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# Is the current model of public dental care promoting the oral health of young children in Australia?

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## Key messages

- Children under 10 experience a high burden of potentially preventable hospitalisations due to poor oral health.
- The proportion of young children under 5 utilising dental services is significantly lower than other age groups under 17 years.
- Surveillance data shows a high rate of untreated dental caries across all age groups in childhood.
- Children receive preventive dental services too late.
- There are opportunities to improve child oral health by focusing on preventive public models of care.
- Enhanced models of care should be expanded to include non-dental practitioners and outreach dental programs.

## Executive summary

The disease burden of dental caries among children is substantial. Children, particularly those under 10 years of age, experience a high rate of potentially preventable hospitalisations compared with other age groups. This is despite strong evidence that early risk assessment, timely and regular dental care can be less costly and more effective than usual models of care.

Surveillance data suggests that young children under 5 years do not receive preventive dental care early enough, nor do they receive care frequently enough. The dental utilisation rate for young children under 5 years is low in comparison to all other age groups under 17 years. Furthermore, the proportion of untreated dental caries is similar across all age cohorts, while the total dental caries experience increases with age.

There is evidence that other approaches to addressing dental care among children are likely to yield positive health and economic outcomes. Proposed approaches include shifting the funding model to focus on prevention, and investing in skills development to increase the capability of non-dental health professionals to deliver more early oral health promotion services.

## Introduction

This policy issues brief provides evidence that a shift in focus to preventive models of oral health care would assist in promoting better oral health for children aged 0 – 12 years. The paper's intended audience includes policymakers, academics, professionals, representative bodies and public health advocates.

### Government policy development

The respective responsibilities of the Australian Government, and the state and territory governments for publicly-funded oral health care and promotion are complex. The mix of responsibilities is largely the result of successive federal governments adopting and implementing different roles and policies over time, leading to fragmented development and implementation of national oral health policy and funding arrangements (VAGO, 2016).

For example, when the Teen Dental Plan was introduced in July 2008, it was means-tested and only funded diagnostic and preventive dental services for eligible adolescents aged 12–17 years. It included an oral examination, dental radiographs, scale and clean, fissure sealants and topical fluoride applications. Following recommendations from the first review of the *Dental Benefits Act 2008* and the National Advisory Committee on Dental Health, various advocacy agencies supported changes to the national scheme to expand eligibility and include additional dental treatment services (DoHA 2009, NACDH 2012).

In 2013, legislation was passed to expand age eligibility under the Child Dental Benefits Schedule to 2–17 years, with this change coming into effect in January 2014. Other major changes included increasing the capped 2-year benefit amount for dental services from $150 to $1,000 per child, and permitting a broader range of general dental services to be covered, such as restorative procedures (dental fillings) and oral surgery procedures (removal of teeth).

To date, two independent reviews of the Child Dental Benefits Schedule (CDBS) have been completed. Both reports stated that overall performance objectives were met, but the program should be more actively promoted to the eligible population (ANAO 2015, DoH 2016a). In April 2016, the Australian Government proposed to replace existing funding arrangements with the Child and Adult Public Dental Scheme (DoH 2016b). This proposed Scheme was to replace two dental programs: the National Partnership on Adult Public Dental Services and the Child Dental Benefits Schedule. The proposal would have entitled all Australian children and adult concession card holders to receive publicly funded dental care services. The Australian Government has since rescinded this proposal, and has announced that public sector provision of services under the CDBS will continue to be funded until 31

December 2019. Private sector provision of services under the CDBS is also eligible for funding, and this currently has no end date.

### The importance of child oral health

Good oral health is integral to child development, and general health and well-being. The most common oral disease amongst children is tooth decay (dental caries). There is evidence that untreated dental caries can contribute to low child weight and higher reported occurrences of dental pain, resulting in changes to eating patterns and sleep behaviour (Schroth et al. 2009). Poor child oral health can impact on teeth alignment, resulting in malocclusion and crowded teeth, which are associated with lower self-esteem (Agou et al. 2008).

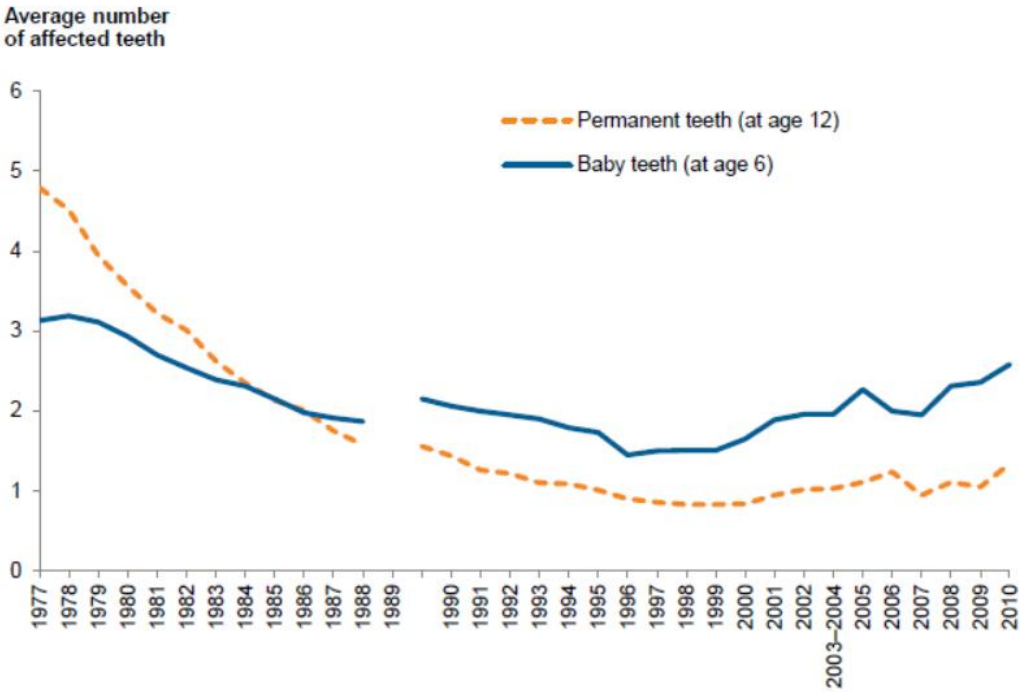
Poor oral health also has societal impacts such as: increased non-attendance in school due to dental pain; poorer school performance (Jackson et al. 2011); loss of income and work productivity (Hayes et al. 2013); increased financial burden due to dental treatment costs (Harford and Luzzi 2013); and psychological stress (Amin et al. 206).

Oral diseases have been linked to other chronic diseases (e.g. cardiovascular disease and diabetes) as a result of shared common risk factors, such as excess sugar and soft drink consumption (Jin et al. 2016). Past tooth decay in the baby teeth (deciduous dentition) is the single most significant predictor of future tooth decay in the adult teeth (permanent dentition) (Mejàre et al. 2014).

## What is the state of Australian children's oral health (0–12 years)?

### Dental caries

Longitudinal data indicate that the oral health of Australian children attending school dental service programs improved from 1977 to 1996, but since then there has been a gradual increase in the rate of dental caries among children aged 6 years in their deciduous teeth, and a gradual increase in the rate of dental caries among children aged 12 affecting permanent teeth (AIHW 2014). Figure 1 illustrates dental caries experience for children in Australia for deciduous and permanent dentition between 1977 and 2010. One of the most important public health interventions that has contributed to reducing the incidence of dental caries has been the introduction of community water fluoridation—for example, since 1953 in Beaconsfield, Tasmania and since 1977 in Melbourne, Victoria (Campain et al. 2010).




*Note:* From 1977 to 1988, data are from the Australian School Dental Scheme evaluation. From 1989 data are from the Child Dental Health Survey. Data for 2003 and 2004 are combined. Data were not available for New South Wales for 2001 to 2006 and 2008 to 2010 and for Victoria from 2005.

*Source:* Child Dental Health Survey, 1977 to 2010.

**Figure 1: Trends in decayed, missing and filled teeth in children, Australia, 1977 to 2010 (AIHW 2014)**

In 2009, for children aged 5 years, the proportion with untreated dental caries in the deciduous dentition was 62.0%. For children aged 6, the proportion of untreated caries was 76.9% (Ha et al. 2013). Figure 2 illustrates the proportion of untreated dental caries by age.

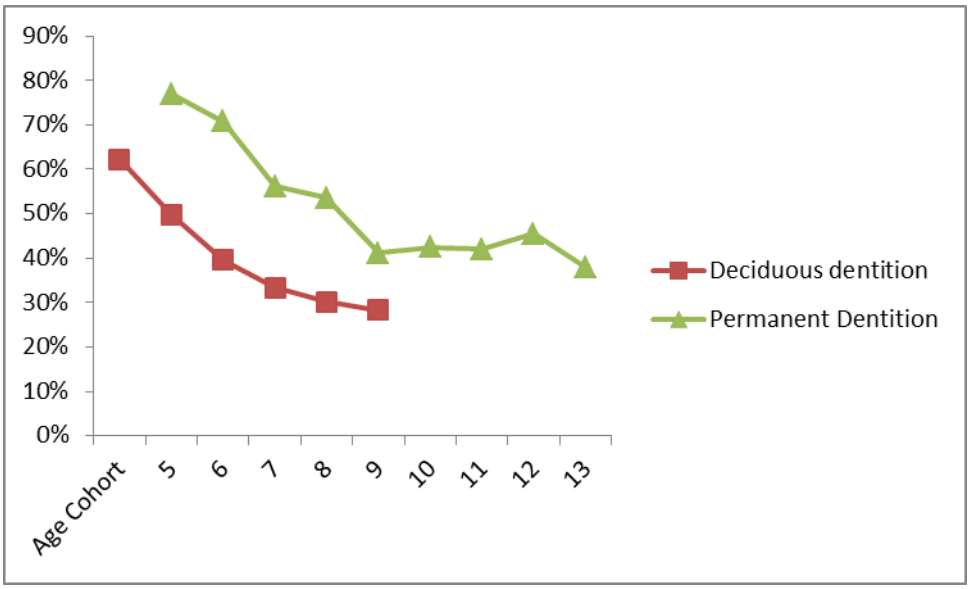



**Figure 2: Proportion of untreated dental caries in children aged 0-13 years, by age, Australia, 2009 (Ha et al. 2013).**

Subsequently, further data has been reported from the Australian Child Dental Survey 2012-14. Figure 3 and 4 shows the proportion of children with untreated dental caries, tooth loss due to dental caries, and dental caries experience. Note that there appears to be a reduction in the proportion of children aged 5 to 6 years with untreated dental caries and with dental caries experience in the permanent dentition between the data reported in 2009, and that reported in 2012-14. These dental health outcomes are likely influenced by the population sampling strategy between the two studies.

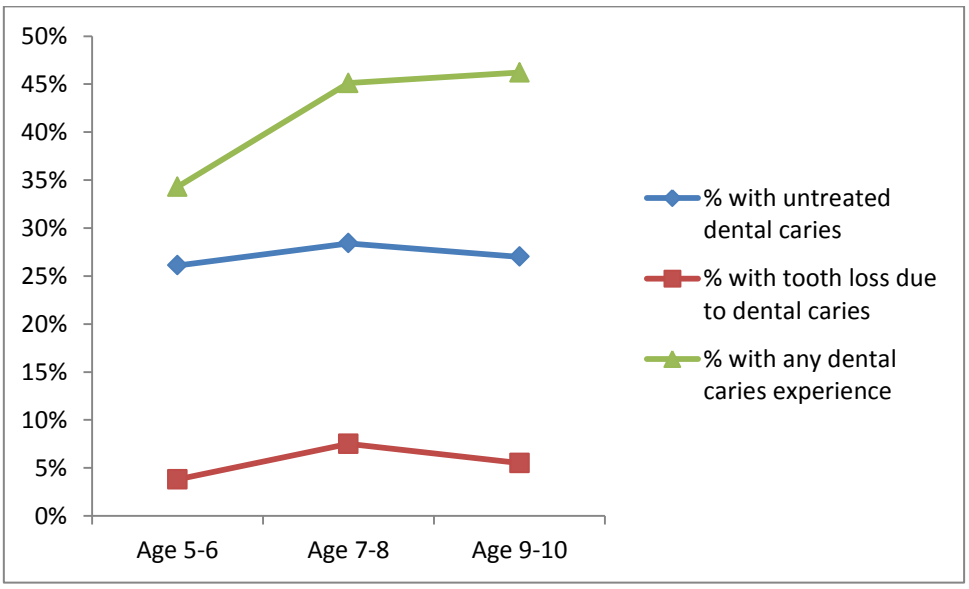



**Figure 3: Proportion of dental caries experience in the deciduous dentition, by age group, Australia, 2012-14 (Do and Spencer 2016).**

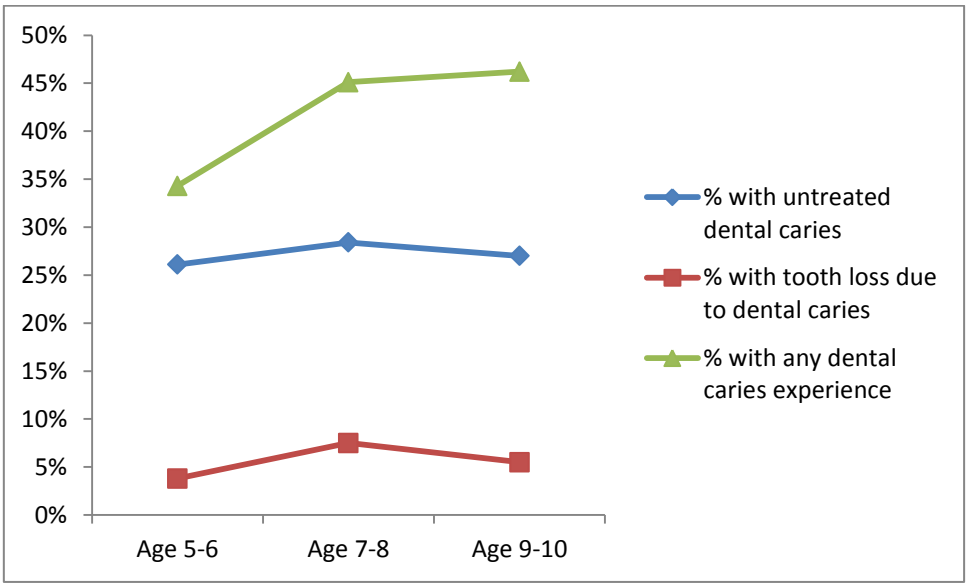



**Figure 4: Proportion of dental caries experience in the permanent dentition, by age group, Australia, 2012-14 (Do and Spencer 2016).**

## Dental visits

In 2010, 28% of children aged 2–4 years, 76% of children aged 5–11 years and 82% of children aged 12–17 years made a dental visit in the previous 12 months (Harford and Luzzi 2013). More recently, it has been reported that 29% of children in the 5-6 age group had never visited a dental practitioner (Do and Spencer, 2016), although an increasing proportion of the older age groups visited a practitioner (Figure 5). This falls short of the following recommendations from the National Oral Health Plan (COAG Health Council 2015):

- Children should have an oral health risk assessment by a health care provider, ideally as soon as the first teeth are present but no later than age 2, and be referred to a dental practitioner as required.
- All children should receive an oral health check-up and preventively focused oral health care at least every two years.
- Children with greater oral health needs should be seen more frequently.

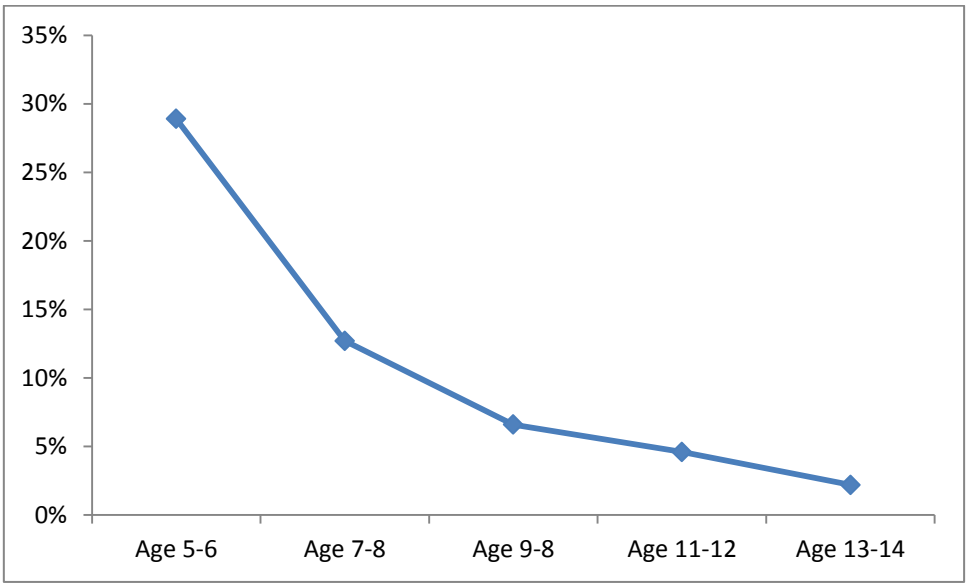
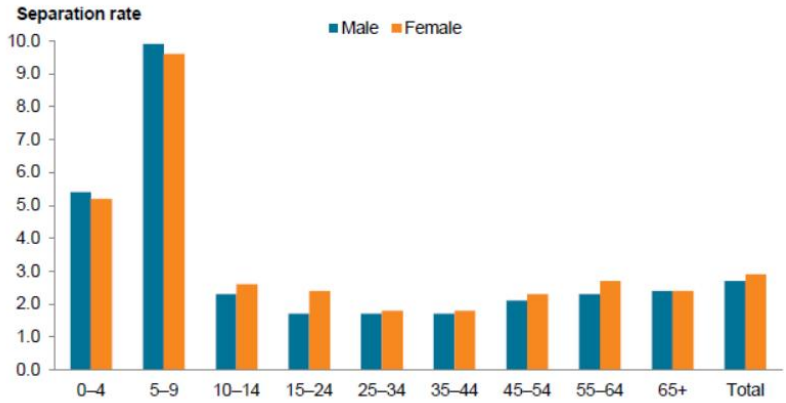



**Figure 5: Proportion of children never having a dental visit, by age group, Australia, 2012-14 (Do and Spencer 2016).**

## Hospitalisations

Untreated severe levels of tooth decay can lead to hospitalisation (Robertson et al. 2015). A Western Australian study of 1,459 children under 2 years found that tooth decay accounted for 39% of all oral health conditions between 1980 and 1998, and was the most frequent cause of hospitalisations due to oral disease (Slack-Smith et al 2012).




*Notes*

1. Potentially avoidable hospitalisations related to dental care are defined as the following ICD-10-AM 6th edn Principal diagnosis categories: K02 Dental caries; K03 Other diseases of hard tissues of teeth; K04 Diseases of pulp and periapical tissues; K05 Gingivitis and periodontal diseases; K06 Other diseases of gingival and edentulous alveolar ridge; K08 Other disorders of teeth and supporting structures; K09.8 Other cysts of oral region, not elsewhere classified; K09.9 Cyst of oral region, unspecified; K12 Stomatitis and related lesions; K13 Other diseases of lip and oral mucosa.
2. Excludes multiple diagnoses for the same separation within the same group and records with care type of Newborn (without qualified days) and records for Hospital boarders and Posthumous organ procurement.
3. The separation rate (number of separations per 1,000 population) is a crude population rate based on the 2011 estimated resident population.

*Source:* AIHW Hospital Morbidity database 2011–12, unpublished.

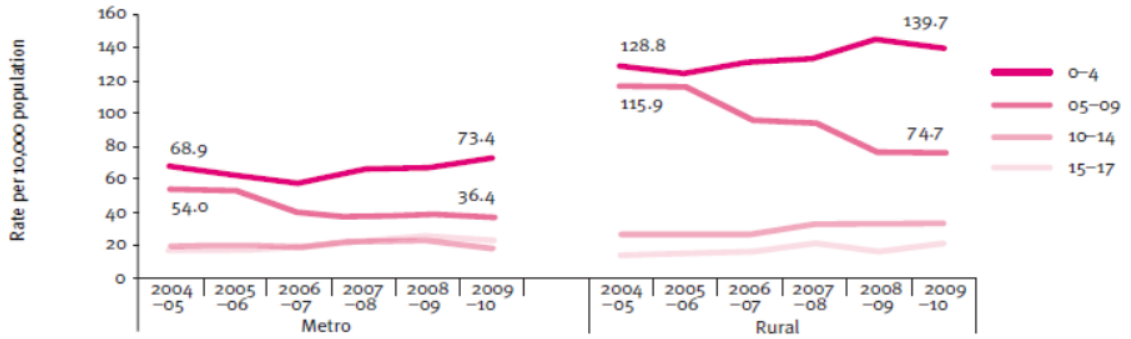
**Figure 6: Hospital separation rates (per 1,000 population) for acute dental conditions, Australia, by sex and age group, 2011–12 (AIHW 2014).**

Acute potentially preventable hospitalisations (PPH) are those due to a specific range of conditions that are considered to be largely preventable if timely and adequate care were provided through population health services, primary care or outpatient services. The acute PPH rate is currently used as an indicator of the effectiveness of the health system other than hospital admitted patient care (AIHW 2016).

Nationally, the annual number of hospital separations for potentially avoidable acute dental conditions rose by 9% (57,955 to 63,327 separations) between 2007–2008 and 2011–12 (AIHW 2014). Hospital separations for potentially avoidable acute dental conditions in children are highest in the 5–9 age group at 9.8 separations per 1,000, followed by the 0–4 age group at 5.3 separations per 1,000. The national average is 2.8 separations per 1,000 (AIHW 2014) as shown in Figure 6.

Among all age groups, potentially preventable hospitalisations in Australia due to dental caries are most common for people under 15 (AIHW 2014). In Victoria, dental caries is the largest cause of acute PPH for people under 25 (DHHS 2015). The estimated average cost of an episode of care in hospital as an admitted acute patient is $3,462 (IHPA 2016).

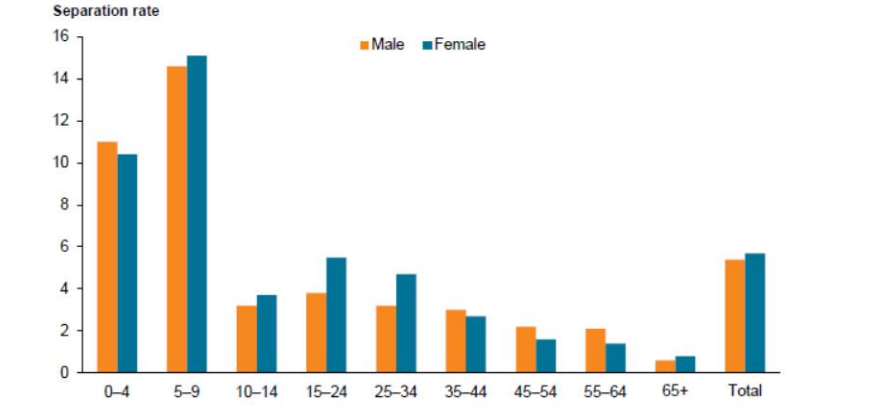
The burden of hospital separations due to dental caries is significantly worse in rural areas than in metropolitan areas (Figure 7). In both the rural and metropolitan areas, there appears to be an increasing admission rate for the 0–4 age group, while there has been a decreasing admission rate for the 5–9 group over the period 2004-05 to 2009-10. The rates are higher in both age groups in the rural areas.




**Source:** Victorian Admitted Episodes Data (both public and private hospitals) 2004–05 to 2009–10, DoH; Estimated Resident Population 30 July 2010, ABS.

**Figure 7: Rate of hospital admissions for dental caries and related causes per 10,000, by age group and region type, Victoria, 2004–05 to 2009–10 (DEECD 2013).**

For Aboriginal and Torres Strait Islander children in Australia, the 0–4 and 5–9 age groups experience the highest hospital separation rates for oral disease requiring dental treatment under general anesthetic, as shown in Figure 8.




*Notes*

1. Hospital separations requiring general anaesthesia for dental conditions as defined by following Australian Classification of Health Interventions (ACHI) 6th edn block numbers and procedure codes: 457 Nonsurgical removal of tooth; 458 Surgical removal of tooth; 462 Pulp treatment; 463 Periradicular surgery; 465 Metallic restoration; 466 Tooth-coloured restoration; 468 Inlay, onlay, indirect; 469 Other restorative dental service; 470 Crown; 471 Bridge; 472 Other dental service on crown and bridge; 97241–00 Tooth root resection, per root; 97387–00 Replantation and splinting of tooth; 97388–00 Transplantation of tooth or tooth bud; 97445-00 Exploration or negotiation of calcified root canal, per canal; 97457-00 Obturation of resorption defect or perforation; 97458-00 Interim therapeutic root filling; 97772–00 Provision of resin splint, indirect; 97773–00 Provision of metal splint, indirect; 97778-00 Metallic inlay for denture tooth.
2. Excludes records with care type of Newborn (without qualified days) and records for Hospital boarders and Posthumous organ procurement.
3. The separation rate used in this table (number of separations per 1,000 population) is a crude population rate based on the 2011 projected Aboriginal and Torres Strait Islander population.

*Source:* AIHW Hospital Morbidity database 2011–12, unpublished; Australian Bureau of Statistics, Projected Aboriginal and Torres Strait Islander population, series B, June 2011.

**Figure 8: Separation rates for hospitalisations requiring general anaesthetic for procedures related to dental conditions, by sex and age group, Aboriginal and Torres Strait Islander people, 2011–2012 (AIHW 2014).**

## What is the current model of public dental care?

All states and territories provide subsidised public dental services. Services provided at the state and territory level are partially funded by the federal government. Eligibility for these services varies between jurisdictions, as do funding sources and the requirement for co-payments. Two models of public dental care are provided by the states and territories: School Dental Services and Community Health Services. Both service delivery approaches may include mobile dental services through use of dental vans. For example, South Australia (SA Health 2012) and Queensland (Queensland Health 2014) continue to deliver school-based dental services, while Victoria (DHSV 2016) and New South Wales (NSW Health 2014) provide dental services through Community Health Services. Decisions about how to manage demand and balance priority care between children and adults through Community Health Services models are local decisions (Nguyen et al 2015).

Australian children who are ineligible for public dental services include:

- 0–3 year old children in South Australia
- 0–4 year old children in Western Australia
- 0–3 year old non-card holder children and non-card holder children in Grade 11 or above in Queensland
- 14–17 year old non-card holder children in the Australian Capital Territory
- 13–17 year old non-card holder children in Victoria

Overlaying these services is the Australian Government's Child Dental Benefits Schedule, where eligible children aged 2-17 years can receive publicly subsidised general dental services through the public or private sector.

## School Dental Services

School Dental Services are public dental services that are provided in the school setting for children. They have traditionally been the model of care for children in Australia and New Zealand (Nash et al. 2015, Mathu-Muju et al. 2013). In Australia, School Dental Services are commonly provided on a rotational basis and are arranged through the school upon receipt of a medical history and consent forms signed by the primary carer (Queensland Health 2014). Parental attendance may also be required. It is a model targeted at primary school children. The advantage of School Dental Services is the ability to reach child populations more easily by being in close proximity to schools.

## Community Health Services

The second model is the provision of child dental services through Community Health Services. This model of public dental care is thought to deliver family-focused healthcare and encourage interdisciplinary collaboration with other allied health disciplines. Community Health Services, as part of primary care, have a beneficial effect due to a greater focus on prevention and early management of health conditions, with consequent reductions in unnecessary specialist care (Starfield et al 2005). Dental services provided through Community Health Services typically are centralised within larger dental services sites, where other medical and allied health services are also provided.

## Child Dental Benefits Schedule

The Child Dental Benefits Schedule (CDBS) is an Australian Government dental scheme that enables eligible children to receive dental services up to $1,000 in value every two years. Services are provided by registered dental practitioners through the public or private sector. The projected annual utilisation rate of the CDBS at the end of the two-year cycle was

estimated to be more than 29.4% (DoH 2016). The levels fell significantly short of the predicted target. i.e. that 82% of the eligible child population would access the scheme (ANAO 2015).

## Pathways for care

The public model of oral health care is fundamentally shaped by the funding structure of the health system. Figure 9 shows the model of care pathway in Victoria for public dental services. Other states and territories implement variations of this model. For example, in Queensland, children categorised as requiring routine care are not further categorised by priority access group, unlike adult patients. They will receive the next available convenient appointment, and a full course of care can follow. Children categorised as requiring emergency care are given an immediate appointment.

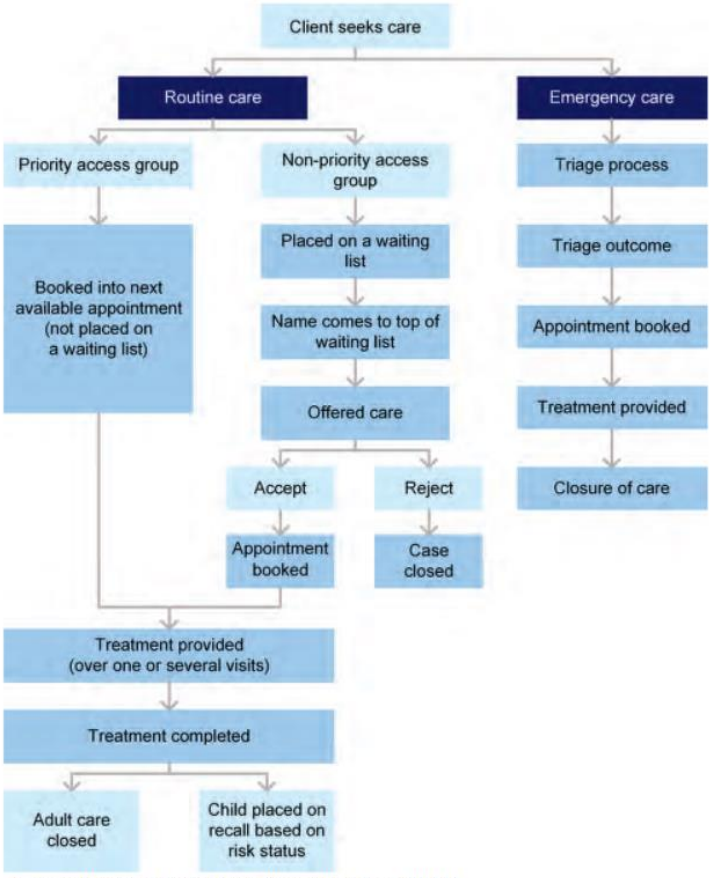



**Figure 9: Pathways to access community dental agencies in Victoria (VAGO 2016).**

In the Victorian model, people receiving emergency dental care are triaged according to severity and are provided dental care related to that emergency only. The emergency course of care includes assessing and treating the tooth, gum or denture that is causing pain.

Adults eligible for public dental care for general dental treatment are placed on a waitlist (up to 3 years), while eligible children can be seen immediately for general dental care. Both adults and children would receive a general course of care, which includes an examination and all general dental treatment. People requiring specialist care are referred to an appropriate health service, including internal referral.

Children who have completed a general course of care are then placed 'on recall', based on their oral disease risk—either 12 months for high risk, 18 months for moderate risk or 24 months for low risk.

Adults who have completed a general course of care are generally required to contact their local Community Health Service to place their name on the adult waiting list again.

## Reasons for low impact of current model of public dental care

It is evident from the data that the current model of public dental care does not adequately promote optimal oral health outcomes for children aged 0–12. The large numbers of potentially preventable hospitalisations due to dental caries could have been treated in primary health care settings if they were detected and managed early enough. Because the funding model is focused on treatment to meet output-based targets, it does not encourage a preventive approach to oral health care to help people keep their natural teeth and reverse the progression of oral disease (VAGO 2016). This is primarily due to the current approach for the management of dental caries being focused on surgical management of the symptoms rather than management of the disease itself (Calache et al. 2013). An explorative study of public oral health program managers in New South Wales found that providing preventive dentistry lacks strong funding support, and shifting the focus towards preventive dental care is complex (Masoe et al. 2015).

There are two main reasons why the current model of public dental care has a limited impact on health outcomes:

(1) children receive preventive dental services too late; and

(2) children at risk of oral diseases do not receive adequate preventive dental services frequently enough.

### Children receive preventive dental services too late

Dental caries can develop very early in the life of the child. A birth cohort study in Victoria found that 8% of participating children developed tooth decay at 18 months, and the prevalence increased to 23% by 36 months (Gussy et al. 2016). Timely access to dental care can reduce potentially preventable hospitalisations due to dental caries (Duckett and Griffiths 2016). Since surgical dental treatment for advanced dental caries normally requires children to tolerate standard dental care at dental clinics, anxiety and dental fear play a

major role in diverting children to alternatives to standard methods, including dental procedures being performed under sedation or general anaesthetic.

New Zealand provides an example of the association between early dental service utilisation and low rates of untreated tooth decay. In New Zealand, where children have received the benefit of universal publicly-funded dental services since 1921 (Saunders cited in Mathu-Muju et al. 2013), 59.7% of children aged 2 to 4 had visited a dentist in the last 12 months compared with 28.4% in Australia. The proportion of New Zealand children aged 2 to 4 with untreated tooth decay was only 14.9% .

In Australia, there are gaps in service eligibility for young children receiving public dental services:

- in Western Australia for the 0–4 age cohort,
- in South Australia for the 0–3 age cohort, and
- in Queensland for the 0–3 non-card holder age cohorts.

## Children at risk for oral diseases do not receive preventive dental services frequently enough

It is internationally recognised that dental caries can be managed through a preventive approach with minimal invasive treatment, commonly known as minimal intervention dentistry (MID). Early, timely, and regular preventive care consistent with MID can reduce costs incurred by preventing dental caries progression to severe stages requiring surgical dental treatment as evident with best practice (Calache and Hopcraft 2010, Pitts et al. 2014). A systematic review has shown that there is between 12%–74% likelihood that dental practitioners would surgically intervene when clinical recommendations indicate less invasive management techniques are more appropriate, which is consistent with the MID philosophy (Innes and Schwendicke 2017). There is further evidence that the MID approach is less costly and more effective, demonstrated by a hospital-based dental practice study with 98.6% certainty at 12 months (Samnaliev et al. 2015).

The principles of MID include:

- Early dental caries detection and risk assessment (e.g. oral screening and comprehensive oral examinations).
- Repair of early signs of dental caries in enamel (outer layer of tooth structure) and stabilising dentine dental caries (inner layer of tooth structure) through prevention interventions (e.g. topical fluoride applications, anticipatory guidance on oral hygiene instructions, dietary counselling).

- Adopting evidence-based dental caries preventive interventions (e.g. recommend age-appropriate use of fluoride toothpastes, fissure sealants, fluoride applications, scale and clean).
- Maximal preservation of tooth structure by using (where appropriate) minimally invasive operative interventions, and by repairing (where appropriate) rather than replacing defective restorations (e.g. stainless steel Hall crown techniques, non-extensive tooth cavity preparations).

The 2016 report on Access to Public Dental Services in Victoria identified that there were four barriers to implementing the principles of MID. They were:

- The current funding model rewards output-based measures (e.g. fee-for-service dental procedures) for more complex and time-intensive treatment activities.
- The dental workforce is predominantly made up of dentists; using dentists rather than other oral health professionals is not a cost-effective method of delivering preventive dentistry.
- There is a lack of care co-ordination between oral health and general health services, resulting in reduced likelihood of holistic assessment of consumer needs at the first point of contact, earlier detection of oral diseases and referral to the most appropriate health service.
- There is a need for stronger strategic leadership and transition planning (VAGO, 2016).

## What preventive models of care could be expanded to optimise oral health outcomes?

In light of the evidence, it is clear that the current model of public dental care is not working optimally to promote oral health for children age 0–12 years. There are two areas of opportunity to move the dental health care system towards preventive-focused interventions that would lead to better child oral health outcomes. The first area of opportunity involves training non-dental practitioners in oral health promotion and associated screening and guidance activities, including limited preventive treatment such as fluoride varnish applications. The second area of opportunity lies in building on current models of public dental care through publicly funded outreach services.

## Non-dental practitioners and oral health promotion

Health professionals such as general practitioners, midwives, pharmacists and maternal child health nurses can play an important role in oral health promotion within primary care (Crocombe et al. 2014). This approach is used in the Lift the Lip program, aimed at early identification of dental caries and implemented with children aged 0 to 5 in several Australian states. A range of oral health promotion activities could be undertaken by non-dental practitioners, including oral disease risk assessment, oral screening, anticipatory guidance on oral hygiene instructions, dietary counselling, fluoride varnish applications, and arranging referrals to dental services.

It is common for consumers to seek information from non-dental healthcare providers, particularly in rural and remote communities—however, the confidence of non-dental health care professionals to provide appropriate oral health advice is limited (Barnett et al. 2015). There would appear to be opportunities to effectively enhance the capacity and skills of the existing primary healthcare workforce in oral health to promote better oral health outcomes. One Australian oral health education program targeting midwives was demonstrably practical and relevant for improving knowledge and confidence in oral health promotion (George et al. 2016). A maternal child health nurse led prevention program in rural Victoria that included oral health education found it prevented tooth decay in early childhood (Neumann et al. 2011).

Models of care that develop the capacity of non-dental practitioners in oral health have included competency to provide fluoride varnish applications. In Australia, fluoride varnish applications by non-dental health professionals are permitted in some jurisdictions. For example, Aboriginal Health Workers and registered nurses were approved from 2012 in the Northern Territory (DoH NT) while Aboriginal Health Workers, School Health Nurses, Child Health Nurses and Remote Area Nurses were given approval in 2014 in Western Australia (DoH WA 2016). A randomised controlled trial in the Northern Territory involving non-dental practitioners demonstrated dental caries reduction rates ranging from 24% to 36% for children aged from 18 months to 47 months (Slade et al. 2011). In Victoria, the Drugs, Poisons and Controlled Substances Regulations 2006 restrict applications of fluoride varnish to dentists, dental hygienists, dental and oral health therapists, medical practitioners and pharmacists (VAGO 2016). While fluoride varnish can legally be applied by medical practitioners and pharmacists, the provision of such services by them is not common, possibly because it is not linked to any type of funding mechanism.

Effectiveness of oral health screening, guidance and fluoride varnish applications does not seem to vary among the various categories of practitioners. For example, since 2000 in North Carolina, United States of America, trained physicians, physician assistants, and nurse practitioners have provided oral screening, anticipatory guidance and fluoride varnish

applications to children younger than 3 years. The model demonstrated that clinical effectiveness in terms of reducing dental caries was not influenced by the type of healthcare provider. All children had similar dental caries experience by age 3 (Kranz et al. 2014).

## Outreach models of public dental care

Outreach models of public dental care can complement existing models of standard care by enhancing early access to, and use of dental services to complement the existing model of standard care. Internationally, policy-driven school-based dental screening programs have had success in reaching disadvantaged populations (Donaldson and Kinirons), and providing the clinical benefits of fluoride varnish programs (Sköld 2016).

Kinder Wide Smiles is an outreach program in the Barwon South-West Region of Victoria. The program provided dental services to 5,305 children aged 3–5 in 2013–14 (Mason et al 2015). Dental practitioners conducted oral screening, provided fluoride varnish applications, and arranged referrals for dental treatment to the local public dental service. For the 32% of children at Visit 1 who had early signs of reversible tooth decay, 68% of surfaces at Visit 2 and 66% of surfaces at Visit 3 remained stable (Mason et al. 2015).

A pilot 'Children's Dental Program' in northern metropolitan Melbourne provided strong evidence that more children from low income families in an intervention group used public dental services compared to those receiving standard care (Nguyen et al. 2015). In the program, children aged 0–12 in the intervention group received a dental check-up on-site at preschools or primary schools using portable dental equipment in consultation with the primary carer. In contrast, children who received standard care had a dental check-up at the local community health service. Children requiring dental treatment in the intervention group were referred to the local public dental service. A reported 48% of children in the intervention group had previously never undergone a dental check-up, and 74% of children who required dental treatment returned for follow-up dental care at the local (fixed) community health service (Nguyen et al. 2015). An economic evaluation of the pilot study demonstrated the intervention was less costly and more effective in terms of reaching children from low socioeconomic families and tooth quality outcomes, compared with standard public dental care (Nguyen et al. 2016).

## Recommendations

The current model of public dental care needs to shift towards a preventive model of care to improve the oral health of Australian children aged 0–12 years. A preventive model of care will lead to more timely and appropriate management of oral diseases, and reduce current reliance on hospital-based care for dental caries management.

Measures recommended for a preventive model of care include:

(a) training non-dental practitioners to provide oral health promotion and early intervention services; and

(b) expanding outreach dental programs, including preschool and school-based dental programs.

This would assist in achieving progress towards meeting the recommendations of the National Oral Health Plan (COAG Health Council 2015), that is, children to have an oral health risk assessment no later than age 2; all children to receive an oral health check up and preventively focused oral health care at least every 2 years; and children with greater oral health needs to be seen more frequently.

## Acknowledgements

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