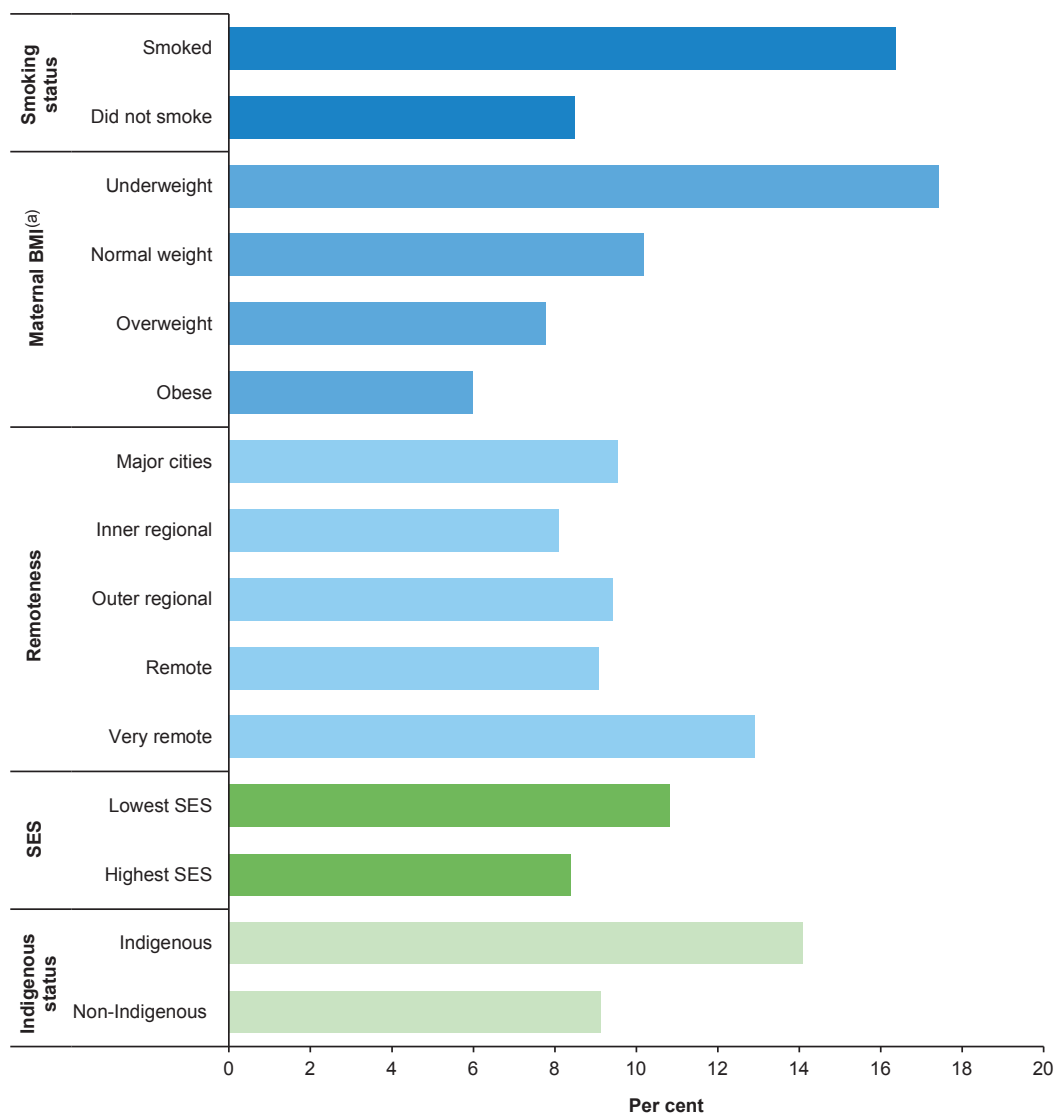
A baby may be small due to being born early (pre-term) or be small for gestational age, which indicates a possible growth restriction within the uterus. Poor fetal growth is associated with increased risk of fetal death and with fetal distress during labour, and may predispose babies to long-term conditions in later life.

Babies are defined as small for gestational age if their birthweight is below the 10th percentile for their gestational age and sex, according to national birthweight percentiles. The latest birthweight percentiles were developed for Australia using information about liveborn singleton babies born between 2004 and 2013 (Johnson et al. 2016, see also Supplementary Table 6.1). Data in this section relate to singleton live births only.

Certain characteristics were associated with increased likelihood of being small for gestational age in 2014, noting that some babies may have more than 1 of these characteristics. These included:

- babies of Indigenous mothers—14% were small for gestational age compared with 9% of babies of non-Indigenous mothers
- babies born to mothers usually residing in more remote areas—13% in *Very remote* areas compared with 10% in *Major cities*
- babies of mothers living in the lowest SES areas—11% compared with 8% in the highest SES areas
- babies of younger (under 20) mothers—13% were small for gestational age, compared with 9% of babies with mothers aged 20–39
- babies whose mothers were underweight—17% compared with 10% of babies whose mothers were in the normal weight range according to BMI (excludes data from New South Wales, see Appendix Table C2)
- babies whose mothers smoked during pregnancy—16% compared with 8% of babies whose mothers did not smoke.

Small for gestational age babies, by selected maternal characteristics, 2014



(a) Maternal BMI data exclude New South Wales (see Appendix Table C2). BMI source data and methods used for collection in states and territories are not uniform.



Find out more in the *Perinatal dynamic data display: Baby outcomes*

Baby presentation and method of birth

3 in 10 multiple births are non-vertex presentations

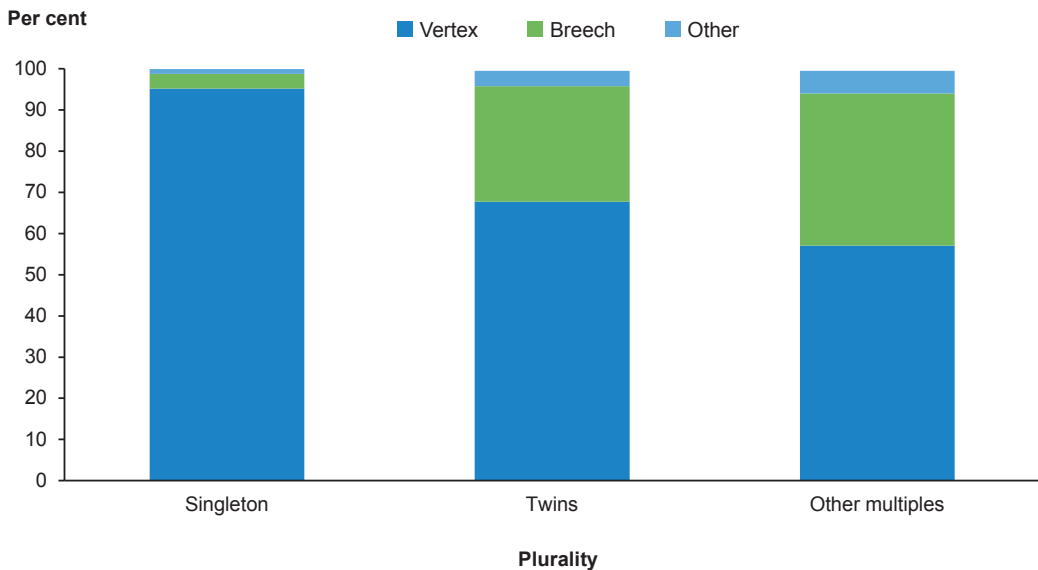
The presentation of the baby at birth refers to the anatomical part of the baby that is facing down the birth canal.

In 2014, the vast majority of babies (94% or 294,908) were in a vertex presentation at birth, in which the top of the head is facing down the birthing canal. Small proportions of babies had different (non-vertex) presentations:

- around 1 in 25 babies (4.3% or 13,519) were in a breech presentation (where the baby exits buttocks or feet first)
- around 1 in 100 babies (1.2% or 3,862) were in other presentations including face, brow, shoulder/transverse and compound presentations.

In 2014, multiple births were almost 7 times as likely to be in non-vertex presentation as singletons (32% compared with 5%, respectively). The proportion was greater for higher-order multiples (triplets and higher) (42%) than for twins (32%). Non-vertex presentation increased with birth order for multiple births, from 23% among babies who were born first to 41% among subsequent babies.

Babies, by presentation at birth and plurality, 2014

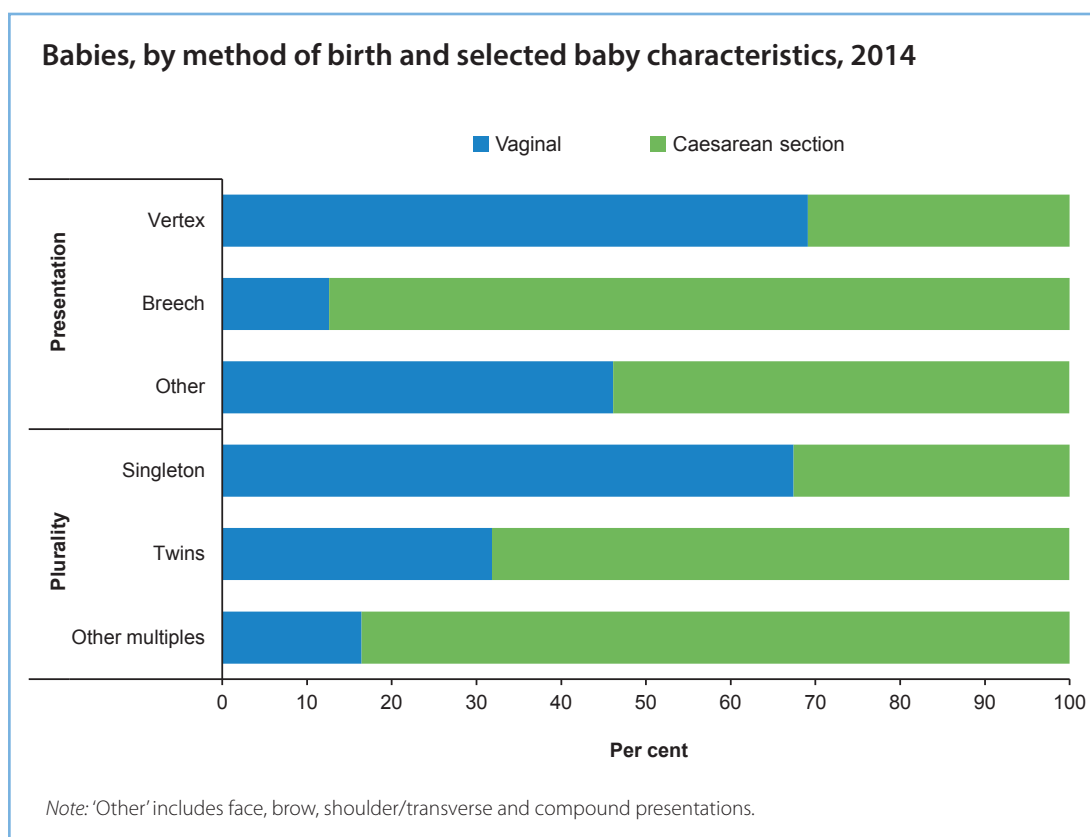


Note: 'Other' includes face, brow, shoulder/transverse and compound presentations.

A baby's presentation at birth can affect the method of birth. Most babies in a vertex presentation were delivered by vaginal birth (69%), with 31% delivered via caesarean section. Conversely, almost 9 in 10 babies (87%) presenting in breech position were delivered via caesarean section, with only 13% delivered by vaginal birth.

Baby's method of birth also varies by plurality. The likelihood of vaginal delivery decreases as plurality increases, from around two-thirds (67%) of singleton babies, to one-third (32%) of twins and 16% of other multiples. This pattern is reversed for caesarean sections, which are least common among singletons (33%) and most common among multiple births (68% of twins and 84% of other multiples).

See Chapter 2 for more information on method of birth for mothers, where the method of birth of the first-born baby in multiple births is used.



Find out more in the *Perinatal dynamic data display: Baby outcomes*

Apgar scores

Apgar scores are highest among babies born at term

Apgar scores are clinical indicators of a baby's condition shortly after birth. The measure is based on the assessment of 5 characteristics of the baby, including skin colour, pulse, breathing, muscle tone and reflex irritability. Each characteristic is given between 0 and 2 points, with a total score between 0 and 10 points.

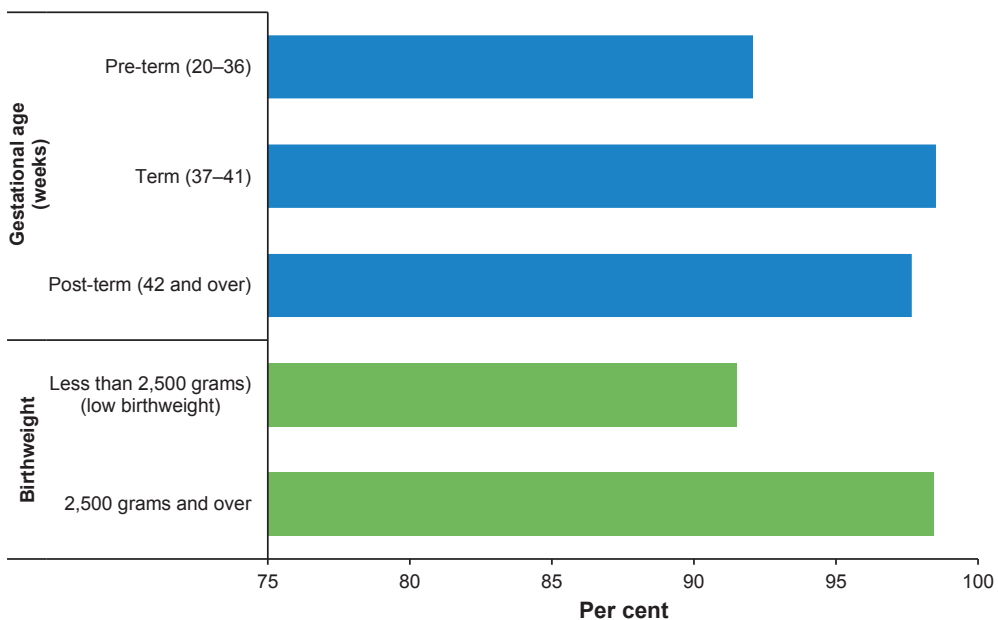
An Apgar score of 7 or more at 5 minutes after birth indicates the baby is adapting well to the environment, while a score of less than 7 indicates complications for the baby.

In 2014, almost all liveborn babies (98%) had an Apgar score of 7 or more while only 1.8% had an Apgar score of 0 to 6. Apgar scores of 0–3 were recorded for just 0.3% of all live births and scores of 4–6 were recorded for 1.5% of liveborn babies.

Apgar scores differed by gestational age and birthweight:

- 92% of babies born pre-term had an Apgar score of 7 or more compared with 99% of babies born at term
- 91% of low birthweight babies (less than 2,500 grams) had an Apgar score of 7 or more compared with 98% of babies weighing 2,500 grams or more.

Liveborn babies, Apgar score of 7 or more at 5 minutes, by gestational age and birthweight, 2014



Find out more in the *Perinatal dynamic data display: Baby outcomes*

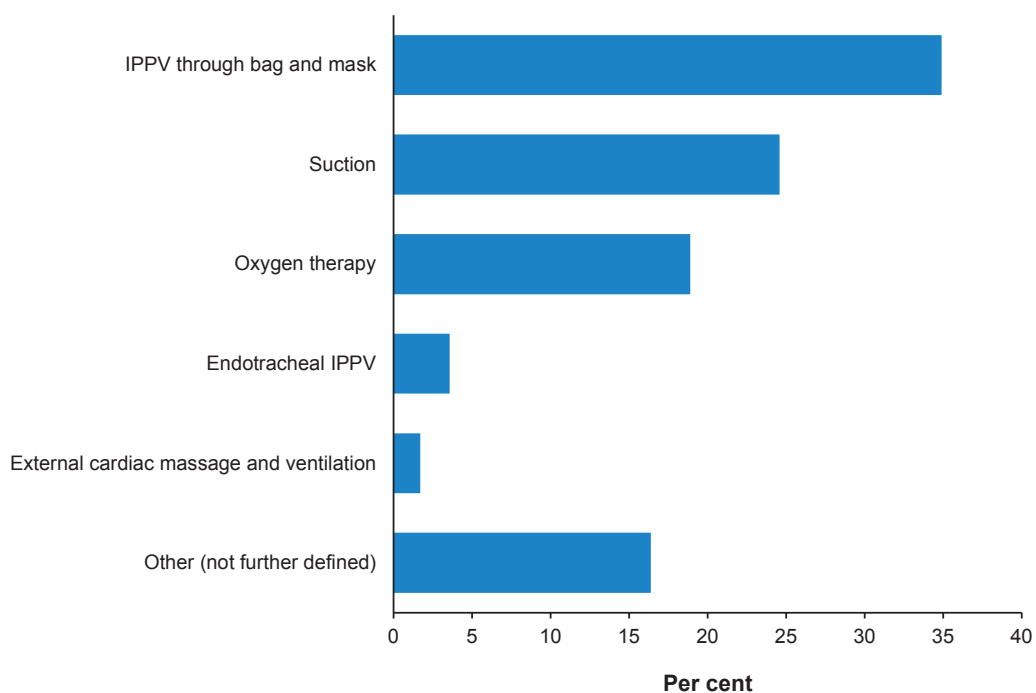
Resuscitation

1 in 5 liveborn babies require active resuscitation

Resuscitation is undertaken to establish independent respiration and heartbeat or to treat depressed respiratory effect and to correct metabolic disturbances. The types of resuscitation are hierarchical, with suction being the least severe and external cardiac massage and ventilation the most extreme. If more than 1 type of resuscitation is performed, the highest order type in the hierarchy is the one coded.

One-fifth (20%) of liveborn babies required some form of active resuscitation immediately after birth in 2014 (excludes data from Western Australia, see Appendix Table C2). Almost half (43%) of those requiring resuscitation received suction or oxygen therapy, and almost 2 in 5 (38%) received ventilatory assistance by intermittent positive pressure ventilation (IPPV) through a bag and mask or via endotracheal intubation. Around 2% of babies who received resuscitation required external cardiac massage and ventilation.

Liveborn babies that received active resuscitation, by resuscitation measure, 2014



Note: Excludes data from Western Australia (see Appendix Table C2).



Find out more in the *Perinatal dynamic data display: Baby outcomes*

Hospital births and length of stay

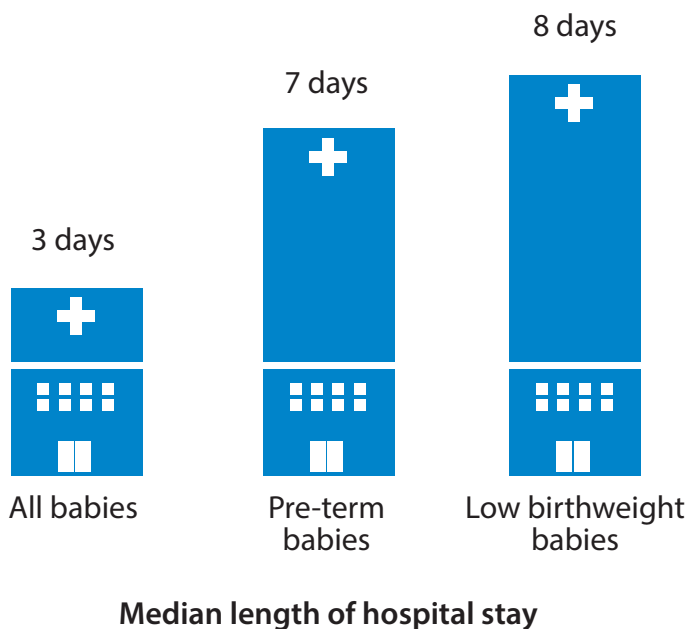
Pre-term babies, low birthweight babies and multiple births stayed in hospital longer

The vast majority of babies were born in hospital (98% or 304,977 babies in 2014), and of these, most were discharged to home (96% or 259,689). A small proportion of babies (3%) were transferred to another hospital and 1% were perinatal deaths (stillbirths or neonatal deaths occurring in the hospital of birth). Note that all data presented for this topic exclude data from Western Australia (see Appendix Table C2).

Among babies who were discharged to home, the median length of stay was 3 days with around 92% staying 5 days or less.

A number of factors influence a baby's length of stay in hospital, including birthweight and gestational age: low birthweight babies had a median stay of 8 days (compared with 3 days for normal birthweight babies) and pre-term babies had a median stay of 7 days (compared with 3 days for babies delivered at term).

As discussed in earlier sections, babies who are part of a multiple birth are more likely to be of low birthweight and to be born pre-term. This is reflected in the median length of stay in hospital, which was higher for twins (6 days) and for other multiples (28 days) than for singletons (3 days).



Admission to special care nurseries and neonatal intensive care units

Pre-term babies and multiple births are more likely to be admitted to an SCN or NICU

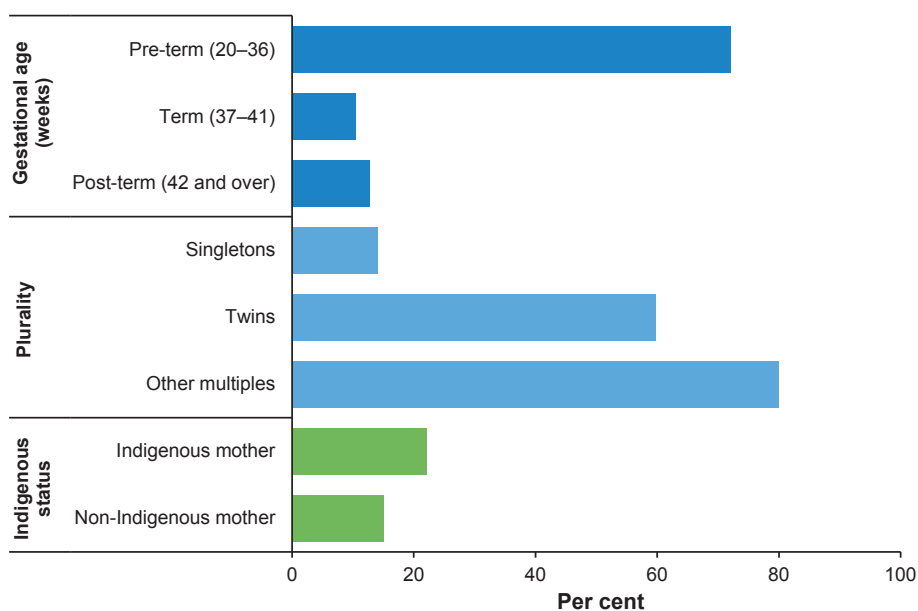
Some liveborn babies require more specialised treatment and care than is available on the postnatal ward. Of all liveborn babies, 15% (42,422) were admitted to a special care nursery (SCN) or neonatal intensive care unit (NICU) in 2014. Note that babies who are transferred between hospitals (around 3% of all babies) and who are then admitted to an SCN or NICU may not be included in these data and data also exclude Western Australia (see Appendix Table C2).

Pre-term babies were more likely to be admitted to an SCN or NICU (72%) than babies delivered at term (10%) or post-term (13%). Most pre-term babies are of low birthweight, and 72% of low birthweight babies were admitted compared with 11% of normal birthweight babies and 23% of those with a high birthweight.

The majority of multiple births are pre-term, and twins and other multiples were therefore more likely to be admitted than singletons (60% and 80% compared with 14%, respectively).

Babies born to Indigenous mothers were 1.5 times as likely to be admitted to an SCN or NICU as those of non-Indigenous mothers.

Liveborn babies, by admission to a special care nursery or neonatal intensive care unit, by selected baby characteristics, 2014



Note: Excludes data from Western Australia (see Appendix Table C2).

Perinatal deaths

Gestational age and birthweight are the biggest predictors of perinatal death

Counting perinatal deaths

There are various definitions used for reporting and registering perinatal deaths in Australia. The National Perinatal Data Collection defines perinatal deaths as all fetal deaths (stillbirths) and neonatal deaths (deaths of liveborn babies aged less than 28 days) of at least 400 grams birthweight or at least 20 weeks' gestation.

Fetal and neonatal deaths include late termination of pregnancy (20 weeks or more gestation) in Victoria and Western Australia.

Neonatal deaths may not be included for babies transferred to another hospital, re-admitted to hospital after discharge or who died at home after discharge.

Perinatal and fetal death rates are calculated using all live births and stillbirths in the denominator. Neonatal death rates are calculated using live births only.

Perinatal and infant death periods used by the National Perinatal Data Collection

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

In 2014, there were 10 perinatal deaths for every 1,000 births, a total of 2,986 perinatal deaths. This included:

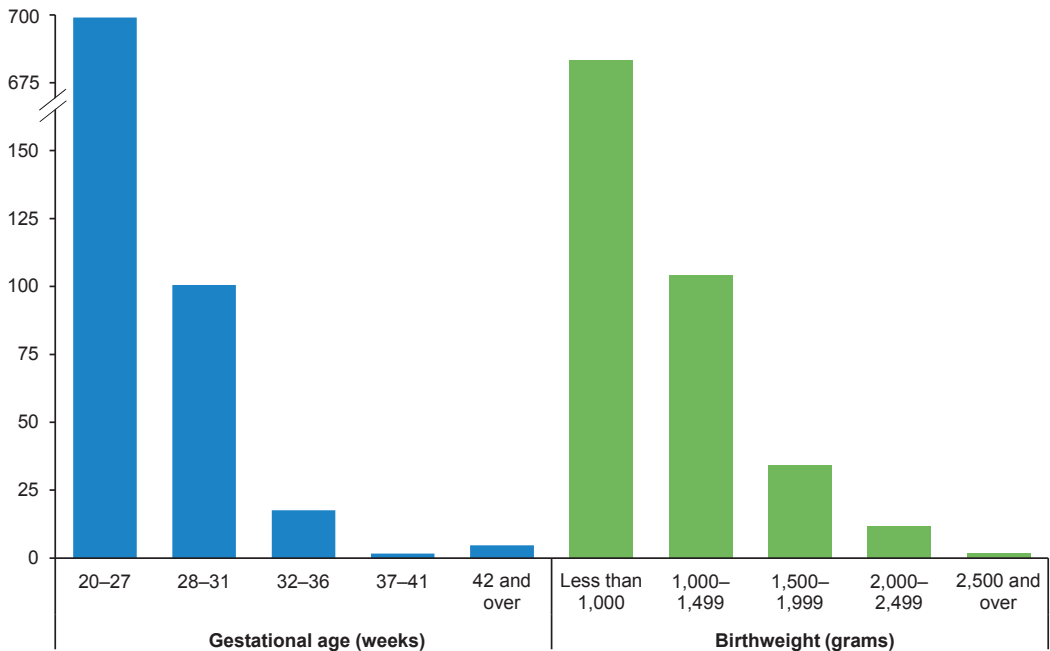
- 2,200 fetal deaths (stillbirths) or 7 fetal deaths per 1,000 births
- 786 neonatal deaths, a rate of 3 neonatal deaths per 1,000 live births.

Perinatal death rates decreased dramatically as gestational age and birthweight increased:

- Gestational age—rates were highest among babies born at 20–27 weeks' gestation (699 per 1,000 births) and lowest among babies born at term (37–41 weeks) (2 per 1,000 births).
- Birthweight—rates were highest among extremely low birthweight babies (less than 1,000 grams) (683 per 1,000 births) and lowest among babies with birthweight 2,500 grams or higher (2 per 1,000 births).

Perinatal deaths by gestational age and birthweight, 2014

Deaths per 1,000 births



Other factors were also associated with higher rates of perinatal death (although to a lesser extent than gestational age and birthweight), including:

- maternal age—babies born to mothers under 20 and 40 and over had the highest rates of perinatal death (14 and 13 per 1,000 births, respectively). Babies of mothers aged 30–34 had the lowest rate (8 per 1,000)
- maternal Indigenous status—perinatal death rates were 1.5 as high among babies of Indigenous mothers (14 per 1,000 births) compared with non-Indigenous mothers (9 per 1,000) (see Chapter 4 for more information)
- multiple births—twins and other multiples had perinatal death rates around 4 and 13 times that of singletons (37 and 114 deaths per 1,000 births compared with 9, respectively).

Patterns by these characteristics were similar for both fetal and neonatal deaths, noting that fetal death rates were consistently higher than neonatal death rates.

Congenital abnormalities are the leading cause of perinatal deaths

Classifying perinatal deaths

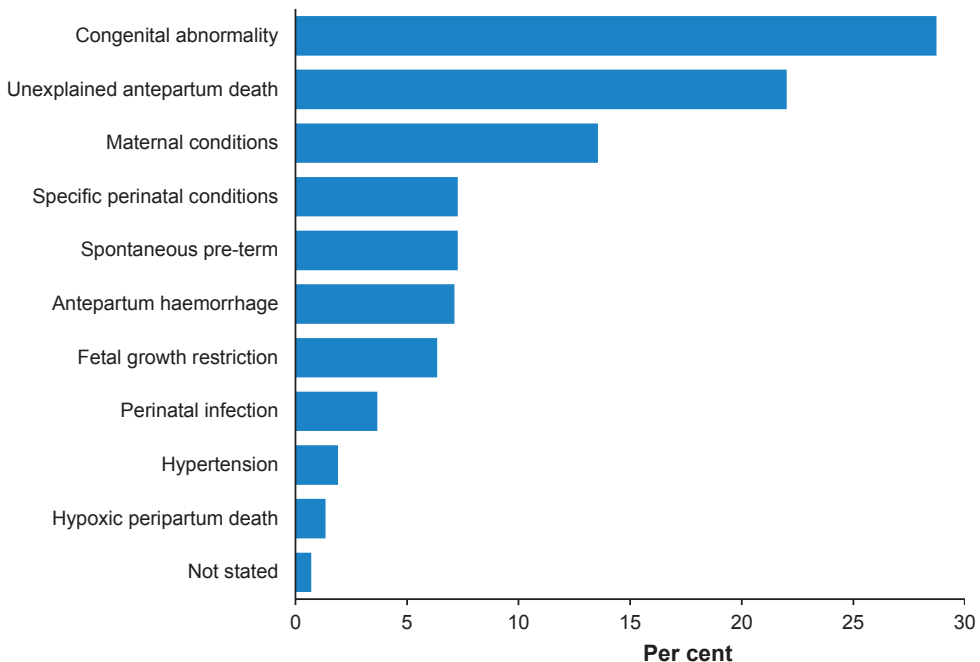
Causes of death for perinatal deaths are classified according to the Perinatal Society of Australia and New Zealand Clinical Practice Guideline for Perinatal Mortality Perinatal Death Classification (PSANZ-PDC).

Information about cause of death is based on data for 6 states and territories (Victoria, Queensland, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory). Perinatal deaths in these 6 jurisdictions represented around two-thirds of all perinatal deaths in 2014 (1,951 deaths).

The most common cause of all perinatal deaths was congenital abnormalities (anomalies), accounting for almost 3 in 10 (29%) perinatal deaths. This was followed by unexplained antepartum death (16%) and spontaneous pre-term birth (15%).

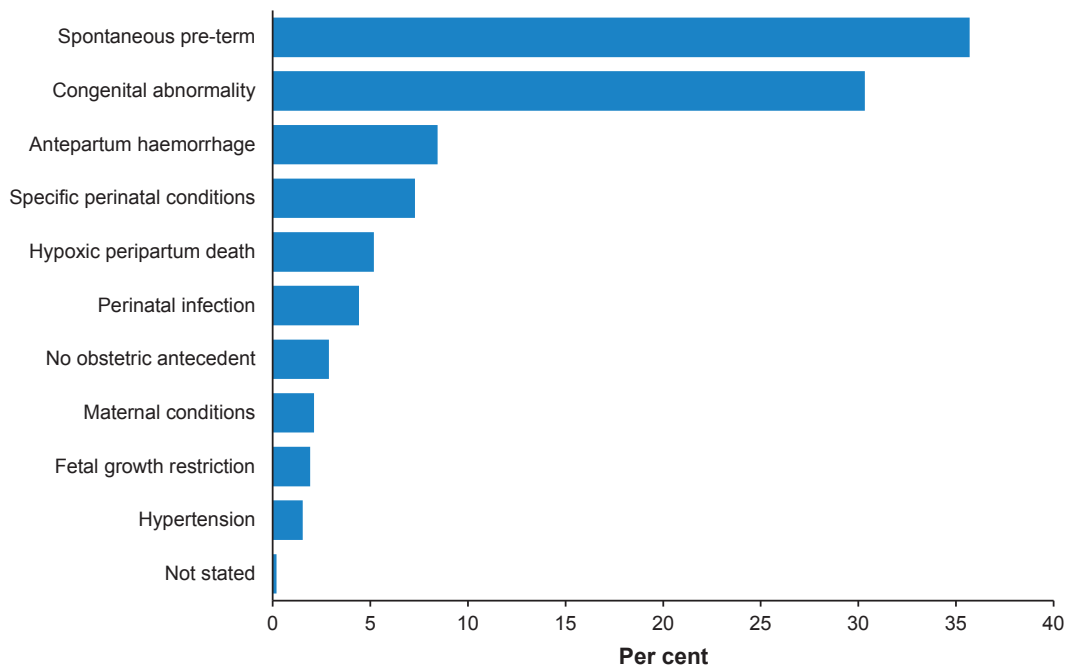
However, the most common causes of death differed between fetal and neonatal deaths. While congenital abnormality was the leading cause of fetal deaths, spontaneous pre-term birth was the leading cause for neonatal deaths.

Fetal deaths, by cause of death (PSANZ-PDC), 2014



Note: Excludes data from New South Wales and Western Australia (see Appendix Table C2).

Neonatal deaths, by cause of death (PSANZ-PDC), 2014



Note: Excludes data from New South Wales and Western Australia (see Appendix Table C2).

These patterns were influenced by gestational age, maternal age and plurality; for example:

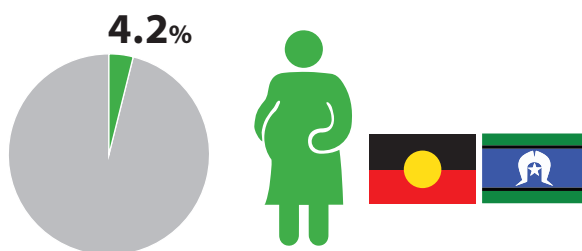
- perinatal deaths due to congenital abnormalities increased with increasing maternal age
- spontaneous pre-term birth decreased with increasing gestational age
- the most common cause of death among singleton babies was congenital abnormalities, while spontaneous pre-term birth and specific perinatal conditions were the most common causes of death among twins and other multiples
- most perinatal deaths of babies born to mothers under 20 were due to maternal conditions or spontaneous pre-term birth, while congenital abnormalities were the most common cause of perinatal death for babies whose mothers were 40 and over.

4

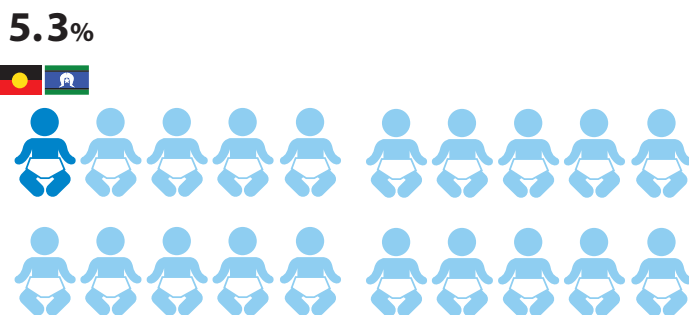
Aboriginal and Torres Strait Islander mothers and their babies

Most Indigenous mothers and their babies are doing well and there have been some improvements in recent years in outcomes for mothers and babies. There has been a notable increase in the proportion of Indigenous mothers attending an antenatal visit in the first trimester and a slight increase in the proportion attending 5 or more antenatal visits. The rate of Indigenous mothers smoking during pregnancy has decreased, as has the proportion of low birthweight babies of Indigenous mothers. Despite these improvements, significant gaps remain between outcomes for Indigenous and non-Indigenous mothers and babies.

Although a range of data by Indigenous status has been presented in earlier chapters, this chapter provides more in-depth information on Indigenous mothers and their babies.



In 2014, 12,817 women who gave birth to 12,978 babies identified as being Aboriginal and/or Torres Strait Islander, representing 4.2% of all women who gave birth (based on the Indigenous status of the mother). Around 1 in 19 babies (5.3% or 16,572) were Aboriginal and/or Torres Strait Islander (based on the Indigenous status of the baby).



Indigenous mothers

Indigenous mothers are more likely to be teenagers, and to live in remote or disadvantaged areas than non-Indigenous mothers

Younger maternal age, remoteness and socioeconomic disadvantage of areas of usual residence are associated with increased risk of a number of poorer maternal and perinatal outcomes.

In 2014, Indigenous mothers, compared with non-Indigenous mothers, were:

- almost 7 times as likely to be teenage mothers (17% compared with 2%). Conversely, only 9% of Indigenous mothers were aged 35 and over compared with 23% of non-Indigenous mothers
- around 14 times as likely to live in *Remote* and *Very Remote* areas as non-Indigenous mothers (23% compared with 1.7%, respectively)—similar to the pattern for all women of reproductive age in the population
- 2.5 times as likely to live in the lowest socioeconomic status (SES) areas as non-Indigenous mothers. Around 1 in 2 Indigenous mothers lived in the lowest SES areas compared with 1 in 5 non-Indigenous mothers.

Antenatal care among Indigenous mothers is increasing

On average, in 2014 Indigenous mothers attended 1 less antenatal visit than non-Indigenous mothers (9 and 10 visits, respectively—data exclude very pre-term births and data from Victoria, see Appendix Table C2). Indigenous women were also more likely to attend antenatal care slightly later in pregnancy than non-Indigenous women (the average duration of pregnancy at the first antenatal visit was 14 and 13 weeks, respectively).

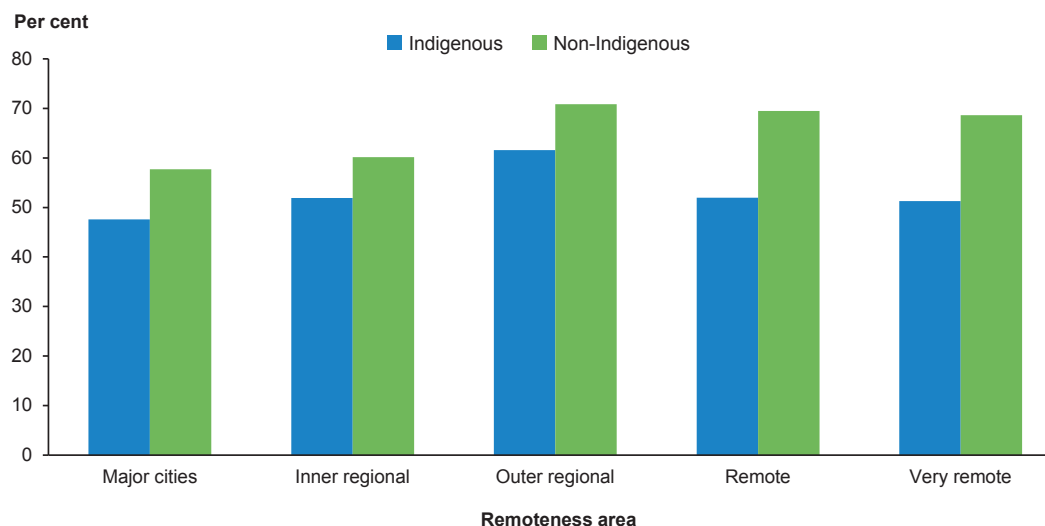
Fewer Indigenous mothers attended their first antenatal visit in the first trimester of pregnancy (less than 14 completed weeks)—over half (53%) of Indigenous mothers compared with 60% of non-Indigenous mothers (age-standardised).

The age-standardised proportion of mothers receiving antenatal care in the first trimester was highest in *Outer regional* areas for both Indigenous and non-Indigenous mothers in 2014 (62% and 71%, respectively), compared with:

- 48% in *Major cities* and 51% in *Very remote* areas for Indigenous mothers
- 58% in *Major cities* and 69% in *Very remote* areas for non-Indigenous mothers.

The proportion of Indigenous mothers who attended antenatal care in the first trimester increased between 2010 and 2014, from 41% to 52%. In comparison, there was little change for non-Indigenous mothers over this time, with proportions remaining between 61% and 62% (age-standardised; excludes data from New South Wales, see Appendix Table C2). This has resulted in a narrowing of the gap between Indigenous and non-Indigenous mothers.

Antenatal visit in the first trimester (less than 14 completed weeks), by remoteness and Indigenous status (age-standardised), 2014



Note: Excludes data for New South Wales (see Appendix Table C2).

Indigenous mothers who gave birth at 32 weeks or more were also less likely to attend 5 or more antenatal visits than non-Indigenous mothers: 86% of Indigenous mothers had 5 or more visits compared with 95% of non-Indigenous mothers (age-standardised, excludes data from Victoria, see Appendix Table C2).

Between 2011 and 2014, the proportion of mothers attending 5 or more visits has increased slightly for Indigenous mothers (from 84.8% to 86.7%) while remaining similar for non-Indigenous mothers (95.1% compared with 95.3%) (age-standardised; excludes data from Western Australia and Victoria, see Appendix Table C2).

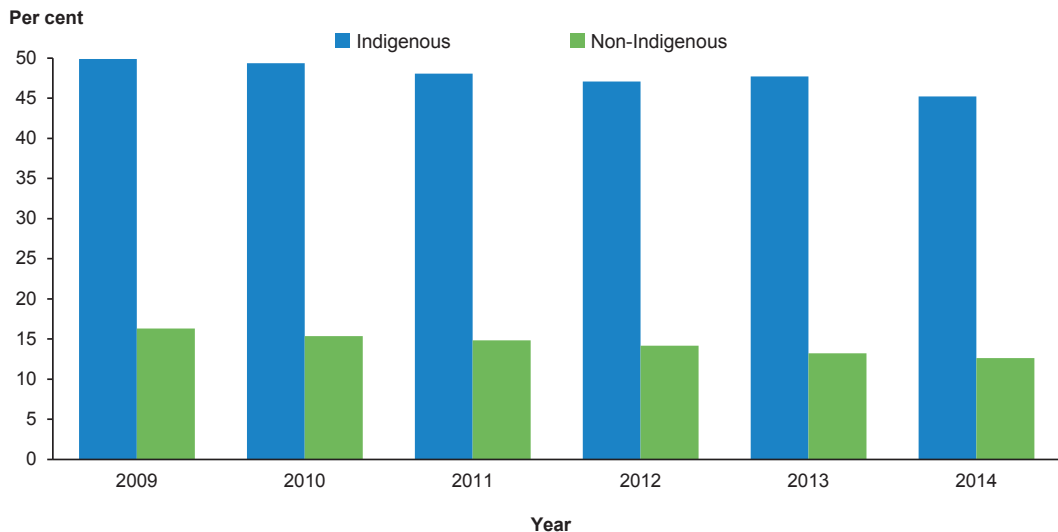
Fewer Indigenous women are smoking during pregnancy

Indigenous mothers accounted for 17% of mothers who smoked tobacco at any time during pregnancy in 2014, despite accounting for only around 4% of mothers. Almost 1 in 2 Indigenous mothers reported smoking during pregnancy—45% compared with 13% of non-Indigenous mothers (age-standardised).

The age-standardised proportion of Indigenous women who smoked at any time during pregnancy decreased from 50% in 2009 to 45% in 2014. There was a similar trend for non-Indigenous mothers, with a decrease in the rate of smoking from 16% in 2009 to 13% in 2014.

The age-standardised rate of smoking cessation during pregnancy among Indigenous mothers was 12%, which is less than half that of non-Indigenous mothers (24%) (based on mothers who reported smoking in the first 20 weeks of pregnancy and not smoking after 20 weeks of pregnancy).

Maternal smoking at any time during pregnancy, by Indigenous status (age-standardised), 2009 to 2014



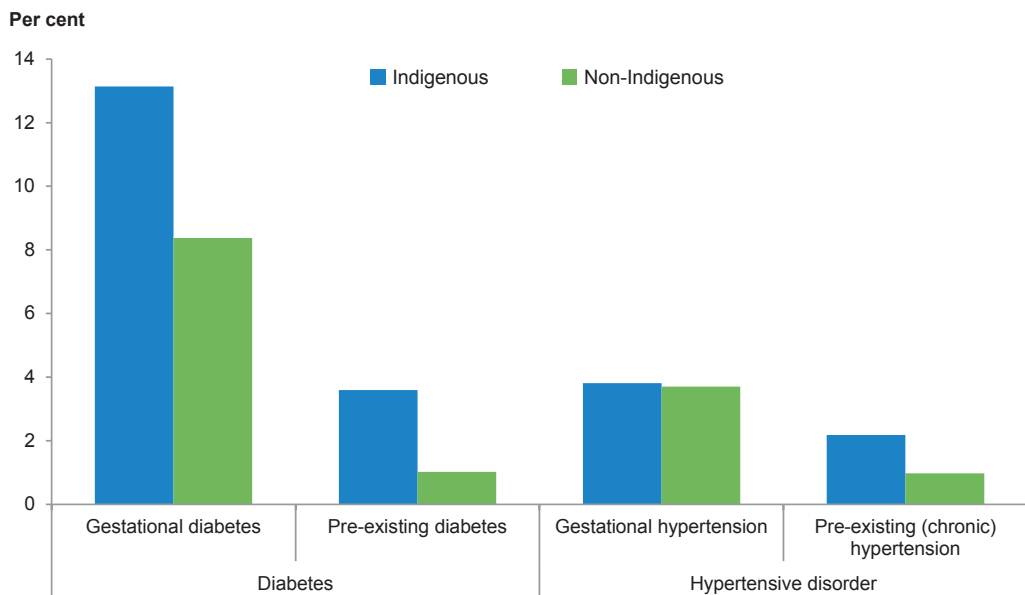
Note: Definitions and methods used for data collection differ by state and territory.

Indigenous mothers were more likely to be obese or to have pre-existing diabetes or hypertension

Indigenous mothers were:

- 1.6 times as likely to be obese as non-Indigenous mothers (33% compared with 20%) (age-standardised; excludes data from New South Wales, see Appendix Table C2)
- 1.6 times and 3.5 times as likely to have gestational diabetes (13%) and pre-existing diabetes (4%), respectively, compared with non-Indigenous mothers (9% and 1%, respectively) (age-standardised; excludes data from Victoria, see Appendix Table C2)
- more than twice as likely to have pre-existing (chronic) hypertension (2.2%) compared with non-Indigenous mothers (1.0%). Rates of gestational hypertension were similar for both Indigenous and non-Indigenous mothers (3.8% and 3.7%, respectively) (age-standardised; excludes data from Victoria, see Appendix Table C2. Data for gestational hypertension include 6 months of data for Western Australia only).

Selected maternal medical conditions during pregnancy, by Indigenous status (age-standardised), 2014



Notes

1. Definitions and methods used for data collection differ by state and territories. Excludes data from Victoria (see Appendix Table C2).
2. Data for gestational hypertension include 6 months of data for Western Australia only.

Indigenous mothers were more likely to have spontaneous labour onset

Spontaneous onset of labour was slightly more common among Indigenous mothers than non-Indigenous mothers (53% and 50%, respectively), while rates of labour induction or no labour were similar for both Indigenous and non-Indigenous mothers—28% compared with 29% for labour induction and 20% compared with 21% for no labour, respectively (age-standardised).

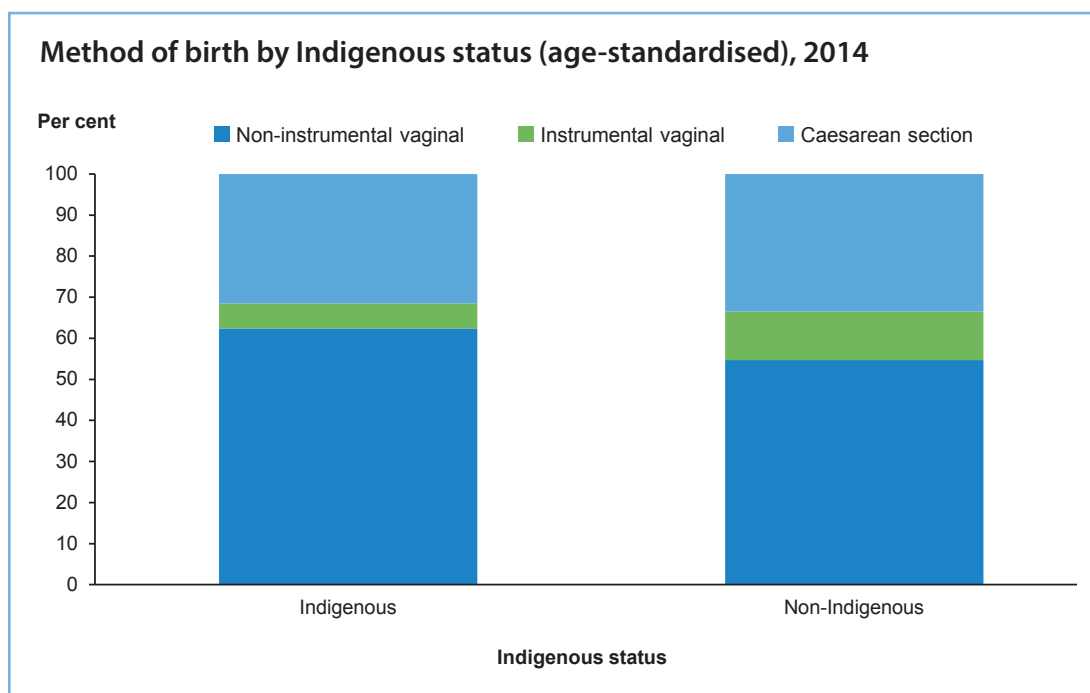
Indigenous mothers who had labour were slightly less likely to receive pain relief during labour compared with non-Indigenous women (71% compared with 77%, respectively; age-standardised).

Non-instrumental vaginal births were more common for Indigenous women

Method of birth is influenced by maternal age, but even when controlling for differences in age structure between Indigenous and non-Indigenous mothers, some differences remain. Indigenous mothers were:

- more likely to have a non-instrumental vaginal birth (62%) than non-Indigenous mothers (55%)
- less likely to have an instrumental vaginal delivery (6% compared with 12% of non-Indigenous mothers).

Caesarean section rates were similar for Indigenous (32%) and non-Indigenous mothers (33%) (age-standardised).



Find out more in the *Perinatal dynamic data display*

Babies of Indigenous mothers

Babies of Indigenous mothers were 1.7 times as likely to be pre-term

In 2014, the average gestational age of babies of Indigenous mothers was 38.2 weeks, which was slightly lower than for those of non-Indigenous mothers (38.6 weeks).

Around 1 in 7 babies of Indigenous mothers (14%) were born pre-term, compared with 8% of babies of non-Indigenous mothers.

Babies of Indigenous mothers who smoked were 1.3 times as likely to be born pre-term as babies born to non-Indigenous mothers who smoked.

Low birthweight rates are decreasing among babies of Indigenous mothers

In 2014, the average liveborn baby of an Indigenous mother weighed 140 grams less than a baby of a non-Indigenous mother (3,215 grams and 3,355 grams, respectively).

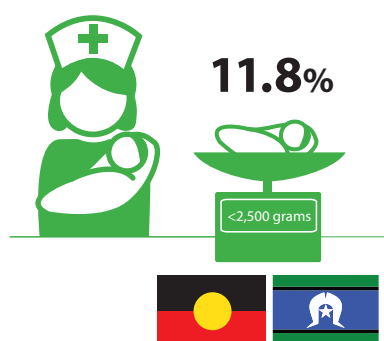
For liveborn babies with Indigenous mothers, 11.8% (1,514) were of low birthweight, compared with 6.2% (18,276) of babies with non-Indigenous mothers. These proportions were made up of:

- 9.7% of babies of Indigenous mothers and 5.2% of babies of non-Indigenous mothers in the low birthweight range of 1,500–2,499 grams
- 2.1% of babies of Indigenous mothers and 1.0% of babies of non-Indigenous mothers were of very low birthweight (less than 1,500 grams)
- 1.0% of babies of Indigenous mothers and 0.4% of babies of non-Indigenous mothers were of extremely low birthweight (less than 1,000 grams).

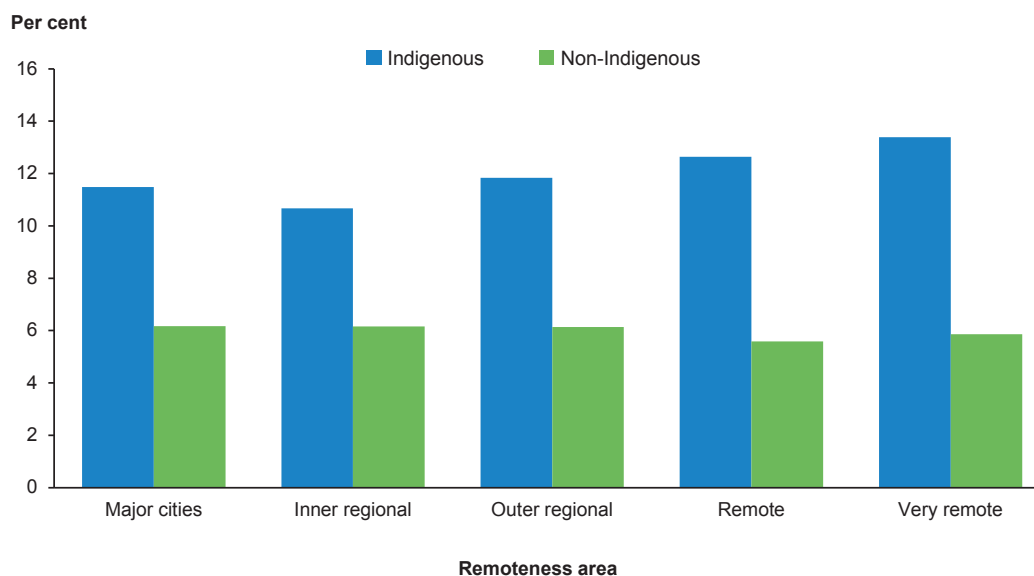
Low birthweight of babies of non-Indigenous mothers varied only slightly by remoteness, ranging from 6.2% in *Major cities* to 5.9% of babies in *Very remote* areas. However, for babies of Indigenous mothers, the difference by remoteness was more noticeable, ranging from 11.5% of babies in *Major cities* to 13.4% in *Very remote* areas.

There was a slight decrease in the proportion of low birthweight babies born to Indigenous mothers between 2004 and 2014, from 13.2% in 2004 to 11.8% in 2014. The proportion of low birthweight babies with non-Indigenous mothers remained between 5.9% and 6.2% over this time. See Chapter 5 for more data on trends.

Babies of Indigenous mothers were also 1.5 times as likely to be small for gestational age (14.1%) as babies of non-Indigenous mothers (9.1%).



Low birthweight of liveborn babies, by Indigenous status of mother and remoteness, 2014



Babies of Indigenous mothers are more likely to be admitted to SCN or NICU

Apgar scores, use of resuscitation and admission to special care nurseries (SCNs) or neonatal intensive care units (NICUs) can give an indication of the health of newborn babies.

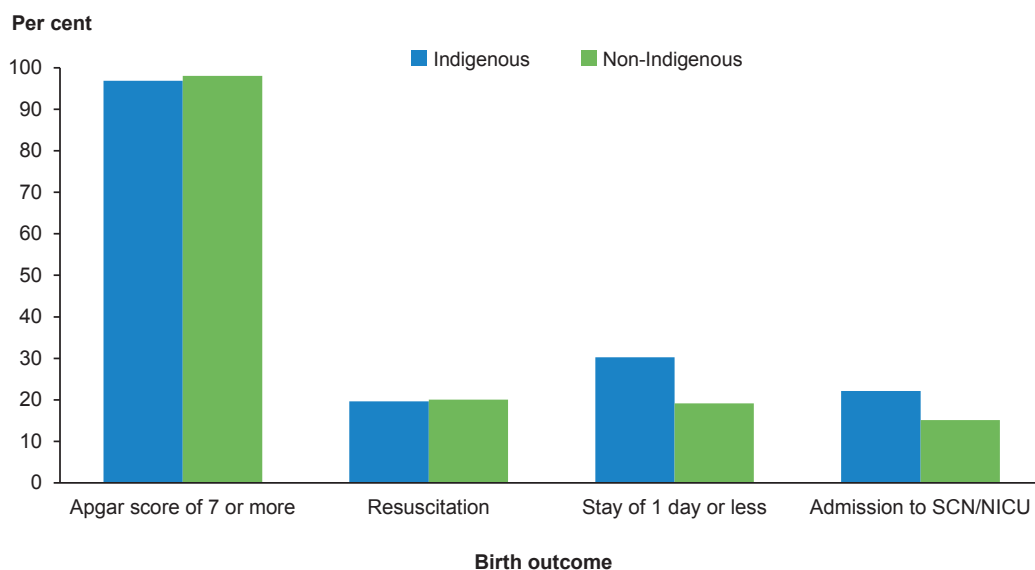
Liveborn babies to Indigenous mothers were more likely to be admitted to an SCN or NICU (22%) than babies of non-Indigenous mothers (15%) in 2014 (excludes data from Western Australia, see Appendix Table C2).

In 2014, similar proportions of liveborn babies to Indigenous and non-Indigenous mothers:

- had an Apgar score at 5 minutes of 7 or more (97% and 98%, respectively)
- required some form of resuscitation (both 20%; excludes data from Western Australia, see Appendix Table C2).

Babies of Indigenous mothers, born in hospital and discharged home, had a shorter median length of stay (2 days) than those of non-Indigenous mothers (3 days). Almost 1 in 3 babies of Indigenous mothers (30%) stayed for 1 day or less, compared with around 1 in 5 babies (19%) of non-Indigenous mothers. However, babies of Indigenous mothers were 1.5 times as likely as those of non-Indigenous mothers to stay in hospital for 6 or more days (excludes data from Western Australia, see Appendix Table C2).

Liveborn babies, by Indigenous status of mother and selected birth outcomes, 2014



Note: Data for resuscitation, length of stay and admission to SCN/NICU exclude Western Australia (see Appendix Table C2).

Higher rates of perinatal death among babies of Indigenous mothers

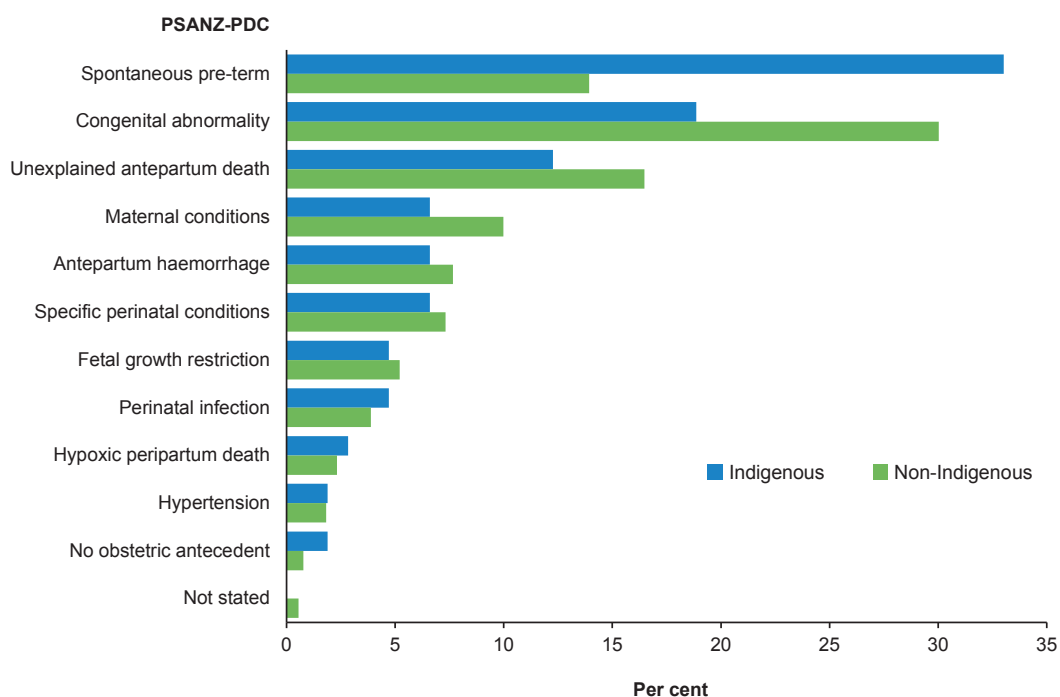
In 2014, there were 14 perinatal deaths for every 1,000 births among babies of Indigenous mothers—1.5 times the rate for those of non-Indigenous mothers (9 per 1,000 births). This included:

- 9 fetal deaths (stillbirths) per 1,000 births for babies with Indigenous mothers and 7 fetal deaths per 1,000 births for those with non-Indigenous mothers
- 5 neonatal deaths per 1,000 live births for babies of Indigenous mothers and 2 neonatal deaths per 1,000 live births for those with non-Indigenous mothers.

Data on cause of death are available for Victoria, Queensland, South Australia, Tasmania, the Australian Capital Territory and the Northern Territory. The most notable differences in cause of death between babies of Indigenous and non-Indigenous mothers in the perinatal period are for spontaneous pre-term births and congenital abnormalities:

- One-third (33%) of perinatal deaths of babies with Indigenous mothers are due to spontaneous pre-term birth, compared with 14% of babies with non-Indigenous mothers.
- Congenital abnormalities accounted for a smaller proportion of perinatal deaths among babies of Indigenous mothers (19%) compared with non-Indigenous mothers (30%).

Perinatal deaths, by Indigenous status of mother and cause of death, 2014



Notes

1. See 'Perinatal deaths' in Chapter 3 for more information on the PSANZ-PDC.
2. Excludes data from New South Wales and Western Australia (see Appendix Table C2).

5

Key statistics and trends

Key trends for Australia's mothers and babies, 2004 to 2014

Topic	Unit	Year											Annual change ^(a)	Per cent change ^(b)	
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014			
Mothers															
Women who gave birth	Number	252,871	267,795	277,440	289,499	292,159	294,547	295,456	297,343	307,570	304,777	307,844	307,844	4,838	*18.2
Women who gave birth per 1,000 women of reproductive age (15–44 years)	Rate	59.1	62.2	64.0	65.8	65.3	64.6	63.9	63.7	64.9	63.4	63.3	63.3	0.2	3.3
Average maternal age (years)															
All mothers	Average	29.7	29.7	29.8	29.9	29.9	30.0	30.0	30.0	30.1	30.1	30.1	30.2	0.0	*1.6
Indigenous mothers	Average	24.8	24.9	25.0	25.2	25.1	25.2	25.2	25.3	25.2	25.3	25.5	25.5	0.1	*2.2
First-time mothers	Average	28.0	28.1	28.2	28.2	28.2	27.9	28.3	29.0	28.4	28.6	28.7	28.7	0.1	*2.7
Maternal age (years)															
Under 25	Per cent	19.1	19.0	18.9	18.7	18.7	18.3	18.0	17.5	17.2	16.9	16.0	16.0	-0.3	*-15.2
25–34	Per cent	61.3	60.5	59.7	59.0	58.4	58.9	59.0	59.8	60.4	60.9	61.9	61.9	0.1	1.3
35 and over	Per cent	19.5	20.4	21.4	22.3	22.9	22.9	23.0	22.7	22.4	22.3	22.1	22.1	0.2	*10.5
Antenatal visits															
5 or more antenatal visits ^(b)															
All mothers	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	95.0	95.4	95.5	95.3	95.3	0.1	0.3
Indigenous mothers	AS per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	84.8	86.1	86.3	86.7	86.7	0.6	*2.1
Non-Indigenous mothers	AS per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	95.1	95.3	95.5	95.3	95.3	0.1	0.2

(continued)

Key trends for Australia's mothers and babies, 2004 to 2014 (continued)

Topic	Unit	Year											Annual change ^(b)	Percent change ^(a)		
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014				
<i>Antenatal visit in the first trimester^(d)</i>																
All mothers	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	62.8	62.0	62.7	62.4	62.4	62.4	0.0	-0.2
Indigenous mothers	AS per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	41.4	46.6	50.2	52.6	52.1	52.1	2.7	*25.4
Non-Indigenous mothers	AS per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	61.4	60.9	61.5	60.9	61.1	61.1	-0.1	-0.5
<i>Tobacco smoking during pregnancy</i>																
<i>Smoked at any time during pregnancy</i>																
All mothers	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	14.6	13.7	13.2	12.5	11.7	11.0	11.0	-0.7	*-24.5
Indigenous mothers	AS per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	49.9	49.4	48.1	47.1	47.7	45.2	45.2	-0.8	*-8.4
Non-Indigenous mothers	AS per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	16.3	15.4	14.8	14.2	13.2	12.6	12.6	-0.7	*-22.6
<i>Smoked in the first 20 weeks of pregnancy</i>																
All mothers	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	12.9	12.1	11.3	10.6	10.6	-0.8	*-17.9
Indigenous mothers	AS per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	47.2	46.5	46.6	44.4	44.4	-0.8	*-5.4
Non-Indigenous mothers	AS per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	14.5	13.8	12.8	12.2	12.2	-0.8	*-16.3
<i>Postnatal stay</i>																
Less than 2 days	Per cent	11.5	12.3	12.7	13.8	14.4	17.0	16.3	17.2	18.0	19.6	20.5	20.5	0.9	*79.9	
2-4 days	Per cent	61.8	62.4	64.3	64.9	65.3	63.7	66.3	65.9	65.4	65.0	64.9	64.9	0.3	*4.7	
5 or more days	Per cent	25.4	23.2	21.9	20.7	19.3	18.2	17.4	16.9	16.5	15.4	14.5	14.5	-1.0	*-42.3	
<i>Onset of labour</i>																
Spontaneous labour	Per cent	57.6	56.5	56.6	56.6	57.0	56.2	56.0	54.8	54.2	52.7	51.3	51.3	-0.5	*-9.2	
Induced labour	Per cent	25.3	25.6	25.1	25.3	24.8	25.3	25.2	26.0	26.3	27.6	28.4	28.4	0.3	*10.7	
No labour	Per cent	17.1	17.9	18.3	18.1	18.2	18.4	18.8	19.1	19.4	19.7	20.3	20.3	0.3	*15.7	

(continued)

Key trends for Australia's mothers and babies, 2004 to 2014 (continued)

Topic	Unit	Year											Annual change ^(a)	Per cent change ^(a)
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014		
Method of birth														
Non-instrumental vaginal delivery	Per cent	59.6	58.9	58.5	57.9	57.5	56.8	56.3	55.6	55.2	54.8	54.4	-0.5	*-8.8
Instrumental vaginal delivery	Per cent	11.0	10.8	10.7	11.2	11.4	11.7	12.0	12.1	12.4	12.4	12.5	0.2	*18.4
Caesarean section	Per cent	29.4	30.3	30.8	30.9	31.1	31.5	30.2	32.3	32.4	32.8	33.1	0.3	*10.8
Multiple pregnancies														
Multiple pregnancies per 1,000 mothers	Rate	16.8	16.9	16.7	16.0	16.1	15.6	15.9	15.5	15.0	15.2	15.0	-0.2	*-11.9
Babies														
Babies born	Number	257,205	272,421	282,173	294,208	296,928	299,227	300,215	302,025	312,251	309,489	312,548	4,838	*18.2
Gestational age														
Pre-term (20–36 weeks)	Per cent	8.2	8.1	8.2	8.1	8.2	8.2	8.3	8.3	8.5	8.6	8.6	0.0	*6.0
Term (37–41 weeks)	Per cent	90.5	90.7	90.6	90.9	90.9	90.8	90.9	91.0	90.9	90.9	90.9	0.0	*0.4
Post-term (42 weeks and over)	Per cent	1.3	1.2	1.1	0.9	0.9	0.9	0.8	0.7	0.6	0.5	0.5	-0.1	*-66.0
Birthweight^(d)														
Low birthweight	Per cent	6.4	6.4	6.4	6.2	6.1	6.2	6.2	6.3	6.2	6.4	6.4	0.0	-0.4
Low birthweight babies with Indigenous mothers	Per cent	13.2	13.2	12.4	12.5	12.4	12.0	12.0	12.6	11.8	12.2	11.8	-0.1	*-9.3
Low birthweight babies with non-Indigenous mothers	Per cent	6.1	6.1	6.2	5.9	5.9	5.9	6.0	6.0	6.0	6.1	6.2	0.0	-0.2
Low birthweight Indigenous babies														
Low birthweight Indigenous babies	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	11.1	10.8	n.a.	n.a.
Low birthweight non-Indigenous babies														
Low birthweight non-Indigenous babies	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	6.1	6.1	n.a.	n.a.

(continued)

Key trends for Australia's mothers and babies, 2004 to 2014 (continued)

Topic	Unit	Year											Annual change ^(a)	Per cent change ^(a)	
		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014			
Birthweight ^(b) (continued)															
Low birthweight singleton	Per cent	4.9	4.8	4.8	4.7	4.7	4.7	4.8	4.8	4.8	4.8	4.8	4.9	0.0	0.3
Low birthweight singleton babies with Indigenous mothers	Per cent	12.1	12.0	11.3	11.2	11.2	10.9	10.7	11.2	10.5	10.9	10.5	10.5	-0.1	*-12.1
Low birthweight singleton babies with non-Indigenous mothers	Per cent	4.6	4.6	4.6	4.5	4.4	4.5	4.5	4.6	4.5	4.6	4.5	4.7	0.0	0.8
Low birthweight singleton Indigenous babies	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	9.8	9.6	n.a.
Low birthweight singleton non-Indigenous babies	Per cent	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	4.6	4.6	n.a.
Perinatal deaths															
Perinatal deaths per 1,000 births	Rate	10.5	10.5	10.4	10.3	10.2	10.2	10.2	10.2	10.2	10.2	10.2	9.6	-0.1	-9.2
Stillbirths per 1,000 births	Rate	7.5	7.3	7.4	7.4	7.4	7.8	7.3	7.4	7.4	7.2	7.1	7.0	-0.0	-4.3
Neonatal deaths per 1,000 live births	Rate	3.1	3.2	3.0	2.9	2.8	2.2	2.9	2.8	2.8	2.4	2.6	2.5	-0.1	*-20.5

n.a. Not available

* Indicates results with statistically significant increases or decreases at the $p < 0.05$ level over the period 2004 to 2014. See Appendix C for further information on methods.

(a) Determined by linear regression (see Appendix C for further information on methods). The annual change is the estimated average annual change between 2004 and 2014. The percentage change is the percentage change between 2004 and 2014. Annual change and percentage change have not been calculated when there are less than 3 years of data available.

(b) Based on women who gave birth at 32 weeks or more gestation (excluding unknown gestation). Trend data excludes Victoria and Western Australia (see Appendix Table C2).

(c) Trend data excludes New South Wales due to a change in data collection practice introduced in 2011.

(d) Includes liveborn babies only.

Notes

- Results should be interpreted with caution due to changes in data collection methods over time.
- Age-standardised (AS) per cents have been directly age-standardised to the Australian female population aged 15–44 as at 30 June 2001.

Key statistics by maternal characteristics and baby outcomes, 2014

Maternal characteristics	Mothers						Babies								
	Antenatal visit in first trimester		5 or more antenatal visits ^(a)		Smoked in the first 20 weeks of pregnancy		Caesarean section ^(b)		Pre-term		Low birthweight ^(c)		Apgar score less than 7 at 5 mins ^(d)		
	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio	
Mother's Indigenous status ^(e)															
Indigenous	52.7	0.9	85.5	0.9	44.4	3.6	31.5	0.9	13.7	1.6	10.5	2.3	2.9	1.6	
Non-Indigenous	60.1	..	95.3	..	12.2	..	33.5	..	8.4	..	4.7	..	1.8	..	
Maternal age															
Under 20	47.5	..	90.7	..	32.0	..	18.2	..	10.8	..	8.5	..	3.1	..	
20–24	51.9	1.1	93.0	1.0	21.9	0.7	23.2	1.3	8.5	0.8	5.6	0.7	2.1	0.7	
25–29	59.1	1.2	95.1	1.0	10.9	0.3	28.9	1.6	8.0	0.7	4.7	0.5	1.9	0.6	
30–34	65.0	1.4	96.1	1.1	6.8	0.2	34.8	1.9	8.0	0.7	4.4	0.5	1.7	0.5	
35–39	67.4	1.4	96.2	1.1	6.4	0.2	41.6	2.3	9.3	0.9	4.8	0.6	1.7	0.6	
40 and over	66.6	1.4	96.3	1.1	7.5	0.2	51.6	2.8	12.2	1.1	6.0	0.7	2.1	0.7	
Remoteness															
Major cities	60.6	..	95.6	..	8.0	..	33.6	..	8.3	..	4.8	..	1.7	..	
Inner regional	60.6	1.0	95.4	1.0	16.2	2.0	32.8	1.0	9.2	1.1	5.0	1.0	2.3	1.3	
Outer regional	71.2	1.2	93.9	1.0	17.8	2.2	33.5	1.0	9.4	1.1	5.2	1.1	2.0	1.2	
Remote	65.6	1.1	93.2	1.0	19.7	2.5	34.6	1.0	9.4	1.1	6.0	1.3	2.1	1.3	
Very remote	60.8	1.0	90.4	0.9	33.9	4.2	32.9	1.0	12.6	1.5	9.1	1.9	3.0	1.8	
Socioeconomic status (SES)															
Lowest SES	54.8	0.8	93.5	1.0	18.6	5.3	31.9	0.9	9.5	1.2	6.1	1.6	2.1	1.3	
Highest SES	68.2	..	96.0	..	3.5	..	34.5	..	7.8	..	3.9	..	1.6	..	

(continued)

Key statistics by maternal characteristics and baby outcomes, 2014 (continued)

	Mothers						Babies							
	Antenatal visit in first trimester		5 or more antenatal visits ^(a)		Smoked in the first 20 weeks of pregnancy		Caesarean section ^(b)		Pre-term		Low birthweight ^(c)		Apgar score less than 7 at 5 mins ^(d)	
	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio
Duration of pregnancy at first antenatal visit (weeks)														
Less than 14 (first trimester)	..	..	97.3	..	8.4	..	35.4	..	8.7	..	4.5	..	1.7	..
14–19	..	..	95.7	1.0	11.4	1.4	30.9	0.9	7.3	0.8	4.7	1.0	1.9	1.1
20 and over	..	..	86.0	0.9	18.2	2.2	29.8	0.8	8.9	1.0	5.9	1.3	2.1	1.2
Number of antenatal visits														
None	..	..	..	..	52.5	5.2	16.6	0.5	37.0	4.9	26.0	6.1	4.6	2.8
1	32.7	0.5	..	..	20.7	2.1	27.9	0.8	18.0	2.4	11.1	2.6	3.3	2.0
2–4	42.6	0.6	..	..	27.0	2.7	27.5	0.8	25.5	3.4	16.3	3.8	4.9	3.0
5 or more	66.4	..	..	..	10.0	..	33.9	..	7.5	..	4.3	..	1.6	..
Smoked in the first 20 weeks of pregnancy														
Smoked	48.9	0.8	88.2	0.9	..	..	30.8	0.9	12.7	1.6	10.3	2.5	2.7	1.5
Did not smoke	63.1	..	96.2	..	..	..	33.8	..	8.0	..	4.2	..	1.7	..
Baby outcomes														
Gestational age														
Pre-term	62.6	1.0	89.5	0.9	16.5	1.6	46.1	1.4	..	..	50.7	28.4	7.5	5.6
Term	61.6	..	95.6	..	10.1	..	32.5	..	..	..	1.8	..	1.3	..
Post-term	56.2	0.9	95.9	1.0	8.6	0.8	33.0	1.0	..	..	0.0	..	2.1	1.6

Key statistics by maternal characteristics and baby outcomes, 2014 (continued)

	Mothers						Babies							
	Antenatal visit in first trimester		5 or more antenatal visits ^(a)		Smoked in the first 20 weeks of pregnancy		Caesarean section ^(b)		Pre-term		Low birthweight ^(c)		Apgar score less than 7 at 5 mins ^(d)	
	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio	%	Rate ratio
Birthweight														
Low (less than 2,500 grams)	60.0	1.0	89.4	0.9	20.6	2.1	46.6	1.4	73.2	19.1	..	..	8.0	5.7
Normal (2,500 to 4,499 grams)	61.8	..	95.5	..	10.0	..	32.5	..	3.8	..	..	..	1.4	..
High (4,500 grams and over)	58.0	0.9	96.6	1.0	7.0	0.7	43.4	1.3	0.7	0.2	..	..	2.1	1.5
Plurality														
Singletons	..	..	..	..	..	..	33.1	..	6.9	..	4.9	..	1.8	..
Twins	..	..	..	..	..	..	67.6	2.0	63.0	9.2	54.6	11.1	4.5	2.6
Other multiples	..	..	..	..	..	..	73.0	2.2	100.0	14.5	98.6	20.1	15.6	8.9
Total	61.6	..	94.7	..	10.6	..	33.1	..	8.6	..	4.9	..	1.8	..

.. Not applicable

(a) Based on women who gave birth at 32 weeks or more gestation (excluding unknown gestation). Excludes data from Victoria (see Appendix Table C2).

(b) Per cents for caesarean section delivery by maternal characteristics have been directly age-standardised to the Australian female population aged 15–44 as at 30 June 2001, with the exception of the maternal age category.

(c) Includes liveborn singleton babies only, with the exception of the plurality category.

(d) Includes liveborn babies only.

(e) Per cents by mother's indigenous status for antenatal visit in the first trimester, 5 or more antenatal visits, smoked in the first 20 weeks of pregnancy and caesarean section have been directly age-standardised to the Australian female population aged 15–44 as at 30 June 2001.

Note: Reference categories for rate ratios are indicated in italics. See Appendix C for further information on methods.

6

About the National Perinatal Data Collection

The NPDC commenced in 1991 and collects national information on the pregnancy and childbirth of mothers, and the characteristics and outcomes of their babies. The NPDC supports a range of reports and products, including:

- *Australia's mothers and babies* annual report
- perinatal dynamic data display, available at <www.aihw.gov.au/perinatal-data/>
- National Core Maternity Indicators reports and dynamic data display, available at <www.aihw.gov.au/ncmi/>
- *Indigenous mothers and their babies* reports
- other specialist reports, indicator-based reports and customised data requests.

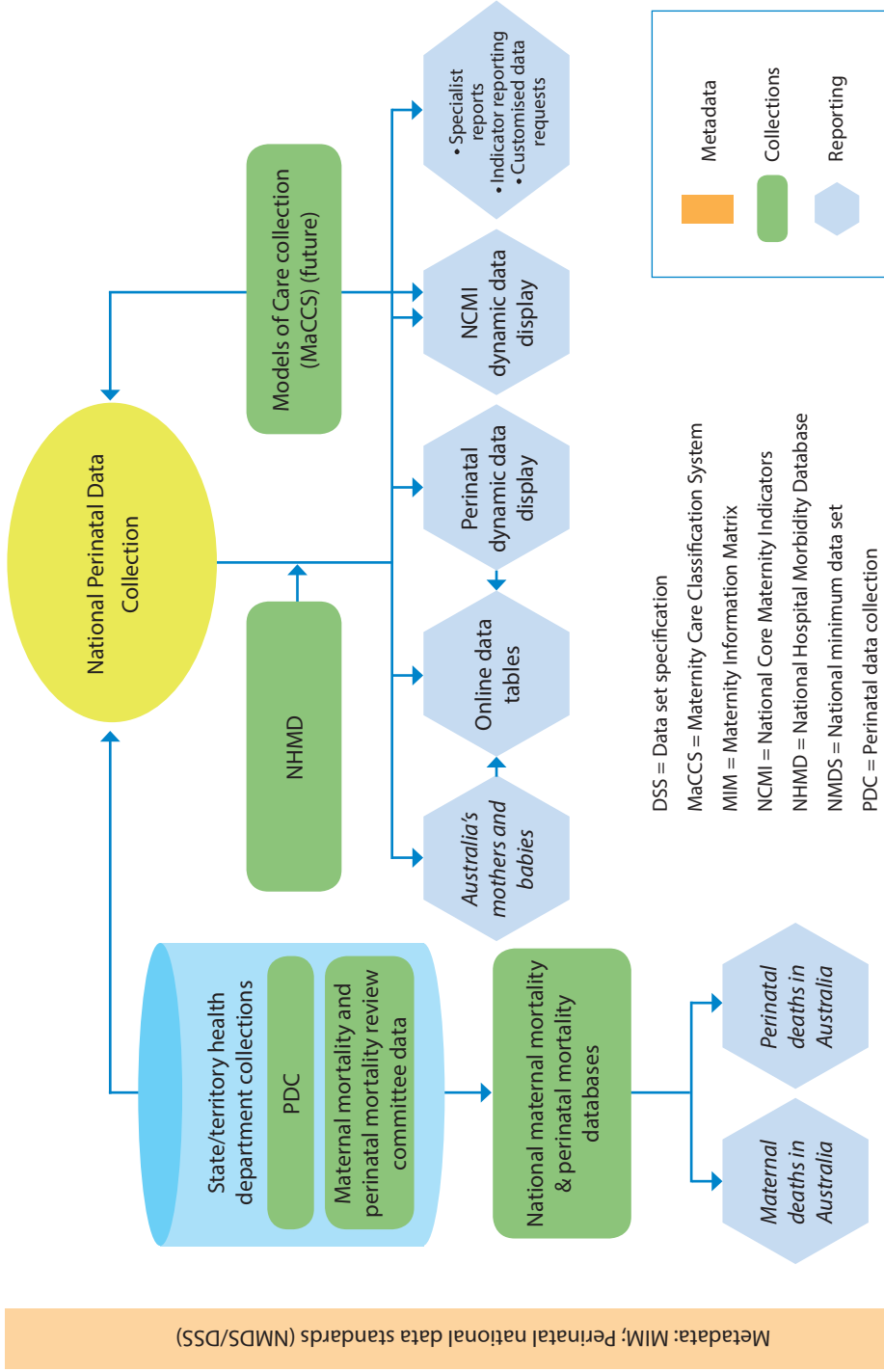
Collection of perinatal data by states and territories

Perinatal data are collected after each birth by midwives or other birth attendants from clinical and administrative records and information systems, including records of antenatal care, the care provided during labour, and the delivery and care provided after the birth. Each state and territory has its own form and/or electronic system for collecting data, which are forwarded to the relevant state and territory health department to form the state or territory perinatal data collection. See Appendix B for state and territory contact details and the most recent state and territory perinatal reports, which contain more detailed information about data collection in each jurisdiction. The Maternity Information Matrix summarises data items from Australian national and state and territory data collections relevant to maternal and perinatal health, and is available at <<http://maternitymatrix.aihw.gov.au/Pages/About-the-MIM.aspx>>.

Collation of national perinatal data

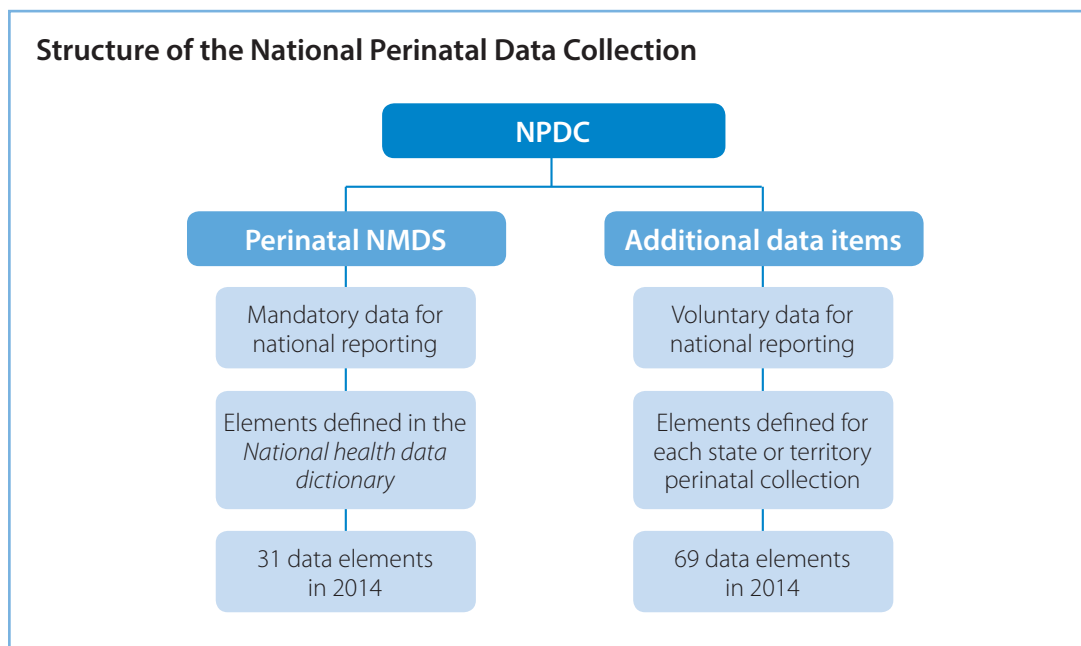
A standardised extract of electronic data from each state and territory collection is provided to the AIHW on an annual basis. Records received from states and territories are anonymous: that is, they do not include any names or addresses, but do include a unique set of identification numbers so that the source record can be identified. Data are checked for completeness, validity and logical errors before inclusion in the national collection.

Overview of maternal and perinatal data collections and national reporting outputs



Structure of the National Perinatal Data Collection

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



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

Each state and territory collects more information than is specified in the Perinatal NMDS, and the AIHW requests some of these additional items. These data items are at different stages in the process of standardisation. Some items have had national data standards developed, but have not yet been included as data elements in the Perinatal NMDS because they could not be implemented immediately in all jurisdictions.

In contrast, there are other data items—for which there are, as yet, no common definitions or categories for collecting the data or which are not collected in all jurisdictions—that are also provided to inform the future development of nationally standardised data.

Which births are counted?

This report presents information from the NPDC about births in Australia, including births in hospitals, in birth centres and in the community. The Australian *National health data dictionary* defines a ‘live birth’ as the complete expulsion or extraction from its mother of a baby, of any gestation, that shows signs of life; and a ‘stillbirth’ is the complete expulsion or extraction of a baby, of at least 20 weeks’ gestation or weighing at least 400 grams at birth (the weight expected of a baby at 20 weeks’ gestational age), which shows no signs of life.

The Perinatal NMDS and the NPDC require that either the birthweight or the gestational age conditions are met for both live births and stillbirths. This means that the very small number of live births occurring before 20 weeks’ gestation and weighing less than 400 grams are not included in the NPDC, although they may have been included in jurisdictional perinatal data collections. Data for babies whose gestational age and birthweight were not recorded are also not included in the NPDC, but may have been included in jurisdictional perinatal collections. Live births and stillbirths may include termination of pregnancy after 20 weeks. Stillbirths can include fetus papyraceous and fetus compressus. In Western Australia, data were included for both live births and stillbirths of at least 20 weeks’ gestation or, if gestation was unknown, the birthweight was at least 400 grams. In Victoria, stillbirths were of at least 20 weeks’ gestation unless gestation was unknown and the baby weighed 400 grams or more. South Australian data may not include all terminations of pregnancy for psychosocial reasons after 20 weeks’ gestation where birthweight was not recorded.

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

National Perinatal Data Development Committee

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

Glossary

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

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

age structure: The relative number of people in each age group in a population.

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

anteperthum fetal death: Fetal death occurring before the onset of labour.

Apgar score: Numerical score used to indicate the baby's condition at 1 minute and at 5 minutes after birth. Between 0 and 2 points are given for each of 5 characteristics: heart rate, breathing, colour, muscle tone and reflex irritability. The total score is between 0 and 10.

augmentation of labour: Intervention after the spontaneous onset of labour to assist the progress of labour.

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

birth status: Status of the baby immediately after birth (stillborn or liveborn).

birthweight: The first weight of the baby (stillborn or liveborn) obtained after birth (usually measured to the nearest 5 grams and obtained within 1 hour of birth).

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

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

diabetes (diabetes mellitus): A chronic condition in which the body cannot properly use its main energy source, the sugar glucose. This is due to a relative or absolute deficiency in insulin. Insulin, a hormone produced by the pancreas, helps glucose enter the body's cells from the bloodstream and then be processed by them. Diabetes is marked by an abnormal build-up of glucose in the blood and can have serious short- and long-term effects.

early neonatal death: Death of a liveborn baby within 7 days of birth.

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

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

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

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

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

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

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

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

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

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

instrumental delivery: Vaginal delivery using **forceps** or **vacuum extraction**.

intrapartum fetal death: Fetal death occurring during labour.

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

late neonatal death: Death of a liveborn baby after 7 completed days and before 28 completed days.

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

low birthweight: Weight of a baby at birth that is less than 2,500 grams.

maternal age: Mother's age in completed years at the birth of her baby.

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

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

neonatal death: Death of a liveborn baby within 28 days of birth.

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

non-Indigenous: People who have indicated that they are not of Aboriginal or Torres Strait Islander descent.

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

perinatal death: A fetal or neonatal death of at least 20 weeks' gestation or at least 400 grams birthweight.

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

perineal status: State of the perineum following birth. Perineal status is categorised as intact, **first, second, third, or fourth degree laceration, episiotomy**, or as another type of perineal laceration, rupture or tear.

plurality: Number of births resulting from a pregnancy.

postneonatal death: Death of a liveborn baby after 28 days and within 1 year of birth.

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

presentation at birth: The part of the fetus that presents first at birth.

pre-term birth: Birth before 37 completed weeks of gestation.

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

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

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

spontaneous labour: Onset of labour without intervention.

stillbirth: See **fetal death (stillbirth)**.

teenage mother: Mother aged younger than 20 at the birth of her baby.

third degree laceration: Perineal laceration, rupture or tear, as in **second degree laceration**, occurring during delivery and also involving the anal floor, rectovaginal septum or sphincter not otherwise specified.

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

Abbreviations

ACT	Australian Capital Territory
AIHW	Australian Institute of Health and Welfare
BMI	body mass index
IPPV	intermittent positive pressure ventilation
NCMI	National Core Maternity Indicators
NICU	neonatal intensive care unit
NMDDP	National Maternity Data Development Project
NMDS	national minimum data set
NPDC	National Perinatal Data Collection
NSW	New South Wales
NT	Northern Territory
OECD	Organisation for Economic Co-operation and Development
PHN	Primary Health Network
PSANZ-PDC	Perinatal Society of Australia and New Zealand Clinical Practice Guideline for Perinatal Mortality Perinatal Death Classification
Qld	Queensland
SA	South Australia
SCN	special care nursery
SES	socioeconomic status
Tas	Tasmania
Vic	Victoria
WA	Western Australia
WHO	World Health Organization

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Acknowledgments

This report was authored by Deanna Eldridge and Kathryn Sedgwick of the Australian Institute of Health and Welfare (AIHW). The authors gratefully acknowledge contributions made by the following AIHW staff: Fadwa Al-Yaman, Katherine Green, Conan Liu, Geoff Neideck, Jacqueline Rek and Chwee Von Sanden.

A large number of stakeholders provided valuable advice and input to the National Perinatal Data Collection and to this report, including the National Perinatal Data Development Committee and, in particular, the following staff from the state and territory health departments who provided data and reviewed this report:

- Lee Taylor, Tim Harrold and Jacob Humphries, Centre for Epidemiology and Evidence, New South Wales Ministry of Health
- Vickie Veitch, Diana Stubbs, Shirin Anil and Mary-Ann Davey from the Clinical Councils Unit, Health Service Programs Branch and Kirsty Anderson from the Health Information and Reporting Branch, Department of Health and Human Services, Victoria
- Sue Cornes, Joanne Ellerington, Vesna Dunne, Neil Gardiner and Ben Wilkinson, Statistical Services Branch, Department of Health, Queensland
- Maureen Hutchinson and Alan Joyce, Maternal and Child Health Unit, Information Data and Standards, Department of Health, Western Australia
- Wendy Scheil, Kevin Priest, Joan Scott and Britt Catcheside, Epidemiology Branch, Department of Health, South Australia
- Peter Mansfield, Peggy Tsang and Cynthia Rogers, Health Information Unit, Department of Health and Human Services, Tasmania
- Rosalind Sexton and Wayne Anderson, Epidemiology Section, ACT Health
- Leanne O'Neil and Shu Qin Li, Health Gains Planning, Department of Health, Northern Territory.

The AIHW also acknowledges the time, effort and expertise contributed by all maternity staff in collecting and providing the data for the National Perinatal Data Collection.

Appendixes

Appendixes are available for download from the AIHW website on the *Australia's mothers and babies 2014—in brief* web page <www.aihw.gov.au/publication-detail/?id=60129557656>:

- Appendix A: Perinatal National Minimum Data Set items
- Appendix B: State and territory perinatal data collections
- Appendix C: Data quality, interpretation and methods.

Australia's mothers and babies 2014—in brief presents key statistics and trends on pregnancy and childbirth of mothers, and the characteristics and outcomes of their babies. This publication is designed to accompany the perinatal dynamic data display available online at www.aihw.gov.au/perinatal-data/.