

Inequalities in the utilisation of the Child Dental Benefits Schedule between Aboriginal* and non-Aboriginal children

Neil Orr^{1,2,4} PhD, Senior Research Fellow

Kylie Gwynne^{1,2} PhD, Associate Professor

Woosung Sohn³ DDS, PhD, DrPH, Professor

John Skinner^{ID}¹ PhD, Senior Research Fellow

¹Poche Centre for Indigenous Health, Edward Ford Building (A27), The University of Sydney, 2006.
Email: kylie.gwynne@sydney.edu.au; john.skinner@sydney.edu.au

²The Faculty of Medicine, Health and Human Sciences, Level 3, 75 Talavera Rd, Macquarie University, NSW 2109, Australia.

³Sydney Dental School, Westmead Centre for Oral Health, Darcy Road, Westmead, NSW 2145, Australia.
Email: woosung.sohn@sydney.edu.au

⁴Corresponding author. Email: neil.orr@sydney.edu.au

Abstract.

Objectives. The Child Dental Benefits Schedule (CDBS) is an Australian Government initiative providing basic dental care to children from low-income households. We sought to investigate levels of utilisation of the CDBS among Aboriginal and non-Aboriginal children to determine whether there is equal access to dental services provided through the schedule.

Methods. CDBS data were obtained for four financial (July–June) years (from 2013–14 to 2016–17). The data captured all claims made during this period. The data included estimates of usage by Aboriginal status, age group and Dental Benefits groups (administrative categories of related dental procedures).

Results. The utilisation of CDBS services was lower for Aboriginal children. However, in 2013–14, although the odds of using the schedule were higher for non-Aboriginal children (odds ratio (OR) 0.89; $P < 0.0001$) this was reversed in 2015–16 and 2016–17 (OR 1.11 and 1.21 respectively; $P < 0.0001$ in both years). The odds of Aboriginal children using preventive services was below that of non-Aboriginal children in 2013–14 (OR 0.82), 2014–15 (OR 0.76), 2015–16 (OR 0.83) and 2016–17 (OR 0.90; $P < 0.0001$) in all years.

Conclusions. The data are encouraging with regard to equity because they show that for services overall, Australian Aboriginal and non-Aboriginal children have similar levels of utilisation. However, lower levels of the use of preventive services may indicate future inequalities in oral health among Aboriginal children.

What is known about the topic? The CDBS is an Australian Government initiative aimed at improving access to dental care for children from low-income households, including for Aboriginal people. By facilitating greater access to dental care, the schedule has the potential to help address inequalities in oral health for both Aboriginal and non-Aboriginal children.

What does this paper add? There are no analyses available comparing the utilisation of the CDBS by Aboriginal and non-Aboriginal children. This study compared levels of utilisation of the schedule overall and specifically for preventive services.

What are the implications for practitioners? Greater efforts should be made to address inequalities in the utilisation of the CDBS between Aboriginal and non-Aboriginal children. Although there are some hopeful signs, inequalities remain that may affect the oral health of Aboriginal children. There is also potential to encourage utilisation of the CDBS for greater provision of preventive services, including targeted population oral health initiatives.

Received 17 February 2020, accepted 16 October 2020, published online 5 February 2021

*Please note that the term ‘Aboriginal’ used in this paper refers to Aboriginal and Torres Strait Islanders.

Introduction

In Australia, oral health is significantly poorer among Aboriginal than non-Aboriginal children. Aboriginal children have almost twice the dental caries experience than non-Aboriginal children.^{1,2} In addition to being more likely to develop dental caries, Aboriginal children aged <5 years are 1.5-fold more likely to experience hospitalisation for dental problems.^{3,4} For Aboriginal people, poorer oral health is associated with colonisation and the resulting shift to a highly processed Western diet, including high consumption of sugar-sweetened drinks and poor access to fluoridated water. Compounding this is limited access to toothbrushes and toothpaste, high out-of-pocket costs for dental care and access barriers related to cultural safety and social disadvantage.^{5–8}

Recently the Australian Government established the Child Dental Benefits Schedule (CDBS) to provide children from low-income households with access to basic dental care.⁹ Mindful of the strong evidence for disparities in access to health care, we sought to investigate levels of utilisation of the CDBS among Aboriginal and non-Aboriginal children to determine whether there is equal access to dental services funded by the CDBS.

The CDBS commenced on 1 January 2014 and is administered by Medicare under the *Dental Benefits Act*.¹⁰ The CDBS replaced the Medicare Teen Dental Plan, which was a more restricted scheme established by the Australian Government in 2007.^{11,12} The CDBS offers up to A\$1000 for dental services over two calendar years for each eligible child. Eligibility includes the receipt of government benefits, tax status and age from 2 to 17 years. Currently, the CDBS includes 76 dental services: diagnostic, preventive and restorative services, oral surgery and prosthodontics (dentures).⁹ Under its rules, CDBS services can be provided by public or private dental sectors but dentists must be registered with the CDBS in order to claim payment.⁹ Although dentists are permitted to set their own fees, most services are provided free of charge to patients under the A\$1000 biannual cap.¹³

The aims of the CDBS are to: (1) address declining child oral health, with a longer-term strategy to deliver improved population-wide oral health into the future; (2) target Commonwealth expenditure on dental services to those children in greater financial need; and (3) build a unified national system for patient eligibility and service delivery for children.¹³

In the 2014–15 financial year, roughly 70% of Aboriginal children were eligible for the schedule as well 54% of non-Aboriginal children.¹³ When established, it was anticipated that approximately 78% of the eligible population would use the schedule. However, at the time of this study, utilisation was less than half this level and remained below the revised targets in the Australian Government Budget Statements.¹³

The aim of this study was to compare the utilisation of the CDBS between Aboriginal and non-Aboriginal children. We were interested in this comparison because there are many examples of poor access to health care being associated with poor health outcomes.^{3,14,15} A secondary aim of the present study was to examine the utilisation of preventive services by Aboriginal children because these services may be even more strongly associated with oral health due to their role in preventing or slowing dental disease.¹⁶ The utilisation of the CDBS by

Aboriginal children is not routinely reported by government. The results of this study will provide further impetus for better targeting of the CDBS for Aboriginal children and for greater engagement with Aboriginal Community Controlled Health Services.

Methods

A repeat cross-sectional survey design was used in the study whereby an extract of aggregated CDBS claims data was obtained from the then Commonwealth Department of Human Services (now Services Australia), the government agency that administers the CDBS and Medicare. The extract included all claims made to the CDBS nationally over four financial years (from 2013–14 to 2016–17). The data included estimates of the number of CDBS patients by Indigenous status, age group and the number of claims for dental services (compiled as Dental Benefits groups, which are categories of related dental procedures used in schedule records).⁹

Measurement

Indigenous status

The key piece of information that enabled us to conduct the study was the Voluntary Indigenous Identifier (VII). The VII is a binary variable collected by Medicare and identifies the Indigenous status of CDBS and Medicare patients.¹⁷ Because disclosure of Indigenous status is not compulsory for accessing the CDBS or Medicare, analyses based on raw VII data will underestimate the number of Aboriginal patients.¹⁷ Services Australia is aware of this and weights the data by age, sex and area of residence before its release to researchers.

Dental services

The CDBS lists 76 dental services that are available through practitioners who are registered with the schedule. Registered practitioners include both public and private providers. The services include diagnostic, preventive and restorative procedures, as well as oral surgery and prosthodontics (dentures). Each service has a set reimbursement price and limits on claiming frequency. The item numbers align to the Australian Dental Association (ADA) Schedule of Dental Services.¹⁸ In Tables 1 and 2 and Fig. 1, all services were included in the analysis, but in Fig. 2 and Table 3 only claims for preventive services were used. Preventive services are identified in the schedule by the Dental Benefits group code U1, which includes: 88111, removal of plaque and/or stain; 88114, removal of calculus (first visit); 88115, removal of calculus (subsequent visit); 88121, topical application of remineralisation and/or cariostatic agents (one treatment); 88161, fissure and/or tooth surface sealing – per tooth (first four services on a day); and 88162, fissure and/or tooth surface sealing – per tooth (subsequent services).⁹

Age groups

The data were provided in 5-year age groups (0 to 4, 5 to 9, 10 to 14 and 15 to 19 years), although all analyses in the paper include the total sample.

Population denominators

Census-derived population denominators were used to calculate population-level estimates of CDBS usage. Census-derived denominators were used because enumerations of the actual eligible populations were not available for the study years. Aboriginal and non-Aboriginal population denominators were based on ABS publications.^{19,20} Denominators were calculated for each financial year for the total Australian population and for the Aboriginal population aged 0–19 years. The denominators were based on population estimates for the month of June preceding the first month of each financial year (e.g. June 2013 for 2013–2014 data, June 2014 for 2014–2015 data, June 2015 for 2015–2016 data and June 2016 for 2016–2017 data). The non-eligible ages (0–1 year and 18 and 19 years) were included in the denominators to align the population estimates to the CDBS data, which also included these ages. To calculate non-Aboriginal population denominators, Aboriginal population estimates were subtracted from total Australian population estimates to give exclusive non-Aboriginal population estimates that were then used as non-Aboriginal population denominators.

Statistical analysis

Odds ratios (ORs) with 95% confidence intervals (CIs) were calculated using logistic regression to estimate the odds of Aboriginal children using the CDBS (for all services and for preventive services). All ORs were adjusted for age.¹⁶ Slopes of trend lines in the figures showing comparative utilisation were calculated using multiple regression. Significance was set at $P \leq 0.05$ (two tailed) for all statistical tests. Data were analysed using IBM SPSS Statistics 24 (IBM Corp., Armonk, NY, USA) and Microsoft (Bellevue, WA, USA) Excel 2016.

Ethics approval

Ethics approval for the study was obtained from the Aboriginal Health and Medical Research Council, NSW (Human Research Ethics Committee reference no. 1281/17).

Results

Table 1 shows the number of CDBS patients by Aboriginal status and age group over four financial years. In its first year (2013–14), 433 393 patients used the schedule. This increased in each of the following years with 1 003 372 using the schedule in 2014–15, 1 025 392 using it in 2015–16 and 1 069 983 using it in 2016–17. The greatest number of patients were in the 5–9 and 10–14 year age groups, which accounted for approximately 70% of total patients.

Fig. 1 shows utilisation of the CDBS schedule by Aboriginal and non-Aboriginal populations. Fig. 1 shows that although levels of utilisation were lower among Aboriginal people, they were fast converging with those of the non-Aboriginal population. This is evident in the slope of the trend lines, where the slope for Aboriginal people is greater than that for the non-Aboriginal population. Table 2 presents ORs for the utilisation of the CDBS. The data show that in 2013–14 the odds were 11% greater for CDBS use by the non-Aboriginal than the Aboriginal population. However, in 2015–16, this had been reversed and, in 2016–17, Aboriginal people were 21% more likely to use the schedule.

Preventive services

Fig. 2 shows the utilisation of preventive services by Aboriginal and non-Aboriginal populations. Fig. 2 shows that levels of utilisation were lower among Aboriginal people in all years.

Table 1. Child Dental Benefits Schedule (CDBS) patients by age group and Aboriginal status for the financial years 2013–14 to 2016–17

Financial year	Age group (years)	Aboriginal		Non-Aboriginal	
		No. (%) CDBS patients ^A	Population (n)	No. (%) CDBS patients ^B	Population (n)
2013–14 ^C	0–4	2415 (2.9)	83 527	47 305 (3.1)	1 524 375
	5–9	7061 (8.7)	81 483	148 761 (10.2)	1 458 636
	10–14	6419 (8.2)	78 152	136 906 (9.8)	1 394 915
	15–19	3848 (5.0)	76 294	80 678 (5.5)	1 466 322
	All ages	19 744 (6.2)	319 456	413 649 (7.1)	5 844 248
2014–15	0–4	4802 (5.7)	84 369	957 52 (6.2)	1 541 431
	5–9	17 213 (20.1)	82 738	344 308 (23.0)	1 496 800
	10–14	15 249 (19.6)	78 114	310 495 (22.2)	1 401 491
	15–19	8795 (11.4)	77 286	206 758 (14.1)	1 470 709
	All ages	46 059 (13.9)	322 507	957 313 (16.2)	5 910 431
2015–16	0–4	5558 (6.5)	85 781	103 395 (6.7)	1 552 567
	5–9	19 794 (23.8)	83 306	368 616 (24.0)	1 536 262
	10–14	16 734 (21.3)	78 633	311 589 (22.1)	1 410 688
	15–19	8472 (10.9)	77 565	191 235 (13.0)	1 469 856
	All ages	50 558 (15.5)	325 285	974 834 (16.3)	5 969 373
2016–17	0–4	6864 (7.8)	88 245	115 670 (7.4)	1 573 626
	5–9	21 565 (26.1)	82 730	380 374 (24.3)	1 567 281
	10–14	18 045 (22.7)	79 482	323 714 (22.6)	1 431 690
	15–19	9236 (11.8)	78 082	194 515 (13.2)	1 475 154
	All ages	55 709 (16.9)	328 539	1 014 274 (16.8)	6 047 751

^AData weighted by region, age and sex.

^BIncludes Aboriginal status not stated.

^CProgram established in January 2014, so 2013–14 data do not cover a full financial year.

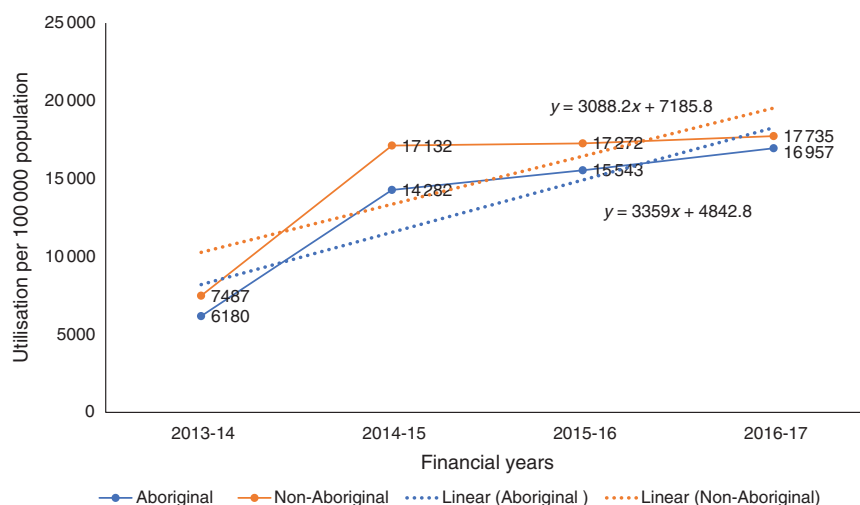


Fig. 1. Utilisation of the Child Dental Benefits Schedule (CDBS) by Aboriginal status for the financial years 2013–14 to 2016–17 (per 100 000 population). Note, the CDBS program was established in January 2014, so the 2013–14 data do not cover a full financial year.

Table 2. Utilisation of the Child Dental Benefits Schedule (CDBS) schedule by Aboriginal status for the financial years 2013–14 to 2016–17

Data for the Aboriginal population are weighted by region, age and sex. The non-Aboriginal population also includes those children for whom Aboriginal status was not stated. The age range in the table includes shoulder ages (0–1 and 18–19 years) to account for individuals transitioning into and out of eligibility age over the period of the study. Odds ratios (ORs) are for predicting Aboriginal utilisation and are adjusted for age. CI, confidence interval

Financial year	Population group	Population aged 0–19 years ^A (n)	CDBS patients (n)	OR (95% CI)	P-value
2013–14 ^B	Aboriginal	319 456	19 743	0.89 (0.87–0.90)	<0.0001
	Non-Aboriginal	5 524 792	413 650		
	Total	5 844 248	433 393		
2014–15	Aboriginal	322 507	46 060	1.005 (0.99–1.02)	0.33
	Non-Aboriginal	5 587 924	957 314		
	Total	5 910 431	1 003 374		
2015–16	Aboriginal	325 285	50 558	1.11 (1.10–1.12)	<0.0001
	Non-Aboriginal	5 644 088	974 834		
	Total	5 969 373	1 025 392		
2016–17	Aboriginal	328 539	557 09	1.21 (1.20–1.22)	<0.0001
	Non-Aboriginal	5 719 212	1 014 274		
	Total	6 047 751	1 069 983		

^APopulation at June preceding the start of the financial year.

^BProgram established in January 2014. 2013–14 data does not cover a full financial year.

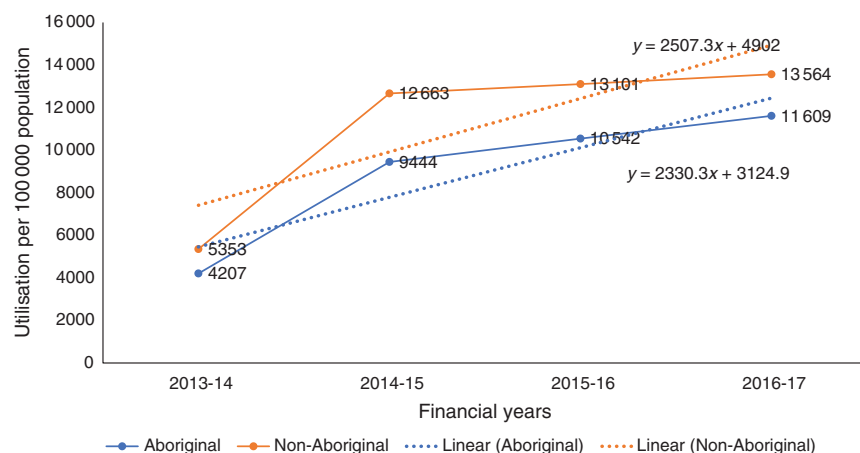


Fig. 2. Utilisation of preventive services through the Child Dental Benefits Schedule (CDBS) by Aboriginal status for the financial years 2013–14 to 2016–17 (per 100 000 population). Note, the CDBS program established in January 2014, so the 2013–14 data do not cover a full financial year.

Table 3. Utilisation of preventive services through the Child Dental Benefits Schedule (CDBS) by Aboriginal status for the financial years 2013–14 to 2016–17

Data for the Aboriginal population are weighted by region, age and sex. The non-Aboriginal population also includes those children for whom Aboriginal status was not stated. The age range in the table includes shoulder ages (0–1 and 18–19 years) to account for individuals transitioning into and out of eligibility age over the period of the study. Odds ratios (ORs) are for predicting Aboriginal utilisation of prevention services and are adjusted for age. CI, confidence interval

Financial year	Population group	Population aged 0–19 years ^A (n)	CDBS patients (n)	OR (95% CI)	P-value
2013–14 ^B	Aboriginal	319 456	13 440	0.82 (0.80–0.83)	<0.0001
	Non-Aboriginal	5 524 792	295 728		
	Total	5 844 248	309 168		
2014–15	Aboriginal	322 507	30 459	0.76 (0.75–0.77)	<0.0001
	Non-Aboriginal	5 587 924	707 589		
	Total	5 910 431	738 048		
2015–16	Aboriginal	325 285	34 291	0.83 (0.82–0.84)	<0.0001
	Non-Aboriginal	5 644 088	739 458		
	Total	5 969 373	773 749		
2016–17	Aboriginal	328 539	38 140	0.90 (0.89–0.91)	<0.0001
	Non-Aboriginal	5 719 212	775 773		
	Total	6 047 751	813 913		

^APopulation at June preceding the start of the financial year.

^BProgram established in January 2014, so 2013–14 data do not cover a full financial year.

Moreover, the trend lines appear to be diverging, with a steeper slope in the non-Aboriginal population. Table 3 presents ORs for the utilisation of preventive services. In 2013–14, Aboriginal people were 18% less likely than the non-Aboriginal population to use preventive services. In addition, Aboriginal people were 24%, 17% and 10% less likely to use preventive services in 2014–15, 2015–16 and 2016–17 respectively.

Discussion

Overall utilisation of the CDBS for four financial years is presented in Table 1. Although the utilisation figures are impressive, it must be remembered that these figures represent reach into the eligible population that is less than half of what was intended, and thus there was an expectation that the schedule would have a much greater impact than what is shown.¹³

Encouragingly, the data show that the number of eligible children using the schedule has increased by approximately 3% per full financial year, suggesting that the schedule is growing in reach and scale. However, the question of whether the schedule is growing is somewhat controversial because our findings contrast with those of Putri *et al.*, who found that utilisation may actually be diminishing, with a decline of 16.3% from the 2014 to 2015 calendar year.²¹

We believe that the difference in the findings can be explained by the contrasting definitions of ‘patient’ used in the studies. Putri *et al.* defined a ‘patient’ as an eligible child who has claimed for item code 88011 (comprehensive oral examination performed), which is justified on the grounds that it reflects the practice in Australia where all new patients undergo a comprehensive oral examination.²¹ In contrast, the definition used in the present study includes an eligible child who has made a claim for any CDBS item.

We are convinced that our definition provides a more accurate depiction of how the CDBS is used, where new patients may use the schedule without first claiming for the comprehensive oral exam item. Furthermore, our findings are supported by the

report on the fourth review of the *Dental Benefits Act 2008*, which used a similar definition to ours and found the number of patients using the CDBS nationally increased from 904 880 in 2014 to 1 022 028 in 2015.¹³

These early findings are encouraging with regard to equity because they show that, for services overall, levels of utilisation are similar among the Aboriginal and non-Aboriginal populations. Indeed, the odds of using the schedule may be greater for Aboriginal than non-Aboriginal children as the schedule is maturing.

However, for the utilisation of preventive services the situation is less positive. We found persistent inequalities with no evidence of the odds converging. An ad hoc submission to the Committee undertaking the fourth review of the *Dental Benefits Act 2008* proposed modification of the CDBS to allow for greater claiming of fluoride varnish items, including those provided by dental assistants (Dr John Skinner, Poche Centre for Indigenous Health, pers. comm.). Initiatives such as these could help stem inequalities in the utilisation of preventive services by making preventive services much more accessible. Although our submission was not supported by the Committee, it is an evidence-based proposal that we believe could address underutilisation of the CDBS by Aboriginal children while preventing dental disease in otherwise underserved communities.

It is now well established that good oral health is essential for overall health and well-being,²² and important to this is adequate access to dental health services.³ In Australia, the provision of dental health services is largely the domain of the private sector, with individual dental practitioner businesses operating on a fee-for-service basis. Private health cover provides insurance against costs of treatment by ancillary health service providers, including dentists. The extent of cover depends on the type of policy purchased.³ However, dental fees and health insurance premiums are often unaffordable to low-income families.^{6,14}

Public dental services have developed to improve access to affordable oral health care. These dental services are largely

funded by state and territory governments with some CDBS and Dental National Partnership Agreement revenue. Although the services differ in each state, they are means tested, often resource constrained and have limited infrastructure; as a result, they have restricted capacity to meet the demand for affordable care.^{6,14}

The CDBS was established in 2014 to promote improved population-wide oral health and to target Commonwealth expenditure on dental services to children in greatest financial need.¹³ Because the schedule operates in both the public and private sectors, it has opened up the private sector to children of low-income households.⁹ These services are complemented in many parts of Australia by dental services provided by Aboriginal Community Controlled Health Services²³ and the CDBS is often an important revenue stream for these services.

This study has several limitations that must be considered when interpreting the findings. First, we were unable to include oral health outcomes due to data limitations, and thus we do not know whether the differences we observed are reflected in oral health and dental disease (although the schedule may not have been running long enough to have a measurable effect). Second, the study may not fully reflect patterns of utilisation in the two populations because the non-Aboriginal population in the study included Aboriginal people who had not stated their Aboriginal status. Third, the CDBS data do not provide a complete enumeration of dental services because patients may be receiving dental care elsewhere.¹⁴ Fourth, the study used aggregate data, and thus it is not possible to make inferences about individuals, their characteristics and the dental care they received.²⁴ Finally, the study used data early in the implementation of the schedule, which may not reflect the operation of the schedule as a mature healthcare program.

The findings of this study are somewhat consistent with other examples of health care for Aboriginal people.^{25–27} The data imply that Aboriginal oral health and access to the CDBS should be considered as a potential new ‘Closing the Gap’ target. These targets seek to level up Aboriginal health, health care and educational and economic opportunity.²⁸

A National Fluoride Varnish Workshop in 2018 identified the potential of claiming fluoride varnish items by dental assistants under the CDBS. This was not supported by the fourth review of the *Dental Benefits Act 2008*, partly because there was no mechanism to receive and adequately review submissions seeking changes to the CDBS.¹³ The greater use of the CDBS as a means of funding prevention strategies for Aboriginal children was a topic for discussion at a second National Fluoride Varnish Workshop in October 2020, providing an opportunity for academics, policy makers and community representatives to discuss how the CDBS could be better promoted among Aboriginal families.

Competing interests

None declared.

Acknowledgements

The authors thank Services Australia for providing us with the CDBS data and Merrin Thompson for reviewing drafts of this paper. This research did not receive any specific funding.

References

- 1 Ha DH, Roberts-Thomson K, Arrow P, Peres KG, Do LG. Children’s oral health status in Australia, 2012–14. In: Do LG, Spencer AJ, editors. *Oral health of Australian children: the National Child Oral Health Study 2012–14*. Adelaide: University of Adelaide Press; 2016. pp. 86–152.
- 2 Christian B, Blinkhorn AS. A review of dental caries in Australian Aboriginal children: the health inequalities perspective. *Rural Remote Health* 2012; 12: 2032.
- 3 Australian Institute of Health and Welfare (AIHW). Oral health and dental care in Australia. Catalogue no. DEN 231. Canberra: AIHW; 2019. Available at: <https://www.aihw.gov.au/reports/dental-oral-health/oral-health-and-dental-care-in-australia> [verified 21 July 2020].
- 4 Australian Medical Association (AMA). AMA report card on Indigenous health. 2019. Available at: https://ama.com.au/sites/default/files/documents/2019_AMA_Report_Card_on_Indigenous_Health_0.pdf [verified 16 December 2020].
- 5 Bitten K, Johnson NW, Hall KK, Anderson J, Toombs M, King N, O’Grady K-AF. Risk factors for oral health in young, urban, Aboriginal and Torres Strait Islander children. *Aust Dent J* 2019; 64: 72–81. doi:10.1111/adj.12662
- 6 Williams S, Jamieson L, MacRae A, Gray C. Review of Indigenous oral health. *Aust Indigen Health Bull* 2011; 11: 1–17.
- 7 Durey A, McAullay D, Gibson B, Slack-Smith L. Aboriginal Health Worker perceptions of oral health: a qualitative study in Perth, Western Australia. *Int J Equity Health* 2016; 15: 4. doi:10.1186/s12939-016-0299-7
- 8 Bitten K, Johnson NW, Hall KK, Toombs M, King N, O’Grady K-AF. Impact of oral health on Australian urban Aboriginal and Torres Strait Islander families: a qualitative study. *Int J Equity Health* 2019; 18: 34. doi:10.1186/s12939-019-0937-y
- 9 Department of Health. Guide to the Child Dental Benefits Schedule. Version 7. Canberra: Commonwealth of Australia; 2018. Available at: [https://www.health.gov.au/internet/main/publishing.nsf/content/42FC28F2797C4A10CA257BF0001A35F6/\\$File/CDBS%20Guide%20v7%20-%201Jan2018.pdf](https://www.health.gov.au/internet/main/publishing.nsf/content/42FC28F2797C4A10CA257BF0001A35F6/$File/CDBS%20Guide%20v7%20-%201Jan2018.pdf) [verified 4 June 2019].
- 10 Services Australia. Child Dental Benefits Schedule. Available at: <https://www.servicesaustralia.gov.au/individuals/services/medicare/child-dental-benefits-schedule> [verified 5 May 2020].
- 11 Department of Health. Report on the second review of the Dental Benefits Act 2008. Canberra: Commonwealth of Australia; 2012.
- 12 The Australian Auditor-General. 2015–16 Performance audit: administration of the Child Dental Benefits Schedule. Australian National Audit Office Report No. 12. Canberra: Australian National Audit Office; 2015.
- 13 Department of Health. Report on the third review of the Dental Benefits Act 2008. Canberra: Commonwealth of Australia; 2019.
- 14 Australian Institute of Health and Welfare (AIHW). Access to health services for Aboriginal and Torres Strait Islander people. Catalogue no. AIHW 46. Canberra: AIHW; 2011.
- 15 World Health Organization (WHO). The world health report 2008: primary health care now more than ever. Geneva: WHO; 2008.
- 16 Pourat N, Choi MK, Chen X. Evidence of effectiveness of preventive dental care in reducing dental treatment use and related expenditures. *J Public Health Dent* 2018; 78: 203–13. doi:10.1111/jphd.12262
- 17 Department of Health. Voluntary Indigenous Identifier (VII) Framework: A framework for the collection, release, use and publication of VII data (Draft for Consultation). Canberra: Commonwealth of Australia; 2020. Available at: <https://apo.org.au/sites/default/files/resource-files/2020-11/apo-nid309291.pdf> [verified 18/12/2020]
- 18 Australian Dental Association. The Australian Schedule of Dental Services and Glossary. St Leonards, Australian Dental Association; 2017. Available at: [https://www.ada.org.au/Dental-Professionals/Publications/Schedule-and-Glossary/The-Australian-Schedule-of-Dental-Services-and-\(1\)/Australian_Schedule_and_Dental_Glossary_2015_FA2_W.aspx](https://www.ada.org.au/Dental-Professionals/Publications/Schedule-and-Glossary/The-Australian-Schedule-of-Dental-Services-and-(1)/Australian_Schedule_and_Dental_Glossary_2015_FA2_W.aspx) [verified 18 December 2020].

- 19 Australian Bureau of Statistics Catalogue No. 3238.0, Estimates and Projections, Aboriginal and Torres Strait Islanders 2001–2026; 2014. Available at: <https://www.abs.gov.au/ausstats/abs@.nsf/second+level+view?ReadForm&prodno=3238.0&viewtitle=Estimates%20and%20Projections,%20Aboriginal%20and%20Torres%20Strait%20Islander%20Australians~2001%20to%202026~Previous~30/04/2014&&tabname=Related%20Products&prodno=3238.0&issue=2001%20to%202026&num=&view=&> [verified 18 December 2020]
- 20 Australian Bureau of Statistics Catalogue No. 3101.0, Australian Demographic Statistics. Estimated Resident Population by Single Year of Age, Australia; 2019. Available at: <https://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/3101.0Jun%202019?OpenDocument> [verified 18 December 2020]
- 21 Putri DE, Kruger E, Tennant M. Retrospective analysis of utilisation of the Australian Child Dental Benefit Scheme. *Aust Health Rev* 2020; 44: 304–9. doi:10.1071/AH19011
- 22 National Advisory Committee on Oral Health. Healthy mouths, healthy lives: Australia's National Oral Health Plan 2004–13. Canberra: The National Advisory Committee on Oral Health; 2004.
- 23 Campbell MA, Hunt J, Walker D, Williams R. The oral health care experiences of NSW Aboriginal Community Controlled Health Services. *Aust N Z J Public Health* 2015; 39: 21–5. doi:10.1111/1753-6405.12294
- 24 Morgenstern H. Ecologic studies. In: Rothman KJ, Greenland S, editors. *Modern epidemiology*. 2nd edn. Philadelphia: Lippincott-Raven; 1998. pp. 459–480.
- 25 Teng T-HK, Katzenellenbogen JM, Geelhoed E, Gunnell AS, Knuiman M, Sanfilippo FM, Hung J, Mai Q, Vickery A, Thompson SC. Patterns of Medicare-funded primary health and specialist consultation in Aboriginal and non-Aboriginal Australians in the two years before hospitalisation for ischaemic heart disease. *Int J Equity Health* 2018; 17: 111. doi:10.1186/s12939-018-0826-9
- 26 Schütze H, Jackson Pulver L, Harris M. The uptake of Aboriginal and Torres Strait Islander health assessments fails to improve in some areas. *Aust Fam Physician* 2016; 45: 415–20.
- 27 Angell B, Laba T-L, Lung T, Brown A, Eades S, Usherwood T, Peiris D, Billot L, Hillis G, Webster R, Tonkin A, Reid C, Molanus B, Rafter N, Cass A, Patel A, Jan S. Healthcare expenditure on Indigenous and non-Indigenous Australians at high risk of cardiovascular disease. *Int J Equity Health* 2017; 16: 108. doi:10.1186/s12939-017-0610-2
- 28 Department of Prime Minister and Cabinet. Closing the Gap Report 2019. Canberra: Commonwealth of Australia; 2019. Available at: <https://www.niaa.gov.au/sites/default/files/reports/closing-the-gap-2019/sites/default/files/ctg-report-20193872.pdf?a=1> [verified 4 June 2019].