

1.10 Decayed, missing, filled teeth

The number of decayed, missing and filled deciduous infant teeth (dmft) and the number of decayed, missing and filled permanent adult teeth (DMFT), for Aboriginal and Torres Strait Islander people

Data sources

Data for this indicator come from the AIHW Dental Statistics Research Unit (Child Dental Health Survey and National Dental Telephone Interview Survey), the ABS 2004–05 National Aboriginal and Torres Strait Islander Health Survey (NATSIHS), the Western Australian Aboriginal Child Health Survey and the AIHW National Hospital Morbidity Database.

Dental health survey data

The AIHW Dental Statistics Research Unit is responsible for a number of data collections in the areas of oral health, access to dental care and dental health services.

Child Dental Health Survey

Data on children's dental health come from the Child Dental Health Survey, a national survey which monitors the dental health of children enrolled in school dental services operated by health departments in all states and territories. In the period 2000–03, Indigenous status was recorded reliably and for sufficient numbers of children in New South Wales, South Australia and the Northern Territory. Data from those jurisdictions are used for this indicator.

National Dental Telephone Interview Survey

Data on adult dental health come from the 1994–96 National Dental Telephone Interview Survey, and from a survey of adults seeking public dental care in Australia in 2001–02. While the National Dental Telephone Interview Survey is conducted every two and a half years, the 1994–96 survey specifically focused on Indigenous Australians, migrants and rural and remote dwellers.

National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)

The 2004–05 NATSIHS collected information from 10,439 Indigenous Australians of all ages. This sample was considerably larger than the supplementary Indigenous samples in the 1995 and 2001 National Health Surveys. The survey was conducted in remote and non-remote areas of Australia and collected a range of information from Indigenous Australians about health-related issues including health-related actions, health risk factors, health status, socioeconomic circumstances and women's health. It is planned to repeat the NATSIHS at six-yearly intervals, with the next NATSIHS to be conducted in 2010–11. Selected non-Indigenous comparisons are available through the 2004–05 National Health Survey (NHS).

Western Australian Aboriginal Child Health Survey

This survey was a large-scale investigation into the health of 5,289 Western Australian Aboriginal and Torres Strait Islander children aged 0–17 years. It was undertaken in 2001 and 2002 by the Telethon Institute for Child Health Research in conjunction with the

Kulunga Research Network. The survey has been the first to gather comprehensive health, educational and developmental information on a population-based sample of Aboriginal and Torres Strait Islander children and their families and communities.

Hospitalisations

The National Hospital Morbidity Database is a compilation of episode-level records from admitted patient morbidity data collection systems in Australian hospitals in each state and territory. Information on the characteristics, diagnoses and care of admitted patients in public and private hospitals is provided annually to the AIHW by state and territory health departments.

Data are presented for the four jurisdictions which have been assessed as having adequate identification of Indigenous hospitalisations in 2003–04 – Queensland, Western Australia, South Australia and the Northern Territory (AIHW 2005). These four jurisdictions represent approximately 60% of the Indigenous population of Australia. Data are presented by state/territory of usual residence of the patient.

Hospitalisations for which the Indigenous status of the patient was not reported have been included with hospitalisations data for non-Indigenous people under the 'other' category. This is to enable consistency across jurisdictions as public hospitals in some states and territories do not have a category for the reporting of 'not stated' or inadequately recorded/reported Indigenous status.

Hospitalisation data are presented for the two-year period July 2002 to June 2004. An aggregate of two years of data has been used as the number of hospitalisations for some conditions is likely to be small for a single year.

The principal diagnosis is the diagnosis established to be the problem that was chiefly responsible for the patient's episode of care in hospital. The additional diagnosis is a condition or complaint either coexisting with the principal diagnosis or arising during the episode of care. The term 'hospitalisation' has been used to refer to a separation which is the episode of admitted patient care, which can be a total hospital stay (from admission to discharge, transfer or death) or a change in a type of care (for example, from acute to rehabilitation).

Analyses

Age-standardised rates and ratios have been used for this indicator as a measure of hospitalisations in the Indigenous population relative to other Australians. Ratios of this type illustrate differences between the rates of hospital admissions among Indigenous people and those of other Australians, taking into account differences in age distributions.

Dental health survey data

Data on the oral health of Indigenous children and adults are presented below.

Oral health outcomes are usually measured in terms of the number of decayed, missing or filled baby (deciduous) and adult (permanent) teeth (dmft and DMFT scores)/(AIHW 2000). The dmft score measures decay experience in deciduous teeth, while the DMFT score measures decay experience in permanent teeth. Another measure of good oral health is the proportion of children with no tooth decay.

Children's oral health

Data on both decay in deciduous and permanent teeth are presented below for Indigenous children in New South Wales, South Australia and the Northern Territory. Data for New South Wales is for 2000, South Australia 2003 and the Northern Territory 2002.

Deciduous teeth

- In New South Wales, South Australia and the Northern Territory, the mean number of decayed, missing or filled deciduous teeth for Indigenous children aged 4–10 years was higher than for non-Indigenous children at all ages (Table 1.10.1, Figure 1.10.1).
- Of all children with decayed, missing or filled deciduous teeth, both Indigenous and non-Indigenous children were most likely to have decayed teeth, followed by filled teeth.
- The mean numbers of decayed or missing teeth were highest among those aged less than 7 years, whereas the mean number of filled teeth was highest among those aged 7 years and over.
- Children in New South Wales had lower mean numbers of decayed or filled teeth than children in South Australia and the Northern Territory. One possible explanation for this is the different type of dental examination used in New South Wales where a screening is undertaken rather than a clinical examination used in other states and territories.
- Indigenous children in the Northern Territory had much higher mean numbers of decayed teeth than Indigenous children in South Australia and New South Wales, whereas for non-Indigenous children, scores were similar across jurisdictions.
- At all ages, the proportion of Indigenous children in New South Wales, South Australia and the Northern Territory free of caries in their deciduous teeth (dmft = 0) was lower than the proportion for non-Indigenous children. At age 6 years, twice as many non-Indigenous children had no clinical deciduous caries experience (62.3%) than Indigenous children (28.0%) (Figure 1.10.2).
- The d/dmft ratio refers to the proportion of untreated teeth with decay in the population. It shows that Indigenous children have a greater unmet need for dental treatment than non-Indigenous children. Indigenous children in New South Wales, Western Australia and the Northern Territory aged 4–10 years had a higher ratio of untreated deciduous decayed teeth to the total count of decayed, missing and filled teeth (d/dmft) than non-Indigenous children, particularly in rural areas (Figure 1.10.3).

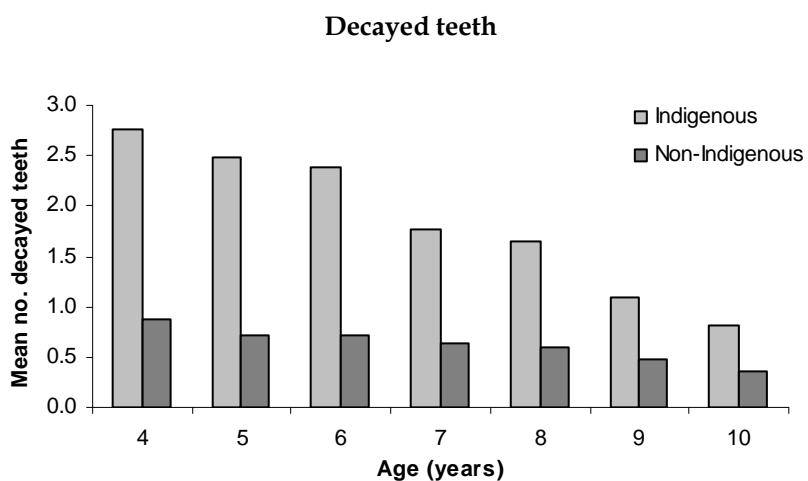
Table 1.10.1: Mean number of decayed, missing or filled deciduous teeth, children aged 4–10 years, by Indigenous status, NSW (2000), SA (2003) and NT (2002)

| Age | New South Wales | | South Australia | | Northern Territory | | NSW, SA & NT | |
|---|---------------------|---------------------|---------------------|----------------|---------------------|---------------------|---------------------|----------------|
| | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous |
| Decayed (d) | | | | | | | | |
| 4 | 1.90 | 0.79 | 2.48 | 0.96 | 3.07 | 0.82 | 2.77 | 0.87 |
| 5 | 1.64 | 0.69 | 2.11 | 0.89 | 3.62 | 0.92 | 2.49 | 0.72 |
| 6 | 1.36 | 0.65 | 2.10 | 0.89 | 3.10 | 0.85 | 2.38 | 0.72 |
| 7 | 1.05 | 0.62 | 1.54 | 0.78 | 2.90 | 0.73 | 1.77 | 0.64 |
| 8 | 0.98 | 0.56 | 1.22 | 0.67 | 2.19 | 0.67 | 1.65 | 0.60 |
| 9 | 0.74 | 0.45 | 1.27 | 0.60 | 1.54 | 0.54 | 1.10 | 0.47 |
| 10 | 0.43 | 0.32 | 0.58 | 0.44 | 1.17 | 0.38 | 0.82 | 0.36 |
| Missing (m) | | | | | | | | |
| 4 | ^(b) 0.16 | ^(a) 0.04 | ^(a) 0.33 | 0.06 | ^(a) 0.11 | ^(a) 0.05 | ^(a) 0.16 | 0.05 |
| 5 | 0.33 | 0.04 | 0.35 | 0.09 | ^(a) 0.15 | 0.05 | 0.27 | 0.05 |
| 6 | ^(a) 0.16 | 0.05 | ^(a) 0.31 | 0.10 | ^(a) 0.15 | ^(a) 0.05 | 0.19 | 0.07 |
| 7 | ^(a) 0.12 | 0.06 | ^(a) 0.21 | 0.08 | 0.08 | 0.06 | 0.11 | 0.06 |
| 8 | 0.13 | 0.06 | ^(a) 0.24 | 0.08 | ^(a) 0.07 | 0.09 | 0.12 | 0.07 |
| 9 | 0.10 | 0.04 | ^(a) 0.07 | 0.06 | 0.09 | 0.09 | 0.10 | 0.05 |
| 10 | 0.05 | 0.03 | ^(b) 0.05 | 0.03 | ^(a) 0.08 | 0.05 | 0.07 | 0.03 |
| Filled (f) | | | | | | | | |
| 4 | ^(a) 0.36 | 0.15 | ^(a) 0.58 | 0.30 | 0.26 | 0.19 | 0.35 | 0.22 |
| 5 | 0.30 | 0.17 | 1.18 | 0.51 | 0.32 | 0.43 | 0.44 | 0.22 |
| 6 | 0.57 | 0.32 | 1.54 | 0.94 | 0.69 | 0.76 | 0.86 | 0.50 |
| 7 | 0.57 | 0.43 | 1.45 | 1.17 | 0.72 | 0.93 | 0.75 | 0.54 |
| 8 | 0.68 | 0.49 | 1.81 | 1.25 | 0.76 | 1.08 | 0.95 | 0.72 |
| 9 | 0.51 | 0.49 | 1.68 | 1.29 | 0.76 | 1.08 | 0.77 | 0.62 |
| 10 | 0.49 | 0.40 | 1.29 | 1.45 | 0.44 | 0.70 | 0.62 | 0.58 |
| Decayed, missing & filled (dmft) | | | | | | | | |
| 4 | 2.42 | 0.98 | 3.39 | 1.32 | 3.44 | 1.06 | 3.41 | 1.33 |
| 5 | 2.27 | 0.90 | 3.64 | 1.49 | 4.09 | 1.40 | 3.66 | 1.31 |
| 6 | 2.09 | 1.02 | 3.95 | 1.93 | 3.94 | 1.66 | 3.68 | 1.54 |
| 7 | 1.74 | 1.11 | 3.20 | 2.03 | 3.70 | 1.72 | 2.94 | 1.54 |
| 8 | 1.79 | 1.11 | 3.27 | 2.00 | 3.02 | 1.84 | 2.91 | 1.60 |
| 9 | 1.35 | 0.98 | 3.02 | 1.95 | 2.39 | 1.71 | 2.17 | 1.34 |
| 10 | 0.97 | 0.75 | 1.92 | 1.92 | 1.69 | 1.13 | 1.60 | 1.09 |

(a) Estimate has a relative standard error of 25% to 50% and should be used with caution.

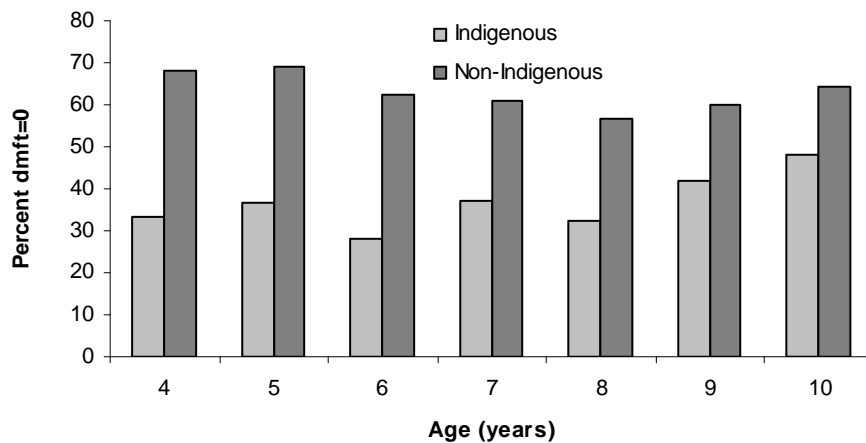
(b) Estimate has a relative standard error of greater than 50% and is considered too unreliable for general use.

Source: AIHW Dental Statistics Research Unit.



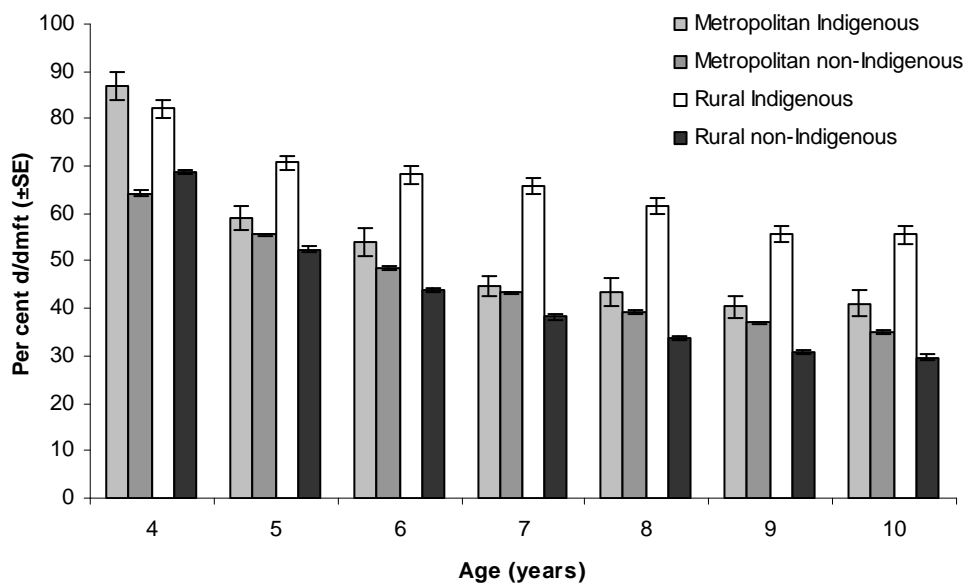
Source: AIHW Dental Statistics Research Unit.

Figure 1.10.1: Mean number of decayed, missing or filled deciduous teeth, children aged 4–10 years, by Indigenous status, NSW (2000), SA (2003) and NT (2002)



Source: AIHW Dental Statistics Research Unit

Figure 1.10.2: Per cent of children with no decayed, missing or filled deciduous teeth (dmft = 0), by age and Indigenous status, NSW (2000), SA (2003) and NT (2002)



Note: SE = Standard error.

Source: AIHW Dental Statistics Research Unit.

Figure 1.10.3: Children with decayed deciduous teeth as a proportion of total children with decayed, missing or filled deciduous teeth (d/dmft), by age and Indigenous status, metropolitan and rural areas, NSW (2000), SA (2003) and NT (2002)

Permanent teeth

- In New South Wales, South Australia and the Northern Territory, the mean numbers of decayed and filled permanent teeth for Indigenous children aged 6–15 years were higher than for non-Indigenous children at all ages except at age 15 years for filled teeth (Table 1.10.2, Figure 1.10.4). Data are not presented separately for missing permanent teeth due to low numbers.
- As with deciduous teeth, children in New South Wales had lower mean numbers of decayed or filled permanent teeth than children in South Australia and the Northern Territory.
- Indigenous children in the Northern Territory had the highest mean number of decayed teeth, whereas Indigenous children in South Australia had the highest mean number of filled teeth.
- The proportion of Indigenous children in New South Wales, South Australia and the Northern Territory free of caries in their permanent teeth decreased with increasing age. At each age level, fewer Indigenous children had no caries experience than non-Indigenous children, however, the differences between Indigenous and non-Indigenous children in the proportion with no clinical caries experience was less marked than in their deciduous teeth (Figure 1.10.5).
- At all ages between 6 and 14 years, there was a higher proportion of Indigenous children in rural areas with untreated permanent decayed teeth as a percentage of those with decayed, missing or filled teeth (D/DMFT) than non-Indigenous children in rural areas (Figure 1.10.6). This was also the case in metropolitan areas for most ages, however, the differences between Indigenous and non-Indigenous children with untreated permanent decayed teeth were not as marked as in rural areas.

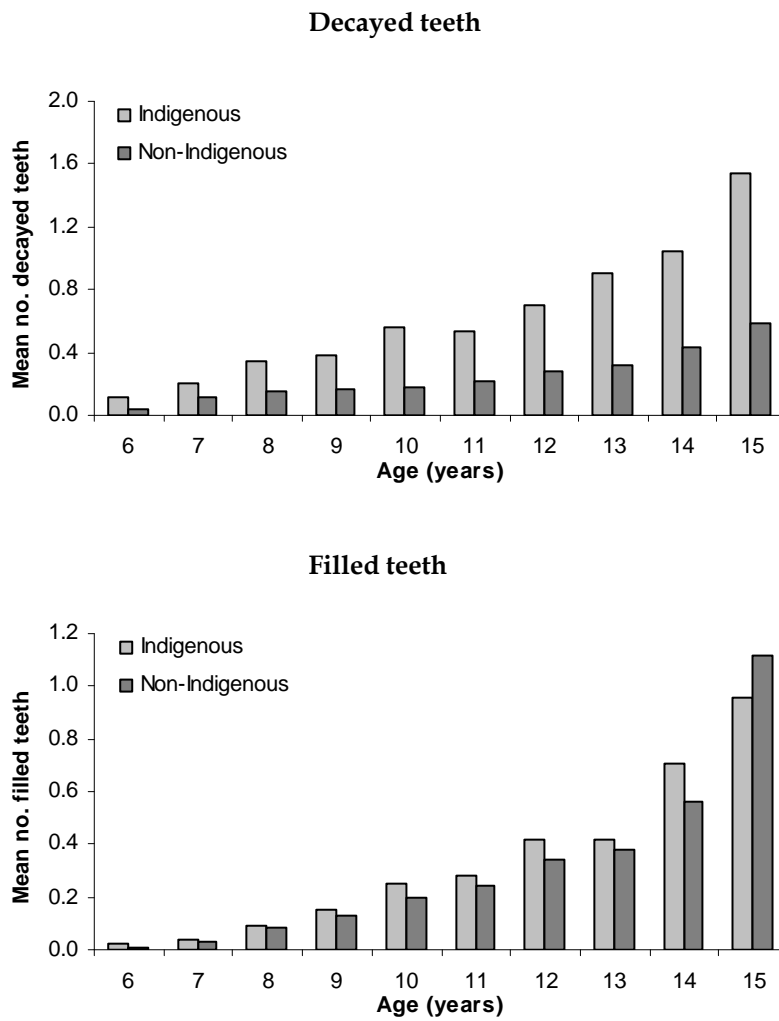
Table 1.10.2: Mean number of decayed, missing and filled permanent teeth for 6–15 year olds, by age and Indigenous status, NSW (2000), SA (2003) and NT (2002)

| Age | New South Wales | | South Australia | | Northern Territory | | NSW, SA & NT | |
|---|---------------------|----------------|---------------------|----------------|---------------------|---------------------|--------------|----------------|
| | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous |
| Decayed (D) | | | | | | | | |
| 6 | 0.09 | 0.03 | *0.14 | 0.06 | 0.12 | 0.06 | 0.12 | 0.04 |
| 7 | 0.17 | 0.12 | 0.30 | 0.17 | 0.25 | 0.12 | 0.21 | 0.12 |
| 8 | 0.29 | 0.13 | 0.39 | 0.18 | 0.40 | 0.12 | 0.35 | 0.15 |
| 9 | 0.29 | 0.15 | 0.53 | 0.19 | 0.45 | 0.14 | 0.38 | 0.16 |
| 10 | 0.37 | 0.16 | 0.51 | 0.21 | 0.69 | 0.17 | 0.56 | 0.18 |
| 11 | 0.36 | 0.21 | 0.55 | 0.24 | 0.72 | 0.21 | 0.53 | 0.22 |
| 12 | 0.54 | 0.26 | 0.59 | 0.31 | 0.78 | 0.25 | 0.70 | 0.28 |
| 13 | 0.66 | 0.31 | 1.00 | 0.41 | 1.45 | 0.25 | 0.90 | 0.32 |
| 14 | 0.82 | 0.38 | 1.24 | 0.50 | 1.24 | ^(a) 0.74 | 1.04 | 0.43 |
| 15 | n.a. | n.a. | 1.59 | 0.54 | *1.31 | ^(b) 0.48 | 1.54 | 0.58 |
| Filled (F) | | | | | | | | |
| 6 | ^(b) 0.01 | 0.01 | ^(b) 0.03 | 0.01 | ^(b) 0.01 | 0.01 | 0.02 | 0.01 |
| 7 | ^(a) 0.03 | 0.03 | ^(a) 0.06 | 0.06 | ^(a) 0.04 | ^(a) 0.04 | 0.04 | 0.03 |
| 8 | ^(a) 0.06 | 0.06 | ^(a) 0.13 | 0.14 | ^(a) 0.08 | 0.08 | 0.09 | 0.08 |
| 9 | 0.11 | 0.10 | 0.33 | 0.27 | 0.15 | 0.18 | 0.15 | 0.13 |
| 10 | 0.22 | 0.13 | 0.47 | 0.35 | 0.19 | 0.21 | 0.25 | 0.20 |
| 11 | 0.25 | 0.20 | 0.55 | 0.43 | 0.21 | 0.29 | 0.28 | 0.24 |
| 12 | 0.33 | 0.27 | 0.67 | 0.48 | 0.32 | 0.39 | 0.42 | 0.34 |
| 13 | 0.34 | 0.32 | 0.78 | 0.66 | ^(a) 0.36 | 0.41 | 0.42 | 0.38 |
| 14 | 0.45 | 0.39 | 1.12 | 0.81 | ^(a) 0.43 | ^(b) 0.77 | 0.71 | 0.56 |
| 15 | n.a. | n.a. | 1.18 | 1.14 | ^(b) 0.11 | ^(b) 0.39 | 0.96 | 1.12 |
| Decayed, missing & filled (DMFT) | | | | | | | | |
| 6 | ^(a) 0.11 | 0.04 | 0.17 | 0.07 | 0.13 | 0.07 | 0.16 | 0.06 |
| 7 | 0.21 | 0.15 | 0.36 | 0.22 | 0.29 | 0.16 | 0.31 | 0.22 |
| 8 | 0.36 | 0.20 | 0.53 | 0.32 | 0.49 | 0.20 | 0.51 | 0.29 |
| 9 | 0.42 | 0.26 | 0.87 | 0.47 | 0.61 | 0.32 | 0.64 | 0.38 |
| 10 | 0.61 | 0.30 | 1.09 | 0.57 | 0.93 | 0.40 | 0.94 | 0.46 |
| 11 | 0.63 | 0.43 | 1.11 | 0.68 | 0.99 | 0.52 | 0.96 | 0.59 |
| 12 | 0.87 | 0.54 | 1.28 | 0.80 | 1.13 | 0.71 | 1.25 | 0.75 |
| 13 | 1.03 | 0.65 | 1.83 | 1.09 | 1.87 | 0.78 | 1.62 | 0.90 |
| 14 | 1.37 | 0.81 | 2.43 | 1.34 | 1.87 | ^(a) 1.51 | 2.09 | 1.18 |
| 15 | n.a. | n.a. | 2.79 | 1.73 | *1.60 | ^(b) 0.86 | 2.65 | 1.80 |

(a) Estimate has a relative standard error of 25% to 50% and should be used with caution.

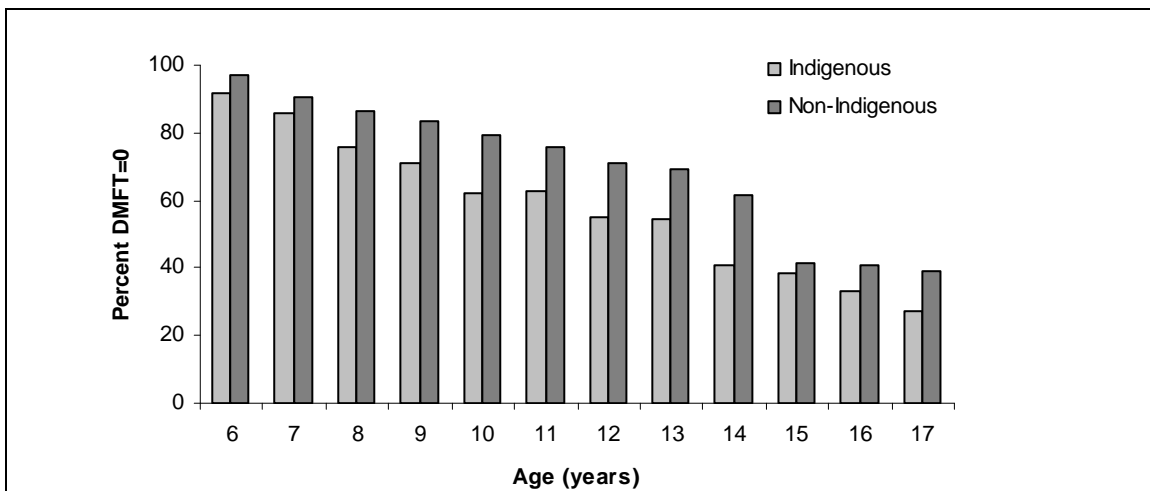
(b) Estimate has a relative standard error of greater than 50% and is considered too unreliable for general use.

Source: AIHW Dental Statistics Research Unit.



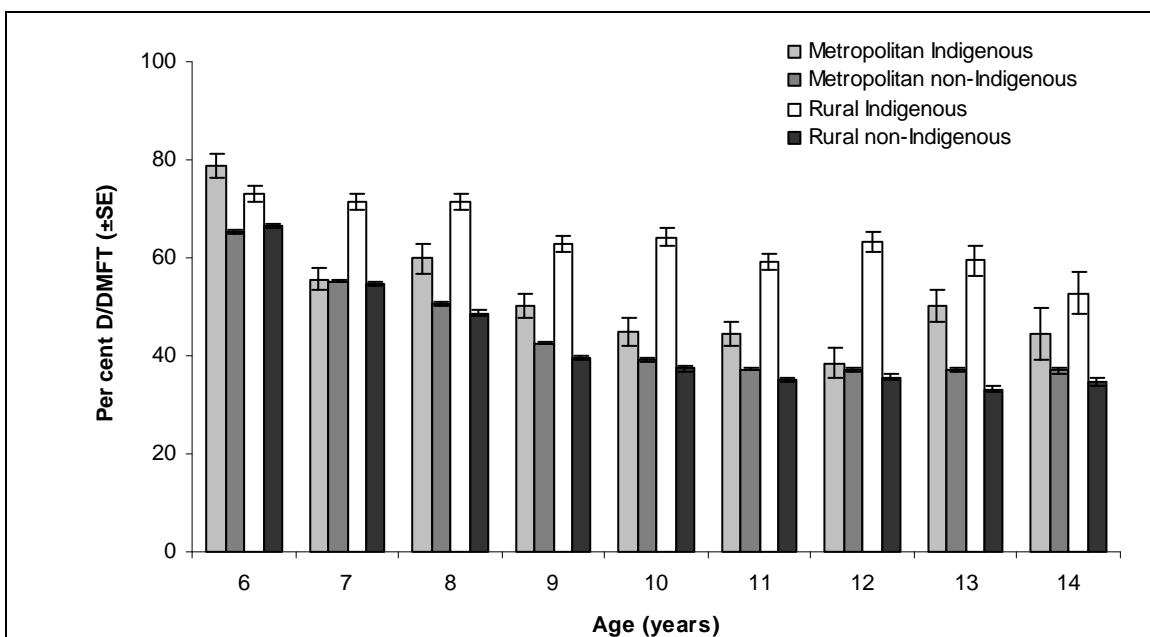
Source: AIHW Dental Statistics Research Unit.

Figure 1.10.4: Mean number of decayed and filled permanent teeth, children aged 6-15 years, by age and Indigenous status, NSW (2000), SA (2003) and NT (2002)



Source: AIHW Dental Statistics Research Unit,

Figure 1.10.5: Per cent of children with no decayed, missing or filled permanent teeth (DMFT = 0), by age and Indigenous status, NSW (2000), SA (2003) and NT (2002)



SE= Standard Error

Source: AIHW Dental Statistics Research Unit.

Figure 1.10.6: Children with decayed deciduous teeth as a proportion of total children with decayed, missing or filled permanent teeth (D/DMFT), by age and Indigenous status, metropolitan and rural areas, NSW (2000), SA (2003) and NT (2002)

Time series analysis

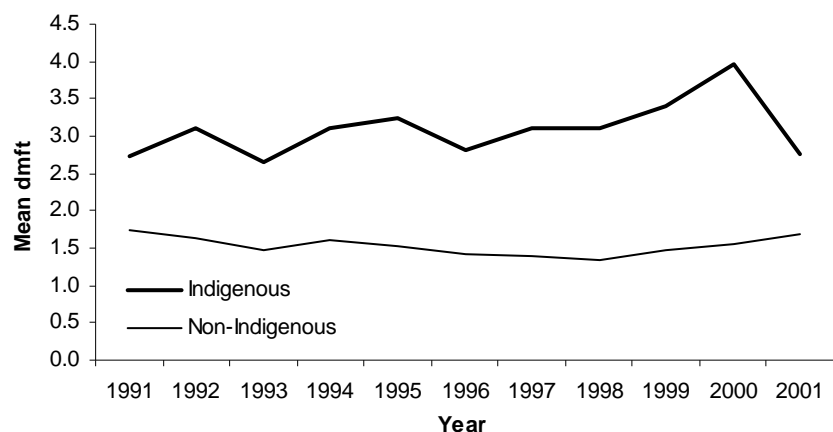
Time series data for caries experience among Indigenous children are available for the Northern Territory and are presented in Table 1.10.3 and Figures 1.10.7 and 1.10.8 below.

- Between 1991 and 2001, the mean number of decayed, missing and filled deciduous teeth (dmft) for Indigenous children in the Northern Territory at 6 years of age varied from year to year.
- For the period 1991 to 2001, there was little change in the number of decayed, missing and filled deciduous (dmft) and permanent teeth (DMFT) for Indigenous and non-Indigenous children.
- The mean dmft and DMFT scores were higher for Indigenous children than non-Indigenous children over the period 1991–2001.
- The decline in Indigenous dmft and DMFT in 2001 may be part of normal variation in Indigenous data which may relate to particular remote communities receiving school dental services in any particular year.

Table 1.10.3: Mean dmft and DMFT scores for Indigenous children in NT, 1991–2001

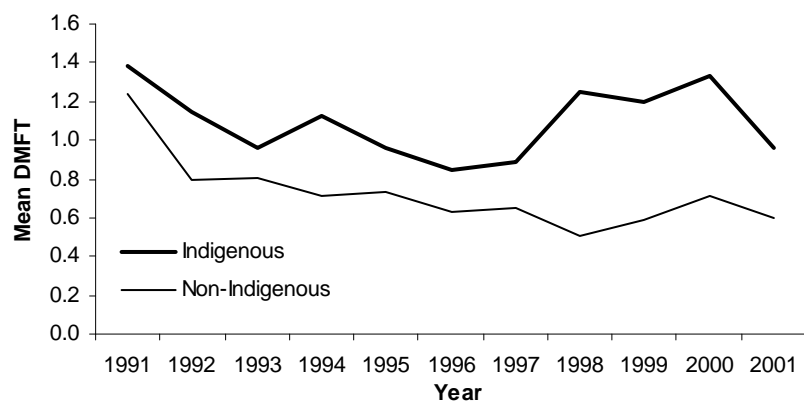
| | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Mean dmft scores, children aged 6 yrs | | | | | | | | | | | |
| Indigenous | 2.74 | 3.11 | 2.66 | 3.11 | 3.23 | 2.80 | 3.12 | 3.11 | 3.4 | 3.96 | 2.77 |
| Non-Indigenous | 1.73 | 1.64 | 1.48 | 1.62 | 1.53 | 1.41 | 1.40 | 1.35 | 1.47 | 1.56 | 1.68 |
| Mean DMFT scores, children aged 12 yrs | | | | | | | | | | | |
| Indigenous | 1.38 | 1.15 | 0.96 | 1.13 | 0.96 | 0.85 | 0.89 | 1.25 | 1.20 | 1.33 | 0.96 |
| Non-Indigenous | 1.24 | 0.79 | 0.81 | 0.71 | 0.73 | 0.63 | 0.65 | 0.51 | 0.59 | 0.71 | 0.60 |

Source: AIHW Dental Statistics Research Unit.



Source: AIHW Dental Statistics Research Unit.

Figure 1.10.7: Mean dmft scores for children at 6 years of age in NT, by Indigenous status, 1991-2001



Source: AIHW Dental Statistics Research Unit.

Figure 1.10.8: Mean DMFT scores for children at 12 years of age in NT, by Indigenous status, 1991-2001

Adult oral health

The latest available data on DMFT scores for Indigenous adults come from adults seeking public dental care in Australia in 2001–02. Data on complete loss of all natural teeth come from the 1994–96 National Dental Telephone Interview Survey.

- In 2001–02, the mean number of decayed teeth was higher for Indigenous adults across all age groups, while the mean number of filled teeth was higher for non-Indigenous adults across all age groups (Table 1.10.4, Figure 1.10.9). Indigenous adults aged 25 years and over had higher mean numbers of missing teeth than non-Indigenous adults.
- Overall, a higher percentage of Indigenous adults had no natural teeth (16.3%) compared to non-Indigenous adults (10.9%) (Figure 1.10.10). This difference is observed in all age groups over 24 years of age and is particularly marked in the 45–65 and 65 years and over age groups where Indigenous adults were around twice as likely to have no natural teeth as non-Indigenous adults.

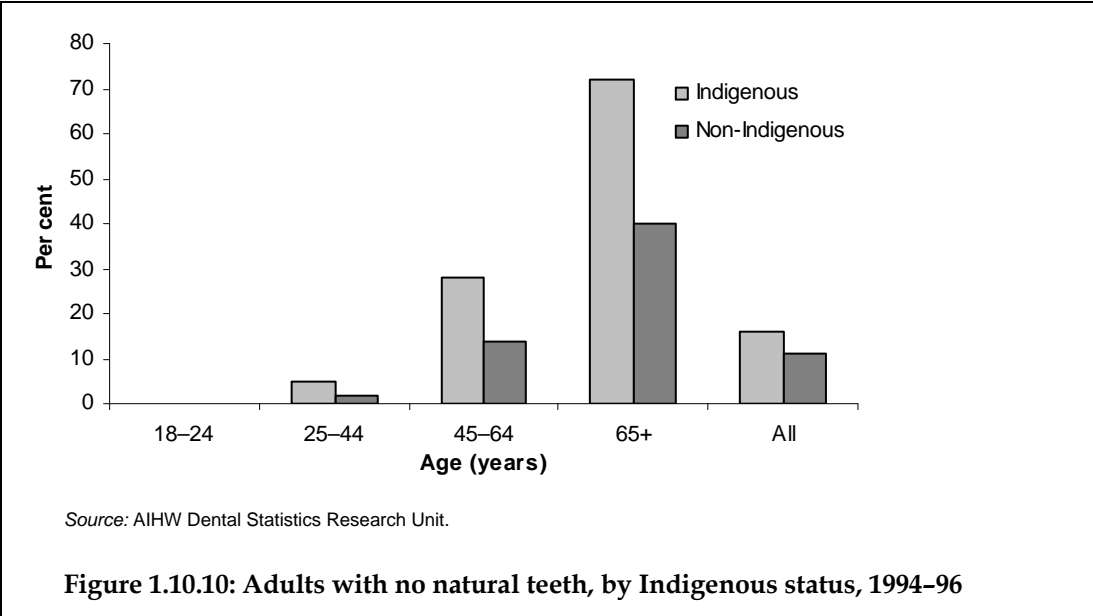
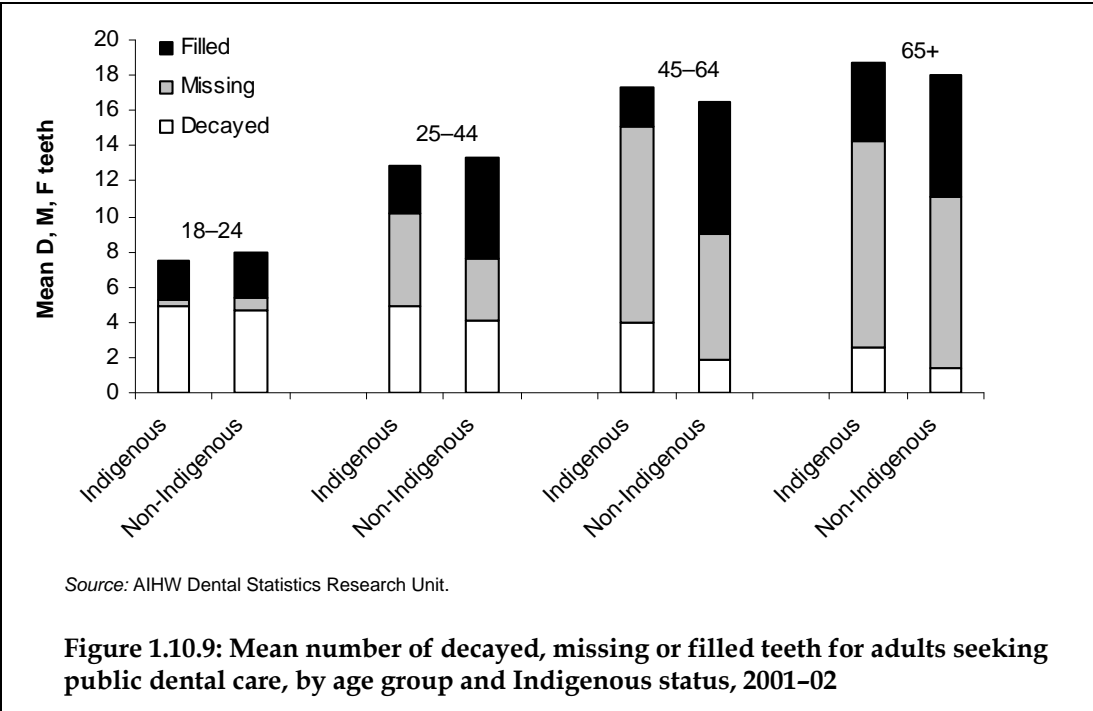
Table 1.10.4: Mean number of decayed, missing or filled teeth for adults seeking public dental care, by age group and Indigenous status, 2001–02

| | 18–24 years | | 25–44 years | | 45–64 years | | 65 years & over | |
|---------------------------|---------------------|----------------|-------------|----------------|-------------|----------------|---------------------|----------------|
| | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous | Indigenous | Non-Indigenous |
| Decayed | ^(a) 4.93 | 4.66 | 4.87 | 4.14 | 3.97 | 1.83 | 2.56 | 1.36 |
| Missing | ^(b) 0.33 | 0.72 | 5.33 | 3.52 | 11.11 | 7.23 | 11.67 | 9.8 |
| Filled | 2.18 | 2.56 | 2.71 | 5.62 | 2.25 | 7.48 | ^(a) 4.44 | 6.86 |
| Decayed, missing & filled | 7.44 | 7.94 | 12.91 | 13.28 | 17.33 | 16.54 | 18.67 | 18.02 |

(a) Estimate has a relative standard error of 25% to 50% and should be used with caution.

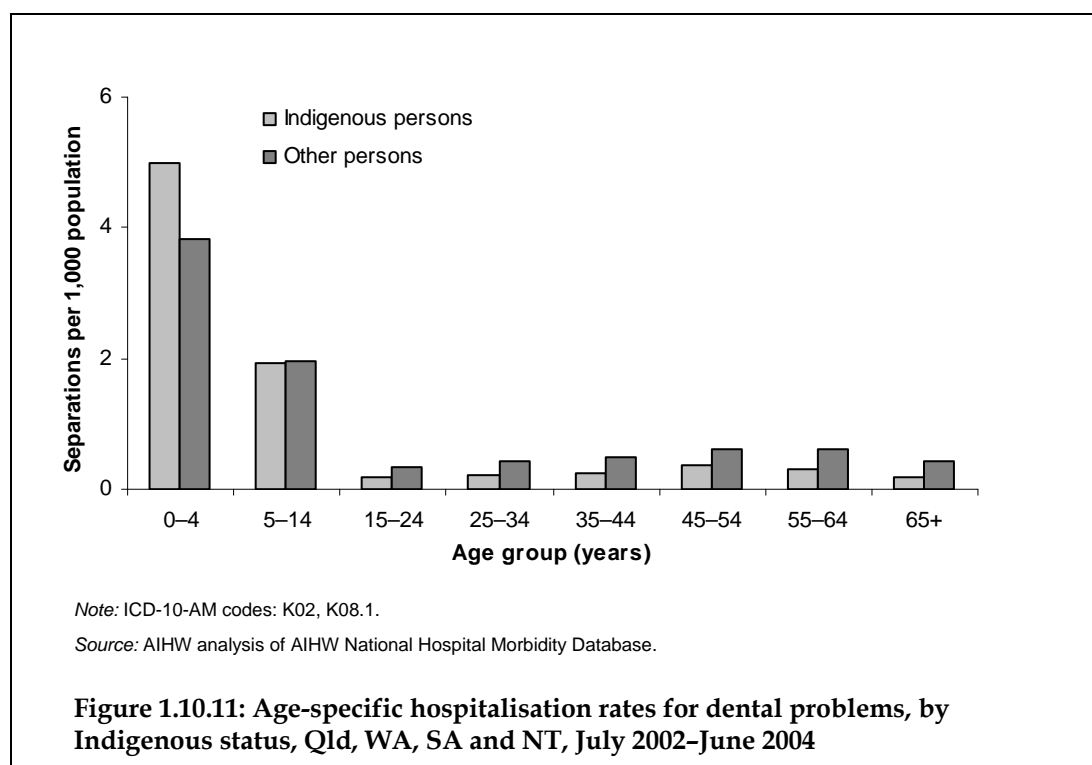
(b) Estimate has a relative standard error of greater than 50% and is considered too unreliable for general use.

Source: AIHW Dental Statistics Research Unit.



Hospitalisations

- For the two-year period July 2002 to June 2004, in Queensland, Western Australia, South Australia and the Northern Territory combined, there were 13,464 hospitalisations for dental problems, 718 (5.3%) of which were hospitalisations of Aboriginal and Torres Strait Islander peoples.
- Indigenous children aged 0–4 years had higher hospitalisation rates for dental problems (dental caries and tooth extractions) than other children of the same age (Figure 1.10.11). At ages 5–14 years, Indigenous children were hospitalised for dental problems at similar rates to other children but in the older age groups, other Australians were hospitalised at higher rates than Indigenous Australians.



- After adjusting for differences in age structure between the two population groups, Indigenous and other Australians in Queensland, Western Australia, South Australia and the Northern Territory were hospitalised at similar rates for dental problems.

Self-reported data

Oral health of Aboriginal children

Information on dental problems among Aboriginal children was collected in the Western Australian Aboriginal Child Health Survey, between 2001 and 2002. Carers of Aboriginal children were asked whether their child currently had a number of dental problems including cavities and dental filings.

- Overall, approximately 38% of Aboriginal children aged 0–17 years were assessed by their carers as having one or more dental problems (tooth decay, tooth removals or fillings). Almost half of children aged 4–17 years had experienced one or more dental problems at the time of the survey (47%). The proportion of children who had dental problems varied by level of relative isolation, with children living in Perth metropolitan areas twice as likely to have tooth decay, a tooth removal or filling (52%) than children living in areas of extreme isolation (25%).
- Approximately 19% of Aboriginal children aged 0–17 years were assessed by their carers as having holes in their teeth. Prevalence of cavities was lowest for children aged 0–3 years (8%) and highest for children aged 4–7 years (31%).
- Around 9% of Aboriginal children were reported to have ever had a tooth removed. Children aged over 3 years of age were more likely to have had a tooth extraction for dental decay.
- Over one-quarter (28%) of children aged 0–17 years were reported to have had dental fillings. A greater proportion of older children were reported to have ever had a tooth filled than younger children. Less than 1% of children aged 0–3 years had ever had a dental filing compared to around 40% of children aged 8–11 years and 12–17 years.
- An estimated 6% of Aboriginal children aged 0–17 years were reported to have a problem with sore and bleeding gums. The prevalence of sore and bleeding gums was highest for children aged 12–17 years (8%).

Dentist consultations and oral health actions

Information on the dentist consultations and oral health actions of Indigenous Australians was collected in the 2004–05 NATSIHS and is presented in Tables 1.10.5 and 1.10.6.

- In 2004–05, approximately 4% of Indigenous Australians and 6% of non-Indigenous Australians aged 2 years and over reported they had visited a dentist in the last two weeks (Table 1.10.5).
- In 2004–05, approximately 89% of Indigenous Australians aged 15 years and over reported they had visited a health professional about their teeth at some point in their lives. A higher proportion of Indigenous people living in remote areas had visited a health professional about their teeth than Indigenous people living in non-remote areas (94% compared to 76%) (Table 1.10.6).
- Approximately 45% of Indigenous Australians aged 15 years and over reported not having lost any natural teeth, 33% reported having lost one–four teeth, 9% had lost five–nine teeth, 3% had lost 10–14 teeth and 8% had lost 15 or more teeth. Numbers of natural teeth lost were similar for Indigenous Australians living in remote and non-remote areas.

Of those aged 55 years and over, almost half reported having lost 10 or more natural teeth.

- In 2004–05, approximately 10% of Indigenous Australians aged 15 years and over reported wearing dentures and 6% reported they required dentures. A higher proportion of Indigenous Australians in non-remote areas reported wearing dentures than those living in remote areas (12% compared to 5%), whereas a higher proportion of Indigenous people in remote areas reported they required dentures (8%) than those living in non-remote areas (6%). Approximately 45% of Indigenous Australians aged 55 years and over reported wearing dentures and 13% reported they required dentures.

Table 1.10.5: Dental consultation in the last 2 weeks, by Indigenous status and age group, persons aged 2 years and over, 2004–05

| | 2–14 | | 15–24 | | 25–34 | | 35–44 | | 45–54 | | 55+ | | Total ^(a) | |
|-------------------------------------|----------------|-------------------|---------------|-------------------|---------------|-------------------|---------------|-------------------|------------------|-------------------|------------------|-------------------|----------------------|-------------------|
| | Indig. (%) | Non-Indig. (%) | Indig. (%) | Non-Indig. (%) | Indig. (%) | Non-Indig. (%) | Indig. (%) | Non-Indig. (%) | Indig. (%) | Non-Indig. (%) | Indig. (%) | Non-Indig. (%) | Indig. (%) | Non-Indig. (%) |
| Dental consultation in last 2 weeks | 5* | 7* | 3* | 6* | 3 | 4 | 3* | 5* | 4 ^(b) | 6 | 4 ^(b) | 6 | 4* | 6* |
| Total number of persons | 180,669 | 3,760,010 | 92,067 | 2,636,199 | 69,772 | 2,761,354 | 59,057 | 2,899,566 | 39,578 | 2,705,580 | 33,167 | 4,529,678 | 474,310 | 1,9292,387 |

* Represents results with statistically significant differences in the Indigenous/non-Indigenous comparisons.

(a) Totals are age standardised.

(b) Estimate has a relative standard error of between 25% and 50% and should be interpreted with caution.

Source: ABS and AIHW analysis of 2004–05 National Aboriginal and Torres Strait Islander Health Survey.

Table 1.10.6: Oral health actions, Indigenous Australians, by remoteness and age group, 2004–05

| | 15–24 | | | 25–34 | | | 35–44 | | | 45–54 | | | 55+ | | | Total | | |
|---|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|------------------|------------------|------------------|------------------|------------|------------|------------|------------|------------|------------|------------|
| | Remote | Non-remote | Total | Remote | Non-remote | Total | Remote | Non-remote | Total | Remote | Non-remote | Total | Remote | Non-remote | Total | Remote | Non-remote | Total |
| | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) |
| Whether ever visited health professional about teeth | | | | | | | | | | | | | | | | | | |
| Yes | 75 | 95 | 90 | 74 | 95 | 89 | 75 | 92 | 87 | 81 | 96 | 92 | 78 | 93 | 89 | 76 | 94 | 89 |
| No | 24 | 5 | 9 | 26 | 5 | 11 | 24 | 8 ^(b) | 13 | 19 | 4 ^(b) | 8 | 22 | 7 | 11 | 24 | 6 | 11 |
| Total^(a) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Number of natural teeth lost | | | | | | | | | | | | | | | | | | |
| No teeth lost | 78 | 80 | 80 | 55 | 48 | 50 | 31 | 26 | 27 | 24 | 14 | 17 | 16 | 5* | 8 | 47 | 45 | 45 |
| 1–4 | 21 | 18 | 18 | 40 | 41 | 40 | 49 | 48 | 48 | 43 | 35 | 37 | 27 | 19 | 22 | 36 | 31 | 33 |
| 5–9 | n.p. | 1 ^(b) | 1 ^(b) | 4 ^(b) | 7 | 6 | 14 ^(b) | 17 | 16 | 19 | 21 | 21 | 16 | 13 | 14 | 9 | 10 | 9 |
| 10–14 | — | — | — | 1 ^(c) | 1 ^(c) | 1 ^(b) | 3 ^(c) | 2 ^(b) | 2 ^(b) | 6 ^(b) | 8 | 7 | 11 | 9 | 10 | 3 | 3 | 3 |
| 15 or more | n.p. | 1 ^(c) | 1 ^(c) | n.p. | 2 ^(b) | 1 | 2 ^(b) | 5 | 4 | 7 | 18 | 15 | 23 | 43 | 37 | 4 | 9 | 8 |
| Total^(a) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Dentures | | | | | | | | | | | | | | | | | | |
| Wears dentures | — ^(c) | 1 ^(b) | 1 ^(b) | 2 ^(b) | 2 | 2 | 2 ^(b) | 10 | 8 | 14 | 26 | 23 | 19 | 55 | 45 | 5 | 12 | 10 |
| Requires dentures | 1 ^(c) | — ^(c) | 1 ^(b) | 5 | 4 | 4 | 11 | 9 | 10 | 14 | 12 | 12 | 19 | 10 | 13 | 8 | 6 | 6 |
| Doesn't require dentures | 20 | 18 | 19 | 38 | 45 | 43 | 54 | 55 | 55 | 48 | 49 | 48 | 45 | 30 | 34 | 39 | 37 | 38 |
| No teeth lost | 78 | 80 | 80 | 55 | 48 | 50 | 31 | 26 | 27 | 24 | 14 | 17 | 16 | 5* | 8 | 47 | 45 | 45 |
| Total^(a) | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

n.p. Not available for publication but included in totals where applicable

(a) Includes not known responses.

(b) Estimate has a relative standard error of 25% to 50% and should be used with caution.

(c) Estimate has a relative standard error greater than 50% and is considered too unreliable for general use.

Source: ABS 2006.

Data quality issues

Dental health survey data

The assessment of dmft and DMFT is based on the World Health Organization protocol. The accuracy of dmft and DMFT will depend on the quality of the assessment and the accuracy of recording.

Child Dental Health Survey

The Child Dental Health Survey monitors the dental health of children enrolled in school dental services operated by health departments or authorities in each state and territory. Therefore, this survey will miss those children not attending these programs. There are some variations among state and territory programs with respect to priority age groups and the nature of the services provided, for example, dental examinations, preventative services and restorative treatment. Caution is required in interpreting statistics for those over the age of 12 years as many programs only include primary school children. Different sampling procedures are used across the states and territories (Armfield et al. 2003). The sample has not been specifically designed to measure Indigenous children and therefore caution is needed in interpreting the results. Data on Indigenous status are collected from the patient's treatment card or medical history. Problems have been identified in the accurate recording of Indigenous status in this data (Armfield et al. 2003).

National Dental Telephone Interview Survey

The computer assisted telephone interview method is restricted to people with access to telephones and there will be some loss of representativeness in the sample to the extent that people without phones or with language difficulties may have been excluded. This may be exacerbated among Indigenous persons, particularly for those living in remote areas (Brennan & Carter 1998).

Any survey of Indigenous persons may suffer from misclassification or under-reporting of Indigenous status. For example, there was a larger than expected increase in the estimated Indigenous population, based on Census data between 1991 and 1996, suggesting that the accuracy of identifying persons of Aboriginal or Torres Strait Islander origin needs to be improved. The percentage of Indigenous persons in the Australian population remains small. Therefore, any survey which does not purposively sample Indigenous persons is likely to achieve only small numbers of responses from Indigenous persons, with resulting differences in levels of precision of estimates between Indigenous and non-Indigenous persons. Differences may also occur in age distributions by Indigenous status which may confound the comparison of estimates of Indigenous and non-Indigenous persons (Brennan & Carter 1998).

The numbers of Indigenous persons surveyed is low among older age groups. Therefore these data should be interpreted cautiously.

National Aboriginal and Torres Strait Islander Health Survey (NATSIHS)

The NATSIHS uses the standard Indigenous status question. The NATSIHS sample was specifically designed to select a representative sample of Aboriginal and Torres Strait Islander Australians and thus overcomes the problem inherent in most national surveys with small and unrepresentative Indigenous samples. As with other surveys, the NATSIHS is subject to sampling and non-sampling errors. Calculations of standard errors and significance testing help to identify the accuracy of the estimates and differences.

Information recorded in this survey is essentially 'as reported' by respondents. The ABS makes every effort to collect accurate information from respondents, particularly through careful questionnaire design, pre-testing of questionnaires, use of trained interviewers and assistance from Indigenous facilitators. Nevertheless, some responses may be affected by imperfect recall or individual interpretation of survey questions.

(continued)

Data quality issues (continued)

Non-Indigenous comparisons are available through the National Health Survey (NHS). The NHS was conducted in major cities, regional and remote areas, but very remote areas were excluded from the sample. Time series comparisons are available through the 1995 and 2001 National Health Survey.

In remote communities there were some modifications to the NATSIHS content in order to address language and cultural appropriateness in traditional communities, as well as to assist respondents in understanding the concepts. Some questions were excluded and some reworded. Also, paper forms were used in communities in remote areas and computer-assisted interview (CAI) instruments were used in non-remote areas. The CAI process included built in edit checks and sequencing.

Further information on NATSIHS data quality issues can be found in the national publication (ABS 2006).

Western Australian Aboriginal Child Health Survey

Survey data are subject to sampling and non-sampling errors. Confidence intervals are published with the data to provide a guide to the reliability of the estimates. Non-sampling errors can occur in surveys due to questionnaire design problems, respondent difficulty recalling information/lack of appropriate records, and errors made in the recording and processing of the data. Every effort was made to minimise non-sample errors in this survey.

Hospital separations data

Separations

The number and pattern of hospitalisations can be affected by differing admission practices among the jurisdictions and from year to year, and differing levels and patterns of service delivery.

Indigenous status question

Some jurisdictions have slightly different approaches to the collection and storage of the standard Indigenous status question and categories in their hospital collections. The not stated category is missing from several collections. It is recommended that the standard wording and categories be used in all jurisdictions (AIHW 2005).

Under-identification

The incompleteness of Indigenous identification means the number of hospital separations recorded as Indigenous is an underestimate of hospitalisations of Aboriginal and Torres Strait Islander people. While the identification of Indigenous people in hospitalisations is incomplete in all states and territories, four jurisdictions (Queensland, Western Australia, South Australia and the Northern Territory) have been assessed as having adequate identification in 2003–04 (AIHW 2005). It has therefore been recommended that reporting of Indigenous hospital separations be limited to aggregated data from Queensland, Western Australia, South Australia and the Northern Territory. The proportion of the Indigenous population covered by these four jurisdictions is 60%. The following caveats have also been recommended:

- *Interpretation of results should take into account the relative quality of the data from the jurisdictions included (currently a degree of Indigenous under-identification in Western Australia and relatively marked Indigenous under-identification in Queensland data).*
- *Data for these four jurisdictions over-represent Indigenous populations in less urbanised and more remote locations.*
- *Hospitalisation data for four jurisdictions should not be assumed to represent the hospitalisation experience in other jurisdictions (ABS & AIHW 2005).*

(continued)

Data quality issues (continued)

Numerator and denominator

Rate and ratio calculations rely on good numerator and denominator data. The changes in the completeness of identification of Indigenous people in hospital and records may take place at different rates than changes in the identification of Indigenous people in other administrative collections and population censuses. Denominators used here are sourced from ABS's Experimental estimates and projections: Aboriginal and Torres Strait Islander Australians 1991 to 2009 (ABS 2004).

References

- ABS (Australian Bureau of Statistics) 2004. Experimental estimates and projections: Aboriginal and Torres Strait Islander Australians 1991 to 2009. ABS cat. no. 3238.0. Canberra: ABS.
- ABS 2006. National Aboriginal and Torres Strait Islander Health Survey 2004–05. ABS cat. no. 4715.0. Canberra: ABS.
- ABS & AIHW (Australian Bureau of Statistics and Australian Institute of Health and Welfare) 2005. The Health and Welfare of Australia's Aboriginal and Torres Strait Islander peoples 2005. ABS cat. no. 4704.0; AIHW cat. no. IHW 14. Canberra: ABS & AIHW.
- AIHW 2000. Oral health and access to dental health services among Indigenous Australians: Research report, March 2000. AIHW cat. no. DEN 64. Canberra: AIHW.
- AIHW (Australian Institute of Health and Welfare) 2005. Improving the quality of Indigenous identification in hospital statistics. Health Services Series no. 25. AIHW cat. no. HSE 101. Canberra: AIHW.
- Armfield JM, Roberts-Thomson KF & Spencer AJ 2003. The Child Dental Health Survey, Australia, 1999: trends across the 1990s. AIHW Dental Statistics and Research Series no. 27. AIHW cat. no. DEN 95. Adelaide: The University of Adelaide.
- Brennan DS & Carter KD 1998. Adult access to dental care: Indigenous Australians. AIHW Dental Statistics and Research Series no. 16. AIHW cat. no. DEN 40. Adelaide: The University of Adelaide.
- National Centre for Classification in Health 2004. International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification. 4th Edition. National Centre for Classification in Health.