



Australian Dental Association Tasmanian Branch Submission

to

The Our Healthcare Future – Immediate Actions and Consultation Paper

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Background

The Importance of Good Oral health

A healthy mouth enables people to eat, speak and socialise without pain, discomfort or embarrassment. Nearly a quarter (23.7%) of adults in Australia reported avoiding certain foods due to dental problems. Approximately one fifth (20.2%) of dentate adult Australians reported experiencing a toothache. Over a third (35.2%) of adult Australians reported being uncomfortable about their dental appearance. Xerostomia (dry mouth) was reported by 13.2% of Australian adults. The figures are even higher in Tasmania (NSAOH, 2020).

Oral health is fundamental to overall health and wellbeing (COAG, 2015). The above figures do not emotionally express how important oral health is to people and their quality of life. How can you get a job with rotten front teeth? How can you study with a toothache? Imagine the difficulty in finding a life term partner when your breath smells bad.

Let's look at the prevalence of oral diseases starting with children. Just over 40% of children aged 5–10 years had experienced caries in their primary teeth. Just under one-quarter of children aged 6–14 years had experienced caries in their permanent teeth. Dental caries experience in both primary and permanent dentitions clustered among a small proportion of the population. Caries experience and its components were consistently higher among children from households where parents had less education and low income. One in ten children aged 5–14 years had never made a dental visit. This percentage was one in four among children aged 5–6 years.

Nearly a third (32.1%) of dentate Australian adults had untreated coronal decay (NSAOH, 2020). Around one in ten dentate persons (10.2%) Australian adults reported having fewer than 21 teeth (NSAOH, 2020). Prevalence of moderate or severe periodontitis was 30.1% among dentate Australians aged 15 years and over (NSAOH, 2020). Oral cancer is the eighth most common cancer in Australia (AIHW 2012).

In 2017-18, \$10.5 billion was spent on dental services. Of that Australian Government expenditure on dental services was \$1,580 billion. State and territory government expenditure on dental services was \$859 billion. Non-government expenditure on dental services \$8,068 billion. Expenditure on dental services by individuals accounted for the majority of non-government expenditure being \$6,009 billion. Health insurance funds expenditure on dental services was \$2,008 billion. Some quick arithmetic shows that non-government expenditure accounts for only 23.2% of the total spend on dental services. Or to put it another way, individuals and their private health funds paid for over three quarters of their dental treatment. This is somewhat different to the situation with medicine. It is not surprising then that of those that visited a dentist within the previous five years, nearly nine in ten paid for all or part of their dental care (89.4%), nor that 85% of dentistry is done in the private sector. It means that if you're poor, you will find it difficult to access dental care.

Good oral health is important in itself. However, it's not until the links between oral and systemic health are explained that some people, even health professions and policymakers, can understand the importance of oral health. It's not surprising that oral health is linked to systemic health. After all the mouth is part of the body. Poor oral health is a critical factor in many health

conditions, including heart and respiratory diseases, arthritis, diabetes, gastrointestinal disease, and with pregnancy.

Diabetes and gum disease are two chronic diseases that have long been considered to be biologically linked (Mealey & Rose 2008, Taylor & Borgnakke 2008, Mealey & Oates 2006). Case reports, cross-sectional studies, longitudinal studies, and reviews report the adverse effects of diabetes on the onset, progression, and severity of periodontitis (Taylor & Borgnakke 2008, Mealey & Ocampo 2007). The prevalence of periodontitis in diabetic subjects is estimated to be double or even triple the number in the normal population. There is a growing body of evidence supporting the fact that the periodontal infections adversely affect glycaemic control. A meta-analysis has suggested that periodontal treatment leads to an improvement of glycaemic control in type 2 diabetic patients (Gerdes et al. 2010).

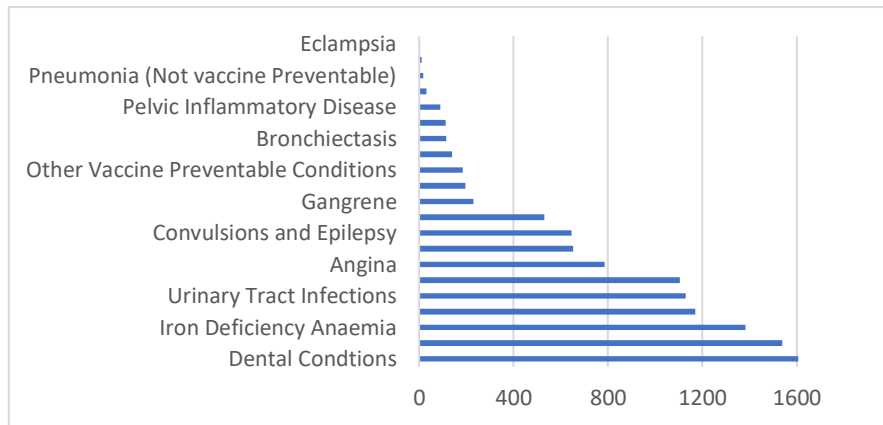
The severity of gingivitis (gum disease) has been found to be correlated with sex steroid hormone levels (Hugosan 1971, Raber-Duracher et al. 1993). Periodontal pathogens from the gums around teeth can cross the placental barrier (Hugosan 1971). Gum infections may be associated with pre-term/low weight births and periodontal treatment can reduce the pre-term/low weight birth rate (McGregor et al. 1995, Novy et al. 1995). Hence, the importance of pregnant women receiving dental care cannot be overestimated.

The literature indicates that burden of pathogens, antigens, endotoxins and inflammatory cytokines of periodontitis might contribute to atherogenesis and thrombosis. Periodontal disease is thought to cause changes in cardiovascular risk factors. For example, severe periodontitis has been associated with adverse changes in blood pressure and in serum cholesterol levels (Williams et al. 2008). There has been some evidence to that periodontal disease may be associated with cardiovascular disease irrespective of confounding factors such as smoking.

Mechanical oral hygiene has a preventive effect on mortality from pneumonia, and nonfatal pneumonia in hospitalized elderly people and elderly nursing home residents (Sjogren et al, 2008). Recent Tasmanian research with which Prof Crocombe is associated has found that oral bacteria such as *Porphyromonas gingivalis* causing the aspiration pneumonia is found in many older people with Alzheimer's disease (Khadka et al., 2020).

In Tasmania, dental conditions were the biggest reason for preventable hospital admissions. That's over 12.5% of preventable hospitalisations. Most of these admissions were for children requiring dental treatment, most often dental extractions, under a general anaesthetic in the Day Theatres of Tasmanian's major hospitals. Children who have required dental treatment in a hospital are likely to need repeat general anaesthetic dental treatment in future years. The best predictor of future dental caries is the presence of dental caries now in a person's mouth.

Table 1: Separations for selected preventable hospitalisations in Tasmania 2013-14



The Current Dental Model

The crucial characteristics of medicine and dentistry that we see today stemmed from the seventeen-century view of the health.

Cartesian thinking has described the body using the machine metaphor:

“... I assume the body is nothing else than a statue or machine ... indeed, the nerves of the machine I am describing to you may very well be compared to the pipes of the machinery of fountains, its muscles and its tendons to various other engines and devices which serve to move them ... its heart is its spring”

There were three consequences of thinking of the body as being like a machine, and these consequences describe the biomedical approach to health.

The first was a physical reductionism where the body was split into parts that were analysed and treated separately leading to an era of specialisation. The mouth and dentistry was one such specialisation.

The second was that diseases were seen as “deviations from the norm of measurable biological variables” with most disorders being understood in terms of simple cause-effect relationships. Researchers used measures of survival, clinical endpoints, disease- and treatment-specific symptoms. Social and psychological issues that may impact a patient were neglected or ignored.

The third was people relied on medical interventions as the source of health. Health was delivered to people by health professionals and the hospital became the essential base and focus for medical services. Medical and dental treatment grew more complex, health care costs spiralled.

In his book titled “Confessions of a Failed Finance Minister”, Senator Walsh advised that,

“dental treatment has the potential to be a bottomless fiscal pit which no Commonwealth Government should go near”.

Yet there are few cures for the increasing burden of chronic diseases.

Mechanic described the major problem of the biomedical model:

“the irony is that while so much of the challenge in health care is social – to enhance the capacity of individuals to perform desired roles and activities – the thrust of the health enterprise was substantially technologic and reductionist, treating complex

sociomedical problems as if they were amenable to simple technical fixes.”
Mechanic (1995)

Due to high sugar consumption levels and high smoking rates, dental caries (tooth decay), periodontal diseases (gum disease) and oral cancer increased rapidly in the twentieth century.

The major problem with the biomedical model of health care is that it doesn't prevent disease and it's very expensive. In Australia, people who regularly visit a dentist do not have a lower total number of decayed, missing or filled teeth than people who visit only occasionally.

One senior public sector rural-based dentist said,

“For me, dentistry has been running a pretty mad course.

In summary I'd say,

- still profoundly a medical model,
- poor individual, intersectoral and community oral health literacy,
- oversupply/overservicing,
- undersupply/underservicing,
- targeting money, far more than need”. (Simmons, 2018)

However, it could be argued that until very recently the dental model has not even reached the biomedical model being stuck in the surgical model.

Prof Crocombe likes to say that

“if a patient with a sore leg came to a dentist in Australia, our natural response would be to chop the leg off and replace it with a wooden leg”.

That's basically what we are doing with restorations (fillings) and tooth extractions. However, regular dental treatment is not a waste of time. It allows us to catch dental diseases at their stages so that they are simpler and less expensive to treat. People who usually visit their dentists for a check-up have better oral health than people who usually visit for problems. Though their total number of decayed, missing or filled teeth are the same, people who usually visit their dentists for a check-up have less decayed and missing teeth and more filled teeth than people who usually visit for problems.

To further complicate the issues, all dental care providers have had to face issues with COVID-19. This has limited the range of services available and encouraged the use of treatments which do create aerosol sprays.

Oral health inequities exist. People with poor oral health include frail and older people (Chalmers 2002), rural residents (Crocombe et al. 2010, 2012, 2013, 2015), Indigenous Australians (Slack-Smith 2011), Australians with physical and intellectual disabilities (Pradhan et al. 2009) and people of low socio-economic status (Sanders et al. 2006). This list looks somewhat similar to what you would expect to find for general health inequality and suggests that when focussing health policies on at-risk groups, oral health should be included. Tasmania has a higher proportion of people who fit into these groups. The irony is that the vast majority of dentistry (85%) is done in the private sector and paid for by individuals. This means that the risk groups miss out on dental care.

To prevent dental diseases, dentistry has focussed on lifestyle causes. These include poor hygiene (Davies et al. 2003; Hujoel et al. 2006), poor diet (Rugg-Gunn, 1993), smoking (Do et al. 2008), lack of access to oral health care (National Oral Health Plan 2004-2013, Shiikha et al. 2015) and low fluoride exposure (Slade et al. 2013, Crocombe et al. 2015, 2016).

What is striking about this list, is that other than low fluoride exposure, the potential causes of poor oral health are the same as for poor general health. Water fluoridation is the most cost-effective way of ensuring better and equitable oral health outcomes. However, other than water fluoridation, this suggests that oral health should be handled as a component of general overall health, and not as a separate entity and that governments should be focussing more on ensuring adequate lifetime fluoridation exposure particularly for those Australians with poor oral health.

Social determinants of oral health

According to the World Health Organisation, the social determinants of health are the conditions in which people are born, grow, live, work and age. They are mostly responsible not only for health inequities, but for oral health inequities.

Sir Michael Marmot was the first to link low socioeconomic status with poor health outcomes. Birmingham had scores below the national average on employment and household income. They adopted a “Brighter Futures Program” that showed parents ways to read, sing, talk, teach and otherwise interact with children to foster development. Within three years they had closed the education development gap by reducing behavioural problems.

“There is a thread of cause and effect that runs from poor childhood development through low educational achievement, low incomes, insecure employment, stressful working and living conditions, unhealthy lifestyle, and poor health”

So rather than the ten traditional tips for better health of:

1. Don't smoke. If you can stop! If you can't cut down.
2. Follow a balanced diet with plenty of vegetables.
3. Keep physically active.
4. Manage stress, i.e. talk things through & making time to relax.
5. If you drink, do so in moderation.
6. Cover up in the sun and protect children from sunburn.
7. Practice safer sex.
8. Take up cancer screening opportunities.
9. Be safe on the roads. Follow the highway code.
10. Learn the first-aid ABC.

one should consider the social determinants ten tips for better health which are:

1. Don't be poor. If you can stop!
2. Don't have poor parents.
3. Own a car.
4. Don't work in a stressful low, paid manual job.
5. Don't live in damp, low quality housing.
6. Be able to afford to go on a foreign holiday & sunbathe.
7. Practice not losing your job and don't become unemployed.
8. Take up the benefits you are entitled to, if you are unemployed, retired etc.
9. Don't live next to a busy road or near polluting factories.
10. Learn to fill in complex housing benefit/asylum application forms before becoming homeless and destitute.

Poor oral health is a subset of poor systemic health and has the same social determinants. Ann Sanders and colleagues have found that poor oral health in people with poor social determinants

was not explained by personal neglect, where personal neglect was defined as lack of dental visiting or dental self-care or both. This suggests having poor oral health is not your fault.

Richard Watt (2004) stated that:

“The dominant preventive approach in dentistry, i.e. narrowly focusing on changing the behaviours of high-risk individuals, has failed to effectively reduce oral health inequalities, and may indeed have increased the oral health equity gap. A conceptual shift is needed away from this biomedical/behavioural ‘downstream’ approach, to one addressing the ‘upstream’ underlying social determinants of population oral health.”

Richard Watt described the social determinants of oral health as a series of influencing steps going from economic and political and environmental conditions, social and community context, oral health related behaviour, Individual factors, all of which led to the outcome of good or poor oral health. Dental treatment is but one small is just one step in the process.

However, changing a person’s social determinants is very difficult.

Current State and Federal Government Approaches

The funding approach by governments in Australia has largely been to supply dental services to some of the groups of people who currently have poor oral health and poor access to dental care. Unfortunately, over years Australia has had a hodgepodge of Commonwealth dental schemes.

The Parliamentary Inquiry into Adult Dental Services stated that

“it is clear that the approach of successive governments to dental policy has been inconsistent. This has resulted in a changeable policy environment that has not been compatible with a sustained commitment to improving the dental and oral health of all Australians”.

The States and Territories currently provide public dental services. For adults, access is largely determined by health care card status and waiting times can be long. With dental services for children, there is much variation across the States and Territories. The Commonwealth Government has three oral health schemes. The National Partnerships Agreement help fund State and Territory Public Dental Services. The Child Dental Benefits Scheme is open to both the private and public dental sectors and is a dental program for eligible children that provides up to \$1,000 for basic dental services over two consecutive years. The child must receive, or be part of a family receiving, a relevant Australian government payment such as Family Tax Benefit Part A. The Royal Flying Doctor Service Scheme funds the supply of dental services in rural areas of Australia.

However, what governments are doing here by focussing on treatment is using the “ambulance at the bottom of the cliff” approach and it’s not working. We simply cannot afford to supply preventive and restorative dental treatment to everyone who needs it. We need to prevent the diseases and problems in the first place.

The late A/ Prof Erica Bell from Prof Crocombe’s research team went so far as to say in a research paper that,

“Oral health research and the policies were so different as to raise doubts about the ability of research to be policy to be policy relevant, or policy to be evidence based.”

However, it has not been all doom and gloom. Over the last 100 years oral health has been a success story, at least for some people. For the “baby boomer” parent’s and grandparent’s generations, dentistry largely involved taking teeth out and making dentures. For the baby boomers, it was by restoring teeth leading to “the repeat restoration cycle” of filling and then later refilling the same teeth as restorations collapsed or more teeth decayed.



The younger generations have tended not to suffer from the ravages of dental disease as earlier generations did. The percentage of Australians aged 15 years and over with complete tooth loss has decreased from 14.4% in 1987–88 to 6.4% in 2004–06, and further declined to 4.0% in 2017–18. The percentage of Australians aged 15 years and over with less than 21 natural teeth also decreased from 20.6% in 1987–88 to 13.8% in 2004–06 to 10.2% in 2017–18. The percentage of Australians aged 15 years and over that wore dentures decreased from 21.5% in 1987–88 to 14.9% in 2004–06 to 11.3% in 2017–18 (NSAOH, 2020).

Tasmanian Approaches

Although Tasmanian children has historically had the worst oral health in Australia, this has changed due partly to improved in-surgery dental prevention techniques, but mainly to water fluoridation. Tasmanian Governments of all persuasions should be congratulated on their approach to water fluoridation which has resulted in Tasmania being the only state in Australia that has reached the target of all towns with a population of 1,000 or more having fluoridated water supplies.

The Tasmanian Government should also be congratulated on trying to increase the education levels by allowing more schools to educate people up to year 12. It will be interesting in years to come to see if this leads to improved oral and systemic health of the students who progress through the education system.

However, on the negative side, Tasmanian funding for oral health has been largely focussed providing dental treatment in an attempt to expensively tackle oral diseases (the “ambulance at the bottom of the cliff approach”). It is disappointing that oral health and dentistry was barely mentioned in “Our Health Care Future”. If state health policymakers have not seen the importance of oral health, it is hardly surprising that state funding not increased for ten years.

A reason for this misunderstanding may be that dentistry is largely funded by the patients and their health funds (85%) while a much larger proportion of funding for medical and hospital services are covered by the States and the Commonwealth. Another possible reason is that many people believe that if someone has poor oral health that it is their own fault. They didn’t clean their teeth properly or they ate too many sweets. As noted above, this concept has been disproven in the research literature.

In spite the Commonwealth and State funding arrangements for oral health, both Oral Health Services Tasmania and the Royal Flying Doctor Service Tasmania Dental Program have been innovative in their attempts to handle the poor oral health of Tasmanians.

Oral Health Services Tasmania has developed a preventive fissure sealant and fluoride varnish program which has been proven to reduce the prevalence of dental caries in children. It partners with James Cook University, the University of Adelaide and will later this year, look to partner with La Trobe University to provide clinical placements for final year dentistry and oral health therapy students thereby increasing service delivery.

Oral Health Services Tasmania runs a program (Healthy Smiles for Two) to improve patient care and raise awareness of good oral health in pregnancy. A baby will have less chance of developing tooth decay if the mouth of the mother is healthy during pregnancy. This is because once the baby is born, decay-producing bacteria can be passed from the mother to the baby. Eligible pregnant women can receive priority general dental treatment without having to go on the waiting list. Then they will receive a 12-month follow-up appointment for the mother and the baby.

“Lift the Lip” is a program that aims to improve early intervention, prevention and referral of dental decay in young children. A simple “Lift the Lip” screening and referral tool and anticipatory guidance tool is available to health professionals to identify young children with early signs of tooth decay.

Oral Health Services Tasmania supports a clinic-based smoking cessation and recording program for clients who are interested in managing their tobacco dependence.

It has also undertaken a clinical trial in collaboration with Prof Crocombe, researchers from the University of Tasmania and SDL Ltd. This study determined that topical silver diamine fluoride treatments were a feasible and cost-effective treatment option for young children compared to the standard dental treatments of restorations or extractions or of treatment under a general anaesthetic in the Day Theatre of the Royal Hobart Hospital. A vast majority of the parents/carers and a majority of the dental clinicians believed that the children preferred the fluoride treatments to standard treatment of restorations and extractions. This research study has already influenced policy within Oral Health Services Tasmania, the Royal Flying Doctor Service Tasmania Dental Program and in Papua New Guinea. The policy for children on general anaesthetic waiting lists has been changed so that topical silver diamine fluoride may be used.

Silver diamine fluoride applied to caries beneath a glass ionomer cement restoration. Note the depth of penetration of silver diamine fluoride seen as a dark band on the optical image. There is some staining of the GIC at the restorative interface.

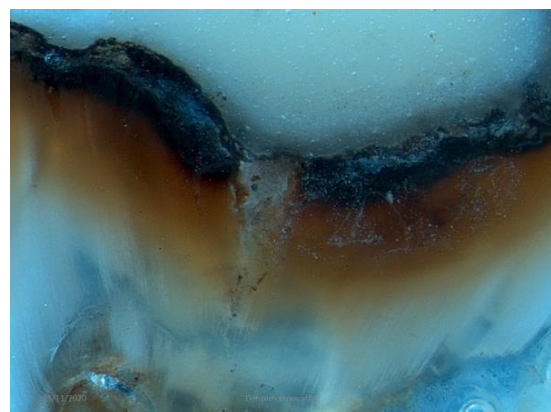


Figure 1: Silver diamine fluoride with potassium iodide covered by glass ionomer cement



Generalized carious dentine and the silver diamine fluoride can be seen penetrating almost to the depth of the caries along the whole slide

Pictures courtesy of Dr Joshua Cheetham. Descriptions by Dr Geoff Knight.

Figure 2: Silver diamine fluoride penetrating caries

This research had the potential to change the philosophy of dentistry away from one of expensive extraction and filling teeth surgical to the biomedical model of arresting and preventing dental caries.

The Royal Flying Doctor Service Tasmania Dental Program is not focussed on numbers and through-put but instead we focus on improving health outcomes, educating people to better understand and better manage their chronic health conditions, including oral health conditions, in their local community. For some country Tasmanians, particularly the most socio-economically disadvantaged, there are barriers to accessing existing services for reasons that are often complex and cumulative.

To address these disparities, particularly of access, Royal Flying Doctor Service Tasmania has developed innovative oral health programs that derive from its experience of running dental outreach programs around Australia and that build on its profile and high levels of trust in rural communities.

These programs are underpinned by a number of principles:

- > Operate where other services don't;
- > Employ different service models depending on the needs of the community;
- > Ensure close co-operation with other service providers in the region;
- > Provide preventative, early intervention and treatment services;
- > Orientate the services toward potential to prevent future disease and provide appropriate care to groups considered at higher risk of dental disease; and
- > Structure visits to maximize outcomes and move beyond emergency and demand dental care.

The Royal Flying Doctor Service Tasmania has partnered with Prof Crocombe's research team in a grant application to investigate a model of oral health care that results in older adults having an acceptable level of oral health before they enter Residential Aged Care Facilities. It includes promoting oral hygiene, inhouse preventive and quality of life oral health care, referral to the

dental team onsite in the new travelling Royal Flying Doctor Service Tasmania dental van, dentist-prescribed individualised anticipatory oral health care plans, and the use of dental telehealth technologies.

Oral Health Trends

There are certain trends occurring which effect oral health and by extrapolating these trends forward, we can an indication of how we can improve the oral health of Tasmanians. Let's go through them one at a time. They can then act to help people understand the recommendations made in the next section titled, "The Way Forward".

1. A decrease in the community incidence of oral diseases, but with oral diseases being focussed in sections of the community

The use of fluorides in community water supplies, in toothpastes and within dental surgeries will lead to further decreases in the incidence of dental caries. Lower smoking rates will decrease the incidence of periodontal disease. These factors plus the future dying off of the "baby boomers" over the next few decades will lead to a lower community prevalence of oral disease. It will also reduce the influence of the "repeat restoration cycle".

However, oral diseases will be more and more focussed in the very people who do not regularly access private dental care. This includes frail and older people, rural residents, Indigenous Australians, Australians with physical and intellectual disabilities, and people of low socio-economic status. The groups of people who suffer from poor oral health are the same groups of people who suffer from poor systemic health. The groups with oral diseases are those who tend not to able to access private dental care. Those who can access private sector dental care will be requiring orthodontic treatments, wisdom teeth removal and cosmetic dental care.

Hence, governments may have to play a larger role than in the past in managing oral diseases.

In particular, there is a worsening crisis developing in aged oral health care and with its older population this crisis is developing in Tasmania first. Their diets may include high sugar "comfort foods" and they will frequently take multiple medications that create xerostomia, further increasing the risk of dental diseases. Older people may no longer be able to look after their own teeth, may have poor access to dental care, will suffer from pain and infections, and being "baby boomers" simply won't put up with it.

2. In the longer term, the demand for dental care involving surgical procedures will decrease and there will be increasing use of minimal intervention dentistry and the pharmacological management of caries.

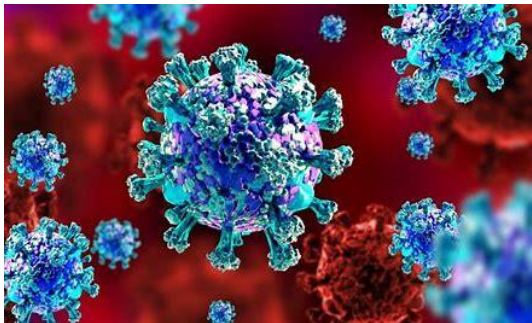
Although slow in gaining momentum, the increasing use of atraumatic restorative techniques and the pharmacological management of caries will be a "game changer".

Atraumatic restorative treatment (ART) is a minimally invasive procedure that involves removing markedly softened carious enamel and dentine using only hand instruments and then restoring the resulting cavity with an adhesive restorative material (Frenken et al., 1996). It has been accepted as part of the minimum intervention philosophy (Burke et al., 2005; Tyas et al., 2000). The use of silver fluorides will play a larger role in managing dental caries, particularly in public sector dental services.

It's a slow mover because there is great resistance to this from the dental profession itself. Minimal intervention dentistry is designed around the principal aim of preservation of as much of the natural tooth structure as possible. It uses a disease-centric philosophy that directs attention to first control and management of the disease that causes tooth decay—dental caries—and then to relief of the residual symptoms. Changing the biochemical properties of saliva, potentially through the use of appropriate drugs, can help the buffering capacity of the saliva to resist changes in pH caused by acid, resisting the acid attack caused by the active caries. Where decay is reversible, where healing is possible by the hardening process of remineralisation. Where decay is not reversible, minimal intervention dentistry is focused on filling only cavitated regions, leaving non-cavitated decay to be remineralised, thus restoring the tooth while removing as little of the tooth structure as possible.

Epidemiologists always knew a pandemic was coming. They just didn't what type and when. With COVID-19, people are now finally waking up to the fact that we will have regular pandemics. Infection control has been a major issue in dental practice for many years.

However, realising that with high rates of international travel, more pandemics will occur in future, the spray from dental air rotors raises further issues with the dentist surgical approach. This has stimulated more interest in treatments which do not cause aerosol sprays.



3. A rapid rise in dental workforce number and changes in the make-up of the workforce

Seven alternative workforce planning projection scenarios were developed by Health Workforce Australia. All scenarios presented the same result – that the supply of the oral health workforce will exceed demand for dental care. This indicates there will be scope to improve access to dental care for those missing out. However, a workforce oversupply may encourage over-servicing. This indicates that the Commonwealth Government should be encouraged to investigate what oral health workforce Australia needs, and use that to determine the numbers and types of practitioners trained.

Table 2: Number of registered dental practitioners



It is ironic that the Commonwealth has decided to increase the number of dental practitioners when we can expect a continuing decrease in the community incidence of oral diseases.

The first change in the make-up of the dental workforce is change in the gender make up. Historically, dentistry has been largely supplied by male “baby boomer” dentists, many of

whom measure success being owning a prosperous and respected private dental practice. According to the Dental Board of Australia, 50.5% of the dental workforce are female and now more women are studying dentistry than men. We are at a tipping point where women will play greater and greater leadership roles in the dental workforce. Women may have different priorities to men.

The other change is the changing age make-up in the dental workforce as the “baby boomer” dentists leave the workforce. The younger generations may have a different outlook on life to the “baby boomers”. A possible example is a greater concern with sustainability. Another is not seeing owning a dental practice as the measure of success: Trend towards group and corporate dental practices.

The outlook on life and to dental practice of dental practitioners may be changing.

4. Sustainability will play a larger role in dental practice.

Over time, sustainability will have a larger role in dentistry. The changing make-up of the dental workforce may encourage this change.

The use of mercury in dental amalgams was discussed at the Minamata Mercury Convention. It recommended that countries agree to a phasedown of mercury in fillings by promoting alternatives, creating dental programs to minimize the need for fillings or taking other steps.



The highest proportion of emissions from dental care are caused by travel (64.5%); procurement (19%); energy (15.3%); and nitrous oxide (0.9%).

As part of a commitment to taking a leadership position on sustainable dentistry in Australia, The national Australian Dental Association has established a Special Purpose Committee on a Sustainable Dentistry Strategy, two members of which are Tasmanian researchers (Dr Silvana Bettiol and Prof Len Crocombe), which will play a key role in incorporating sustainable dentistry objectives into its Strategic and Business Plans.

5. A hope that the social determinants of systemic and oral health are tackled.

Dentistry has focussed on changing oral health-related behaviours such as improving oral hygiene, diet, and access to dental care, and encouraging people to stop smoking. Basically, we've been saying that if you have poor oral health it is your own fault because of your bad habits. “Blaming the victim”. If we move to tackling the social determinants of systemic health, we will at the same time, tackle the social determinants of oral health.

The Way Forward

The question asked by the “Our Healthcare Future – Immediate Actions and Consultation Paper” is what are the best approaches to improving the health, and in the case of the Australian Dental Association Tasmanian Branch, the oral health (noting that oral and systemic health are strongly linked) of Tasmanians.

Recommendations

1/ Extra resources should be allocated to dental services.

Although as noted previously, a service delivery approach has limitations. However, due to limited resources and high oral disease rates, a major problem faced by both Oral Health Services Tasmania and the Royal Flying Doctor Service Tasmania Dental Program is not being overrun with patients with problems so that they can move from problem-based care to restorative and preventive care. The extra resources can be via all the dental service providers in Tasmania. The Australian Dental Association has developed an excellent funding model that could be used for the private sector.

There should be a continued emphasis on early years (0-4 years old's) with evidence showing that investment in these formative years reaps dividends in the future. A child with tooth decay is a strong predictor of an adult with poor oral health, and 1 dollar spent on prevention at this age will prevent 7 dollars being spent on treatment later in adult life.

However, it is both morally and politically unacceptable to allow people in community groups who currently having difficulty accessing dental care suffer from the poor health and quality of life effects associated with poor oral health.

2/ Encourage the use of, and research into, pharmacological approaches to prevent and treat dental caries in Oral Health Services Tasmania.

All dental practitioners at Oral Health Services Tasmania should be encouraged to use minimal intervention dentistry to treat dental caries if it cannot be managed using pharmacological methods.

If a patient comes to a clinic with a dental problem, whilst the local anaesthetic is taking affect, the dental clinician should use pharmacological techniques to arrest dental caries. This will reduce the likelihood of the person returning for problem-based care in the near future enabling clinician to encourage the person to take up regular check-ups.

Oral Health Services Tasmania should be encouraged to expand and be supported with its clinical placements for University of Adelaide, James Cook University and La Trobe University final year dentistry and oral health therapy students. As well as increasing productivity, some of the students will stay in Tasmania after graduation.

3/ Encourage and support the Royal Flying Doctor Service Tasmania Dental Program with its translation into practice trial supplying dental care in the aged care sector in rural areas.

The translation into practice trial will use of Minimal Intervention Dentistry along with sodium and silver fluorides F in Residential Aged Care Facilities and for older Tasmanians living in retirement villages. As well as reducing costs and improving the quality of life of the patients, it will reduce the use of aerosol, thereby lessening the risk of droplet infections.

The trial will utilise oral health screening, the creation of anticipatory oral health care plans and a referral system to dental clinicians. Our evidence-based oral interventions (CIs Wallace *et al.* 2016, Steffens 2012, Sbaraini *et al.* 2012) will include non-surgical periodontal (gum) treatment, sodium fluoride varnish, high fluoride toothpastes, glass ionomer restorations/sealants, saliva replacements, water hydration, desensitising agents, lip balms, wash cloth mouth cleaning, sodium bicarbonate rinse and toothpaste, chlorhexidene gel and varnish for periodontal disease, casein phosphopeptide amorphous calcium phosphate solutions (CPP-ACP) heal the damage of the early stages of decay, denture cleaning tablets and pastes, denture adhesive pastes (GC, 2018) and silver fluoride with stannous fluoride to arrest tooth decay (Deutsch, 2009).

4/ Increase the fluoride exposure of Tasmanians with a high risk of dental caries.

This can be done in three ways.

The first is to reduce the town size from 1,000 to 500 before reticulated water supplies are required to be fluoridated. Tasmania has led Australia in the fluoridation of water supplies. It is time to expand upon this success. The fluoridation of water supplies has become more and more cost effective with the advent of new water fluoridation technology.

The second is to change legislation so that dental assistants with a Certificate IV in Health Promotion, and having successfully completed a course in the administration of Schedule 4 poisons for dental treatment (fluoride varnish) HLTOHC006, be able to undertake sodium fluoride applications under the prescription of a registered dental practitioner.

This will allow the application of sodium fluoride, which is an established evidence based intervention to help prevent tooth decay in Tasmanian children and adults at high risk of tooth decay. Having these fluoride applications delivered under the prescription of a registered dental practitioner by a dental assistant with appropriate training, will ensure appropriate Clinical Governance. Tasmanians at high risk of tooth decay include people of low socioeconomic status, people with special needs, Indigenous Tasmanians, and people residing in rural areas. This strategy is already in place and being employed in other jurisdictions nationally.

An amendment to the Poisons Regulations will be required to enable dental assistants to lawfully possess and administer Fluoride Varnish a Schedule 4 poison under the prescription of a registered dental practitioner.

This legislation change is supported by the Australian Dental Association Tasmanian Branch, the Australian Dental and Oral Health Therapist Association, Oral Health Services Tasmania,

and the Royal Doctor Service Tasmania. A letter asking for a meeting with the Health Minister has been send asking for a meeting to discuss this proposal.

The third is to give continued support of Oral Health Services Tasmania evidence-based interventions such as the fissure sealant and fluoride varnish program.

5/ Encourage the expansion of the existing collaborations between the Australian Dental Association Tasmanian Branch, Oral Health Services Tasmania and the Royal Doctor Service Tasmania Dental Program.

This should include expanding upon the sharing of continuing professional development opportunities and by ensuring Tasmanians “don’t fall between the cracks” when attempting to access dental care. Only by having all dental service suppliers working together can we ensure that all Tasmanians are supplied the best dental care.

6/ Encourage and support municipal councils to help dentists move to, but more importantly, stay in rural areas.

Dr Diana Godwin from Prof Crocombe’s research team found that what encouraged health practitioners to move to rural areas were not the same factors that encouraged them to stay. Financial incentives encouraged many new graduate health professionals to begin their careers in rural areas in order to build their skills. However, this can lead to higher staff turnover, with highly skilled workers being continuously replaced by lesser experienced ones. It was job satisfaction and lifestyle enjoyment of the social and physical environment, social and personal factors, and the existence of strong social support networks, that were important factors in the long-term retention of workers.

Encouraging rural municipalities to ensure dentists and other health workers feel part of their local communities is the simplest and most cost-effective way of locally retaining them.

7/ Upskilling non-dental health practitioners to improve their awareness of oral health issues and producing more timely referrals to and intervention from dental professionals.

Australia’s National Oral Health Plan 2015–2024 includes an educational program for physicians, nursing staff and residents. It emphasises an interprofessional approach where the many different professionals who are invested in residents’ oral, nutritional, and physical health work together.

This should include encouraging oral health education on the importance of oral health and early screening for doctors, nurses, aged care workers, antenatal carers, and Indigenous health workers and producing more timely referrals to and intervention from dental professionals.

The education should begin when these health professionals are undergraduate students. upskilling non-dental health practitioners to improve their awareness of oral health issues. Oral Health Services Tasmania currently teaches into the curriculums of both the medical and pharmacy programs and is in the early stage of inclusion into the nursing course at the University of Tasmania. Further developments will see further integration into allied health programs and delivery of education to professional groups and associations.

8/ Tackle the social determinants of oral and systemic health

As mentioned above, this can be very hard to do and will not achieve results in the short term but will increase oral and systemic health in the long term. Unfortunately, this does not fit with the electoral cycle. However, the government is moving in the right direction with trying to improve education levels in Tasmania and should be encouraged to increase the rate at which rural secondary school education students are offered local education to year 12.

9/ Supporting Oral Health Services Tasmania, the Royal Doctor Service Tasmania Dental Program and the Australian Dental Association Tasmanian Branch, in using evidence-based methods to reduce the prevalence of oral health risk behaviours including smoking, excessive alcohol consumption, poor diets.,

This could include further investment in health literacy across life span, to improve people's understanding of their own health issues, such as their role in improving their own oral health and close working with the Department of Education and continuing to embed oral health in education curriculum design.

It should include support for the T21 Bill designed to prevent people from supplying tobacco to Tasmanians under 21 years of age. Smoking rates are not declining in Tasmania as fast as on the mainland. This is due to insufficient effort being expended on tobacco control prevention, over decades, and the close association of governments with the tobacco industry (Tasmanian DHHS Epidemiology Unit, National Health Survey data 2014/15 and 2017/18). In Tasmania the smoking rate for 15-17-year olds is 8% but this rapidly increases to 22.6% once these young people turn 18 years (ABS 2017-2018).

There is now funding for mass media campaigns, but the numbers of Tasmanian smokers remain high. More legislation is required.