

## Celebrating successes in oral health and looking to an innovative future

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### EDITORIAL

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Imagine we were writing this editorial in the 1960s. We would be talking about how every child is suffering dental pain and abscesses. We would be talking of massive drives of tooth extraction and how it is better to get false teeth when you are 20 years old than to continue to suffer the scourge of dental pain. But, we are not in the 1960s and this is nothing like the current situation.

Today, dental decay is nothing of the problem it was previously. Why? The principal driver has been the population-level fluoride exposure.<sup>1</sup> In children this has reduced dental decay from an average of 10 decayed teeth per child, to a current level where statistical averages can no longer be reasonably used (Figure 1). In fact, prevalence of 12-year-olds free of decay runs at more than 60 per cent and growing. This effect is not limited to children, with the rates of full denture wearing in adults turning around from 75 per cent wearing, to 75 per cent not needing in 50 years, and are predicted to continue to fall to near zero levels over the next 20 years.

However, this demolition of decay through public health has exposed a tyranny of our society—socioeconomic divide.<sup>2</sup> The remaining decay is not even or randomly distributed (Figure

1). Those at the margins of society, or in poverty, have in many cases not seen any real improvement in dental health. For example, one study found one in three Aboriginal children in one remote Australian towns suffered toothache in the last six months.<sup>3</sup> The mix of care provided in remote Australia has dentists reminiscing of times gone by.<sup>3</sup>

Against this relatively rapid swing from universal chronic disease to a very skewed distribution associated with poverty and marginalised groups, we have not seen the concomitant shift in targeted health care.

Dental care in Australia is fundamentally a private model, with small practices, setting prices and locating themselves based on business decisions. This makes up some 80 or more per cent of the total care provided.<sup>5</sup> A relatively small state and territory government safety net for the poor provides the remaining 20 per cent. And school dental services in some states remain universal coverage.

Obviously, under a small business model dental practices are at their highest densities in the cores of our cities<sup>5</sup> where people are able to pay the fees for care (or have private health insurance). But this is opposite to where new disease is at its most intense, and a classic example of the “inverse care law”.

The national balance has not had time to adapt its service models to address the new disease distribution, as population health initiatives have rapidly changed the face of dentistry. Like any reasonable small business, as demand for your “product” diminishes you look to diversify. This has occurred in dentistry. A greater emphasis on cosmetic-level care and complex care has been part of the last 30 years, as has a growing level of advertising of these services. None of this is unreasonable from an economic perspective, nor surprising, simple economic theory was in play.

Surely the Australian government is aware and has been acting? Yes, to some extent, using the levers they have at hand. However, with a near wholly privatised sector, these levers are limited and at times have consequences that policy makers were unprepared for.

The first lever government has is workforce numbers. In the late 1990s Australia was training some of the lowest numbers of dentists since World War II (in absolute numbers). The government in collaboration with universities moved to support a change in educational models to provide more opportunity for dental education. The new models, having its genesis in Western Australia,<sup>6</sup> saw a near doubling of dental school numbers, and importantly, the new schools were predominately in rural, regional, and remote Australia. The locations of these new schools are resting on the globally acknowledged basis that more student training in rural areas leads to new graduates more likely to practice in the bush. This has been a national iconic success. A relatively small input in dollar terms, with a substantial long-term benefit—every policy maker’s dream outcome.

The second lever the government experimented with was to outsource care for those in need to the private sector. This billion-dollar policy initiative was brought to a close (running some half a billion dollars over budget) after it became evident that a number of “interesting pathways” and models of use were occurring.<sup>7</sup> Policy makers were burnt by the small business economic drivers that appeared to take hold during its implementation. All would agree the principle was good, but the implementation framework left a lot to be desired.

The third lever the government has continued to use is a small funding program to attract dentists to move from the city to the country.<sup>8</sup> This relatively small, and formal, open-detailed reporting of the outcomes is yet to be available. However, from a policy perspective the principles are correct, but again, it is vitally important that in the economic reality of small-business-led care, its implementation framework be robust.

At the state level (those responsible for the safety net) the level of adaptation to the new disease distribution has been varied. This is especially evident in the operation of school dental services. Casting our eye back to the 1960s we can imagine that a universal—see every child every six months—was a perfectly logical model when extraction and pus drainage was the primary need. As population-level health effects started to reap rewards, it was logical to extend the time of review from six months, to eight months, to 12 months, etc. More recently, cutting edge school dental services have now moved to being targeted at those child

groups of poverty and marginalised children. The days of universal service are behind us. Free dental checks for children from wealthy areas with little probability of decay, and high access to care, should no longer be the focus of limited resources; many states have taken this path, some have not.<sup>9</sup>

Some states have been slow to move, lacking leadership in public oral health strategy and policy with a deep history in population-level evidence base. Conversely, some states have moved to adapt to targeting their limited resources to those in need. The arrangement of state-funded dental clinics is a good measure; some states are getting their services organised to make it easy for the poor and marginalised to access.

### Negatives

The current negative is, at its essence, the same problem again. The vast majority of service and practitioners are private small business models driven by economic markets. With the development of new dental schools (and a parallel increase in International dental graduates receiving registration in Australia) there have been murmurs of workforce “over supply”. Not unsurprising as the economic cooling of Australia in the last couple of years has been coincident with the growing output of new-graduate dentists. Demand for care has dropped, especially for non-essential care (e.g., cosmetic), at the same time as supply has increased. Also, we are at a juncture where the baby boomer practitioners are looking to sell their practices as retirement nest eggs, and values are at risk of falling.

Basic economics would prescribe a simple pushback to constrain supply (graduate numbers), which is the current way of thought. But at a national health level, in particular for those who have not reaped the benefits of population health advances (that have seen city dwellers and the affluent gain better outcomes), oversupply is not an issue.

As harsh as it sounds, an argument can be made that a downturn leading to price pressures, and expanding service options, may actually be a reasonable outcome at a population level. The main population-level defence that needs to occur under these conditions is to protect against over servicing. This will be a challenge of the next decade; maybe a challenge that needs to be integrated into accreditation systems?

## Where is the data?

Historically Australia has rested on approaches to collecting population-level dental health data that were closed book, and reported by one government department.<sup>10</sup> Astonishingly, in the context of the plethora of dental public health expertise available to Australia now, we still remain with a relatively closed-loop approach. State systems nearly all use one electronic patient management system, data warehouses exist, and a far more diverse expertise exists. It is time for the federal government to look closely at its current data and analysis arrangements and look to a more open and transparent system that allow many more groups to apply their skills to the datasets. Taxpayers have put massive sums towards the data collection and to not open it (with proper de-identification) to wide scrutiny would not be wise, or could be constrained as “hiding from the truth”.

## The future

The next substantive national-level challenge in dental health that needs urgent and appropriate attention is the changing demographic in Australia. We are a rapidly ageing population. Ageing and dental health are complex issues, including the comorbidity of multiple systemic conditions, the use of many medications that may have side effects that are hazardous to oral health, the diminishing ability to sustain good oral hygiene practices, and lack of access to appropriate care for the elderly, or those in residential aged care.<sup>11</sup>

A systematic approach to addressing an ageing population needs to become a priority. The transition of dental auxiliaries to act as front-line and primary care practitioners to address the issue is a potential and realistic opportunity. The planning and implementation of sustainable and effective systems is going to be the next generation of problems to face in Australian public oral health.

In the 1960s outstandingly effective systems were developed to address the epidemic levels of dental disease in children that existed back then. We need to rest on learning of system reform from those times to build effective, preventive, and interventional services for the ageing. We are now lucky, much technology that was not available in the 1960s can be brought to hand to build frameworks and operational systems to address the need. We need to collaborate across health boundaries to build effective systems. No elderly person should be without access to good oral health.

The need to target other high-risk groups will remain at the forefront of Australian dental public health for decades to come. The days of universal “one-size-fits-all” approaches are gone. Disease and suffering are not evenly distributed

anymore. Australia's complex geographic and demographic spread is going to require novel systems of addressing the oral health needs of people at socioeconomic disadvantage and those distant from the cores of our cities because these are the people who do, and will continue, to suffer.<sup>12</sup>

Closing the gap for Aboriginal and Torres Strait Islander people is a core value of modern Australia. Not unsurprisingly oral health issues are a real issue. Modern approaches to effective care models have been trialled, and shown to be cost effective and sustainable.<sup>13</sup>

State systems have to adapt to address these needs, and the successes of the last decade are exemplars of tailored solutions that can, under all sorts of economic conditions, sustainably address complex issues for marginalised (geographically, socially, and economically) groups.<sup>14</sup> The solutions are achievable within the constraints of Australia's dental healthcare system, we just need to innovate rapidly. Visionary leadership that has a strong connection to evidence-based public health research is essential. At a federal level, care must be taken to understand the complex nature of the sector when planning policy initiatives, as this is a sector predominated by independent small business.

## Conclusion

Australia has come a long way in addressing dental ill-health; however, many problems and risks remain. We are not at the end, but achievements of the last 30 years should be celebrated. Strategic, expert-led reflection on these past efforts in order to drive the next wave of evidenced-based innovation must be focused on an inclusive, all-of-society agenda, particularly with the shifting pattern of disease burden.

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## CONFLICTS OF INTEREST

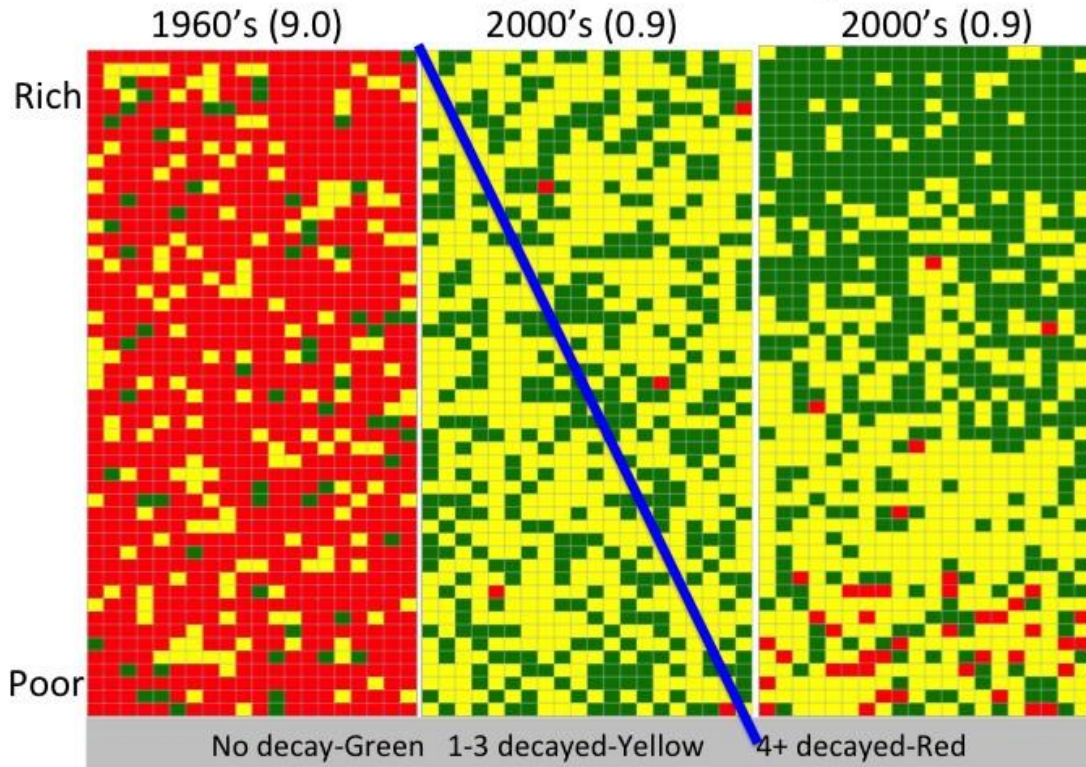
Marc Tennant is an editorial board member of the *Australasian Medical Journal*.

## PEER REVIEW

Externally commissioned. Peer reviewed.

Figure 1: Changing level of dental decay in Australia over the past 50 years

**One Thousand Children – Changing of dental decay in Australia**



*Theoretical distribution graphically depicted showing the changing levels of decay in Australian children (12-year-olds) over the last 50 years (Mean DMFT is in parenthesis adjacent to years). The middle image is not approaching reality as dental decay is now a condition that is linked to socioeconomic risk; decay is no longer randomly distributed.*