# 6 Early child development

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| Strategic areas for action |
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| Governance, leadership and culture |  | Early child development |  | Education and training |  | Healthy lives |  | Economic participation |  | Home environment |  | Safe and supportive communities |
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| 6.1 Antenatal care6.2 Health behaviours during pregnancy6.3 Teenage birth rate6.4 Birthweight | 6.5 Early childhood hospitalisations6.6 Injury and preventable disease 6.7 Ear health6.8 Basic skills for life and learning |
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A good start can help children to thrive and lead happy and healthy lives into adulthood. Addressing challenges in early childhood, including before children are even born, can reduce the development of problems that would prevent them achieving their full potential.

The indicators in the early child development strategic area focus on the drivers of long term advantage or disadvantage:

* antenatal care (section 6.1) — the health and wellbeing of women during pregnancy, childbirth and the period following birth is important for their future wellbeing and the wellbeing of their children
* health behaviours during pregnancy (section 6.2) — the health behaviours of women during pregnancy, including the consumption of tobacco and other drugs, affect the wellbeing of both mothers and children
* teenage birth rate (section 6.3) — teenage births are associated with poorer health outcomes, along with poorer educational attainment and employment prospects and lower incomes, which can lead to an intergenerational cycle of disadvantage
* birthweight (section 6.4) — low birthweight babies require longer periods of hospitalisation after birth, and are more likely to have poor health or even to die in infancy and childhood. Low birthweight is also correlated with poorer health outcomes later in life
* early childhood hospitalisations (section 6.5) — the hospitalisation rate provides a broad indicator of serious health issues experienced by children
* injury and preventable disease (section 6.6) — most childhood diseases and injuries can be successfully prevented or treated without hospitalisation
* ear health (section 6.7) — recurring ear infections, if not treated early, can become chronic and lead to hearing impairment. This can affect children’s capacity to learn and socialise
* basic skills for life and learning (section 6.8) — children’s early social and cognitive development provides the foundations upon which later relationships and formal learning depend.

Several COAG targets and headline indicators reflect the importance of early child development:

* young child mortality (section 4.2)
* early childhood education (section 4.3)
* substantiated child abuse and neglect (section 4.11).

Other headline indicators are important influences on early childhood outcomes:

* household and individual income (section 4.10)
* family and community violence (section 4.12).

Outcomes in the early child development area can be affected by outcomes in several other strategic areas, or can influence outcomes in other areas:

* education and training — school engagement (chapter 7)
* healthy lives — access to primary health care, obesity and nutrition, mental health (chapter 8)
* economic participation — income support (chapter 9)
* home environment — overcrowding, access to functioning water, sewerage and electricity services (chapter 10)
* safe and supportive communities — alcohol/drug misuse and harm (chapter 11).

Attachment tables for this chapter are identified in references throughout this chapter by an ‘A’ suffix (for example, ‘table 6A.1.1’). These tables can be found on the web page (www.pc.gov.au/oid2020).

## 6.1 Antenatal care[[1]](#footnote-1)

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| Box 6.1.1 Key messages |
| * Antenatal care provides expectant mothers with information and screening, prevention and treatment services to maximise their health throughout pregnancy, and the health of their babies.
* Over time, the proportion of Aboriginal and Torres Strait Islander expectant mothers attending at least one antenatal visit in the first trimester has increased. Of all Aboriginal and Torres Strait Islander mothers who gave birth in 2018, 66 per cent attended at least one antenatal visit in the first trimester of pregnancy (compared with 50 per cent in 2011).
* This increase has contributed to a narrowing of the gap over time to non-Indigenous women. From 2011 to 2018 the gap nearly halved, and is now 8 percentage points.
* Almost all Aboriginal and Torres Strait Islander women who gave birth at 32 weeks or more of gestation in 2018 attended at least one antenatal visit (99 per cent). Of these women, 88 per cent attended five or more antenatal visits and proportions were above 80 per cent across all remoteness areas.
* Although the gap has narrowed, the proportion who gave birth at 32 weeks or more after attending five or more antenatal visits remains lower for Aboriginal and Torres Strait Islander women than for non-Indigenous women.
* Culturally safe antenatal care services, including holistic care, greater continuity of carers throughout pregnancy and access to birthing on Country sites can facilitate early and ongoing engagement with these services by Aboriginal and Torres Strait Islander expectant mothers.
* Greater engagement of partners and other family members during the antenatal period may also facilitate better outcomes for parents and babies.
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| Box 6.1.2 Measures of antenatal care |
| There are two main measures for this indicator (aligned with reporting for the National Indigenous Reform Agreement (NIRA), which was in effect at the time of preparing this report). * *Antenatal visits in the first trimester* is defined as the proportion of women who gave birth who attended at least one antenatal visit in the first trimester (that is, up to and including 13 completed weeks).
* *Five or more antenatal visits* is defined as the proportion of women who gave birth at 32 weeks or more gestation, who attended five or more antenatal visits.

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| Box 6.1.2 (continued) |
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| The most recent available data for both main measures are from the AIHW National Perinatal Data Collection (NPDC) (all jurisdictions; remoteness). Key points to note are that:* nationally standardised data on *gestation at first antenatal visit* are only available from July 2010, and nationally standardised data on *number of antenatal visits* are only available from July 2012. (Caution should be used making jurisdictional comparisons prior to these dates.)
* data by remoteness area are provided from 2011. Data for prior years are not directly comparable and are not included in this report.

A supplementary measure on health and nutrition during pregnancy is also reported, but new data were not available for this report (see tables 6A.1.20 and 6A.1.22 for 2014-15 data.). |
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Antenatal care aims to maximise women’s health throughout pregnancy along with the health of their babies (AIHW 2020). Antenatal care provides expectant mothers with information and screening and prevention and treatment services and can help manage any issues that may affect birth outcomes. Early and ongoing access to, and engagement with, antenatal care is a key part of improving pregnancy outcomes (AHMAC 2012).

The optimal number and timing of antenatal care visits is unclear (Department of Health 2018; Gausia et al. 2013). National, evidence-based antenatal care guidelines recommend a first visit within the first 10 weeks of gestation, with the subsequent schedule of antenatal visits to be based on the individual woman’s needs (for uncomplicated pregnancies — 10 visits for the first pregnancy and 7 visits for subsequent pregnancies) (Department of Health 2018). This report aligns with other national reporting (including the NIRA and the Aboriginal and Torres Strait Islander Health Performance Framework) by reporting on attending for five or more visits.

The type of antenatal care available in Australia often depends on service availability, the woman’s preferences and her risk profile (Gibson-Helm et al. 2016). It can comprise primary and/or hospital care and often involves a range of health professionals. In remote locations, pregnancy care is usually provided by primary health care centres, with women transferring to hospitals in regional centres or metropolitan areas for the birth between four and six weeks prior to the due date (Reibel et al. 2015).

### Over time, the proportion of Aboriginal and Torres Strait Islander expectant mothers attending at least one antenatal visit in the first trimester has increased …

Nationally in 2018, 66 per cent of Aboriginal and Torres Strait Islander women who gave birth had attended at least one antenatal visit in the first trimester, an increase from 50 per cent in 2011 (table 6A.1.1). This pattern held across states and territories (figure 6.1.1) and by remoteness — with increases of between 13 and 18 percentage points across remoteness categories between 2011 and 2018 (table 6.A.1.6).[[2]](#footnote-2) Historical data prior to 2011 are available for selected jurisdictions and are reported in tables 6A.1.2–5.

| Figure 6.1.1 Aboriginal and Torres Strait Islander women who attended at least one antenatal visit in the first trimester of pregnancy, 2011 to 2018**a** |
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| Figure 6.1.1 Aboriginal and Torres Strait Islander women who attended at least one antenatal visit in the first trimester of pregnancy, 2011 to 2018  More details can be found within the text surrounding this image. |
| a See table 6A.1.1 for detailed definitions, footnotes and caveats.*Source*: AIHW analysis of the National Perinatal Data Collection; table  6A.1.1. |
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### … but the proportion remains lower than for non-Indigenous expectant mothers

The proportion of Aboriginal and Torres Strait Islander women giving birth who attended at least one antenatal visit in the first trimester of pregnancy remained lower than for non‑Indigenous women, although the gap has narrowed (figure 6.1.2). In 2018, after adjusting for differences in population age structures, the gap was about 8 percentage points, nearly half of what it was in 2011 (table 6A.1.7). The gap narrowed in major cities between 2011 and 2018; variability in the data means that definitive statements on changes in the gap cannot be made for other remoteness areas (figure 6.1.2).

| Figure 6.1.2 Women who gave birth and attended at least one antenatal visit in the first trimester, by Indigenous status and remoteness, 2011 and 2018 (age-standardised)**a,b** |
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| Figure 6.1.2 Women who gave birth and attended at least one antenatal visit in the first trimester, by Indigenous status and remoteness, 2011 and 2018 (age-standardised)  More details can be found within the text surrounding this image. |
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| a Age-standardised data for non-Indigenous women in very remote areas were not reported in 2018. b See tables 6A.1.7 and 6A.1.12 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW analysis of the National Perinatal Data Collection; tables 6A.1.7 and 6A.1.12. |
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### Most Aboriginal and Torres Strait Islander mothers who gave birth at 32 weeks or more of gestation attended five or more antenatal visits

Most Aboriginal and Torres Strait Islander women who gave birth at 32 weeks or more of gestation attended five or more antenatal visits during pregnancy. Nationally in 2018, almost all women who gave birth at 32 weeks or more gestation (99 per cent) attended at least one antenatal visit, and 88 per cent attended at least five visits (table 6A.1.13). These proportions are largely unchanged since 2012 (table 6A.1.13**)**.[[3]](#footnote-3)

Of women who gave birth at 32 weeks or more of gestation, the proportion who attended five or more visits was above 80 per cent across all remoteness areas. In 2018, the proportions (age-standardised) ranged from 84 per cent in remote areas to 91 per cent in inner regional areas (table 6A.1.19).

Between 2011 and 2018, the gap between Aboriginal and Torres Strait Islander and
non-Indigenous women who gave birth at 32 weeks or more of gestation and attended five or more antenatal visits during pregnancy narrowed, from 12 to 7 percentage points (table 6A.14).

### What can be done to further increase early and ongoing engagement with antenatal care?

Early and ongoing engagement with antenatal care is facilitated by the provision of culturally safe and evidence-based care relevant to the local community (Clarke and Boyle 2014; Middleton et al. 2017). Cultural safety is defined by the individual’s experiences of health care, and by their ability to raise concerns. Part of the process of developing cultural safety requires improving the cultural competence of health professionals (Bainbridge et al. 2015) — which is essential for effective health communication (Clarke and Boyle 2014) — and monitoring progress at the service level (Aitken and Stulz 2018). Culturally safe maternal and child health services are particularly critical to improving health for Aboriginal and Torres Strait Islander mothers and babies (Kildea et al. 2016).

Across Australia, there are an increasing number of maternity models that recognise the contributions of Aboriginal and Torres Strait Islander people in the design and delivery of services (Clarke and Boyle 2014; Gibson-Helm et al. 2016; Hickey et al. 2019; Kildea et al. 2016) to improve birth outcomes for Aboriginal and Torres Strait Islander women (Kildea et al. 2016). Programs in which Aboriginal and Torres Strait Islander people — members of the workforce and the community — work in partnership with staff in primary health care services and maternity services to design and deliver services, and to incorporate traditional midwifery knowledge and skills in those services, have been found to encourage Aboriginal and Torres Strait Islander women’s use of antenatal services and have led to better maternal and birth outcomes (Bertilone and McEvoy 2015; Kildea et al. 2012, 2019a; Middleton et al. 2017).

Research suggests that providing culturally safe antenatal care involves:

* supporting the vital role of the kinship system in Aboriginal and Torres Strait Islander communities to transfer child bearing knowledge (Dietsch et al. 2011) and encourage and support new parents through the antenatal period and the parenting journey (Reibel et al. 2015)
* holistic care (Clarke and Boyle 2014; Kildea and Van Wagner 2013) that addresses emotional wellbeing (Gibson-Helm et al. 2018) and takes into account the social and cultural determinants of health (Bertilone and McEvoy 2015; Reibel, Wyndow and Walker 2016)
* continuity of caregiver (midwife and/or Aboriginal health education officer) (Clarke and Boyle 2014; Gibson-Helm et al. 2018; Homer 2016; Kildea et al. 2012, 2019a)
* providing antenatal care closer to home, and the option of birthing on Country (Kildea et al. 2016, 2019b, 2019a, Hickey et al. 2018). Services that do this well encompass some of the following elements: they are community-based and community-governed, encourage traditional practices, involve a connection with lands and Country, have a holistic definition of health, and value Aboriginal and Torres Strait Islander people’s ways of knowing and learning (Kildea et al. 2016).

Many Aboriginal and Torres Strait Islander men also want to engage with antenatal (and postnatal) programs and services, but there are limited options for them to do so (Canuto et al. 2019, Canuto et al. 2020). Evidence from Australian and international studies looking at other population groups indicates that supporting and engaging partners during the antenatal, birthing and post-natal period may have positive impacts on:

* partners themselves, given increasing evidence of the mental health challenges associated with fatherhood (Baldwin et al. 2018; Giallo et al. 2012)
* the mother’s psychological wellbeing and birth outcomes (Jeffery et al. 2015).

Aboriginal and Torres Strait Islander men’s engagement with parental and child health services can be supported by culturally safe and gender-sensitive health care and community services that include men, focus on men’s psychological empowerment and provide them with support to build confidence with parenting (Reilly and Rees 2018).

### Future directions in data

The most recent data on the supplementary measure on Aboriginal and Torres Strait Islander mothers and young children’s nutrition and health are not reported because the data are only available every six years from the ABS National Aboriginal and Torres Strait Islander Social Survey; the most recent data are for 2014–15, and are included in attachment tables for this section. More regular data, and comparative data for non‑Indigenous mothers and children, would improve reporting.

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## 6.2 Health behaviours during pregnancy[[4]](#footnote-4)

| Box 6.2.1 Key messages |
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| * The health and wellbeing of a pregnant woman and her baby is influenced by health behaviours such as nutrition, physical activity, smoking, and alcohol and drug use.
* Tobacco smoking is one of the most significant and most common reversible risk factors for the health of pregnant women and their babies.
* The proportion of Aboriginal and Torres Strait Islander women smoking during pregnancy has declined in the past decade — from 52 per cent in 2009 to 44 per cent in 2018.
* However, the gap in smoking during pregnancy for Aboriginal and Torres Strait Islander women compared with non-Indigenous women increased (from three times the proportion in 2009 to nearly four times in 2018), as smoking in pregnancy for non-Indigenous women also declined and it was from a lower base rate.
* Self-reported consumption of alcohol during pregnancy by the mothers of Aboriginal and Torres Strait Islander children more than halved in the past decade, from 20 per cent in 2008 to nine per cent in 2018-19.
* Self-reported drug use rates during pregnancy for Aboriginal and Torres Strait Islander women remained relatively unchanged over this period — and in 2018-19 it was three per cent.
* Further reductions in these risk factors require a holistic approach to health that includes an understanding of, and strategies to overcome, the impacts of intergenerational trauma and racism on current ill health and social disadvantage, and of their association with health behaviours.
* Many Aboriginal and Torres Strait Islander pregnant women are motivated to quit smoking during pregnancy. Social support, health literacy and culturally responsive health care are key to helping them achieve this objective.
* Also key to reducing smoking rates during pregnancy are strategies to prevent the uptake of smoking by young people in adolescence and early adulthood — around the age when many Aboriginal and Torres Strait Islander women have children.
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| Box 6.2.2 Measuring health behaviours during pregnancy |
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| There is one main measure for this indicator (aligned with reporting for the NIRA, which was in effect at the time of preparing this report). *Tobacco smoking during pregnancy* is defined as the number of women who smoked during pregnancy as a proportion of the total number of women who have given birth. (continued next page) |
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| Box 6.2.2 (continued) |
| The most recent available data are from the AIHW National Perinatal Data Collection (NPDC) (all jurisdictions; remoteness). Key points to note are that:* data are available for all states and territories from 2009 onwards. Prior to 2009 data were not available for Victoria
* nationally standardised data items on tobacco smoking are available from July 2010. Caution should be used in making jurisdictional comparisons prior to this date
* remoteness data are presented from 2011 onwards (and are not comparable with previous years).

Data for three supplementary measures are also provided: The measures are of the proportion of mothers, with Aboriginal and Torres Strait Islander children aged 0–3 years, who: used tobacco during pregnancy; consumed alcohol during pregnancy; used illicit drugs during pregnancy. The data for these measures come from the ABS National Aboriginal and Torres Strait Islander Social Survey (NATSISS) (all jurisdictions; remoteness), and from the ABS National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) (all jurisdictions; remoteness). The most recent available data are from NATSIHS 2018-19).Data on tobacco use during pregnancy from the NPDC and the NATSISS are not directly comparable. |
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The health and wellbeing of a woman and her baby during pregnancy are enhanced by certain behaviours. These include eating a healthy diet containing iron and calcium-rich foods, drinking plenty of water, doing low to moderate-intensity physical activity, taking vitamins and minerals such as folic acid and iodine (DoH 2019) and receiving vaccinations for influenza and whooping cough (DoH 2020).

On the other hand, behaviours like tobacco smoking, alcohol and drug use during pregnancy have long-lasting negative impacts on the mother (Greenhalgh 2015; Wilson et al. 2017) and the baby. All three behaviours are linked to at least one adverse perinatal outcome such as low birthweight (section 6.4 *Birthweight*), being small for gestational age, or pre-term birth and perinatal death (section 4.2 *Young child mortality*) (AIHW 2020b; Brown et al. 2016; Kelly, Graham and Sullivan 2010; O’Leary et al. 2020; Oni et al. 2019) and can have ongoing developmental effects (Gould et al. 2017; Reid et al. 2015). Alcohol use creates a risk of fetal alcohol spectrum disorder (FASD) — which can mean birth defects and growth and developmental problem  — (Fitzpatrick et al. 2017; Reid 2018).[[5]](#footnote-5) And the effects of alcohol and illicit drug use can include neonatal abstinence syndrome (Davies et al. 2016).

During pregnancy, there is no safe amount of tobacco smoking or illicit drug use (DoH 2019), but it is not yet known how much alcohol is safe to drink. The risk of damage to the baby is greatest with high, frequent alcohol consumption during the first trimester (12 weeks) (AIHW 2020a), and binge drinking is especially harmful (AIHW 2020c). The National Health and Medical Research Council (NHMRC) advises that the safest option for pregnant women is to abstain from drinking if they are pregnant, planning a pregnancy or breastfeeding (NHMRC 2009).

Furthermore, the risks of adverse health outcomes are significantly higher when these substances are used simultaneously, rather than in isolation (Oni et al. 2019; Reynolds et al. 2020) and simultaneous use is not uncommon (AIHW 2020c; Brown et al. 2016; Gibberd et al. 2019; Passey et al. 2014).[[6]](#footnote-6)

The pregnancy period presents a unique opportunity to support women to engage in healthier behaviours for themselves and their babies. While these behaviours often carry into pregnancy (AIHW 2020c), pregnant women are motivated to quit (Gould et al. 2013, 2015) and continue to not smoke after the baby is born (see section 8.4 *Tobacco consumption and harm*).

Tobacco smoking is one of the most significant and most common reversible risk factors for the health of pregnant women and their babies (AIHW 2020b; Gould et al. 2017); and the main focus in this section. Obesity is also a significant emerging risk factor for perinatal morbidity and mortality (for example, see Thrift and Callaway 2014) that may become an additional focus for future reporting (see section 8.5 *Obesity and nutrition* for further information on overweight/obesity).

### Rates of Aboriginal and Torres Strait Islander women smoking during pregnancy have declined across all areas, except very remote areas …

The proportion of Aboriginal and Torres Strait Islander women smoking during pregnancy has decreased over time, from 52 per cent in 2009 to 44 per cent in 2018 (table 6A.2.1).[[7]](#footnote-7) This decrease can be seen across all remoteness areas, except very remote areas, where there was an increase (figure 6.2.1). The less remote the area, the larger the decrease in smoking during pregnancy was over time. This means that the gap across remoteness areas has increased over time (from a range of 46 to 53 per cent in 2011 to 39 to 57 per cent in 2018) (table 6A.2.2).

| Figure 6.2.1 Tobacco smoking during pregnancy for Aboriginal and Torres Strait Islander women, by remoteness, 2011 to 2018**a** |
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| Figure 6.2.1 Tobacco smoking during pregnancy for Aboriginal and Torres Strait Islander women, by remoteness, 2011 to 2018  More details can be found within the text surrounding this image. |
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| a See table 6A.2.2 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW (unpublished) National Perinatal Data Collection; table 6A.2.2. |
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### … but the ratio of the rates of smoking during pregnancy for Aboriginal and Torres Strait Islander women to non-Indigenous women increased

Smoking rates during pregnancy for both non-Indigenous and Aboriginal and Torres Strait Islander women decreased over the decade to 2018 (figure 6.2.2). The decline was statistically similar — 3.5 percentage points for Aboriginal and Torres Strait Islander women and 4.6 percentage points for non-Indigenous women — leaving the rate difference largely unchanged (table 6A.2.3). However, as the rate for non-Indigenous women was lower at the start of the period, the proportional decline in the rate was greater for non-Indigenous women. This led to an increase in the ratio of the rates of smoking during pregnancy for Aboriginal and Torres Strait Islander women to non-Indigenous women from 3.0:1 in 2009  to 3.9:1 in 2018 (figure 6.2.2).

| Figure 6.2.2 Tobacco smoking during pregnancy by Indigenous status, 2009 to 2018 (age-standardised rate and rate ratio)**a** |
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| Figure 6.2.2 Tobacco smoking during pregnancy by Indigenous status, 2009 to 2018 (age-standardised rate and rate ratio)  More details can be found within the text surrounding this image. |
| a See table 6A.2.3 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW (unpublished) National Perinatal Data Collection; table 6A.2.3. |
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### Alcohol use during pregnancy is decreasing and drug use remains low

More mothers of Aboriginal and Torres Strait Islander children are reporting abstaining from alcohol during their pregnancies. In 2018-19, around nine per cent of mothers of Aboriginal and Torres Strait Islander children aged 0–3 years reported that they consumed alcohol during pregnancy, a figure which is half of what it was in 2008 (20 per cent) (table 6A.2.5). While declines were observed across remoteness areas, they were only statistically significant in non‑remote areas (figure 6.2.3).

The most recent *National Drug Strategy Household Survey* (NDSHS) confirmed a general decline in self-reported alcohol use for pregnant women in Australia (AIHW 2020c). Nationally in 2019, of all the women surveyed who had been pregnant in the previous twelve months, over one-third (35 per cent) reported drinking alcohol during pregnancy — down from 44 per cent in 2016. Of those who did, most (90 per cent) drank infrequently (monthly or less) and the overwhelming majority (96 per cent) consumed one to two standard drinks on a typical day they drank (AIHW 2020c).

| Figure 6.2.3 Alcohol and drug use during pregnancy for mothers of Aboriginal and Torres Strait Islander children, by remoteness, 2008, 2014-15 and 2018-19**a,b** |
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| Figure 6.2.3 Alcohol and drug use during pregnancy for mothers of Aboriginal and Torres Strait Islander children, by remoteness, 2008, 2014-15 and 2018-19  Alcohol use  More details can be found within the text surrounding this image. | Figure 6.2.3 Alcohol and drug use during pregnancy for mothers of Aboriginal and Torres Strait Islander children, by remoteness, 2008, 2014-15 and 2018-19  Illicit drug or substance use  More details can be found within the text surrounding this image. |
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| a Confidence intervals for drug use in remote areas in 2008 and 2018-19 were not available. b See tables 6A.2.5–6 for detailed definitions, footnotes and caveats. |
| *Source*: ABS (unpublished) National Aboriginal and Torres Strait Islander Social Surveys 2008 and 2014-15 and ABS (unpublished) National Aboriginal and Torres Strait Islander Health Survey 2018-19; tables 6A.2.5–6. |
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Rates of self-reported drug use among Aboriginal and Torres Strait Islander women during pregnancy have remained relatively unchanged over time. In 2018-19, three per cent of mothers of Aboriginal and Torres Strait Islander children aged 0–3 years reported using illicit drugs or substances during pregnancy, a figure which is statistically similar to the proportion in 2008 (table 6A.2.5 and figure 6.2.3). Data from the NDSHS indicate that, in 2019, zero per cent of Australian women reported continuing to use cannabis or other illicit drugs once they found out they were pregnant — compared with five per cent and two per cent, respectively, who reported consuming drugs before they knew they were pregnant (AIHW 2020c). However, due to high sampling error, the data should be interpreted with caution.

### Social support and culturally responsive and holistic health care support are key to help the many Aboriginal and Torres Strait Islander women who want to quit smoking during pregnancy

Reducing smoking rates during pregnancy requires strategies to prevent the uptake of smoking by young people and to support women to quit smoking during pregnancy. For the most part, smoking uptake occurs in adolescence and early adulthood (Heris et al. 2020) — around the age when many Aboriginal and Torres Strait Islander women have children (section 6.3 *Teenage birth rate*) — and often carries into pregnancy (AIHW 2020c). Section 8.4 *Tobacco consumption and harm* contains more information about the determinants of smoking uptake and approaches to reduce its consumption, including localised solutions.

Research suggests that strategies to support Aboriginal and Torres Strait Islander women of childbearing age to quit smoking need to be multifaceted and holistic taking into account the social and cultural determinants of health and health-related behaviours (Bertilone and McEvoy 2015; Cockburn, Gartner and Ford 2018; Lovett, Thurber and Raglan 2017; Reibel, Wyndow and Walker 2016).

The factors affecting smoking during pregnancy are complex and interrelated. Aboriginal and Torres Strait Islander people are resilient (Beyond Blue Australia 2020). However, the cumulative effects of colonisation and dispossession, the removal of children and racism (Bovill et al. 2019; Gould et al. 2017) have led to intergenerational trauma and marked social disadvantage (Paradies 2016) and a deterioration in mental health and wellbeing (Beyond Blue Australia 2020; Calma, Dudgeon and Bray 2017; Macedo et al. 2020). Smoking rates are known to be associated with socioeconomic status (O’Leary et al. 2020; Thrift, Nancarrow and Bauman 2011) and emotional wellbeing (Kotz et al. 2016; Prandl, Rooney and Bishop 2012), including the stress and anxiety that results from the cumulative effects of multiple stressful life events (Askew et al. 2019; Harris et al. 2019; Wyndow, Walker and Reibel 2018).

Many pregnant Aboriginal and Torres Strait Islander women are motivated to quit smoking (Gould et al. 2013, 2015). They are more likely to be successful when they have some level of social support during their attempts to quit, particularly support from their partner and mother (Harris et al. 2019). Social support is important because Aboriginal and Torres Strait Islander women face many barriers during their attempts to quit (Harris et al. 2019). These barriers include high levels of daily stress and smoking as a social norm (Harris et al. 2019).

Key to supporting pregnant Aboriginal and Torres Strait Islander women to quit smoking is building health literacy. That is, changing the health literacy environment to improve health literacy for women, their families and healthcare providers (ACSQHC 2014). Aboriginal and Torres Strait Islander pregnant women face uncertainty regarding messages on the specific harm caused by smoking to themselves and their babies, which poses a barrier to quitting (Harris et al. 2019). For Aboriginal and Torres Strait Islander pregnant women, the provision of culturally appropriate health information that is designed in partnership with communities and provided in schools could assist to build their health literacy (Ireland and Smith 2020).

Also key is culturally responsive and holistic health care. This means providing appropriate education and training to health care professionals (Clifford et al. 2015; Hearn et al. 2011) — and particularly those professionals who may lack knowledge about smoking cessation strategies and the confidence to discuss smoking cessation with pregnant women (Harris et al. 2019). Supporting pregnant women requires assessing the women’s smoking status on the first antenatal visit (see section 6.1 *Antenatal care*), advising them of the risks associated with smoking in pregnancy, and providing support to stop or reduce smoking — including on possible approaches for quitting (DoH 2019) (Bovill et al. 2019; Harris et al. 2019; Walker et al. 2019).

But current research on smoking cessation programs for pregnant Aboriginal and Torres Strait Islander women is limited (Gould et al. 2017; Harris et al. 2019; Williams and Allan 2019), as is comparable international research for Indigenous people (Washio and Cassey 2016). For Aboriginal and Torres Strait Islander women, there is some evidence that programs are more likely to be effective if they are community-led (Williams and Allan 2019) and supported by Aboriginal and Torres Strait Islander women, families, and communities (Chamberlain et al. 2017; Gibberd et al. 2019; Gould et al. 2019).

### Future directions in data

The AIHW National Perinatal Data Collection (NPDC) contains information about maternal smoking during pregnancy. Data on paternal smoking during pregnancy would be a useful addition to the data collection because of the impacts of second-hand smoking.

Limited information is available about the prevalence of FASD in Australia. This is due to several factors including a low level of awareness by clinicians, the complexity of diagnosis and, until recently, the absence of nationally agreed and consistent diagnostic criteria, definitions and tools (Heyes 2018). Collection of data on alcohol use during pregnancy would provide an important contribution to the knowledge base.

The AIHW is continuing to pursue the collection of nationally consistent data on alcohol use during pregnancy through the National Maternity Data Development Project (NMDDP) (AIHW 2018). A list of high priority data items for national standardisation and reporting has been developed, including data on alcohol consumption in pregnancy. Six data items around the consumption of alcohol during pregnancy were introduced to the Perinatal National Best Endeavours Data Set (NBEDS) for collection from 1 July 2019.

There is also limited information available about nutrition and physical activity during pregnancy. These are important given their link to obesity in pregnancy. Collection of this information, would provide valuable information to support reporting on key risk and protective factors for the health of pregnant women and their babies.

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## 6.3 Teenage birth rate[[8]](#footnote-8)

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| Box 6.3.1 Key messages |
| * For some young women, teenage motherhood (giving birth under 20 years of age) can be a positive experience. But giving birth as a teenager can pose health risks for both the mother and the baby, and is also associated with socioeconomic disadvantage at the birth of the child, which can be lifelong for the mother due to the interruption of education and employment opportunities.
* The teenage birth rate is at a historical low nationally for all women. In 2018, it was 48 births per 1000 Aboriginal and Torres Strait Islander women aged 15–19 years. This rate is the lowest in the 15 years of reported data, down from a peak of 74 per 1000 births in 2009.
* The decrease in the birth rate for Aboriginal and Torres Strait Islander teenage women is seen across all teenage years.
* Despite a downward trend, Aboriginal and Torres Strait Islander women are still more likely than non-Indigenous women to have a baby in their teenage years. In 2018, the rate for Aboriginal and Torres Strait Islander teenage women was seven times the rate for non‑Indigenous teenage women — and more than half of the approximately 200 births in Australia to all women under 16 years (less than one per cent of all births in Australia) were births to Aboriginal and Torres Strait Islander women.
* Over time, the proportion of babies born to teenage Aboriginal and Torres Strait Islander women is decreasing. Of all births to Aboriginal and Torres Strait Islander women in 2018, 13 per cent were to women aged under 20 years, down from 20 per cent two decades earlier. Similarly, the proportion has decreased for those under 18 years, from 10 per cent to 4 per cent.
* The proportion of births to teenage mothers who also had a teenage father has been stable over the past decade at around 30 per cent for Aboriginal and Torres Strait Islander women, only a few percentage points higher than the proportion for non-Indigenous women. Caution should be used in interpreting data on the age of the father given the large proportion of births for whom the age of the father is unrecorded.
* Sexual and reproductive health education, culturally safe primary healthcare and better education opportunities and socioeconomic conditions in childhood and adolescence play an essential role in reducing and managing teen births.
* For young Aboriginal and Torres Strait Islander women who are pregnant and decide to proceed with the pregnancy, appropriate support is important to maximise the outcomes for mother and child.
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| Box 6.3.2 Measures of teenage birth rate |
| The main measure for this indicator is *Teenage birth rate*, defined as the number of live births to women aged less than 20 years per 1000 women aged 15–19 years.Data are also provided for two supplementary measures:* Births to teenage mothers, by age of mother
* Births to teenage mothers, by age of father.

The most recent available data for all measures are from the ABS Birth Registrations Collection (all jurisdictions; age; remoteness). Births are reported according to the date of registration (which may occur in a different year to the birth itself).The ABS Birth Registrations Collection data are not directly comparable to the AIHW’s National Perinatal Data Collection (NPDC) due to differences in methods, timing and reporting, and the NPDC has a shorter time series than the ABS data collection. |
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For some young women, teenage motherhood can be a positive experience (AIHW 2020). It can change unhealthy behaviours and relationships (AHRC 2017) and provide mothers with a newfound sense of purpose, maturity, and responsibility (Larkins et al. 2011; Price-Robertson 2010).

However, teenage motherhood is often associated with poor health outcomes for the mother and baby (see section 4.2 *Young child mortality*). For example, teenage mothers (under 20 years of age) face higher risks of systemic infections than women aged 20 to 24 years (WHO 2020), and babies born to teenage mothers are also more likely to die during the perinatal period (AIHW 2018). The younger the teenage mother, the greater the likelihood of poorer outcomes for the mother and baby (WHO 2020).

Furthermore, teenage motherhood is also associated with socioeconomic disadvantage at the birth of the child, which can become a lifelong issue for the mother and child (Boden, Fergusson and John Horwood 2008; Gibb et al. 2015; Kalb, Le and Leung 2015). For example, teenage mothers are more likely to have more children over their lifetimes (Venn and Crawford 2018) and are less likely to complete year 12, to be employed, and to have more personal income (Kalb, Le and Leung 2015). For babies born to Aboriginal and Torres Strait Islander teenage women, analysis of data from the Longitudinal Study of Indigenous Children (LSIC) found that the children had greater vocabulary and social and emotional difficulties compared with children born to older Aboriginal and Torres Strait Islander women, even after accounting for other characteristics (DSS 2015).[[9]](#footnote-9)

The relationship between teenage motherhood and socioeconomic disadvantage is complex. Teenage mothers often have relatively disadvantaged childhood backgrounds when compared with older mothers, and tend to leave school early (Jeon, Kalb and Vu 2011; Kalb, Le and Leung 2015). While there is no evidence to suggest that disadvantage directly leads women to become adolescent mothers, the reality in disadvantaged communities where unemployment rates are high and rates of school completion are low can shape young women’s expectations and aspirations (Gore et al. 2017; Senior and Chenhall 2012), and they may see few alternatives to early motherhood (Larkins and Page 2016).

### The birth rate for Aboriginal and Torres Strait Islander teenage women has declined, and across all teenage years

The birth rates for Aboriginal and Torres Strait Islander teenage women is at its lowest level over the 15 years of available data, with decreases across all teenage years (figure 6.3.1). The number of live births per 1000 Aboriginal and Torres Strait Islander women aged
15–19 years increased from 63 in 2004 to 74 in 2009, before declining to 48 in 2018 (table 6A.3.1). This decrease has contributed to the narrowing of the gap with non‑Indigenous women over time (table 6A.3.2).

However, not all births may be registered, and so the birth rate may be underestimated. There is evidence (analysis of births up to 2012) indicating non-registration of around 17‑18 per cent of births to Aboriginal mothers in Queensland and WA (Endo, van Schalkwijk and Wills 2014; Gibberd, Simpson and Eades 2016).

| Figure 6.3.1 Birth rate for Aboriginal and Torres Strait Islander teenage mothers, by age of mother, 2004–2018**a** |
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| Figure 6.3.1 Birth rate for Aboriginal and Torres Strait Islander teenage mothers, by age of mother, 2004–2018  More details can be found within the text surrounding this image. |
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| a See table 6A.3.1 for detailed definitions, footnotes and caveats. |
| *Source*: ABS (unpublished) Births, Australia, various years, Cat. no. 3301.0; ABS (2019) *Estimates and Projections, Aboriginal and Torres Strait Islander Australians*, 2006 to 2031, Cat. no. 3238.0; ABS (various years) Australian Demographic Statistics, June quarter; table 6A.3.1. |
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Despite a downward trend in birth rates for Aboriginal and Torres Strait Islander teenage women and a narrowing of the gap, Aboriginal and Torres Strait Islander women remain more likely to have a baby in their teenage years than non-Indigenous women. In 2018, the rate of births to Aboriginal and Torres Strait Islander teenage women was seven times the rate for non-Indigenous teenage women (table 6A.3.2). — and more than half of the 201 babies born in Australia to women aged under 16 years (less than one per cent of all babies born in Australia) were born to Aboriginal and Torres Strait Islander women (table 6A.3.6).

### The proportion of babies born to Aboriginal and Torres Strait Islander mothers who are teenagers is declining

Over the years, there has been a decrease in the proportion of babies born to Aboriginal and Torres Strait Islander mothers who are aged under 20 years. The percentage of babies born to women under 20 years of age decreased from around 20 per cent between 1998 and 2010 to 13 per cent in 2018 (table 6A.3.4), and this downward trend held across all teenage years (figure 6.3.2). For those under 18 years of age, the proportion decreased from 10 per cent to 4 per cent (table 6A.3.4). These trends are similar when data are reported by the Indigenous status of the baby (table 6A.3.3).

| Figure 6.3.2 Proportion of births to Aboriginal and Torres Strait Islander mothers, by age of teenage mother, 1998–2018**a** |
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| Figure 6.3.2 Proportion of births to Aboriginal and Torres Strait Islander mothers, by age of teenage mother, 1998–2018  More details can be found within the text surrounding this image. |
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| a See table 6A.3.4 for detailed definitions, footnotes and caveats. |
| *Source*: ABS (unpublished) Births, Australia, various years, Cat. no. 3301.0; table 6A.3.4. |
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While the proportion of babies born to Aboriginal and Torres Strait Islander mothers who are teenagers decreased in all remoteness areas between 2001 and 2018, it continues to be higher in more remote areas (figure 6.3.3). In 2018, it was 11 per cent in major cities, increasing to 18 per cent in very remote areas (table 6A.3.7). For babies born to non‑Indigenous mothers the proportion born to teenage mothers, ranged between 1 and 3 per cent across remoteness areas (table 6A.3.7).

| Figure 6.3.3 Proportion of births to Aboriginal and Torres Strait Islander mothers who are teenagers, by remoteness, 2001–2018**a** |
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| Figure 6.3.3 Proportion of births to Aboriginal and Torres Strait Islander mothers who are teenagers, by remoteness, 2001-2018  More details can be found within the text surrounding this image. |
| a See table 6A.3.7 for detailed definitions, footnotes and caveats. |
| *Source*: ABS (unpublished) Births, Australia, various years, Cat. no. 3301.0; table 6A.3.7. |
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### The proportion of babies born to Aboriginal and Torres Strait Islander teenage mothers who also had a teenage father has been stable at around 30 per cent, close to that for non-Indigenous teenage mothers

International research indicates that children of teenage fathers have an increased risk of adverse birth outcomes such as preterm birth, low birthweight, being born small for gestational age, low Apgar Score[[10]](#footnote-10) and infant mortality (Alio et al. 2012; Chen et al. 2008; Doamekpor, Amutah and Ramos 2013).

The proportion of babies born to Aboriginal and Torres Strait Islander teenage mothers who also had a teenage father has remained relatively stable over the last decade, and is close to that for teenage non-Indigenous mothers. In 2018, 30 per cent of births to Aboriginal and Torres Strait Islander teenage mothers involved a father aged less than 20 years; a similar proportion of the children of non-Indigenous teenage mothers also had a teenage father (27 per cent) (table 6A.3.8).

However, as a large proportion of babies born to teenage mothers have the age of their father recorded as unknown — in 2018, 33 per cent for Aboriginal and Torres Strait Islander teenage mothers, and 17 per cent for non‑Indigenous teenage mothers — interpretation of these data is difficult (table 6A.3.8).

### What are the factors associated with higher Aboriginal and Torres Strait Islander teenage births, and how can they be addressed to reduce teenage birth rates?

While Aboriginal and Torres Strait Islander young women want control over family planning (James, Toombs and Brodribb 2018), obtaining and using contraception may be difficult for varying reasons including gender inequalities (MacPhail and McKay 2018) and sociocultural factors such as ideas surrounding women’s health, social isolation and shame (Ireland and Smith 2020; James, Toombs and Brodribb 2018). Shame may be a larger issue in remote communities where confidentiality can be harder to achieve (Warwick et al. 2019).

Helping young Aboriginal and Torres Strait Islander people better plan for their families by improving sexual and reproductive health literacy could help reduce teenage births (Lewis and Skinner 2014).

* Aboriginal and Torres Strait Islander young men and women and their female family members have expressed a need for improved sexual and reproductive health literacy, particularly in relation to relationships, first sexual experiences and negotiating condom use (Helmer et al. 2015; James, Toombs and Brodribb 2018; Reibel et al. 2015).
* Assisting Aboriginal and Torres Strait Islander young men and women to build their health literacy means providing culturally appropriate reproductive health information that is responsive to the gendered needs of males and females and is designed in partnership with communities and provided in schools (Ireland and Smith 2020).
* This information should be embedded in a holistic primary health care system, providing culturally appropriate support where health professionals enable autonomous family planning that is inclusive of men by offering information and resources both antenatally and postnatally (Griffiths et al. 2019; James, Toombs and Brodribb 2018; Larkins and Page 2016).

Research indicates that attention should also be given to the broader social and cultural determinants associated with Aboriginal and Torres Strait Islander teenage births (Burbank, Senior and McMullen 2015; James, Toombs and Brodribb 2018; Larkins and Page 2016). As socioeconomic disadvantage and early school leaving are linked to high rates of teenage births (Kalb, Le and Leung 2015; Venn and Crawford 2018; WHO 2020), improving socioeconomic conditions in childhood and increasing education opportunities could have positive implications for teenage parenthood.

For young Aboriginal and Torres Strait Islander women who are pregnant and decide to proceed with the pregnancy, appropriate support beyond that provided by kinship networks is important to maximise the outcomes for mother, father and child. These include:

* facilitating Aboriginal and Torres Strait Islander men’s and women’s engagement with the health system in relation to their health and the health of their babies. Evidence from a small scale qualitative study in WA indicates that destigmatizing young parenthood and providing continuous care in culturally safe environments (with culturally competent health professionals) could help expectant Aboriginal and Torres Strait Islander teenage mothers to engage with the healthcare system (Reibel et al. 2015; Reibel, Wyndow and Walker 2016). Another study found that Aboriginal and Torres Strait Islander men’s roles as parents can be supported by culturally safe and gender sensitive health care and community services that include men, focus on men’s psychological empowerment and provide support and encouragement to male parents to address shame and lack of confidence around parenting (Reilly and Rees 2018).
* supporting Aboriginal and Torres Strait Islander young parents to continue their education, which may assist in addressing the potentially negative longer‑term effects of teenage parenthood on employment and income (Griffiths et al. 2019; Kalb, Le and Leung 2015).

### Future directions in data

National data and evidence are lacking on knowledge, access to and use of contraceptive methods and sexual and reproductive health services (including pregnancy termination services) for Aboriginal and Torres Strait Islander young women and their partners. The most recent ABS National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) in 2018-19 did not collect any information about contraception, whereas in previous surveys data was collected for women aged 18–49 years.

Further work is required to encourage all births to be registered, and the age of the father to be recorded for births to teenage mothers. The ABS births data collection has data on the age of the mother and father, but where the mother is a teenager there is a high proportion of births where the age of the father is unknown. Identification of the father is currently not compulsory on birth registrations, and capturing this information would assist in developing age‑appropriate programs for teenage parents.

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## 6.4 Birthweight[[11]](#footnote-11)

| Box 6.4.1 Key messages |
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| * Children with a low birthweight have a greater risk of poor health or death at birth, and face a continued risk to their healthy development.
* Most babies born to Aboriginal and Torres Strait Islander women (about nine in ten in 2018) are born at a normal birthweight. About one in ten babies born to Aboriginal and Torres Strait Islander women are of low birthweight. This rate has decreased by one percentage point over the past decade.
* The proportion of babies born to Aboriginal and Torres Strait Islander women who are of low birthweight increases with remoteness, from 10 per cent in major cities and inner regional areas to 13 per cent in very remote areas in 2016–2018.
* While the gap has narrowed, the proportion of babies born to Aboriginal and Torres Strait Islander women who have low birthweight remains more than twice the proportion born to non‑Indigenous women who have low birthweight, and the gap still increases with remoteness.
* Australian research indicates that supporting Aboriginal and Torres Strait Islander women with their health during pregnancy is important for addressing low birthweight. In particular, support in ceasing smoking and the provision of culturally safe antenatal services are important factors in improving maternal outcomes.
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| Box 6.4.2 Measures of birthweight |
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| There is one main measure for this indicator. * *Incidence of low birthweight among live‑born babies* is defined as the number of low birthweight (less than 2500 grams) live‑born singleton infants as a proportion of the total number of live‑born singleton infants with known birthweight. The choice of low birthweight was to align with the associated measure under the National Indigenous Reform Agreement (NIRA), which was in effect at the time of drafting this report.

The most recent available data for this measure are from the AIHW National Perinatal Data Collection (NPDC) (all jurisdictions; remoteness). Key points to note are that:* since 2011, data have been available by the Indigenous status of the baby. Historical data are only available by the Indigenous status of the mother
* data disaggregated by geography are based on the place of usual residence of the mother
* data disaggregated by remoteness are presented for 2011 onwards only, as remoteness data are not directly comparable for earlier years.
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The foundations for good health start in the antenatal period and the first years of life. Children who are born at a normal birthweight have a better chance of a healthy start.[[12]](#footnote-12)

By contrast, babies with a low birthweight have a greater risk of poor health or death at birth and face continued risks to their healthy development (AIHW 2018b; McEwen et al. 2018; OECD 2019; Westrupp et al. 2019). Approximately four in five fetal deaths (stillbirths) are low birthweight babies (with rates similar for Aboriginal and Torres Strait Islander and non‑Indigenous mothers) (table 6A.4.24).

Low birthweight is often due to pre‑term births (births before 37 completed weeks of gestation) — although the infant may be within the expected weight range for its gestational age (Ford et al. 2018). In 2018, almost 3 in 4 of all low birthweight babies were pre‑term, and more than half of pre‑term babies were of low birthweight (AIHW 2020).

Pre‑term birth and low birthweight complications contribute to the increased burden of disease experienced by Aboriginal and Torres Strait Islander people, and are among the top ten contributors to the burden (AIHW 2016).

Low birthweight is also associated with:

* reduced social, emotional and cognitive development in childhood (DeKieviet et al. 2012; Guthridge et al. 2015)
* higher death rates in adult life, due to an increased likelihood of developing chronic diseases including cardiovascular disease, kidney disease and diabetes mellitus (AIHW 2018a; Arnold, Hoy and Wang 2016; Hoy and Nicol 2019; Luyckx et al. 2013).

### Most babies born to Aboriginal and Torres Strait Islander women are born at a normal birthweight, and the proportion born with a low birthweight has decreased over the past decade…

Most babies born to Aboriginal and Torres Strait Islander women are born at a normal birthweight (approximately nine in ten in 2018). And a small proportion (about 1 per cent) are born at a high birthweight (AIHW 2020).

The proportion of babies born to Aboriginal and Torres Strait Islander women who were of low birthweight has decreased over the last decade, from 11.2 per cent in 2007 to 10.2 per cent in 2018 (figure 6.4.1).

| Figure 6.4.1 Proportion of live‑born singleton babies born with low birthweight, by Indigenous status of mother, 2007 to 2018**a** |
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| Figure 6.4.1 Proportion of live‑born singleton babies born with low birthweight, by Indigenous status of mother, 2007 to 2018  More details can be found within the text surrounding this image. |
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| a See table 6A.4.1 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW (unpublished) National Perinatal Data Collection; table 6A.4.1. |
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Nationally, in 2016–2018,[[13]](#footnote-13) the proportion of babies born to Aboriginal and Torres Strait Islander mothers who were of low birthweight increased with remoteness, from less than 10 per cent in major cities and inner regional areas to 13 per cent in very remote areas (figure 6.4.2).

Similar data and trends are apparent for the low birthweight rate for Aboriginal and Torres Strait Islander babies (that is, based on the Indigenous status of the baby, rather than the mother) (tables 6A.4.14–22).

### …however, the proportion of babies born to Aboriginal and Torres Strait Islander women who were of low birthweight remains more than twice that for non‑Indigenous women

While there has been a narrowing in the gap with non‑Indigenous women, the proportion of babies born to Aboriginal and Torres Strait Islander women who were of low birthweight remains more than twice the proportion born to non‑Indigenous women (figure 6.4.1), and the gap increases with remoteness (figure 6.4.2).

| Figure 6.4.2 Proportion of live‑born singleton babies born to Aboriginal and Torres Strait Islander mothers with low birthweight, by remoteness area, 2016–2018**a,b** |
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| Figure 6.4.2 Proportion of live‑born singleton babies born to Aboriginal and Torres Strait Islander mothers with low birthweight, by remoteness area, 2016–2018  More details can be found within the text surrounding this image. |
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| a Error bars represent the variability band associated with each point estimate. b See table 6A.4.13 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW (unpublished) National Perinatal Data Collection; table 6A.4.13. |
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### Research indicates that supporting Aboriginal and Torres Strait Islander women with their health during pregnancy is important for addressing low birthweight

Australian and international research suggests that the risk factors for low birthweight and pre‑term birth include maternal smoking, alcohol consumption and poor nutrition during pregnancy, maternal health factors (such as diabetes, high blood pressure, and low maternal body mass index), lower socioeconomic status, maternal age and unfavourable obstetric conditions, and issues with accessing health care in Aboriginal and Torres Strait Islander communities (AIHW 2018a; Barreto et al. 2019; Ford et al. 2018; OECD 2019).

A higher prevalence of these and other risk factors help explain the gap in the proportions of babies born to Aboriginal and Torres Strait Islander and non‑Indigenous women with low birthweight. For example, Aboriginal and Torres Strait Islander people are more likely to live in remote areas or areas of socioeconomic disadvantage. Analysis of perinatal data for 2012–2014 found that for low birthweight babies born to Aboriginal and Torres Strait Islander women, 21 per cent of the low birthweight was attributable to area‑level socioeconomic status and 5 per cent to remoteness (AIHW 2018b).

Australian research indicates that supporting Aboriginal and Torres Strait Islander women with their health during pregnancy is important for addressing pre‑term birth and low birthweight. In particular, support with the following issues is considered important.

* Reducing maternal smoking rates (AIHW 2018b; Ford et al. 2018; Khalidi et al. 2012; McInerney et al. 2019; Wyndow, Walker and Reibel 2018). Analysis of perinatal data for 2012–2014 indicates that 51 per cent of low birthweight births to Aboriginal and Torres Strait Islander women were attributable to smoking, compared with 16 per cent for non‑Indigenous women (AHMAC 2015). While rates of smoking during pregnancy for Aboriginal and Torres Strait Islander mothers are decreasing, they remain higher than for non‑Indigenous mothers (see section 6.2 *Health behaviours during pregnancy* for further information).

Higher rates of smoking during pregnancy are partly explained by higher rates of smoking across Aboriginal and Torres Strait Islander communities, which have been associated with socioeconomic disadvantage (Gould et al. 2017; Oni et al. 2019). In addition, research has found that stress, difficult relationships and times of chaos within women’s lives affect their capacity to prioritise smoking cessation during pregnancy (Walker et al. 2019). Culturally responsive support, whereby Aboriginal and Torres Strait Islander women are provided with the knowledge, self‑agency, and advice on effective interventions to cease smoking, is likely to be more effective (Walker et al. 2019).

* Increasing antenatal care use (AIHW 2018b; Khalidi et al. 2012; Taylor et al. 2013). Antenatal visits enable education and the monitoring of risk factors. Nationally in 2014‑15, a lower proportion of mothers of Aboriginal and Torres Strait Islander children born with low birthweight attended regular check‑ups whilst pregnant (84 per cent), compared with mothers of children with higher birthweights (98 per cent) (table 6A.4.26).

While rates are increasing over time (and the gap with non‑Indigenous women is narrowing), the proportion of Aboriginal and Torres Strait Islander women attending antenatal care in the first trimester remains below that for non‑Indigenous women. (See section 6.1 *Antenatal care* for further information on antenatal care for Aboriginal and Torres Strait Islander women.)

Culturally safe service provision (which includes involving Aboriginal and Torres Strait Islander elders and the community in developing services, holistic care, the continuity of caregivers, and the incorporation of traditional midwifery knowledge and skills) has been found to encourage Aboriginal and Torres Strait Islander women to access maternity health services — leading to better maternal outcomes (Kildea et al. 2012; Kildea and Van Wagner 2013; Murphy and Best 2012; Reibel and Walker 2010; Simmonds et al. 2010; Wilson 2009).

### Future directions in data

Further research on the services that are effective in improving the health of Aboriginal and Torres Strait Islander women during pregnancy will be important for addressing low birthweight.

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## 6.5 Early childhood hospitalisations[[14]](#footnote-14)

| Box 6.5.1 Key messages |
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| * Children’s health in their early years establishes the foundations for lifelong health, and also affects their social, emotional, and cognitive development.
* Early childhood hospitalisation rates are a proxy indicator of the health of young children aged under 5 years old. However, hospitalisation data should be interpreted with caution, as they are not a measure of the actual prevalence of injury and disease.
* The rate of hospitalisation among Aboriginal and Torres Strait Islander young children is increasing. Nationally in 2018‑19, there were around 3 hospitalisations for every 10 Aboriginal and Torres Strait Islander children. This rate has increased by almost 40 per cent over the past decade.
* The gap with non‑Indigenous young children is widening — nationally in 2018‑19, the rate for Aboriginal and Torres Strait Islander children was 1.4 times the rate for non‑Indigenous children — an increase from a ratio of 1.1 times in 2010‑11. This widening is because hospitalisations for Aboriginal and Torres Strait Islander young children have grown faster than those for non‑Indigenous children.
* The rates of hospitalisation for Aboriginal and Torres Strait Islander young children in major cities and regional areas have increased, but remain below those in remote areas (which have decreased slightly).
* Respiratory diseases — including influenza, pneumonia and asthma — accounted for over a quarter of all Aboriginal and Torres Strait Islander child hospitalisations, and were the largest contributor to the growth in hospitalisations.
* Improving housing conditions and increasing access to primary health care are important responses to facilitate reductions in respiratory diseases.
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| Box 6.5.2 Measures of early childhood hospitalisations |
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| The main measure for this indicator is the *hospitalisation rate*, which is defined as the hospital separation rate per 100 000 Aboriginal and Torres Strait Islander children aged 0–4 years, by principal diagnoses. A separation is a completed episode of care for an admitted patient. Data are sourced from the National Hospital Morbidity Database (all jurisdictions; remoteness), with the most recent data available for 2018‑19. |
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Children’s health in their early years establishes the foundations for lifelong health (Emerson, Fox and Smith 2015; Hartz 2017), and also affects their social, emotional, and cognitive development (Bell et al. 2016; Guthridge et al. 2015).

Hospitalisation rates are a proxy indicator of the health of young children. However, hospitalisation data should be interpreted with caution, as they do not measure the actual prevalence of injury and disease:

* Hospitalisations only represent the most serious illnesses or injuries. Many children suffering disease and injury do not require hospital treatment — most do not require formal medical treatment, or are treated by doctors, nurses and other primary health care providers outside of hospital.
* Hospitalisation rates may reflect the level of access and use of primary health care. If primary health care is difficult to access, hospital may be accessed as an alternative.
* Hospitalisation rates may reflect the level of access and use of hospital services for secondary and tertiary care services.

This section should be read together with section 6.6 *Injury and preventable diseases*.

### The rate of hospitalisation among Aboriginal and Torres Strait Islander young children is increasing, and the gap with non‑Indigenous children is widening

Most babies of Aboriginal and Torres Strait Islander mothers (97 per cent) are born healthy (AIHW 2020), and the total burden of disease is relatively low in young Aboriginal and Torres Strait Islander children (AIHW 2016).

However, the rate of hospitalisation among Aboriginal and Torres Strait Islander young children is increasing. Nationally in 2018‑19, there were 32 328 hospitalisations per 100 000 Aboriginal and Torres Strait Islander young children — around 3 hospitalisations for every 10 children (figure 6.5.1). This rate has increased by almost 40 per cent over the past decade, up from 23 523 hospitalisations per 100 000 children in 2010‑11.

The rate of hospitalisation among Aboriginal and Torres Strait Islander young children is higher than for non‑Indigenous young children. In 2018‑19, the rate was 1.4 times that of non‑Indigenous young children (which was 23 804 per 100 000 children), an increase from 1.1 times the rate of non‑Indigenous children in 2010‑11 (figure 6.5.1). Hospitalisation rates for non‑Indigenous young children have increased over the past decade, but not as much for Aboriginal and Torres Strait Islander children — and, as a result, the gap in hospitalisation rates has widened (figure 6.5.1)

| Figure 6.5.1 Rate of hospitalisations for young children (aged 0–4 years), by principal diagnosis, by Indigenous status, 2010-11 to 2018‑19**a** |
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| Figure 6.5.1 Rate of hospitalisations for young children (aged 0–4 years), by principal diagnosis, by Indigenous status, 2010-11 to 2018-19  Aboriginal and Torres Strait Islander  More details can be found within the text surrounding this image.Figure 6.5.1 Rate of hospitalisations for young children (aged 0–4 years), by principal diagnosis, by Indigenous status, 2010-11 to 2018-19  Non-Indigenous  More details can be found within the text surrounding this image.Figure 6.5.1 Rate of hospitalisations for young children (aged 0–4 years), by principal diagnosis, by Indigenous status, 2010-11 to 2018-19  Legend to figure  More details can be found within the text surrounding this image. |
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| a See table 6A.5.1 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW (unpublished) National Hospital Morbidity Database; table 6A.5.1. |
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### The rates of hospitalisation among Aboriginal and Torres Strait Islander young children in major cities and regional areas have increased, but remain below those in remote areas

An increase in hospitalisation rates for Aboriginal and Torres Strait Islander children occurred in major cities (where it grew by 66 per cent between 2010–12 and 2016–18) and regional areas (where it grew by about 35 per cent) (figure 6.5.2).[[15]](#footnote-15) In contrast, the hospitalisation rate for Aboriginal and Torres Strait Islander children in remote areas declined slightly (by 2.8 per cent) between 2010–12 and 2016–18. Even though the rate declined in remote areas, it remains just under twice the rate in non‑remote areas (47 531 per 100 000 children, compared with about 28 548 per 100 000 children). This is in contrast to non‑Indigenous young children, for whom hospitalisation rates are similar across remoteness areas (figure 6.5.3).

| Figure 6.5.2 Rate of hospitalisations for Aboriginal and Torres Strait Islander young children (aged 0–4 years), by principal diagnosis, by remoteness, 2010–12 and 2016–18**a** |
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| Figure 6.5.2 Rate of hospitalisations for Aboriginal and Torres Strait Islander young children (aged 0–4 years), by principal diagnosis, by remoteness, 2010–12 and 2016–18  Major cities  More details can be found within the text surrounding this image.Figure 6.5.2 Rate of hospitalisations for Aboriginal and Torres Strait Islander young children (aged 0–4 years), by principal diagnosis, by remoteness, 2010–12 and 2016–18  Inner and outer regional  More details can be found within the text surrounding this image.Figure 6.5.2 Rate of hospitalisations for Aboriginal and Torres Strait Islander young children (aged 0–4 years), by principal diagnosis, by remoteness, 2010–12 and 2016–18  Remote and very remote  More details can be found within the text surrounding this image.Figure 6.5.2 Rate of hospitalisations for Aboriginal and Torres Strait Islander young children (aged 0–4 years), by principal diagnosis, by remoteness, 2010–12 and 2016–18  Legend to figure  More details can be found within the text surrounding this image. |
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| a See table 6A.5.5 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW (unpublished) National Hospital Morbidity Database; table 6A.5.5. |
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### Respiratory diseases accounted for over a quarter of all hospitalisations for Aboriginal and Torres Strait Islander young children, and the largest portion of the gap with non-Indigenous children

Respiratory diseases — such as influenza and pneumonia, asthma, and other respiratory infections and diseases — accounted for over a quarter of all Aboriginal and Torres Strait Islander child hospitalisations (table 6A.5.1). These diseases also accounted for the largest portion of the gap with non‑Indigenous children, and were the largest contributor to the growth in Aboriginal and Torres Strait Islander child hospitalisations (table 6A.5.1). Infectious and parasitic diseases — such as viral and bloodstream infections — accounted for a further 9 per cent of child hospitalisations in 2018‑19.

The high rates of hospitalisations for respiratory and infectious diseases are consistent with research that indicates that Aboriginal and Torres Strait Islander children are more likely to suffer from these diseases, particularly in remote communities (AHMAC 2017; AIHW 2016; Falster et al. 2016; Hartz 2017; O’Grady et al. 2018). For example, hospitalisation rates for Aboriginal and Torres Strait Islander infants (aged less than 12 months) in the NT (and particularly the Central Australian region) for pneumonia and acute lower respiratory infections are among the highest rates in the world (Binks et al. 2019).

Poverty, poor quality housing, exposure to tobacco smoking and malnutrition all contribute to the higher rates of respiratory and infectious diseases among Aboriginal and Torres Strait Islander children, and in particular for young children in remote and low socioeconomic areas (AHMAC 2017; Falster et al. 2016; O’Grady et al. 2018).

| Figure 6.5.3 Rate of hospitalisations for young children (aged 0–4 years), by principal diagnosis, by remoteness, by Indigenous status, 2016–18**a** |
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| Figure 6.5.3 Rate of hospitalisations for young children (aged 0–4 years), by principal diagnosis, by remoteness, by Indigenous status, 2016–18  Aboriginal and Torres Strait Islander  More details can be found within the text surrounding this image.Figure 6.5.3 Rate of hospitalisations for young children (aged 0–4 years), by principal diagnosis, by remoteness, by Indigenous status, 2016–18  Non-Indigenous  More details can be found within the text surrounding this image.Figure 6.5.3 Rate of hospitalisations for young children (aged 0–4 years), by principal diagnosis, by remoteness, by Indigenous status, 2016–18  Legend to figure  More details can be found within the text surrounding this image. |
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| a See table 6A.5.5 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW (unpublished) National Hospital Morbidity Database; table 6A.5.5. |
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Other diagnoses that contribute to Aboriginal and Torres Strait Islander child hospitalisations include conditions originating in the perinatal period — such as birth trauma, fetal growth disorders, and complications of pregnancy (see sections 6.1 *Antenatal care*, 6.2 *Health behaviours during pregnancy* and 6.4 *Birthweight*) — along with injury, poisoning and certain other consequences of external causes (see section 6.6 *Injury and preventable diseases*).

### Improved housing conditions and access to primary health care are important responses to higher rates of hospitalisations

Approaches that ensure Aboriginal and Torres Strait Islander families have access to affordable and appropriate housing can reduce infectious disease transmission (Ali, Foster and Hall 2018; O’Grady et al. 2018). Some of the key barriers to be addressed include providing sufficient housing stock where it is needed (Habibis 2013; Lowell et al. 2018), regular repairs and maintenance (Standen et al. 2020), and affordable short term accommodation options for visitors (House of Representatives Standing Committee on Aboriginal and Torres Strait Islander Affairs 2001; Memmott, Birdsall-Jones and Greenop 2012). For further information on housing conditions see chapter 10 *Home environment*.

Access to primary health care can also help prevent the need for childhood hospitalisations with early intervention to detect and treat common childhood diseases. Barriers to accessing primary health care for families of Aboriginal and Torres Strait Islander children — some of which disproportionately affect those living in remote and disadvantaged areas — include the physical availability of health services, transport, flexible service delivery, affordability, and the cultural acceptability and appropriateness of health services (Falster et al. 2016).

Vaccinations (including maternal vaccinations) are also an important factor in protecting individuals against communicable diseases (AIHW 2018b). Vaccination has led to a decrease in the rates of a number of diseases (such as hepatitis A, meningococcal C, measles, diphtheria and mumps) in Aboriginal and Torres Strait Islander children (NCIRS et al. 2019).

Nationally in 2018, vaccination coverage (as per the National Immunisation Program Schedule[[16]](#footnote-16)) was high for Aboriginal and Torres Strait Islander children — 92 per cent and 89 per cent of children aged 1 year and 2 years, respectively (section 8.1 *Access to primary health care*, table 8A.1.19). Despite these relatively high vaccination rates, Aboriginal and Torres Strait Islander children continue to incur higher rates of hospitalisations from vaccine‑preventable diseases than non‑Indigenous children (AIHW 2018b; Li-Kim-Moy et al. 2016). The higher rates of disease are most likely explained by:

* environmental and social disadvantage, which increases the likelihood of being exposed to respiratory and infectious diseases. It is estimated that hospitalisation rates would be even higher if vaccination rates were lower (AIHW 2018b; NCIRS et al. 2019)
* the fact that not all vaccines are available on the National Immunisation Program Schedule. Some vaccines (such as those for seasonal influenza) are available for Aboriginal and Torres Strait Islander children, but vaccination coverage is not optimal (NCIRS et al. 2019)
* timeliness of vaccination — a higher proportion of Aboriginal and Torres Strait Islander children receive their vaccinations late (in reference to the Schedule) (NCIRS et al. 2019).

Section 8.1 *Access to primary health care* contains information on access to primary health care, including data on childhood immunisations.

### Future directions in data

Understanding the pathways Aboriginal and Torres Strait Islander children take through the health care system could help identify whether they are gaining access to the appropriate services at the right time. The National Integrated Health Services Information Analysis Asset (NIHSI AA) project, aims to bring together hospitals data from states and territories with data from the Medicare Benefits Schedule, Pharmaceutical Benefits Scheme and the National Death Index. NIHSI AA is currently in its pilot phase and will be managed by the Australian Institute of Health and Welfare.

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## 6.6 Injury and preventable disease[[17]](#footnote-17)

| Box 6.6.1 Key messages |
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| * Potentially preventable hospitalisations and potentially avoidable deaths for children include those for:
* health conditions that might have been prevented by the provision of appropriate and timely health services
* injuries that might have been prevented through community‑wide childhood injury prevention strategies or appropriate treatment.
* For Aboriginal and Torres Strait Islander children aged 0–4 years, about half of all hospitalisations and one in five deaths were potentially preventable; that is they could have potentially been prevented by timely and adequate health care in the community.
* The rate of potentially preventable hospitalisations for injury and disease among young Aboriginal and Torres Strait Islander children increased by 25 per cent over the past decade (to around 17 hospitalisations for every 100 young children in 2018‑19). But the rate for young non‑Indigenous children is largely unchanged, and as a result the gap has widened.
* The increased rates of potentially preventable hospitalisations for young Aboriginal and Torres Strait Islander children can be seen across most diagnosis categories. Diseases of the respiratory system and infectious and parasitic diseases accounted for around two‑thirds of potentially preventable hospitalisations in 2018‑19, and three‑quarters of the growth over the past decade.
* Between 2014 and 2018, there were about 1.5 potentially avoidable deaths per 1000 young Aboriginal and Torres Strait Islander children, which was about twice the rate for young non‑Indigenous children.
* The rate of potentially avoidable deaths for young Aboriginal and Torres Strait Islander children did not change substantially between 2009–2013 and 2014–2018. When considered against increasing hospitalisation rates for young Aboriginal and Torres Strait Islander children, the stable rate of potentially avoidable deaths could indicate that better care is being received once in hospital and/or diseases are being detected earlier leading to earlier entry and treatment in hospital.
* Governments can assist in preventing disease and promoting children’s health by providing quality housing and community infrastructure and culturally safe primary health care, and through community wide childhood injury prevention strategies which involve Aboriginal and Torres Strait Islander communities in their design.
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| Box 6.6.2 Measures of injury and preventable disease |
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| There are two main measures for this indicator:* *Potentially preventable hospitalisations* is a subset of all early childhood hospitalisations (section 6.5 *Early childhood hospitalisations*) and is defined as the number of potentially preventable hospital separations for injury and disease. Data are presented as a rate per 100 000 children aged 0–4 years. A separation is a completed episode of care for an admitted patient.

Potentially preventable hospitalisations are those admissions that may have been prevented through appropriate preventive health interventions and early disease management, usually delivered in primary care and community‑based care settings. See tables 6A.6.1–5 for a summary of the diagnosis categories counted in potentially preventable hospitalisations.The main data source is the Australian Institute of Health and Welfare (AIHW) National Hospital Morbidity Database, with the most recent available data for 2018‑19.* *Potentially avoidable deaths* is defined as the number of potentially preventable deaths from injury and disease. Data are presented as a rate per 100 000 children aged 0–4 years. See table 6A.6.6 for a summary of the categories of injury and disease counted in potentially avoidable deaths. The main data source is the ABS Causes of Death collection, with the most recent available data for 2014–2018 (NSW, Queensland, WA, SA and the NT).
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Children’s health and physical wellbeing in their early years establishes the foundations for lifelong health (Emerson, Fox and Smith 2015; Hartz 2017). Minimising injuries and disease is therefore important in ensuring that children receive the best possible start in life.

A large proportion of the hospitalisations and deaths of Aboriginal and Torres Strait Islander infants and children are potentially preventable — that is, they could be prevented if more effective health and injury prevention strategies and non‑hospital care are available and used (AHMAC 2017; Clapham et al. 2019). Potentially avoidable deaths and potentially preventable hospitalisations for young children stem from:

* childhood injuries — like all children, Aboriginal and Torres Strait Islander children are naturally curious and explore their environment using an hands‑on approach. While this is important for children’s development (Fox and Geddes 2016), it can also expose them to injuries (such as from falls, poisoning, and burns) (WHO 2008). Many of these injuries can be prevented through community‑wide childhood injury prevention strategies (such as car safety regulations, safety standards for household products, safe playgrounds, or swimming between the flags campaigns) (Clapham et al. 2019; Mitchell, Curtis and Foster 2018; Möller et al. 2017)
* conditions that might have been prevented by the provision of population health interventions (such as immunisation) and primary care services (such as early interventions to detect and treat common childhood diseases) (AHMAC 2017). For example, hospitalisations can be prevented for conditions such as measles and tetanus through vaccinations, and for other conditions such as selected respiratory and chest infections through timely treatment in primary health care settings using antibiotics.

Data on potentially preventable hospitalisations and potentially avoidable deaths are proxy indicators of the health of young children. However, these data should be interpreted with caution, as they do not measure the actual prevalence of injury and disease. Deaths and hospitalisations represent the most serious cases, with many children suffering disease and injury that can be treated in the community with the support of primary health care providers outside of hospital. High or increasing hospitalisation rates may also reflect appropriate or improving referral mechanisms and access to hospital care (AHMAC 2017).

Nationally in 2018‑19, about half of all hospitalisations for Aboriginal and Torres Strait Islander young children were potentially preventable (tables 6A.5.1 and 6A.6.1). This section should be read together with section 6.5 *Early childhood hospitalisations*.

### The rate of potentially preventable hospitalisations for injury and disease among young Aboriginal and Torres Strait Islander children is increasing, and the gap with non-Indigenous children is widening

The rate of potentially preventable hospitalisations for injury and disease among young Aboriginal and Torres Strait Islander children is increasing (table 6A.6.1). Nationally in 2018‑19, there were 17 148 of these child hospitalisations per 100 000 Aboriginal and Torres Strait Islander young children (figure 6.6.1). This rate has increased by 25 per cent over the past decade; it stood at 13 664 hospitalisations per 100 000 children in 2010‑11 (figure 6.6.1).

The rate of potentially preventable hospitalisations for injury and disease among young Aboriginal and Torres Strait Islander children is higher than that of non‑Indigenous children, and the gap is widening. (figure 6.6.1). While the rate for Aboriginal and Torres Strait Islander children grew, the rate for non‑Indigenous children (10 477 hospitalisations per 100 000 children) is largely unchanged from a decade ago (figure 6.6.1), leading to a widening of the gap. Nationally in 2018‑19, the rate for Aboriginal and Torres Strait Islander children was 1.6 times the rate for non‑Indigenous children, compared with 1.3 times the rate in 2010‑11.

| Figure 6.6.1 Potentially preventable hospitalisations for children aged 0–4 years, by Indigenous status, 2010‑11 to 2018‑19**a** |
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| Figure 6.6.1 Potentially preventable hospitalisations for children aged  0–4 years, by Indigenous status, 2010-11 to 2018-19    Aboriginal and Torres Strait Islander   More details can be found within the text surrounding this image.Figure 6.6.1 Potentially preventable hospitalisations for children aged  0–4 years, by Indigenous status, 2010-11 to 2018-19    Non-Indigenous   More details can be found within the text surrounding this image.Figure 6.6.1 Potentially preventable hospitalisations for children aged  0–4 years, by Indigenous status, 2010-11 to 2018-19    Legend to figure  More details can be found within the text surrounding this image. |
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| a See table 6A.6.1 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW (unpublished) National Hospital Morbidity Database; table 6A.6.1. |
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### The rate of potentially preventable hospitalisations for injury and disease among young Aboriginal and Torres Strait Islander children in non‑remote areas increased, but remains below that in remote areas

Like total hospitalisation rates for Aboriginal and Torres Strait Islander young children (section 6.5 *Early childhood hospitalisations*), potentially preventable hospitalisation rates for Aboriginal and Torres Strait Islander young children increased both in major cities (where they grew by more than 60 per cent between 2010–2012 and 2016–2018) and regional areas (where they grew by about 25 per cent) (table 6A.6.5).[[18]](#footnote-18) In contrast, the potentially preventable hospitalisations rate for Aboriginal and Torres Strait Islander children in remote areas declined slightly (by 2.4 per cent) between 2010–2012 and
2016–2018. Even though the rate has declined in remote areas, it remains more than twice the rate of non‑remote areas (table 6A.6.5). Rates for non‑Indigenous young children in 2016–2018 were also higher in remote areas, but to a lesser extent (being less than 25 per cent above non‑remote areas) (table 6A.6.5).

Higher rates of potentially preventable hospitalisations for young Aboriginal and Torres Strait Islander children in remote compared with non‑remote areas is likely due to:

* greater exposure to the risk factors associated with potentially preventable injury and disease (discussed below)
* barriers to accessing primary health care health in remote areas — including the physical availability of health services, transport, flexible service delivery, affordability, and the cultural acceptability and appropriateness of health services (Falster et al. 2016). See also sections 6.5 *Early childhood hospitalisations* and 8.1 *Access to primary health care*.

### Aboriginal and Torres Strait Islander children are being hospitalised at higher rates than a decade ago, across most potentially preventable diagnosis categories

Nationally in 2018‑19, Aboriginal and Torres Strait Islander children were hospitalised at higher rates than they were a decade ago, across most potentially preventable diagnosis categories (table 6A.6.1 and figure 6.6.1).

Respiratory system and infectious and parasitic diseases have contributed most of the increase in potentially preventable hospitalisations among Aboriginal and Torres Strait Islander young children. Together, these diagnoses accounted for about two‑thirds of all potentially preventable hospitalisations in 2018‑19, and three‑quarters of the growth in potentially preventable hospitalisations between 2010‑11 and 2018‑19 (table 6A.6.1). Most of the growth in rates for these diseases has been in non‑remote areas (table 6A.6.5).

Other diagnoses (where infections are a significant contributor) that help explain the higher rates of potentially preventable hospitalisations among Aboriginal and Torres Strait Islander children include diseases of the ear and mastoid process (see section 6.7 *Ear health*) and diseases of the skin and subcutaneous tissue (with each category accounting for 8 per cent of these hospitalisations in 2018‑19). However, while hospitalisation rates for diseases associated with the ear have increased over the past decade (by half), they have decreased slightly for diseases associated with the skin (table 6A.6.1).

Aboriginal and Torres Strait Islander children are more susceptible to respiratory and infectious conditions (including skin and ear infections), as research shows that they are more likely to be exposed to the risk factors for these diseases, particularly if they live in remote areas or areas of socioeconomic disadvantage (Falster et al. 2016; Hendrickx et al. 2018). Risk factors include poverty, inadequate housing, overcrowding, insufficient community infrastructure, and exposure to environmental tobacco smoke (Coleman et al. 2018; Davidson, Knight and Bowen 2020; Falster et al. 2016).

It can be difficult to maintain good hygiene practices when living in poor quality or overcrowded housing (including housing with poor health hardware[[19]](#footnote-19)), which can lead to higher rates of respiratory and infectious diseases (Ali, Foster and Hall 2018). Overcrowded housing can mean that infectious diseases, once present in a community, can circulate more rapidly (May, Bowen and Carapetis 2016). While insufficient community infrastructure and services can result in higher exposure to environmental health diseases. For example, exposure to dust from unsealed roads or insufficient waste disposal facilities (particularly affecting remote areas) leads to higher levels environmental health diseases (such as trachoma and lung infections) (Clifford et al. 2015; Department of Health 2014; McDonald, Bailie and Michel 2013; Melody et al. 2016; The Kirby Institute, UNSW 2015). See section 10.2 *Rates of disease associated with poor environmental health*.

Injury, poisoning and certain other consequences of external causes accounted for 14 per cent of potentially preventable hospitalisations for Aboriginal and Torres Strait Islander young children in 2018‑19 (table 6A.6.1). The increase in rates over the past decade has been in non‑remote areas (table 6A.6.5). Analysis of the causes of injury for Aboriginal and Torres Strait Islander children which led to hospitalisation has identified that falls (particularly falls from playground equipment) and other unintended causes were the most common (Möller et al. 2017; Pointer 2016).

Research shows that people living in low socioeconomic and remote areas (where Aboriginal and Torres Strait Islander people are overrepresented) are at increased risk of childhood injuries (Clapham et al. 2019; Möller et al. 2017). For example, lack of resources has been described as a main barrier to adequate maintenance of playgrounds (where many Aboriginal and Torres Strait Islander child injuries occur) in disadvantaged and remote areas (Möller et al. 2017).

### The rate of potentially preventable deaths has changed little over time for young Aboriginal and Torres Strait Islander children, but has decreased for non-Indigenous children

For 2014–2018, about one in five deaths (18 per cent) among Aboriginal and Torres Strait Islander children aged 0–4 years was attributable to preventable and treatable injuries and diseases (table 6A.6.6).

During this five‑year‑period, there were 109 potentially preventable deaths of young Aboriginal and Torres Strait Islander children across NSW, Queensland, WA, SA and the NT combined, a decrease from 132 deaths in the previous five‑year period (table 6A.6.6). However, the rates did not change significantly between these periods: they stood at 146 deaths per 100 000 children in 2014–2018, compared with 150 deaths per 100 000 children in 2009–2013 (figure 6.6.2).[[20]](#footnote-20)

The rate of deaths from preventable and treatable injuries and diseases was over twice as high for young Aboriginal and Torres Strait Islander children as for non‑Indigenous children in 2014–18. While the Aboriginal and Torres Strait Islander rate has not changed, the rate for non‑Indigenous children has decreased, from 90 deaths per 100 000 children in
2009–2013 to 72 deaths per 100 000 children in 2014–2018 (figure 6.6.2).

When stable or decreasing death rates are considered against increasing hospitalisation rates (bearing in mind the considerably larger number of hospitalisations compared to deaths), this could indicate better care once in hospital and/or earlier detection of diseases leading to earlier entry to hospital. For example, increased efforts to identify and treat preventable disease — such as through Aboriginal and Torres Strait Islander child health checks and targeted screening and health services — may have led to increased hospitalisation rates, but decreased the likelihood of long‑term disease and death (AHMAC 2017; AIHW 2018).

| Figure 6.6.2 Deaths from external causes and preventable diseases, children aged 0–4 years, by Indigenous status, NSW, Queensland, WA, SA and the NT, 2009–2013 and 2014–2018**a** |
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| Figure 6.6.2 Deaths from external causes and preventable diseases, children aged 0–4 years, by Indigenous status, NSW, Queensland, WA, SA and the NT, 2009–2013 and 2014–2018  Aboriginal and Torres Strait Islander  More details can be found within the text surrounding this image.Figure 6.6.2 Deaths from external causes and preventable diseases, children aged 0–4 years, by Indigenous status, NSW, Queensland, WA, SA and the NT, 2009–2013 and 2014–2018  Non-Indigenous  More details can be found within the text surrounding this image.Figure 6.6.2 Deaths from external causes and preventable diseases, children aged 0–4 years, by Indigenous status, NSW, Queensland, WA, SA and the NT, 2009–2013 and 2014–2018  Legend to figure  More details can be found within the text surrounding this image. |
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| a See table 6A.6.6 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW (unpublished) National Hospital Morbidity Database; table 6A.6.6. |
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### Quality housing and community infrastructure and culturally safe health care and injury prevention programs may assist to reduce potentially preventable hospitalisations for Aboriginal and Torres Strait Islander children

Approaches to ensure that Aboriginal and Torres Strait Islander families have access to affordable and appropriate housing (including housing that receives adequate and timely repair and maintenance) can reduce infectious disease transmission and subsequently reduce the demands on health services (Ali, Foster and Hall 2018; O’Grady et al. 2018). Similarly, attention needs to be paid to whether community services and infrastructure (such as sanitation, waste disposal and dust control) is sufficient for community needs (Department of Health 2014). Further information on housing conditions and Aboriginal and Torres Strait Islander health is provided in chapter 10 *Home environment*.

Early detection and treatment through primary health care (including dental and immunisation services) has significant benefits for those at risk of disease and can reduce the rate of potentially preventable hospitalisations and deaths (AHMAC 2017).

However, there are barriers to the families/carers of Aboriginal and Torres Strait Islander children accessing prevention and early intervention services. These barriers include the physical availability of health services, transport, flexible service delivery, affordability, language and the cultural acceptability and appropriateness of health services (Conway, Tsourtos and Lawn 2017; Falster et al. 2016).

Evidence suggests that access to primary health care can be improved where primary health care services can find ways of these barriers (Davy et al. 2016), and where these health services are provided in a culturally safe environment (Davy et al. 2016; Dwyer et al. 2015; Jennings, Bond and Hill 2018).

Further information on Aboriginal and Torres Strait Islander people’s access to primary health care is provided in section 8.1 *Access to primary health care*.

Similarly, community‑wide childhood injury prevention strategies can be effective in reducing childhood injuries. Research suggests that community interventions appear to be most successful where agencies work with the Aboriginal and Torres Strait Islander communities, and where the communities set the agenda for priority projects and have ownership over them (Clapham et al. 2019).

### Future directions in data

National data on the health status of Aboriginal and Torres Strait Islander people aged
0–14 years has historically been collected in the National Aboriginal and Torres Strait Islander Health Survey, but was not collected in 2018‑19. Data on the timely use of primary health care services was also not available for this age group from this survey. These are critical information gaps at the population level for Aboriginal and Torres Strait Islander children.

Understanding the pathways Aboriginal and Torres Strait Islander children take through the health care system could help identify whether they are gaining access to the appropriate services at the right time. The National Integrated Health Services Information Analysis Asset project, aims to bring together hospital data from states and territories with data from the Medicare Benefits Schedule, Pharmaceutical Benefits Scheme and the National Death Index. The project is currently in its pilot phase and will be managed by the Australian Institute of Health and Welfare.

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## 6.7 Ear health[[21]](#footnote-21)

| Box 6.7.1 Key messages |
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| * Good hearing is important for a child’s social, emotional, and cognitive development. Poor hearing (or extended periods of poor hearing) can impede a child’s development of language and communication skills, as well as their cognitive development and subsequent school performance.
* The proportion of Aboriginal and Torres Strait Islander children with a long‑term hearing problem has decreased by one third in the past two decades, and has nearly halved in remote areas.
* However, in 2017–19, this rate remained twice that of non‑Indigenous children, with the gap for otitis media (a treatable ear infection) even higher.
* The rate of hospitalisation among Aboriginal and Torres Strait Islander children for diseases of the ear is increasing, particularly for younger children (less than four years old); this may reflect improved diagnosis and use of ear health services and/or improved access to hospitals.
* The higher rates of ear diseases among Aboriginal and Torres Strait Islander children correspond to higher rates of hearing loss, compared to non‑Indigenous children. These higher rates are related to poor living conditions and environmental risk factors, such as exposure to tobacco smoke, together with barriers to accessing primary health care and issues with communication and coordination between service providers.
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| Box 6.7.2 Measures of ear health |
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| There are two main measures for this indicator:* *Prevalence of hearing conditions in children* is defined as the proportion of children aged 0–14 years with a reported hearing condition. Data are available from the ABS National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)/National Aboriginal and Torres Strait Islander Social Survey (NATSISS), with the most recent data available from the 2018‑19 NATSIHS. Data for the non‑Indigenous population are sourced from the ABS National Health Survey (NHS), with the most recent data available from the 2017‑18 NHS. Data are self‑reported — adults responded on behalf of children aged less than 15 years.
* *Hospitalisation rates for ear and hearing problems in children* is defined as the proportion of hospital separations for children aged 0–14 years for which the principal diagnosis was diseases of the ear and mastoid. A separation is a completed episode of care for an admitted patient. Data are sourced from the National Hospital Morbidity Database, with the most recent data available for 2018‑19 (all jurisdictions; by age; remoteness).
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Good hearing in childhood is important for social, emotional, and cognitive development, and helps young people to socialise, play and communicate.

Conversely, poor hearing (or extended periods of poor hearing) can impede a child’s development of language and communication skills, as well as their cognitive development and subsequent school performance (AMA 2017; Arefadib and Moore 2017; Bell et al. 2016; Burns and Thomson 2013; Simpson et al. 2020). Analysis of data from the Australian Early Development Census (AEDC) found that children with reported hearing loss were more than twice as likely as their hearing peers to be developmentally vulnerable when entering school (Simpson et al. 2020). In a study of Aboriginal children in the NT, Su et al. (2020, p. 6) found using data linkage that hearing impairment ‘increases the risk for poorer outcome in early childhood development and school readiness … and that risk may increase with the severity of [hearing impairment]’.

Poor hearing throughout childhood is also associated with emotional and behavioural difficulties, social isolation, and lower levels of self‑esteem (AMA 2017; Burns and Thomson 2013). As well as influencing school engagement and performance (AIHW 2018; Burns and Thomson 2013), these issues can compromise family functioning (AMA 2017) and could affect a child’s participation in and enjoyment of a range of activities including sporting, cultural, family, and community events.

Poor hearing in childhood can also have life‑long consequences. Research has shown that hearing loss during a child’s first year can lead to lifelong auditory processing disorders (AMA 2017). Hearing loss in childhood is associated with limited employment options and income in adulthood. In addition, hearing loss is associated with increased contact with the criminal justice system, which may result from increased antisocial behaviour, but also from difficulties communicating with authorities (AIHW 2018; Vanderpoll and Howard 2012). A 2011 study, on the hearing health of prisoners in the NT found that about 94 per cent of Aboriginal and Torres Strait Islander prisoners had significant hearing loss (Vanderpoll and Howard 2012).

### The proportion of Aboriginal and Torres Strait Islander children with a long‑term hearing problem has decreased by one‑third in the past two decades, and has nearly halved in remote areas…

Nationally in 2018‑19, seven per cent of Aboriginal and Torres Strait Islander children aged 0–14 years had a self‑reported long‑term hearing condition, which includes deafness or partial deafness, otitis media, tinnitus, or Ménière’s disease (table 6A.7.1).[[22]](#footnote-22)

This rate decreased over the past two decades by over one‑third, or four percentage points (figure 6.7.1). The decrease was greatest for Aboriginal and Torres Strait Islander children in remote areas, with the rate almost halving between 2001 (18 per cent) and 2018‑19 (10 per cent) (figure 6.7.1). But the rate for those in remote areas who had a self‑reported long‑term hearing condition remained 1.5 times the rate for those in non‑remote areas (table 6A.7.3).

### …but it remains higher than for non‑Indigenous children, with the gap for treatable ear infections particularly high

In 2017–19, Aboriginal and Torres Strait Islander children were twice as likely as non‑Indigenous children to have long‑term hearing conditions; similar to the ratio reported in 2001 (figure 6.7.1).

| Figure 6.7.1 Children aged 0–14 years with a long-term hearing problem, by Indigenous status, by remoteness; 2001, 2004­05, 2008, 2011–13, 2014-15, and 2017–19**a,b** |
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| Figure 6.7.1 Children aged 0–14 years with a long-term hearing problem, by Indigenous status, by remoteness; 2001, 2004-­­­­­05, 2008, 2011–13, 2014-15, and 2017–19  Aboriginal and Torres Strait Islander  More details can be found within the text surrounding this image.Figure 6.7.1 Children aged 0–14 years with a long-term hearing problem, by Indigenous status, by remoteness; 2001, 2004-­05, 2008, 2011–13, 2014-15, and 2017–19  Non-Indigenous  More details can be found within the text surrounding this image. |
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| a Error bars represent the 95 per cent confidence interval associated with each point estimate. b See tables 6A.7.3‑4 for detailed definitions, footnotes and caveats. |
| *Source*: ABS (unpublished) National Aboriginal Torres Strait Islander Health Survey (various years); ABS (unpublished) National Aboriginal Torres Strait Islander Social Survey (various years) ABS (unpublished) National Health Survey (various years); ABS (unpublished) General Social Survey (various years); tables 6A.7.3‑4. |
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Among Aboriginal and Torres Strait Islander children with hearing problems, about one‑third had otitis media. The proportion of Aboriginal and Torres Strait Islander children with otitis media was about three times the rate observed in non‑Indigenous children (table 6A.7.4). Otitis media is a treatable middle ear infection that can affect hearing in the short‑term; however, if left untreated, chronic otitis media can lead to permanent hearing loss (AMA 2017). Compared to non‑Indigenous children, Aboriginal and Torres Strait Islander children experience their first episode of otitis media at a younger age, followed by more frequent episodes that come in more severe and persistent forms (AIHW 2018; AMA 2017; Coleman et al. 2018; Jervis-Bardy et al. 2017).

The most recent data on self‑reported treatment are for 2014‑15, when 16 per cent of Aboriginal and Torres Strait Islander children with hearing problems or problems with their ears reported that they had not had treatment for these problems (26 per cent in remote areas). Of those children with hearing problems who had not received treatment, the majority in non‑remote areas reported that they had not sought treatment; while, the majority in remote areas reported that no treatment was available or that treatment was not affordable (table 6A.7.5). Data are not available for non‑Indigenous children.

### The rate of hospitalisation for diseases of the ear is increasing for Aboriginal and Torres Strait Islander children which may reflect improved diagnosis and use of services

Nationally in 2018‑19, there was 1261 Aboriginal and Torres Strait Islander children aged 0–3 years hospitalised for diseases of the ear per 100 000 children of the same age. This rate increased by more than 40 per cent over the past five years and, by 2018‑19, was similar to the rate for young non‑Indigenous children (figure 6.7.2).

| Figure 6.7.2 Hospitalisations per 100 000 children where the principal diagnosis was diseases of the ear and mastoid process, by Indigenous status, by age group, 2010-11 to 2018-19**a** |
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| Figure 6.7.2 Hospitalisations per 100 000 children where the principal diagnosis was diseases of the ear and mastoid process, by Indigenous status, by age group, 2010-11 to 2018-19  Aged 0-3 years  More details can be found within the text surrounding this image.Figure 6.7.2 Hospitalisations per 100 000 children where the principal diagnosis was diseases of the ear and mastoid process, by Indigenous status, by age group, 2010-11 to 2018-19  Aged 4-14 years  More details can be found within the text surrounding this image.Figure 6.7.2 Hospitalisations per 100 000 children where the principal diagnosis was diseases of the ear and mastoid process, by Indigenous status, by age group, 2010-11 to 2018-19  Legend to figure  More details can be found within the text surrounding this image. |
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| a See table 6A.7.6 for detailed definitions, footnotes and caveats. |
| *Source*: AIHW (unpublished) National Hospital Morbidity Database; table 6A.7.6. |
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By contrast, the rate of hospitalisation for diseases of the ear among Aboriginal and Torres Strait Islander children aged 4–14 years did not increase as steeply. Nationally in 2018‑19, there was 720 Aboriginal and Torres Strait Islander children aged 4–14 years hospitalised for diseases of the ear per 100 000 children of the same age (figure 6.7.2).

Hospitalisation rates for Aboriginal and Torres Strait Islander children for diseases of the ear increase with remoteness. In 2016–2018, among Aboriginal and Torres Strait Islander children, there was 734 hospitalisations per 100 000 children for diseases of the ear in major cities.[[23]](#footnote-23) This rate was slightly higher for children in regional areas (to 761 hospitalisations per 100 000 children), but was more than double in remote areas (1495 hospitalisations per 100 000 children) (table 6A.7.8). Non‑Indigenous child hospitalisations for diseases of the ear also increased with remoteness in 2016–2018, but to a lesser extent than for Aboriginal and Torres Strait Islander children (table 6A.7.8).

The most common hospital diagnoses are diseases of the middle ear and mastoid process (table 6A.7.6). Among Aboriginal and Torres Strait Islander children hospitalised for diseases of the middle ear and mastoid process, three quarters had *myringotomy* (an incision in the eardrum to relieve pressure caused by excessive fluid build‑up) or *tympanoplasty* (a reconstructive surgical treatment for a perforated eardrum) procedures (AIHW 2018). While non‑Indigenous children had similar myringotomy and tympanoplasty procedure rates, they had their procedures at relatively younger ages (AIHW 2018).

Hospitalisations for diseases of the middle ear and mastoid process appear to reflect increasing use of hospital services, rather than the increasing prevalence of these conditions in the community. This, in turn, may reflect improved early diagnosis and use of other ear health services (AIHW 2018) (as evidenced by the increasing hospitalisation rates for younger Aboriginal and Torres Strait Islander children noted above). Efforts over the past two decades to decrease the underlying prevalence of ear disease in Aboriginal and Torres Strait Islander children — such as through Aboriginal and Torres Strait Islander child health checks and targeted screening and health services — may have led to increased hospitalisation rates (AIHW 2018).

### Higher rates of ear diseases and hearing loss are associated with greater exposure to risk factors and barriers to access and coordination of health care

Risk factors for ear disease, together with barriers to accessing primary health care and issues of poor communication and coordination between service providers, explain these higher rates of hearing loss for Aboriginal and Torres Strait Islander children.

* Research indicates that risk factors for ear diseases include environmental risk factors (such as poor community and housing infrastructure, and overcrowded housing), along with exposure to tobacco smoke (AIHW 2018; Coleman et al. 2018; DeLacy, Dune and Macdonald 2020). These factors are more likely to be experienced by people living in lower socioeconomic and remote areas, in which Aboriginal and Torres Strait Islander people are overrepresented.
* Aboriginal and Torres Strait Islander people often face barriers to primary health care, particularly in remote areas, which can delay the diagnosis, treatment and management of ear diseases among Aboriginal and Torres Strait Islander children (Gunasekera et al. 2009; table 6A.7.5). These delays in treatment can lead to prolonged periods of hearing loss and long‑term hearing impairment (AIHW 2017).
* There is also an ongoing need for governments and service providers to continue to work with Aboriginal and Torres Strait Islander communities and families so that they understand the importance of seeking treatment for ear diseases, particularly where they may have come to accept ear infections/diseases as a part of growing up (AMA 2017; Siggins Miller 2017).
* Lack of prioritisation of Aboriginal and Torres Strait Islander ear health — and the lack of effective coordination and communication between primary, secondary and (where required) tertiary health services — have also been identified as barriers (Siggins Miller 2017).

Addressing environmental risk factors (see chapter 10 *Home environment*) and barriers to primary health care (see section 8.1 *Access to primary health care*) could further reduce the prevalence of ear diseases and associated hospitalisations.

### Future directions in data

More comprehensive and reliable data are required to enable assessment of the type and severity of ear infections in Aboriginal and Torres Strait Islander children and of any resulting hearing loss.

* Only sparse data are available on the burden of poor ear health in Aboriginal and Torres Strait Islander children, with current survey data limited by the difficulty of obtaining reliable estimates for small populations.
* Limited data are available on the prevalence and severity of hearing loss in the community. Current measures use self‑reported data — which are likely to be underestimates, as respondents may be unaware of the extent of their children’s hearing loss. While the 2018‑19 NATSIHS included a hearing test to address this limitation, the collection was limited to respondents aged seven years or over and did not provide information about the causes of the hearing loss (ABS 2019).[[24]](#footnote-24) Comparable data for non‑Indigenous children are also unavailable.
* Only limited data are available on whether Aboriginal and Torres Strait Islander children are seeking and receiving treatment for ear or hearing problems. These data were collected in the 2014‑15 NATSISS (table 6A.7.4). However, they were not collected in the 2018‑19 NATSIHS, and comparable data for non‑Indigenous children are not available.

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## 6.8 Basic skills for life and learning[[25]](#footnote-25)

| Box 6.8.1 Key messages |
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| * Early on in life, children develop the key social, emotional and cognitive skills that are important for their successful transition to school and for their later academic achievement, mental health and wellbeing.
* The majority of Aboriginal and Torres Strait Islander children are meeting developmental milestones as specified in the Australian Early Development Census (AEDC). Nationally in 2018, in each of the five AEDC domains, between 60–65 per cent of Aboriginal and Torres Strait Islander children were assessed as being developmentally ‘on track’, all up from 2009.
* However, there remains a substantial gap with non‑Indigenous children, with Aboriginal and Torres Strait Islander children being assessed in the AEDC as developmentally vulnerable at twice the rate of non‑Indigenous children in four of the five AEDC domains. And this gap widens as remoteness increases.
* Much of the difference in early childhood development outcomes between Aboriginal and Torres Strait Islander children and non‑Indigenous children is likely to be associated with greater experience of disadvantage, such as lack of access to quality and secure housing, and/or the experience of more major life stressors.
* In addition, while the AEDC has been validated for use for Aboriginal and Torres Strait Islander children, some have questioned whether it is culturally appropriate for assessing their development and if the instrument itself leads to lower scores for Aboriginal and Torres Strait Islander children.
* Children not proficient in standard Australian English are more likely to be assessed as developmentally vulnerable. Of the Aboriginal and Torres Strait Islander children assessed in the 2018 AEDC, around one‑third of children in remote areas and three‑quarters of children in very remote areas spoke English as a second or additional language.
* A safe and stimulating home learning environment, early childhood education and regular health checks can all positively influence a child’s development.
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| Box 6.8.2 Measures of basic skills for life and learning |
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| There are two main measures for this indicator. Data are available for all jurisdictions.* *Children on track on Australian Early Development Census (AEDC) domains* is defined as the proportion of children entering their first year of full time school who are on track (based on national cut‑off scores established on the basis of the top 75 per cent of scores in the 2009 AEDC), in each of the five AEDC domains: physical health and wellbeing; social competence; emotional maturity; language and cognitive skills (school‑based); and communication skills and general knowledge. The most recent available data are for 2018.
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| Box 6.8.2 (continued) |
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| * *Informal learning activities* is defined as the proportion of children aged 3–8 years who undertook informal learning activities with their main carer in the last week. The most recent available data are for 2014‑15 from the ABS National Aboriginal and Torres Strait Islander Social Survey (NATSISS) for Aboriginal and Torres Strait Islander children, and for 2014 from the ABS Childhood Education and Care Survey for non‑Indigenous children.

Data are also provided for two supplementary measures:* *Language background* is defined as the proportion of Aboriginal and Torres Strait Islander children entering their first year of school for whom English is considered a second or additional language. The most recent available data are for 2018 from the AEDC.
* *Health checks* is defined as the number of health assessments received per 100 children aged 0–4 years in the population. The most recent available data are for Aboriginal and Torres Strait Islander children in 2018‑19 from Medicare Item Reports. Comparable data for non‑Indigenous children are not available.
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Children in their early years develop key social, emotional and cognitive skills — such as the skills to solve problems, to think, to communicate, to control their emotions, and to form relationships (Pascoe and Brennan 2017). These skills are important for their successful transition to school and are related to their academic achievement, mental health and wellbeing in adulthood (Williamson et al. 2019).

Aboriginal and Torres Strait Islander children can develop many strengths in their early years. Some of these strengths — such as independence from an early age, well‑developed visual‑spatial and motor skills, and the capacity to self‐judge and to take risks — are specifically associated with Aboriginal and Torres Strait Islander cultural child‑rearing practices (Armstrong et al. 2012; Lohoar, Butera and Kennedy 2014; Taylor 2011).

### The majority of Aboriginal and Torres Strait Islander children are meeting developmental milestones, with the proportions increasing over the past decade in each of the five AEDC domains…

Nationally in 2018, in each of the five AEDC domains, the majority of Aboriginal and Torres Strait Islander children were considered developmentally on track — with the proportions ranging between 60 per cent (for the social competence domain) and 65 per cent (for the emotional maturity domain) (figure 6.8.1).

Since 2009, there has been an increase in the proportion of Aboriginal and Torres Strait Islander children developmentally on track in each of the domains, with the largest increase (15 percentage points) in the language and cognitive skills (school‑based) domain (figure 6.8.1).

| Figure 6.8.1 Proportion of children assessed as developmentally on track, by AEDC domain, 2009 to 2018**a** |
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| Figure 6.8.1 Proportion of children assessed as developmentally on track, by AEDC domain, 2009 to 2018  More details can be found within the text surrounding this image. |
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| a See tables 6A.8.1–4 for detailed definitions, footnotes and caveats. |
| *Source*: Department of Education, Skills and Employment (DESE) 2019, *Australian Early Development Census*; tables 6A.8.1–4. |
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### …however, there remains a substantial gap with non‑Indigenous children, with Aboriginal and Torres Strait Islander children twice as likely to have been assessed as developmentally vulnerable…

In each AEDC domain, the gap between Aboriginal and Torres Strait Islander children and non‑Indigenous children has decreased over the past decade. However, there remains a substantial gap with non‑Indigenous children. For each domain in 2018, the differences between Aboriginal and Torres Strait Islander and non‑Indigenous children who were assessed as developmentally on track were between 13 and 23 percentage points (table 6A.8.1).

Children who are not assessed as developmentally on track are assessed as being ‘at risk’ or, worse, ‘vulnerable’. Nationally in 2018, Aboriginal and Torres Strait Islander children were assessed as developmentally vulnerable at about twice the rate of non‑Indigenous children across four of the five AEDC domains, and over three times the rate in the language and cognitive skills (school‑based) domain (table 6A.8.1).

### …and the gap widens as remoteness increases

The proportion of Aboriginal and Torres Strait Islander children classified as developmentally on track decreases with remoteness. Nationally in 2018, in all AEDC developmental domains, as remoteness increased the proportion of Aboriginal and Torres Strait Islander children classified as on track decreased. The proportions for non‑Indigenous children were fairly similar across remoteness areas (figure 6.8.2). The domain showing the greatest difference across remoteness areas for Aboriginal and Torres Strait Islander children was language and cognitive skills (school‑based) (figure 6.8.2).

| Figure 6.8.2 Proportion of children developmentally on track, by domain, by remoteness, 2018**a** |
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| Figure 6.8.2 Proportion of children developmentally on track, by domain, by remoteness, 2018  More details can be found within the text surrounding this image. |
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| a See table 6A.8.5 for detailed definitions, footnotes and caveats. |
| *Source*: DESE 2019, *Australian Early Development Census*; table 6A.8.5. |
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In part, this geographic gradient may be explained by Aboriginal and Torres Strait Islander children in more remote areas having limited access to services (particularly culturally and linguistically appropriate services) known to mediate the impact of adversity in early childhood (Arefadib and Moore 2017)*.*

### The various factors that can negatively impact developmental outcomes are more likely to be experienced by Aboriginal and Torres Strait Islander children

Much of the difference in developmental outcomes between Aboriginal and Torres Strait Islander children and non‑Indigenous children is likely to be associated with differential experiences of socioeconomic disadvantage, access to key facilities or services (Williamson et al. 2019) and multiple major life stresses. For example, poorer developmental outcomes have been linked to: poor parent/carer health; low levels of parental education, occupation and employment; poor quality and overcrowded housing; social isolation; exposure to family violence and child protection intervention; and the intergenerational effects of trauma associated with colonisation (AEDC 2014; Arefadib and Moore 2017; Guthridge et al. 2016).

* In a cross‑sectional data linkage study of children across NSW, Williamson et al. (2019) found that a large proportion of the inequality in social and emotional development between Aboriginal and Torres Strait Islander children and non‑Indigenous children was explained by differences in socioeconomic disadvantage.
* Similarly, analysis of data from the Longitudinal Study of Indigenous Children (LSIC) showed that housing insecurity, money worries and being harassed for money (over an extended period) were found to be associated with children’s social and emotional difficulties (FaHCSIA 2013).
* This LSIC analysis also showed that major life stressors were associated with social and emotional difficulties — including having a close family member who has problems with the police/jail (over an extended period); being cared for by someone other than their regular carer for at least a week; and being scared by other people’s behaviour.
* In addition, Aboriginal and Torres Strait Islander children’s rates of exposure to a number of perinatal risk factors (such as young maternal age, smoking in pregnancy, no or low antenatal care, and premature birth) are strongly associated with poor attainment of developmental milestones (Williamson et al. 2019). See sections 6.1 *Antenatal care*, 6.2 *Health behaviours during pregnancy*, 6.3 *Teenage birth rate*, and 6.4 *Birthweight* for further details.

Another factor that may affect the AEDC outcomes in relation to a child’s development is speaking ‘standard Australian English’ as a second or additional language. While many children who speak English as a second or additional language are developmentally on track (and may indeed have a developmental advantage), Australian research shows that children who begin school with limited English *proficiency* are more likely to be assessed as developmentally at risk (DET 2019; FaHCSIA 2012; Guthridge et al. 2016; O’Connor et al. 2018).

Nationally in 2018, about 14 per cent of Aboriginal and Torres Strait Islander children spoke English as a second language. This rate increased with remoteness — one‑third of children in remote areas and three‑quarters of Aboriginal and Torres Strait Islander children in very remote areas spoke English as a second language (table 6A.8.9). Nationally, a similar proportion of non‑Indigenous children spoke English as a second language (18 per cent); however, a higher proportion were proficient in English[[26]](#footnote-26), and they were more likely to be located in major cities (table 6A.8.9) (where more support services are likely to be available).

The AEDC has been validated for use for Aboriginal and Torres Strait Islander populations (Silburn et al. 2009). However, some researchers question whether standard collection instruments (such as the AEDC) are culturally and linguistically appropriate for assessing development among Aboriginal and Torres Strait Islander children. They contend these instruments may possess an innate bias, and so do not fully measure the strengths of Aboriginal and Torres Strait Islander children (Sydenham 2019; Taylor 2011).

### The home learning environment, early childhood education, and health checks can significantly influence a child’s development

A child’s home learning environment can significantly influence their development. Engagement between parents and children builds cognitive and language skills, positive dispositions to learning, and thinking and reasoning skills (Pascoe and Brennan 2017). Growing up in a stimulating home benefits children’s Year 3 NAPLAN scores by the equivalent of more than four months of schooling for reading, and eight weeks of schooling for numeracy (Yu and Daraganova 2014). Analysis from the LSIC showed that the majority of Aboriginal and Torres Strait Islander families read books to their children, and that this positively affected their English language acquisition (FaHCSIA 2012).

Almost all young Aboriginal and Torres Strait Islander children do some informal learning in their home. In 2014‑15, almost all Australian children aged 3–8 years had done some form of informal learning activity with their main carer in the previous week, with the proportion for Aboriginal and Torres Strait Islander children (99 per cent) similar to the Australian total (table 6A.8.12). For both Aboriginal and Torres Strait Islander and other Australian children, the most common informal learning activities their main carers did with them were ‘Told stories, read or listened to the child read’ (89 per cent and 96 per cent, respectively) and ‘Watched TV, video or DVD’ (90 per cent and 85 per cent, respectively) (table 6A.8.14).

Attendance at quality early childhood education programs (including that programs are culturally safe) also provides an important foundation for all children by developing their cognitive and non‑cognitive skills (OECD 2017; Pascoe and Brennan 2017). Recent data indicates that preschool participation rates are increasing substantially among Aboriginal and Torres Strait Islander children. (See section 4.3 *Early childhood education*.)

Aboriginal and Torres Strait Islander children can receive annual health checks through the Medicare Benefits Schedule (MBS). These health assessments aim to encourage early detection, diagnosis and intervention for common and treatable conditions that cause morbidity and early mortality (AIHW 2019). Morbidity can impair a child’s development; for example, Aboriginal and Torres Strait Islander children who have had problems with their ears or hearing have been found to suffer language development issues (FaHCSIA 2012; Simpson et al. 2020). (See section 6.7 *Ear health*.)

MBS‑funded health checks have been available to Aboriginal and Torres Strait Islander children since 2006 (AIHW 2019). Since that time, the rate of Aboriginal and Torres Strait Islander children aged 0–4 years receiving an Aboriginal and Torres Strait Islander health assessment has been increasing.[[27]](#footnote-27) Nationally in 2018‑19, there were 29 health assessments per 100 children aged 0–4 years — an almost tenfold increase in the rate since 2006‑07 (when it was 3 assessments per 100 children) (figure 6.8.3).

To improve health outcomes, health checks require a follow‑up for any issues identified (Bailie et al. 2014; Dutton, Stevens and Newman 2016). Currently, data are only available on Indigenous‑specific follow‑ups to Aboriginal and Torres Strait Islander health assessments; data are not available on whether a follow‑up was required, or on whether a person received an alternative follow‑up service. Nationally in 2016‑17 (the latest period for which data are available), about 40 per cent of children aged 0–4 years who received an Aboriginal and Torres Strait Islander health assessment received an Indigenous‑specific follow‑up within 12 months of their health check, an increase of 32 percentage points (from 8 per cent) since 2010‑11 (AIHW 2019).

| Figure 6.8.3 Aboriginal and Torres Strait Islander Health Assessments per 100 children aged 0–4 years, 2006-07 to 2018-19**a** |
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| Figure 6.8.3 Aboriginal and Torres Strait Islander Health Assessments per 100 children aged 0–4 years, 2006-07 to 2018-19  More details can be found within the text surrounding this image. |
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| a See table 6A.8.11 for detailed definitions, footnotes and caveats. |
| *Source*: Services Australia (2020), derived from Medicare Item Reports (http://medicarestatistics. humanservices.gov.au/statistics/); ABS (2019) *Estimates and Projections of Aboriginal and Torres Strait Islander Australians, 2006 to 2031*, Cat. no. 3238.0; table 6A.8.11. |
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### Future directions in data

Additional measures on culturally appropriate developmental milestones and data on the developmental strengths of Aboriginal and Torres Strait Islander children — particularly those who speak English as a second or additional language — would be beneficial. In addition, further research is required on whether these strengths are appropriately recognised and built upon by educators in the Australian education and care system.

There is a need for comprehensive data on the availability and use of developmental health checks for Aboriginal and Torres Strait Islander and non‑Indigenous children. Data presented in this Report only cover selected MBS‑funded services, and so they understate the total number of health assessments received. For example, babies and young children may also receive regular developmental health checks from maternal and child health nurses employed by State, Territory or local governments.

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1. The Steering Committee notes its appreciation to Associate Professor Catherine Chamberlain, La Trobe University, who reviewed a draft of this section of the Report. [↑](#footnote-ref-1)
2. The trend was negative in major cities and inner regional areas between 2011 and 2013, but was reversed in 2014. [↑](#footnote-ref-2)
3. The trends exclude data for Victoria, which were first reported in 2016. Age-standardised rates for women who gave birth at 32 weeks or more of gestation and attended five or more antenatal visits are available by Indigenous status and state and territory from 2011 to 2018 and are reported in table 6A.1.14. Historical data for selected jurisdictions are reported in tables 6A.1.15–18. [↑](#footnote-ref-3)
4. The Steering Committee notes its appreciation to Associate Professor Catherine Chamberlain, La Trobe University, who reviewed a draft of this section of the Report. [↑](#footnote-ref-4)
5. The prevalence of FASD in Australia is unknown; it is estimated that as many as 2 per cent of all Australian babies may be born with some form of FASD (DoH 2018). [↑](#footnote-ref-5)
6. The association between smokeless tobacco use, such as chewing tobacco, and adverse health effects differs by type of product (Greenhalgh, Scollo and Winstanley 2020). The effects on birth outcomes of Aboriginal and Torres Strait Islander expectant women’s chewing a tobacco plant known as pituri will soon be known (Ratsch et al. 2019). [↑](#footnote-ref-6)
7. National data (excluding Victoria) from 2005 available in table 6A.2.1 also showed a downward trend. [↑](#footnote-ref-7)
8. The Steering Committee notes its appreciation to Associate Professor Catherine Chamberlain, La Trobe University, who reviewed a draft of this section of the Report. [↑](#footnote-ref-8)
9. Analysis of data from the LSIC did not show the same results for babies born to non-Indigenous women with age not being a factor when other characteristics were taken into account (DSS 2015). [↑](#footnote-ref-9)
10. The Apgar score is a numerical score that indicates a baby’s condition shortly after birth. Apgar scores are based on an assessment of the baby’s heart rate, breathing, colour, muscle tone and reflex irritability. [↑](#footnote-ref-10)
11. The Steering Committee notes its appreciation to Associate Professor Catherine Chamberlain, La Trobe University who reviewed a draft of this section of the Report. [↑](#footnote-ref-11)
12. Normal birthweight is defined as 2500 grams to 4499 grams (AIHW 2020). [↑](#footnote-ref-12)
13. Aggregating three years of data smooths out some of the volatility in the data stemming from small numbers. [↑](#footnote-ref-13)
14. The Steering Committee notes its appreciation to Associate Professor Catherine Chamberlain, La Trobe University, who reviewed a draft of this section of the Report. [↑](#footnote-ref-14)
15. Aggregating three years of data smooths out some of the volatility in the data by remoteness area. [↑](#footnote-ref-15)
16. The current definition of fully immunised for measuring coverage rates includes vaccination against: hepatitis B, diphtheria, tetanus, whooping cough, Haemophilus influenza type b, polio, measles, mumps, rubella, pneumococcal disease, varicella and meningococcal C (AIHW 2018a). [↑](#footnote-ref-16)
17. The Steering Committee notes its appreciation to Associate Professor Catherine Chamberlain, La Trobe University who reviewed a draft of this section of the Report. [↑](#footnote-ref-17)
18. Aggregating three years of data smooths out some of the volatility in the data by remoteness area. [↑](#footnote-ref-18)
19. Health hardware includes safe electrical systems, toilets, showers, taps, kitchen cupboards and benches, stoves, ovens and fridges collectively (DoH 2013). [↑](#footnote-ref-19)
20. Aggregating five years of data smooths out some of the volatility in the young child mortality data. Mortality data disaggregated by Indigenous status are available for NSW, Queensland, WA, SA and the NT, as these jurisdictions have sufficient levels of Aboriginal and Torres Strait Islander identification and numbers of deaths to support analysis. [↑](#footnote-ref-20)
21. The Steering Committee notes its appreciation to Associate Professor Catherine Chamberlain, La Trobe University who reviewed a draft of this section of the Report. [↑](#footnote-ref-21)
22. Data on self‑reported hearing loss should be considered with caution: they are likely to underestimate hearing loss as respondents can be unaware of the extent of their own or their child’s hearing loss (particularly in mild cases) (AIHW 2016). For the first time in Australia, the 2018‑19 NATSIHS collected measurements of hearing using a voluntary self‑administered hearing test. Among Aboriginal and Torres Strait Islander children aged 7–14 years, 29 per cent had a hearing impairment (ABS 2019). [↑](#footnote-ref-22)
23. Aggregating three years of data smooths out some of the volatility in the data by remoteness area. [↑](#footnote-ref-23)
24. Aboriginal and Torres Strait Islander respondents who completed the test were given their results on a Measurements Card, with advice as to whether they should see a General Practitioner or health service provider. Data were not collected on whether the respondents sought medical advice (ABS 2019). [↑](#footnote-ref-24)
25. The Steering Committee notes its appreciation to Associate Professor Catherine Chamberlain, La Trobe University, who reviewed a draft of this section of the Report. [↑](#footnote-ref-25)
26. Based on analysis of English proficiency data in the 2018 AEDC Complete Microdata file. [↑](#footnote-ref-26)
27. Data for the number of assessments received under the MBS Aboriginal and Torres Strait Islander Health Assessment understate the total number of health assessments received by Aboriginal and Torres Strait Islander children. Aboriginal and Torres Strait Islander children can receive other health assessments, so the MBS data provided here should not be viewed as representative of all health assessments. [↑](#footnote-ref-27)