Briefing to: the Rt. Hon. Jacinda Ardern, Prime Minister of New Zealand
the Hon. Andrew Little, Minister of Health
the Hon. Peeni Henare, Associate Minister of Health

ACHIEVING ORAL HEALTH EQUITY FOR MĀORI

PURPOSE

This paper from the Māori Oral Health Quality Improvement Group (the Group) proposes solutions to address long-standing Māori oral health inequities, and the worsening of those inequities created by the COVID -19 pandemic.

The paper has been organised into four sections.

Section 1 contains our thinking on what should be done to address the issues covered in this paper.

Section 2 covers the oral health of tamariki Māori, rangatahi Māori and Māori adults under the headings:

1. What did the evidence tell us, and what did we do?
2. How successful were our actions in achieving equity?
3. Why do inequities still exist?

Section 3 captures the work and achievements of the Māori Oral Health Quality Improvement Group, with a focus on integrated models of care and Māori oral health providers, the workforce, and recommendations to embed these approaches.

Section 4 examines the impact of COVID -19 and the treatment backlog.

MĀORI ORAL HEALTH INEQUITIES ACROSS THE LIFE COURSE

Despite decades of compelling evidence that there are significant inequities in oral health status and outcomes for Māori compared to the non-Māori population over the life course, the health system and the oral health sector have made few inroads in changing that trajectory.

The World Health Organisation defines health inequity as differences in health status or outcome between groups of people defined socially, economically, ethnically, or geographically that are unnecessary, avoidable, unfair, and unjust.

Considering what has happened to people earlier in their life matters. The life –course approach is defined as the long-term effects on later health or disease risk of physical or social exposures during gestation, childhood, adolescence, young adulthood, and later adult life (the life stages of the life course).

SECTION 1

OUR RECOMMENDATIONS

Health system changes

- Elevate the right of Māori to good oral health under Te Tiriti o Waitangi; the right of indigenous people to health that is Accessible, Available, Acceptable and Quality under the United Nations Declaration, and the right of a child to have the highest standard of health and care attainable under the United Nations Convention on the Rights of the Child and in particular the provision of primary and preventive healthcare (Committee on the Rights of the Child).
- Implement the Māori Oral Health Equity Plan with oversight from a Māori Oral Health Equity Reference Group and include Māori community representation.
- Establish an executive leadership role in Health NZ and the Maori Authority with the responsibility of commissioning to achieve equity in oral health for Māori tamariki, rangatahi, pakeke and kaumātua.
- Require oral health sector leaders to work with the DHB Māori Relationship Boards to establish oral health as a health and Maori development priority.
- Continue to fund the work of the Māori Oral Health Quality Improvement Group.

Service models across the life-course for Māori

- Commission integrated model/s of oral health care that are informed by equity focused commissioning models (Central Region DHB Equity Framework) that are integrated with general primary care health to provide quality oral health services across the life course:
    - Informed by Ngā Ara Tika – the integrated practice guidelines (tested and evaluated by Māori Oral Health providers in the general primary care health setting) that can be used by nurses, general practitioners, whanau ora navigators to provide oral health education, prevention, and screen for obvious dental disease,
    - reinstate public health roles of promotion, education, and the prevention of poor oral health,
    - ensure whānau Māori preferences and priorities are embedded in service design and delivery,
    - design pathways of care that address the needs of Māori living in rural areas
    - support flexible and innovative operating hours with contracts to increase accessibility and wider availability,
    - redesign the current child oral health services hub and spoke model to:
        - address the delivery pathway that has led to years of under or no dental care for tamariki,
        - reinstate mandatory oral health promotion roles,
        - implement pathways and actions that address the high ASH admission rates for surgical intervention under a general anaesthetic
    - develop a new adolescent service model that ensures all rangatahi receive their entitlement of oral health care,
        - include rangatahi-centric oral health promotion and education.
- Introduce a free oral health care programme for Māori mothers (prioritising 18-30 years olds), low income adults, and for those with chronic systemc disease.
- Introduce a model that provides essential dental care rather than emergency dental care for low income adults and make preventive care a core component of the Special Needs Grant and the Relief of Pain contract.
- Introduce a model within primary care funding streams for those with systemic conditions made worse by oral disease and the concentration of complexity that occurs within this group.

Funding

- Introduce a funding regime that supports proportionate universalism – resourcing and delivering of universal services at a scale and intensity proportionate to the degree of Maori tamariki, rangatahi and pakeke need.
- Address the problems with the special needs grant (SNG) administered by WINZ.
- Alter the Combined Dental Agreement for all New Zealanders to extend the age of entitlement for adolescents for 5 years from school year 9 to 22 years of age.
- Measure oral health spending in child oral health services and the adolescent universal programme against oral health outcomes for tamariki and rangatahi.
- Introduce targeted funding for compromised patients via primary care funding streams for those with systemic conditions impacted and caused by oral disease.
- Include schedule items, pathologies, and treatment modalities particular for delivery to Maori within an integrated service delivery model in the Electronic Oral Health Record database.

Accountability

- Make oral health and oral health equity a whole of government accountablity:
    - establish the mandatory collection of ethnicity data in compliance with the HISO 10001;2017 Ethnicity Data Protocols in child oral health services and the adolescent universal scheme, and audit, and
    - require the public reporting by ethnicity, age, sex and DHB of measures focused on oral health outcomes.
- Regularly survey whanau to assess their satisfaction with the delivery of oral health services for their whānau.
- Provide good information to whānau about adolescent oral health services and their entitlements.
- Establish an independant role to monitor equity trends, performance, workforce, models of care.
- Review the National Service Framework for the Community oral health service and make explicit equity actions, expectations, and accountabilities and investment analysis.

Contracting

- Enable Māori oral health providers to expand sustainably, recruit and retain well qualified and trained workforce to provide integrated, quality and safe oral health services (currently there are only **six active** Māori oral health providers operating in Aotearoa/New Zealand).
- Shift the focus of health agencies particularly planners and funder from an annual cycle of contracting with Māori Oral Health providers to a strategic relational contracting regime over a longer period of time, with contracts that cover the actual costs of delivering to a concentrated population with complex health and social needs.
- Use the planned investment of $37.5 million in an additional 20 full service mobile dental clinics **equitably** and enable Māori oral health providers access to the funding so that they upgrade their mobile dental clinics and purchase new infrastructure to support expansion.
- Enable the entry of other providers to deliver emergency dental care by making the relief of pain contract available to Māori oral health providers (prioritised) and community dentists working in rural and deprived communities.

Workforce

- Promote the oral health career pathway to Māori:
    - through career promotion at secondary schools, and with hapū and Iwi,
    - increase the availability of high quality science classes in secondary school and their uptake by Māori students including distance learning,

- enable the attainment of skills that will facilitate selection into the highly competitive Bachelor of Dentristy (BDS)programme,
- fund dental assistance training in Māori oral health providers, with an established pipeline to dental therapy or the BDS targeting Māori,
- develop tertiary scholarships specific to oral health.

- develop a comprehensive workforce plan that:
  - transitions new graduates into a new entry training programme,
  - establishes an upskilling regime for practitioners that includes clinical competence, cultural safety, social responsibility, and equity,
  - provide training, resources, and competencies for the non-clinical oral health workers,
  - resource the development of workforce roles in oral health education, promotion, and integrated settings,
  - include requirements for all oral health training institutions to establish robust affirmative action policies focused on increasing the number of Māori students in their training programmes and improve the cultural safety curricula and teaching within the institution.
- Strengthen Dental Council NZ cultural safety standards.
- Expand the Health Workforce NZ (HWFNZ) Voluntary Bonding Scheme to:
  - equitably prioritise rural and high deprivation communities,
  - include oral health therapy,
  - provide greater incentive for placements at Māori Oral Health Providers,
  - report progress to the Group and Te Ao Marama,
  - invest in increasing the number of Māori dentists with post graduate qualifications,
  - include Post-Grad Y1-3 Dentists at Māori oral health providers or rural/remote practices in recognition that new graduates working aone or with insufficient supervision may not be practicable or desirable.
- Develop a post registration dental workplace based professional development programme, or a 'Graduate to Practice' programme in the Māori oral health provider setting, including a mentoring programme.
- Urgently reinstate dentists on to the Essential Skills in Demand (ESID) lists (which includes the Long Term Skill Shortage list and the Regional Skill Shortage list) to enable Māori oral health providers to recruit internationally experienced dentists, and develop Māori oral health providers as centres for immigtant dentists training for the New Zealand registration.

Addressing the back-log created by COVID -19

- address the backlog and aggressively reduce wait times for first specialist assessment (FSA) and access to treatment:
  - inject a one-off boost funding to reduce the waitlist of 1200 tamariki and rangatahi who have been waiting for more than 8 months for surgery,
  - create an ESP15 MoH indicator to actively ensure and monitor timely access to surgical treatment for 0–15-year-old children,
  - utilise community based oral health services, including Māori oral health provider services as clinics for FSA appointments to reduce wait times in hospital outpatient clinics,
  - create equity targets for Māori, Pacific and Asian children aged 0-15 years waiting for secondary care dental treatment, and
  - instruct Mobile Surgical Unit via their national contract to prioritise 0-15 year-old children living in rural communities.

SECTION 2

TAMARIKI MĀORI

What did the evidence tell us, and what did we do?

In 2003, the Public Health Advisory Committee (PHAC) published *Improving Child Oral Health and Reducing Child Oral Health Inequaliti*es a report that identified unacceptable health inequalities in the oral health of New Zealand children, especially Māori, Pacific, children from low-income families and those children living in rural areas.

In 2004, the Hon. Annette King Minister of Health directed the Ministry of Health (MoH) to commission a review and re-orientation of the School Dental Services (SDS) by District Health Boards (DHBs).

The table below clearly illustrates that in 2005, the oral health of New Zealand children was poor, there were marked differences between tamariki Māori and all children. The SDS, which had been designed some 80 years (1921) prior to that report was not delivering to most of the population and was no longer fit for purpose.

2005	dental health status of 5-year-olds		dental health status of year 8	
Indicator	Maori	Total population	Māori	Total population
Number	8,983	39,173	9,707	48,711
No. of children caries free	2,710	20,352	3,166	21,569
% caries free	30.17%	51.95%	32.62%	44.28%
no of decayed, missing, filled teeth	34,196	87,654	24,234	81,452
mean dmft	3.8	2.24	2.50	1.67

1 Date from the Community Oral Health Service, containing statistics on the level of decayed, missing and filled teeth (dmft/DMFT) and percentage of children caries-free for 5 -year-old children and children in school-year 8 - downloaded 7 March 2020 from https://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/oral-health-data-and-stats/age-5-and-year-8-oral-health-data-community-oral-health-service.

2 note that the use of the total population rather than non-Māori population dilutes the actual different between the Maori and non-Maori population as Māori numbers are included in the total population

The review of the SDS found that services were hampered by ageing equipment and buildings, and that the model of service delivery did not meet the needs of the community.

At the same time of the review of the SDS, the MoH commissioned a review by Mauri Ora Associates of 16 Māori providers to evaluate their operations and experiences in delivering oranga niho (oral health) services. The review concluded that there were only a handful of Māori health providers delivering oral health treatment services, most were funded to either provide oral health promotion services or enrol tamariki Māori into the SDS.

As a result of the SDS review Government launched the strategy *Good Oral Health for All for Life* and invested in the **implementation of a new** model of community -based oral health services for young people.

How successful were our actions in achieving equity for tamariki Māori?

The tables below demonstrates that the changes to the SDS and the investment in replacing old facilities and infrastructure has improved the oral health of all children. Comparison of the health status of year 8 with 5 year olds illustrates that child oral health services can make a difference.

However, the improvement has not been as great for tamariki Māori. There still exists a marked difference between tamariki Māori and all children. Inequities remain and the dilution effect using the total population as the comparator obscures the actual difference for tamariki Māori.

Table 1: Dental Health status of five -year old children

	Total Population					Māori				
Year	Number	No. of children caries free	% caries free	No, of decayed, missing & filled teeth	mean dmft	Number	No. of children caries free	% caries free	No, of decayed, missing & filled teeth	mean dmft
2005	39,173	20,352	51.95%	87,654	2.24	8983	2,710	30.17%	34,196	3.81
2010	44,752	25,581	57.16%	84,873	1.90	10069	3852	38.26%	31229	3.10
2015	46,040	27,432	59.58%	82,902	1.80	9826	3868	39.36%	28617	2.91
2019	39,662	23,338	58.85%	74,393	1.88	9,382	3,858	41.12%	26.984	3.02

Table 2: Dental Health Status of Year 8

	Total Population					Māori				
Year	Number	No. of children caries free	% caries free	No, of decayed, missing & filled teeth	mean dmft	Number	No. of children caries free	% caries free	No, of decayed, missing & filled teeth	mean dmft
2005	48,711	21,569	44.28%	81,452	1.67	9,707	3166	32.62%	24,234	2.50
2010	46,740	24,890	53.25%	57,433	1.23	9,493	3806	40.99%	17933	1.89
2015	45,734	28,059	61.35%	40,954	0.89	9,001	4.503	50.03%	11,748	1.3
2019	51,478	35,721	68.52%	36,291	0.70	11,297	6,829	60.45%	11,513	1.01

1 Date from the Community Oral Health Service, containing statistics on the level of decayed, missing and filled teeth (dmft/DMFT) and percentage of children caries-free for 5 -year-old children and children in school-year 8 - downloaded 7 March 2020 from https://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/oral-health-data-and-stats/age-5-and-year-8-oral-health-data-community-oral-health-service.

2 note that the use of the total population rather than non-Māori population dilutes the actual different between the Maori and non-Maori population as Māori numbers are included in the total population

Why do tamariki Māori still have significant inequities in oral health outcomes compared to their non-Māori contemporaries?

While government invested in upgrading facilities and infrastructure with an aim of implementing a new model of community based oral health services to be delivered by a range of providers. This new model has largely focused on refashioning the existing SDS so that it became the community -based oral health service for young people.

The 'hub and spoke' model is a key feature of the Child Oral Health Service consisting of community based fixed clinics, and mobile outreach facilities. The 2016 MoH evaluation of the reorientation found the clinical teams did not think that the location of the facilities had improved access to care for those with the greatest need. This finding is further supported by DHB Did Not Attend data where in some regions rates are reaching as high as 50 - 60% for Māori children, and only 30% uptake for Māori adolescents. Lack of transport, little flexibility to take time off work, inability to book appointments at times that suit working parents were identified as barriers to equitable access to care, however the evaluation survey did not include sufficient feedback from Māori communities and whānau, and further work is required to gather Māori experiences of the Child Oral Health Service and adolescent models and potential whānau-led solutions.

The opportunity to extend the range of providers and thus the capacity of the system to address the oral health needs of children has been limited. Only five out of the eight Māori oral health providers were contracted by their respective DHBs to deliver child oral health services. Ora Toa PHO spent some years negotiating with Capital and Coast, and Hutt Valley DHBs to procure a child oral health contract but failed. The biggest contributory reason for Māori 0-4 year olds ambulatory sensitive (avoidable) hospital admission (ASH) rates for those DHBs are for general surgical removal of teeth. There was no attempt by any of the DHBs to support any existing or new Māori health providers to enter oral health treatment provision.

There are significant capacity issues for the current set of DHB owned community- based child oral health services that underpin the existence of these inequities. The funding package for child oral

health treatment and support services is calculated on the assumption that these costs will be uniform across the population. However, child oral health need is not uniformly distributed across the population, and so the funding package fails at the first equity hurdle. Higher acuity requires more resources to address.

The model as it is currently configured assumes that all children will arrive for their appointments. However, we know that there will always be children who cannot attend and the reasons can vary. Despite this, there is no additional capacity (funding or workforce) within the service to actively follow up those who do not attend or make arrangements that ensure they receive the service that they are entitled. Many DHBs operate a system where the child is simply "put forward", after two missed appointments.

A 2018, review of the Hawkes' Bay DHB ASH dental care pathway for tamariki aged 0-4 years reported numerous barriers of access to oral health care for tamariki Māori and their whānau. Poor early engagement, tamariki with no record of appointments, being 'put forward' after two missed appointments, minimal child oral health service engagement with primary care and primary health care services, variation in preventive care prior to procedure, an 'at risk' process that made no apparent difference to recall or care planning and gaps in follow up care post-procedure.

Social and family information was sparse with no or little information about early childhood education enrolment and attendance, no record of family history or social circumstances that may impact on a child's oral health status or access to oral health care.

The review reported that not all whānau were pleased with their interaction with the child oral health services, and suggested that oral health workers needed to better understand how they could support whānau to obtain, process, and understand basic health information and services, to help the whānau make informed decisions about the care of their tamariki.

The health system has failed to implement the aim of the strategy *Good Oral Heath for All for Life* to make oral health an integrated part of primary health care. This has been a lost opportunity to link a child's oral health information and their general health information via the existing primary health care patient management systems. Our health system does not have a comprehensive view of the health status or health need of children living in Aotearoa/New Zealand.

The dental therapist workforce is an aging workforce. The Dental Council Workforce Analysis 2018 - 2019 reported that the mean age for this occupational group was 55.5 years. Dental therapists largely reported being employees (89.3%), of those 88.3% were employed by the DHBs and 8.2% in private practice. Only 2.7% reported being self-employed.

Overtime the dental therapist and dental hygienist occupational groups will disappear. In 2017, the Dental Council disestablished the dental therapy and the dental hygienist qualifications and established a new oral health therapy scope of practice.

The new oral health therapy workforce has a very different age profile from dental therapists a mean age of 33.3 years and their employment profile is different. The primary employment for the 429 oral heath therapists (78.0%) who reported being employees for 2019 worked in DHBs (239, 55.7%) and private practice (177, 41.3%). Only 26 (4.7%) reported being self-employed.

Accountability through public reporting is weak. Reporting has been focused on enrolment into the child oral health service rather than outcome measures.

There has been a progressive disinvestment and devaluing of public health measures (population health measures) in the health system in the last decade and this has played a significant role in the failure to provide the systemic supports to good oral health for all New Zealanders.

There has been a raging debate in Aotearoa/New Zealand about the benefits of water fluoridation, to such an extent that children with the most to gain Maori, Pacific, low income, and those living rurally have been disadvantaged by a very vocal anti-fluoride lobby. It is pleasing to see that the Community Water Fluoridation Bill is progressing through the Parliament and that this will provide the Director General of Health with the authority to make the decisions about water fluoridation.

The Health and Disability Review has recommended a proactive approach to promoting and protecting health with an explicit focus on equity. The response to the COVID-19 pandemic has brought into sharp relief the importance of simple public health measures.

However, as we know, what happens earlier in people's lives matters. The evidence shows that tamariki Māori are more likely to move into rangatahi/adolescent oral health services with a greater burden of poor oral health because child oral health services have not met their oral health needs.

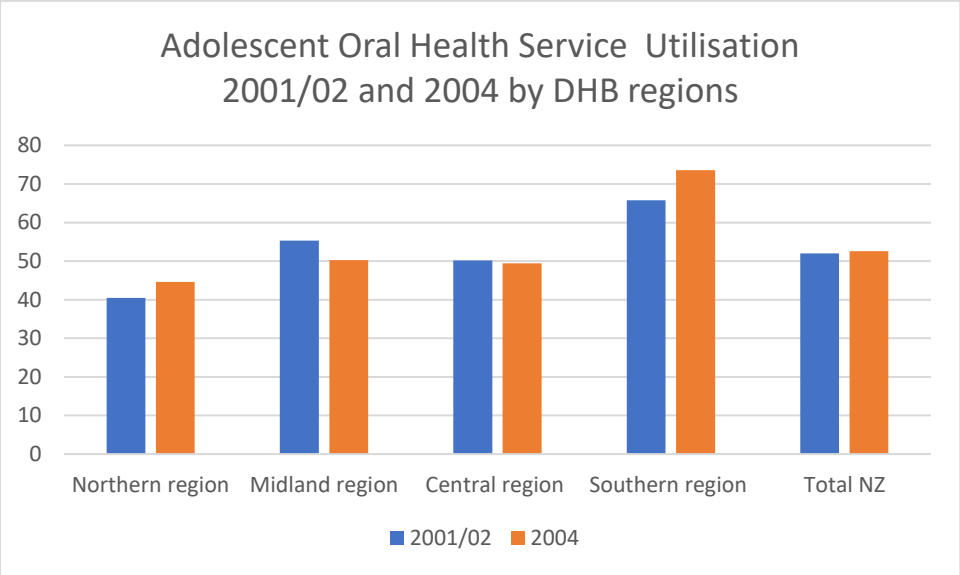
RANGATAHI MĀORI

What did the evidence tell us and what did we do?

Comparing caries free percentages between 5 year old children and School Year 8 children demonstrates that child oral health services can make a difference. However, there are a significant number of tamariki Māori transitioning into the Adolescent oral health scheme with a greater burden of oral health disease than their non-Maori contemporaries year on year.

The capacity issues that exist in the child oral health services have created a back-log of unmet oral health need for tamariki Māori and forwarded it to the Adolescent oral health scheme to address.

The graph below shows the proportion of adolescents in Aotearoa/New Zealand oral health service utilisation for the years 2001/02 and 2004 by DHB regions. The oral health service utilisation data is derived from billing data by private dentists to DHBs, it does not provide a comprehensive picture of the oral health status of adolescents. The data is not disaggregated by ethnicity.



Rangatahi Māori/ adolescents receive care from private dentists under the Combined Dental Agreement (the service agreement for the Provision of Oral health Services for Adolescents and Special Dental Services for Children and Adolescents) these services are free from School Year 9 up to and include age 17 years.

There were no significant changes in the funding or the model for the delivery of adolescent oral health service, except in the Māori Oral health provider sector.

Some Māori oral health providers took the opportunity forwarded in the strategy *Good Oral Health for All for Life* to deliver adolescent treatment services: Ora Toa Primary Health Organisation (PHO) based in Porirua, Te Taiwhenua o Heretaunga based in Hastings, Tipu Ora based in Rotorua, Raukura Hauora o Tainui based in the Tainui rohe (spanning the two DHBs of Waikato and Counties Manukau), and Te Hauora o Te Hiku o Te Ika in Kaitaia, Te Mana Toroa in Tauranga, Ngati Hine in Kawakawa and Ngāti Porou Hauora based in Tairawhiti.

Te Mana Toroa, one of the Maori oral health providers delivers oral health treatment services to approximately 40% (3,151 adolescents) of the 7,635 adolescents enrolled in colleges or high schools in the Tauranga area.

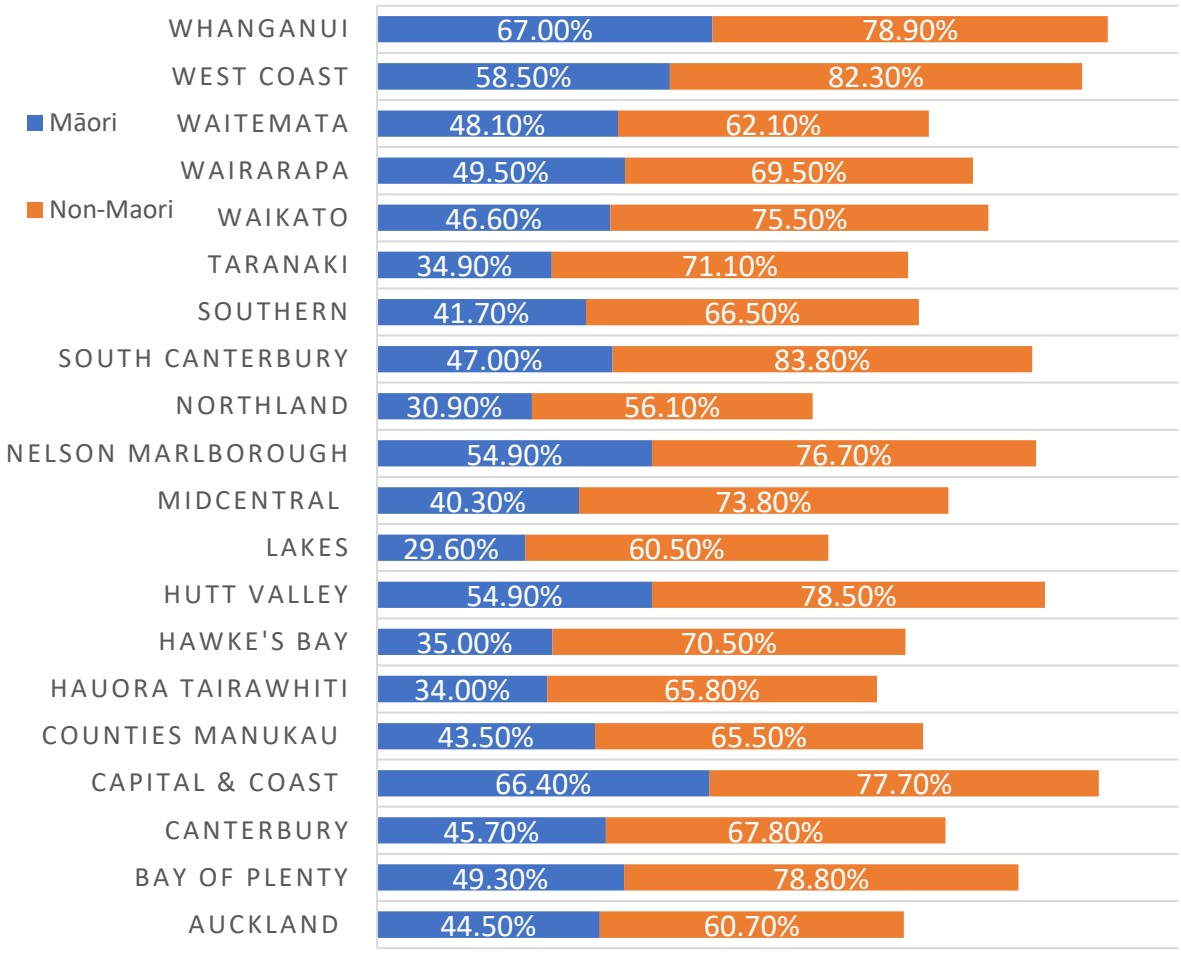
Ngāti Porou Hauora used to have both a mobile dental clinic and a dental facility based in Ruatoria, which delivered oral health treatment services to tamariki and rangatahi along the East Coast. Unfortunately Ngāti Porou Hauora had difficulty securing a dentist and has stopped delivering oral health treatment services. Tamariki and rangatahi living along that coast now travel to Gisborne to access oral health services, and there is concern that they may be missing out on services for which they are eligible.

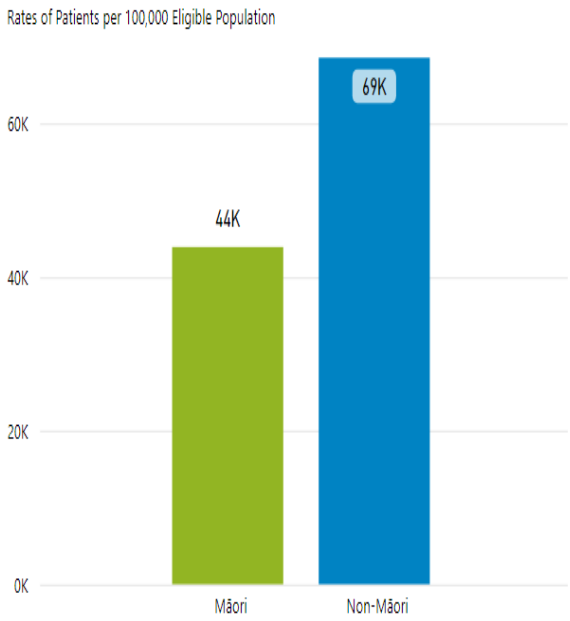
Ngāti Hine based in Kawakawa had both child and adolescent oral health services but has been forced to close because of the difficulties in recruiting and retaining dental staff, and the relationship with the DHB was difficult.

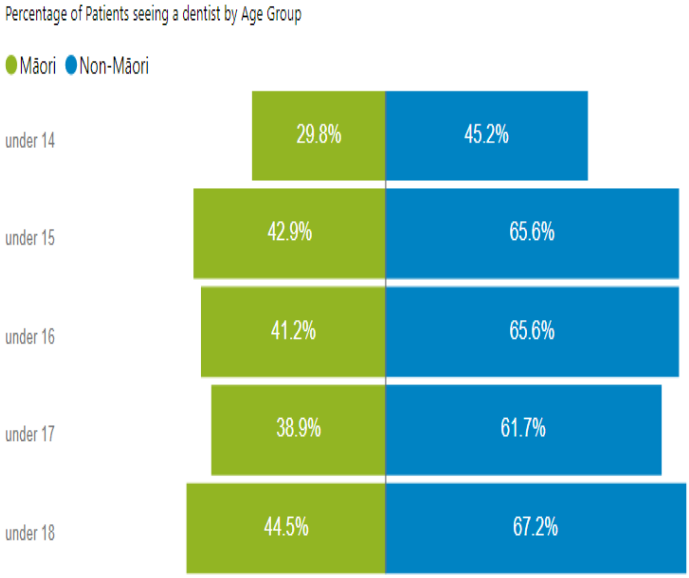
How successful were our actions in achieving equity for rangatahi Māori?

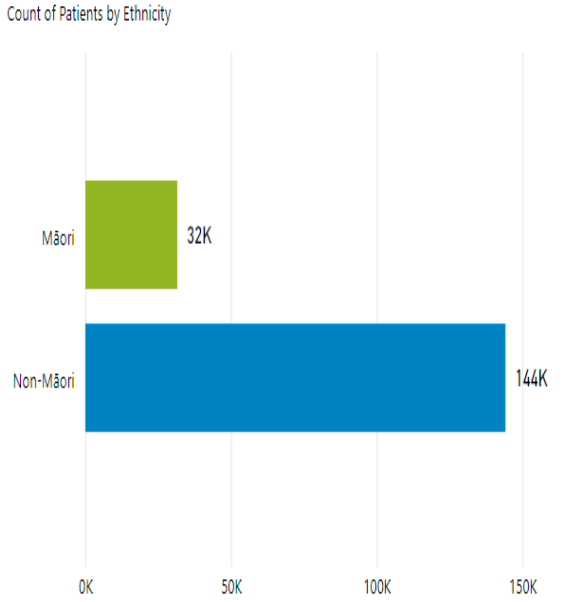
At a system level the graph below shows the proportion of Māori and non-Māori adolescents by DHB of domicile who visited a dentist in 2020. This is calculated by taking the number of adolescents that went to the dentist divided by the eligible population. The eligible population is defined by the MoH as half of the 13 year old population plus 14, 15, 16 and 16 year olds.

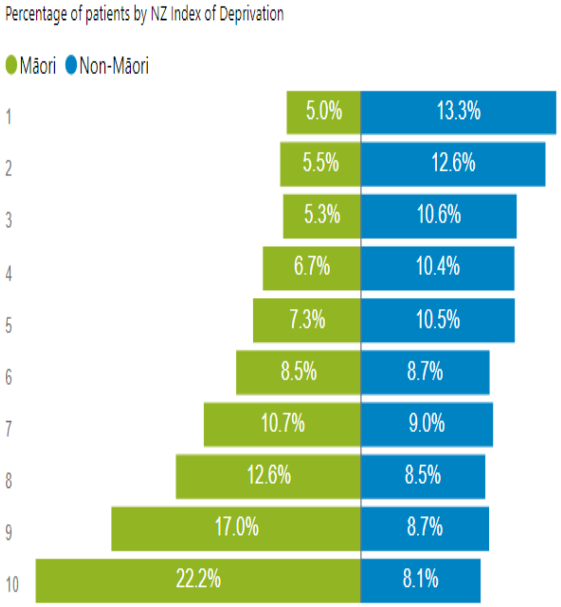
The percentage of Māori and non-Maori adolescents by DHB of domicile who went to the dentist in 2020.











The graphs above show the rate per 100.000 eligible population by Maori and non-Maori, percentage of Māori and non-Māori adolescents who visited a dentist by age group, count of patients by ethnicity and percentage of Māori and non-Māori adolescents by deprivation (NZDep).

Why do rangatahi Māori still have significant inequities in oral health outcomes compared to their non-Māori contemporaries?

It is impossible to quantify with any certainty how large or small the oral health status difference is between rangatahi Māori and their non-Māori contemporaries, though it would be safe to assume that there is a difference, given the significant number of tamariki Māori who have transitioned from child oral health services with existing oral health unmet need.

Routine disaggregated outcome data is not available the only data available is utilisation data derived from billing by private dentists of DHBs under the Combined Dental Agreement for oral health services for Adolescents and Special Dental services for Children and Adolescents (CDA).

In the Dental Council Workforce Analysis 2013 – 2015 report the distribution of dentists by DHB showed that there were more dentists per 100,000 population aged 15+ years in Auckland DHB and Southern DHB and a lesser number of dentists for that population in Westcoast DHB, Tairawhiti DHB, Counties Manukau and the Wairarapa DHB respectively. In the Dental Council Workforce Analysis 2018 – 2019 report the distribution of dentists remained the same except in Hawkes' Bay where the FTE per 100,000 population aged 15+ years in the 2012-13 report was 55.5 had fallen to 22.4 in the 2018-2019 report. The distribution of dentists in these districts does not meet the higher health need of the Māori resident in these DHBs. However, the distribution of dentists is not the only contributing driver of inequities for rangatahi Māori.

While government has invested in the child oral health services to improve access and outcomes for children, the model and funding package for the delivery of adolescent services has largely remained the same.

There is anecdotal information that adolescents are more likely to be accepted as patients by a practice if their parents are patients. As we know there are many Māori aged 18 years and over who do not attend routine maintenance oral health care because of costs.

The accountability processes, expectations and reporting are weak, there is a woeful examination of oral health outcome measures for both the child oral health services and the adolescent services. There needs to be greater scrutiny of outcomes and their link to public funding.

MĀORI ADULTS

What did the evidence tell us, and what did we do?

What happens in early life matters. We know that more tamariki Māori will transition into adolescent services with a higher burden of oral health disease, and that there will be more rangatahi Māori who will have missed out on the universal adolescent scheme, (compounding the burden) than their non-Māori contemporaries.

The impacts of the failings of the publicly funded child and adolescent oral health services are accumulative – at each point the impact for the individual compounds. It is inevitable that Māori adults will have poorer oral health and that this disease burden will worsen as they age.

Percentage of population accessing oral health services over the life-course 2012

	5 year olds	Year 8	Adolescents	Adults
Māori	58%	69%	44%	38%
NZ European	74%	86%	78%	52%
Difference	-16%	-17%	-33%	-14%

Source: Ministry of Health: NZ Health Survey StatsNZ 2012

There is growing evidence supporting the association between periodontal and chronic systemic diseases such as cardiovascular disease, type 2 diabetes mellitus, chronic respiratory conditions, adverse pregnancy outcomes and some cancers. Periodontal disease refers to the inflammatory processes that occur in the tissues surrounding the teeth in response to bacterial accumulations or dental plaque. Systemic means the condition affects the entire body rather than a single organ or body part.

The 2009 New Zealand Oral Health Survey found that people living in the most deprived areas were more likely to have lost all their teeth, to have more untreated coronal and root decay and more periodontal disease than people living in less deprived neighbourhoods.

The oral health status of Māori adults reflects a similar trend but there is a marked inequality across those variables when compared to the non-Māori population. Māori adults were 60% more likely to report one or more oral health impacts on quality of life than non-Māori, 20% less likely to have visited a dental professional in the past year, 30% more likely to have avoided dental care because of cost, and 50% more likely to have gone without recommended dental treatment due to cost.

With respect to chronic systemic disease the total cardiovascular disease mortality rate among Māori was more than twice as high as that for non – Māori. Māori were more than 1.5 times as likely as non-Māori to be hospitalised for cardiovascular disease. Chronic oral inflammation is emerging as a contributing factor in the aetiology of cardiovascular disease. Bacterial infection and the associated bacteraemia are significant causal factors in infective endocarditis among rheumatic fever survivors. The same process is an established cause of secondary infection and failure of major joint orthopaedic replacements. Oral sepsis is one reason for postponing or cancelling cardiac, vascular and orthopaedic surgery.

Māori adults were about 1.5 times more likely as non-Māori to have been diagnosed with diabetes after 25 years of age in 2013/14; that is, the self- reported prevalence of type 2 diabetes mellitus was about 50% higher than that for non-Māori (this may be an undercount as there is evidence that not all Māori who have type 2 diabetes mellitus will have been diagnosed). Oral sepsis is well established as a contributor to uncontrollable diabetes, working together diabetes worsens oral infections and the resultant infection and inflammation affects diabetic control.

In 2013/14 Māori aged 15 -45 years were more likely than non-Māori at the same age to be diagnosed with asthma. The chronic obstructive pulmonary disease (COPD) rate among Māori aged 45 years and over in 2010/12 was almost 3 times that of non- Māori in the same age group. The disparity was greater for females; Māori females had a COPD rate almost 3.5 times of non-Māori females.

The Health Quality and Safety Commissions report "*A Window on the Quality of Aotearoa New Zealand's Health Care 2019* found that Māori mothers and babies both have higher mortality rates, and Māori babies are more likely to be born pre-term.

Māori adults aged over 25 years and over had significantly higher cancer registration rates than non-Māori for all cancers in 2010/12. The total-cancer mortality rate among Māori adults was more than 1.5 times as high as that among non-Māori adults. Oral sepsis will complicate cancer therapies where the use of immunosuppressants will cause major oral cavity infections.

Long term oral sepsis and inflammation sets oral diseases on a collision course with systemic illness. Oral sepsis, both acute and chronic, can contribute to and magnify systemic diseases, evidence is accumulating that periodontal disease is a major contributor to inflammatory systemic disease.

In 2019, Compass Health: Tū Ora very low cost access (VLCA) Youth Council commissioned work to examine population health needs in low cost high needs practices compared to non-high needs practices across the network comprising 320,000 patients. There were six practices with a defined high need population – Māori, Pacific, and community service card holders (CSC). The findings identified that there is a concentration of complexity – people with multiple co-morbidities and social needs, in these practices, and the current funding model, workforce availability and infrastructure is insufficient to support the sustainable delivery of services to people who need care the most.

A disproportionate burden of oral health and inequitable access to oral health services for Māori adults means that Māori oral health providers often work with whānau with previous unmet and /or high oral health needs.

The work required to support such high needs people into an oral health service, and complete a treatment plan is often not recognised or adequately remunerated in contracts.

The vital role of oral health promotion has been routinely withdrawn over recent years.

Action Area 4: Build links with Primary Health Care in the strategy *Good Oral Health for All for Life* identified that the changes brought about by the Primary Health Care Strategy were timely for the re-orientation of oral health services. It called for co-ordination of care between difference services to ensure comprehensive disease prevention and management approaches. The strategy put forward that PHOs were ideally positioned to promote oral health to their enrolled populations and wider communities. There were three approaches suggested:

1. Directly providing oral health services
2. Partnering with DHBs and/or private dental practitioners
3. Equipping PHO practitioners with the knowledge and resources to support preventions and early intervention for oral health.

While dental services for adults (unlike general health services) are outside the system of publicly subsided health care, there are three programmes in place to assist low-income adults access dental treatment:

1. special needs grant (SNG) administered by Work& Income New Zealand *(WINZ)* is a one-off payment that helps people who are unable to pay for an essential or emergency cost. Dental treatment is one of the criteria for a SNG payment that falls under the classification of emergency costs,
2. an advance on a WINZ benefit to pay for dental care. This is recoverable and granted at the discretion of the individual case worker. It depends on the beneficiary's ability to repay the advance, and
3. publicly funded emergency dental care for relief of pain and infection

Special needs grant

The SNG programme provides financial support for people on low incomes who required urgent unbudgeted personal funding. This can be in the form of a one-off recoverable and non-recoverable financial assistance. Dental treatment is one of the areas in which a person can qualify for the grant.

Under the SNG programme people receiving a WINZ benefit can apply for a $300 grant once per 12 month period for emergency dental treatment. However, the amount and frequency of the grant may vary depending on any of the following:

- The dental problem
- Whether the person has a health condition
- The last time the person accessed a SNG for dental care
- The last time the person accessed a SNG for other special needs

Applications are assessed by a WINZ case manager based on the individual circumstances of each applicant. Approved applications are usually subject to one of the following conditions:

- Non- repayable
- Repayable (usually over a period at a set amount per week deducted from their benefit)
- Advance payment of their benefit (resulting in a reduced amount at their next benefit payment)

The SNG programme does not cover preventative dental care.

Publicly funded emergency dental care for relief of pain

Publicly funded dental services under the relief of pain contract (ROP) are offered to eligible people needing emergency dental care for relief of pain and infection, at DHB hospital based dental facilities or under a community based contract with private providers. To be eligible for this ROP dental care a person must be eighteen years and over and hold a CSC.

Emergency dental services include basic restorations and extractions, there is no provision for root canal work, preventive dental care, orthodontics, crowns, dentures, or maintenance despite the need being identified at the initial examination. The cost of emergency dental services to the patient is around 15% of the maximum schedule fee. Patients can apply to the WINZ SNG programme for help to pay the co-payment costs. There is no limit on the number of treatment visits per year.

Demand for hospital based dental care almost doubled from **10,232 in 2007 to 19,980 in 2010.** In 2010 hospital based dental treatment cost $39 million, (this includes inpatient care).

This paper does not cover the emergency dental care funding through the Accident Compensation Corporation (ACC) but it is important to note that ACC funded entitlement favours applicants with at least 5 years of verifiable continuous care, particularly for high cost procedures.

How successful were our actions in achieving equity for Māori adults?

Table: Dental visits and dental treatment indicators, by gender, Māori and non-Māori, 2013/14

	Māori			Non-Māori		
Indicator	Males	Females	Total	Males	Females	Total
Visited a dental health care worker in previous year (self-reported) 15+ years, percent, 2013/14	33.6 (30.2-37.1)	42.0 (38.5-45.6)	38.3 (35.7-41.0)	45.0 (42.9-47.1)	51.5 (49.3-53.7)	48.3 (46.7-49.8)
Usually only visits a dental health care worker for dental problems or never visits, among adults with natural teeth (self-reported), 15+ years percent, 2013/14	75.8 (72.0-79.2)	71.3 (67.7-74.6)	73.4 (70.8-75.8)	53.6 (51.2-56.0)	48.3 (45.7-51.0)	50.9 (48.7-53.0)
Had any teeth extracted due to decay, abscess, infection, or gum disease in previous year (self-reported), 15+ years, percent, 2013/14	8.2 (6.4 – 10.4)	10.3 (8.5 – 12.6)	9.4 (8.0-11.0)	6.0 (5.2-6.9)	5.6 (4.8-6.5)	5.8 (5.2 – 6.4)

1 data sourced from Community Oral Health Services and downloaded on 15 March 2020 from https://www.health.govt.nz/our-work/populations/maori-health/tatau-kahukura-maori-health-statistics/nga-mana-hauora-tutohu-health-status-indicators/oral-health
2. figures are age-standardised to the total Maori population as recorded in the 2001 Census
3. Prioritised ethnicity has been used

Comprehensive information about the oral health status of New Zealanders is not readily available. The last comprehensive Dental Health Survey of New Zealanders was completed in 2009, the above data was derived from Tatau Kahukura: Māori Chart book and is based on self-reported responses to questions in the 2013/14 New Zealand Health Survey.

The above table illustrates Māori adults were less likely than non-Māori adults to have visited a dental health worker in the past 12 months. Among adults with natural teeth, Māori adults were more likely than non-Māori to report that they had never visited a dental health care worker for dental health problems. Māori adults were more than 1.5 times as likely as non-Maori adults to have had any teeth extracted due to decay, abscess, or infection in the past 12 months.

The 2014 key findings from **the LiLACS NZ cohort study** on the oral health of people in advanced years Māori (aged 80 to 90 years) and non-Māori (aged 85 years) showed that:

- Three-quarters (76%) of people of advanced aged wore full or partial dentures. Significantly more women than men wore dentures
- Māori living in socioeconomically deprived areas were less likely to wear dentures than non-Māori living in socioeconomically deprived areas
- 24% of people of advanced age reported having difficult chewing; the most common reasons were poorly fitting dentures and missing teeth
- Less than a third of people of advanced age had visited a dentist in the previous 12 months. Māori were significantly less like to have visited a dentist (8%) than non-Maori (34%). People without dentures were more likely to have visited the dentist than those with dentures in the previous 12 months.

1. Data downloaded on 15 March 2020 https://www.health.govt.nz/publication/oral-health-advanced-age-findings-lilacs-nz
2. Kerse N. LiLACS NZ 2014. Oral Health in Advanced Age: Findings from LiLACS NZ. Auckland: School of Population Health, the University of Auckland.

The Māori Oral Health Quality Improvement Group (the Group) reviewed the three programmes designed to assist low-income adults access dental treatment and found they needed an overhaul.

The media reported In May 2015 that the amount being loaned to beneficiaries for emergency dental care had reduced from **$9,398,451** in **2011** to **$45,100** in **2014.** It is unlikely that the oral health needs for low income adults reduced during this time. It is not known whether the decline in spend was driven by an increase in declines (for whatever reason) or other policy decisions. However, there is concern that there has been an increase in the number of repayable approvals for emergency dental care resulting in beneficiaries making decisions to **not** access the SNG programme in favour of seeking funding for **other** pressing needs.

The Group found that unqualified WINZ case managers are declining SNG applications to cover the costs of emergency dental care.

The grant amount of the SNG programme has never been adjusted for inflation. It is known that the $300.00 SNG allocation does not cover the real costs of addressing the severity of oral health disease in this population group. Fixing teeth costs more than removing teeth, consequently beneficiaries and people on low incomes have few options available to them for the restoration or maintenance of their oral health. Government has committed to increase the SNG grant for dental to $1,000, a total funding package of $176 million. However, this new policy will not come into effect until a later stage.

There are problems with the publicly funded emergency dental care for relief of pain and infection. Not all eligible New Zealanders are able to access emergency dental services. Only 14 of the 20 DHBs provide hospital-based emergency services and it is unclear how the needs of those people living in the DHB districts that do not provide these services are being equitably managed.

The ROP specifications provide for the provision of services '...from facilities located at a public hospital or at a private dentist's facility'. DHBs are reluctant to shift these services despite evidence that transitioning emergency dental care for low income adults into the community will reduce costs and help DHBs live within their means. Demand for hospital based dental care almost doubled from **10,232 in 2007 to 19,980 in 2010.** In 2010 hospital based dental treatment cost $39 million, (this includes inpatient care). There are reports that DHBs are declining all referrals, even for those who are eligible with a CSC, due to growing pressures within the hospital to cater for medically compromised and vulnerable patients.

Māori oral health providers with the capacity and capability to provide these services have not been able to secure ROP contracts. This has essentially meant that their registered patients (these providers operate primary health care services) are not able to access an integrated comprehensive seamless model of general primary healthcare that includes oral health care. Despite the reluctance of DHBs to provide a ROP contract to support access to emergency dental provision in the community, DHB emergency will often refer patients to Māori oral health providers, because their low cost service model is more accessible than others in the community.

Why do Māori adults still have significant inequities in oral health outcomes compared to their non-Māori contemporaries?

The vision of the oral strategy *Good Oral Health for All for Life* was for an environment that promoted oral health. The strategy identified that oral health services needed to be better linked to general primary health care but this has not been achieved, despite compelling evidence of the association between periodontal and chronic systemic disease.

Preventive, restorative, or rehabilitative dental care is accessible to the affluent but generally unattainable to the less well-off. The NZ Population Economic Living Standard Scores 2008 identified that compared to the non-Māori population, Māori are more likely to have less disposable income and therefore diminished access to dental care. The impact is even greater for people with disabilities and much greater if you are Māori with a disability and live in a rural area. This can be further compounded for patients living in rural areas (such as Wairoa) where there are no dental services or

ROP, and whānau must travel long distances for dental care (relief of pain) at a hospital. There is anecdotal evidence that some patients have been declined.

SECTION 3.

MĀORI ORAL HEALTH QUALITY IMPROVEMENT GROUP

This section of the paper covers the activities of the Māori Oral Health Quality Improvement Group to develop and implement integrated models of health care, support the growth of a sustainable Māori oral health provider sector with a trained workforce that addresses Māori oral health inequities.

While the intent of *Oral Health for All for Life* was to establish links between oral health services and other health care services and increase the diversity of providers and models of oral health care this has not uniformly been achieved.

Most of the funding provided by Government to DHBs to upgrade SDS facilities and change the model of care were consumed by the DHB provider arm – the traditional provider of tamariki oral health services. Despite the recommendations from the Mauri Ora Associates review of Māori oral health providers, to grow a viable and sustainable Māori oral health provider sector, none of the DHBs directed any of this funding for facilities or equipment to support a viable and sustainable Māori oral health provider sector.

There remain clear divisions between oral and general health, largely the same model of oral health services and set of providers, resulting in inequity and a quality chasm in oral health for Māori tamariki, rangatahi and adults.

Māori Oral Health Providers

There have only been three planned developments of Māori oral health providers. In 1997 the Māori Health Development Commission (one of four such entities in the social sector established as part of the coalition agreement between the National Party and New Zealand First) established four Māori health providers to deliver a full range of oral health treatment services for Māori tamariki. The four providers were Ngāti Hine (Hauora Whānui) based in Kawakawa, Te Taiwhenua o Heretaunga based in Hastings, Tipu Ora based in Rotorua and Raukura Hauora o Tainui based in the Tainui rohe (spanning the current two District Health Boards of Waikato and Counties Manukau).

In 2006, the MoH provided one-off funding of $1.3 million to six Māori health providers to purchase dental caravans and up-grade or purchase dental equipment and refurbish dental clinics. The DHBs provided the on-going services funding for some of those providers. These providers have been able to access funding from the Māori provider development scheme to upgrade their dental equipment as required. Noting that all other providers call on this development scheme and the amount available ($10 million GST inclusive) has not increased since 1997 when it was established.

In 2009, the **Māori Oral Health Quality Improvement Group** (the Group) was established by the MoH to assist existing and new Māori oral health providers to quickly develop the clinical, management and financial capability to operate in the oral health environment.

The group continues to provide that support and in addition provides advice and strategic direction to the sector on the quality of care and service planning that will address the oral health inequities that exist for Māori, and low income whānau. The Group comprises representatives from eight Māori oral health providers: Te Runanga o Toa Rangatira (Ora Toa PHO), Ngāti Porou Hauora, Te Taiwhenua o Heretaunga, Tipu Ora, Raukura Hauora o Tainui, Ngāti Hine (Hauora Whānui) Te Hauora o Te Hiku o Te Ika and Te Mana Toroa a member of Ngā Mataapuna Oranga PHO.

Snapshot of the Māori Oral Health provider sector 2017

Total Māori Oral Health provider enrolled population	38,979
Total active dental patients	31,916
Total patients seen for an appointment in the previous two years	17,142
% of Māori health clinical workforce	57%
Total dental chairs	27
Total Staff	57
Total FTE	44.2

This is not a complete picture of all the Māori oral health providers operating

- Tipu Ora, Te Taiwhenua o Heretaunga and Te Manu Toroa information is not included in the provider enrolled population
- Te Taiwhenua o Heretaunga active dental patient numbers were not included

In 2018, there was a combined total of 29,094 patients enrolled with Māori oral health providers The sector has a combined total of 28 dental chairs, with an average utilization of 74%.

Māori oral health poviders face challenges in recruiting and retaining a suitable and sustainable clinical workforce. From 2015 – 2018, the Māori Oral Health provider sector had a total of 16 vacancies. Dental Therapy and Non-Clinical staff had the highest number of vacancies during this time. In 2018 the number of dentists employed by Māori Oral Health providers had decreased to 13, down from 21 in 2015. The number of dental assistants had also declined from 32 in 2015 to 22 in 2018. The average length of time to recruit to vacancies was 3 months for dentists, 2 years for dental therapists, and 1-2 months for dental assistants.

Attracting new staff that "fit "in the Māori oral health provider setting and reflect the community they serve is challenging. There is an uneven playing field in terms of remuneration and conditions of employment for oral health staff working for Māori oral health providers compared to DHBs and private practice. DHBs are able to pay higher salaries with better conditions while private practice can often offer even better remuneration and opportunities for new graduates .

The rural and /or isoated location of several of the Māori oral health providers has been a barrier recruiting and retaining dentists. While most DHBs and private practices are able to supervise and mentor junior staff, in rural and isolated locations it is more difficult to provide this career development support, making new graduates less well suited to working in a Māori oral health provider. Internationally trained experienced dentists are well suited to the Māori oral health provider environment but dentists have been removed from the Essential Skills Immigration list making international recruitment difficult.

Ngā Ara Tika -Integrated Practice Guidelines for Māori Oral Health Providers in the Primary Care Setting

In 2013, the Integrated Practice Guidelines for Māori Oral Health Providers in the Primary Care Setting were developed and trialled in two Māori oral health providers: Te Runanga o Toa Rangatira Inc (Ora Toa PHO) and Ngāti Hine (Hauora Whānui) Kawakawa. Four main areas were identified where integrated practice could happen :

- **Knowledge integration**: the management and sharing of information between oral and primary care health practitioners to inform patient decision making
- **Physical integration:** the co-location of primary care and oral health facilities to improve clinical care pathways and patient accessibility
- **System integration**: processes that facilitate integration and appropriate care pathways
- **Focus integration:** the shift that needs to occur within the organisation to facilitate change toward integrated service delivery.

Formative Evaluation of Ngā Ara Tika

In 2014 a formative evaluation of Ngā Ara Tika was conducted, the purpose was to:

- determine the uptake of the guidelines
- provide rationale for any changes to the implementation plan, and
- collect baseline data.

The formative evaluation found that there was high staff buy-in across both the oral and primary care teams for integrated practices, and a willingness to work together to improve patient care. There were two main barriers identified that undermined the implementation of integrated practices:

- the costs of dental treatment relative to the resources of whānau, and
- information technology limitations and the impact on practitioner ability to share patient information to support clinical decision making.

Process Evaluation of Ngā Ara Tika

In 2015, a process evaluation took place to determine how well integrated practices had been embedded in the providers, what had changed, the extent that referral pathways had been embedded, and the impact on patient care management.

A mixed methods approach was used including, a staff survey, workshop hui, key informant interviews, and feedback/discussion from the workshop itself.

The process evaluation showed that while staff across all disciplines valued integration, staff knowledge, training, and practices to support integration between oral health and primary care had not been embedded well within the providers.

The report provides information about the evaluation, presents, and discusses the findings, and makes recommendations for improving uptake and success of integrated practice within oral and primary care.

Review of Oral Health provisions for people on low incomes

In 2016 the Group reviewed the oral health provision for low-income whānau and found that current provisions were not adequate to address the growing oral health needs of a population who carry a greater risk of poor oral and general health outcomes. The review covered three main areas and have been included in more detail in the section under Māori adults.

The Māori Oral Health Equity Action Plan 2019

The first action in the development of the plan was initiated by the convening of a **Think Tank** in December 2018 by the Group in partnership with Te Ao Marama (the Māori Dental Association) of representatives from the oral and general health sector. The purpose of the think tank was to identify priorities and activities to guide the oral health sector on actions to achieve equitable oral health services and outcomes for Māori across the life-course. Also progress an integrated oral and general health model in the primary health care environment.

The key questions that the think tank considered were:

- What should the sector do to increase oral health as a priority for the Government/MoH/DHBs?
- In which areas can we make positive change quickly (“low hanging fruit”) and how?
- What urgent changes are needed to get better traction on improving equitable oral health outcomes for Maori?

The outcome of the think tank was the **Oral Health Equity Improvement Matrix** (the matrix) which was widely circulated in the sector for feedback. A copy was presented to the Hon. David Clark on 7 March 2019, and forwarded to the MoH for comment.

A **National Māori Oral Health Equity Symposium** held over two days in October 2019, provided a further opportunity to gather sector-wide input on the matrix priorities and activities. The symposium had wide representation from the health sector, Māori health and other non-health sector stakeholders.

The Hon. Peeni Henare opened the symposium, key-note speakers for the first day were Professor Sir Peter Crampton, the previous Dean of the University of Otago Medical School, a professor of public health in Kōhatu the Centre for Hauora Māori at the University of Otago, and Dr Camara Jones an American physician, epidemiologist, and anti-racism activist who specialises in the effects of racism and social inequalities in health. Moana Jackson, a Māori lawyer specialising in Treaty of Waitangi and constitutional issues, and director of Ngā Kaiwhakamarama i Ngā Ture was the key -note speaker on the second day.

Interspersed across the two days were facilitated workshops covering these topics:

1. Achieving an equitable oral health system
2. Responsive oral health services/greater sector accountability
3. Systems services and workforce,
4. Participation

Following the symposium an expert advisory group analysed the documentation and recorded discussions from the symposium workshops and identified the main priorities to focus efforts over the next three years .

Throughout the development of the action plan, the feedback from the sector has been clear, urgent change is required at multiple levels to achieve equitable oral health outcomes for Māori. The action plan sets out the direction, and identifies system and service level interventions, priority areas for improvement, and identifies who in the sector would be responsible for giving effect to those actions.

The completed **Māori Oral Health Equity Plan** was sent to the Hon. Dr Clarke, and the Ministry of Health and released by the Group in December 2019.

WORKFORCE

Establishing a stable and competent clinical team is integral to service and clinical quality for any provider. The acute shortage of Māori in the New Zealand's oral health workforce and the wider overall shortage of dental therapists and oral health clinicans has an adverse impact on all oral health providers.

The following table derived from the Dental Council Report: Workforce Survey Analysis 2009 provides an overview of the oral health workforces based on data from the Dental Council registration system, workforce survey data collected from oral health practitioners and graduate data from the universities offering dental -related programmes. Data from the universities has not been used in the table below.

Workforce	Registered	Practicing	Māori	Female	Male	mean age
Dentist and Dental Specialist	2267	2034	55 (2.8%)	711 (33.0%)	1387 (66.1%)	-
Dental Therapist	679	647	74 (11.4%)	630 (97.4%)	15 (2.3%)	49.3 years
Dental Hygienist[1]	423	378	17	371	7	41.1 years
Dental Technician	387	346	9 (2.6%)	77 (22.3%)	265 (76.8%)	47.0 years

[1]anaysis and interpretation of the hygiene workforce is complicated by the existence of three main types of workers (dental hygienist, dental auxiliiaries (this scope closed in 2009 but data remains in the register and are included here for completeness), and orthodontic axillaries.

In 2015 Māori made up 5.4% (229) of the total practicing oral health workforce with the largest group being dental therapist (11%) followed by dental hygienists and orthodontic auxilliaries (6.8%) with dentists at 3.1%. These numbers are well below the national Māori population of 14.9%.

What has the Group done?

Primary care based dental training.

In 2012 Otago University changed the dental training curriculum to include a primary healthcare based placement for final year (fifth year) dental students to expose them to a broader understanding of primary healthcare. DHBs were reluctant to provide that facility without significant funding from the University of Otago.

Despite the lack of funding the Māori oral health providers saw this as an opportunity to:

- provide the students with a placement in a Māori cultural setting that provided a broad range of primary health care services, and
- attract and recruit future dentists.

Otago University was very supportive, but parts of the dental sector were not and laid racist allegations about the **cultural competence** of the Māori oral health providers.

It is difficult to provide unequivocal evidence that this response from the dental sector has led to a reduced commitment and support of the Māori oral health providers by Otago University. However, the University has built two 'community' facilities in Dunedin and Counties Manukau, provided placements for students in the Pacific, established Pacific providers and reduced the use of the Māori oral health providers.

The Voluntary Bonding Scheme

In 2009 Health Workforce New Zealand (HWNZ) established the Voluntary Bonding Scheme. The purpose of the scheme was to incentivise newly graduated health professionals who are starting their career to work in eligible hard to staff communities or specialities.

The Group advocated for the scheme to include dentistry as an eligible profession, and proposed inclusion of Māori Oral Health providers as placement sites fitting the "hard to staff communities."

Dentistry was included in 2016 with 4 positions for Graduate Dentists specifically working in either a Māori Oral Health Provider or within a rural setting.

Māori Oral Health Workforce Implementation Plan 2018 – 2020 and the Māori Oral Health Provider profile.

The aim of the Māori Oral Health Workforce Implementation Plan was to lead efforts to recruit and train a high quality, culturally response oral health workforce, and to support the growth and sustainability of the Māori oral health provider sector.

The plan had four parts:

- Goal 1 : Growing the Māori oral health provider sector
- Goal 2: Training the Māori oral health provider sector
- Goal 3: Strengthening the oral health workforce
- Goal 4: Quality Māori oral health workforce information.

Has there been any change overtime?

The Dental Council Report: Workforce Survey Analysis 2018 and 2019 below when compared to the report of ten years ago the 2009 year report shows that there has been some growth in the number of Māori in the dental pracitioner workforce. However, the numbers are small, 34 more dentists, a combined total of 104 oral health therapist, dental therapists and dental hygienists in 2018/19 compared to a combined total of 96 in 2009 and 1 more dental technician.

Workforce	Registered	Practicing	Māori	Female	Male	mean age
Dentist and Dental Specialists	2969	2465	89 (3.6%)	1,290 (43.0%)	1,679 (57.0%)	45.1 years
Oral Health Therapy [1]	587	550	54 (9.8%)	495 (90.0%)	51 (9.3%)	30.3 years
Dental Therapy [2]	458	412	51(12.4%)	401 (97.3%)	11 (2.7%)	55.5 years
Dental Hygienist Orthodontic Auxillaries[3]	467	398	9 (2.3%)	387 (97.2%)	64 (2.8%)	46.0 years
Dental Technician and Clinical Dental Technicians	405	361	10 (2.8%)	113 (31.3%)	248 (68.7%)	43.9 years

[1] in November 2017, the Dental Council established a new oral health therapy scope of practice, eligible oral health graduates have been from the dental hygiene and dental health scope of practice

[2] since the above changes there is no dental therapy qualification in New Zealand and hardly any overseas dental therapists entering the profession, the decline in dental therapy scope of practice is expected to continue.

3 with no dental hygienist qualification available in New Zealand, and low numbers of overseas dental hygienists entering the profession, the decline in dental hygiene scope of practice is expected to continue

Dental Council in its 2018/19 workforce survey report provided a description of the Māori oral health practitioners workforce. Māori oral health practitioners make up 5.2% of the total workforce, there are 218 in practice, the mean age is 41.6 years, 75.2% are female and 24.5% male. Of the total Maori oral health practitioner workforce, dentists comprise 3.6%, oral health therapists 9.8%, dental therapists 12.4%, dental hygienists 2.3%, and dental technicians 2.8%. The largest proportional representation continues to be in dental therapy followed by dental oral health therapists but in absolute terms the largest group was in the dentist and dentist specialist group totalling 88 in 2018 and 89 in 2019.

Of the Māori oral health practitioners 30.3% of are self -employed , 8.3% in solo practice and 22.0% in group practice. 57.8% of Māori oral health practitioners are employees, 31.7% working for District Health Boards, 19.3% in private practices and 2.3 % working for an iwi/Māori oral health provider.

The age group distribution for Māori was skewed towards the younger age groups, with the 25 -29 age group being the largest (17.4%) . The geographical distribution of Māori oral health practitioners by territorial authorities and DHBs showed that for dentists the highest proportions were in Auckland and Waitemata DHBs, and the highest concentration in the North Island. The highest number of dental therapists reported was in Auckland as were oral health therapists and dental hygienists. Whakatane had the highest reported proportion of dental technicians and clinical dental clinicians.

The Dental Council Workforce Analysis 2018-2019 identifies that the distribution of the dental workforce is inequitable e.g. there are plenty of dentists operating in Auckland (64.8/100.000) but there are oral health workforce shortages in areas where Māori oral health providers operate (Hawkes Bay 22.4/100.000). For example, there is no adult dental service in Wairoa resulting in either a 90 minute drive to a dentist, transportation by air ambulance or Te Taiwhenua o Heretaunga dentists travelling two hours to service a hapū mama contract.

Primary care based dental training.

Over time smaller numbers of fifth year dental students are being allocated to spend their community based primary health care placements with Māori oral health providers. This is very unfortunate as very few will be provided with an opportunity to experience Maori settings, work with clinicians across a range of disciplines and learn about the possibilities of oral health services being integrated into primary care.

Māori Oral Health Workforce Implementation Plan 2018 – 2020 and the Māori Oral Health Provider profile.

Training institutions recognise the importance of recruiting more Māori into the oral health practitioner training programmes but their approach is passive support rather than active recruitment and pastoral care programmes.

Otago Medical School has robust affirmative action policies to make it easier for Māori to get into medical school. In 2010 about 10% of medical students were Māori or Pacifica, in 2016 the percentage had increased to 32% and in 2020 79 Māori and Pacifica students (39%) were accepted into first year medicine.

It is vital that Māori oral health providers are recognised and supported as an integral part of the oral health sector. Overall, an absence of a national oral health workforce programme with initiatives that focus on increasing Māori oral health practitioner numbers have led to the current work force crisis in the Maori oral health sector. While some initiatives are happening, they are disconnected and few of them are focused on Māori and oral health.

In the longer term increasing the number of Maori in the oral health professions through a career pathway that supports the development of a much larger Maori oral health workforce and at the same time ensuring a culturally safe and competent workforce overall is critical.

The Voluntary Bonding Scheme

There have been 3 newly graduated dentist who taken up the voluntary bonding scheme placements in Māori oral providers. In 2021 hard -to-staff communities for dentists are any of the listed eight Māori Oral Health Providers:

- Te Hauora o Te Hiku o Te Ika, Kaitaia
- Ngāti Hine Health Trust, Kawakawa
- Raukura Hauora o Tainui, Hamilton
- Te Manu Toroa, Tauranga
- Tipu Ora, Rotorua
- Ngāti Porou Hauora, Te Puia Springs
- Te Taiwhenua o Heretaunga, Hastings
- Ora Toa PHO, Porirua

SECTION 4

THE IMPACT OF COVID-19 AND THE TREATMENT BACKLOG

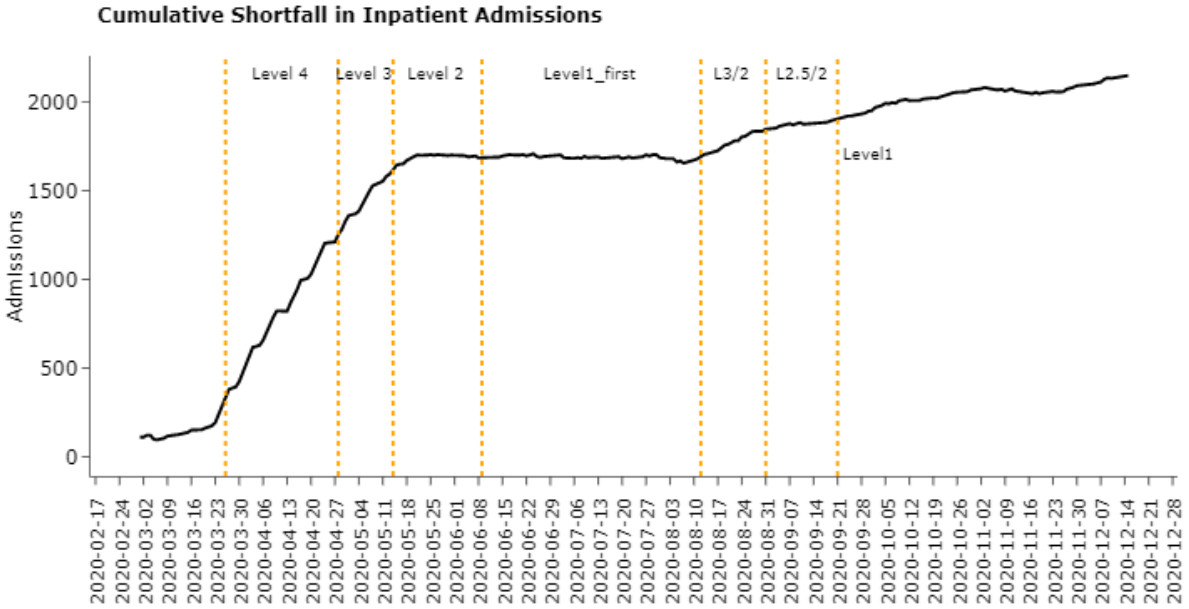
The Government's COVID -19 Elimination Strategy has meant that COVID – 19 morbidity and mortality rates for the Aotearoa/New Zealand population has been one of the lowest when compared to other nations. However, health commentators are reporting both internationally and nationally that the pandemic has exacerbated existing inequities. The "*Build Back Fairer: The COVID -19 Marmot Review* reported that the COVID -19 pandemic has exposed and amplified existing inequities in the United Kingdom.

The following very brief analysis draws out some measures from the Health Quality & Safety (HQSC) COVID tool. This tool runs on national collection data and uses granular and relatively sophisticated forecasting methodologies to estimate activity and compare this to actual activity – thereby estimating the reduction in activity during the lockdown period. The tool allows this to be calculated by patient age, ethnicity, DRG, admission type and DHB – this level of granularity allows much greater insight about who and what is in the "backlog". The following is an exercise in showing what it can do with dental surgery admissions (which include day cases) to hospital.

Dental surgery admissions to hospital during the lockdown period and beyond

The basic shape of the shortfall is identical for both the whole specialty (Fig 1) and waiting list as a whole (Fig 2) – a rapid emergence of the "lost" patients during the first lockdown, a very slight increase in activity during June and July, followed by increases in the shortfall from August onwards. Noticeably this pattern does not reverse following the lifting of the second lockdown in late September – in other words the backlog continues to increase. This can be shown by looking at the week by week percentage shortfalls for all dental surgery admissions (Fig 3) and waiting list admissions only (Fig 4). In broad terms, this "backlog" stands at around 2000 patients

Figure 1: Dental surgery hospital admissions shortfall between forecast and actual March to December 2020



Breaking this down, nearly all activity (and therefore all the reduction) is waiting list rather than acute. Something like 1500 (c 75%) “non-admissions” were from the waiting list.

Figure 2 Cumulative shortfall for waiting list admissions

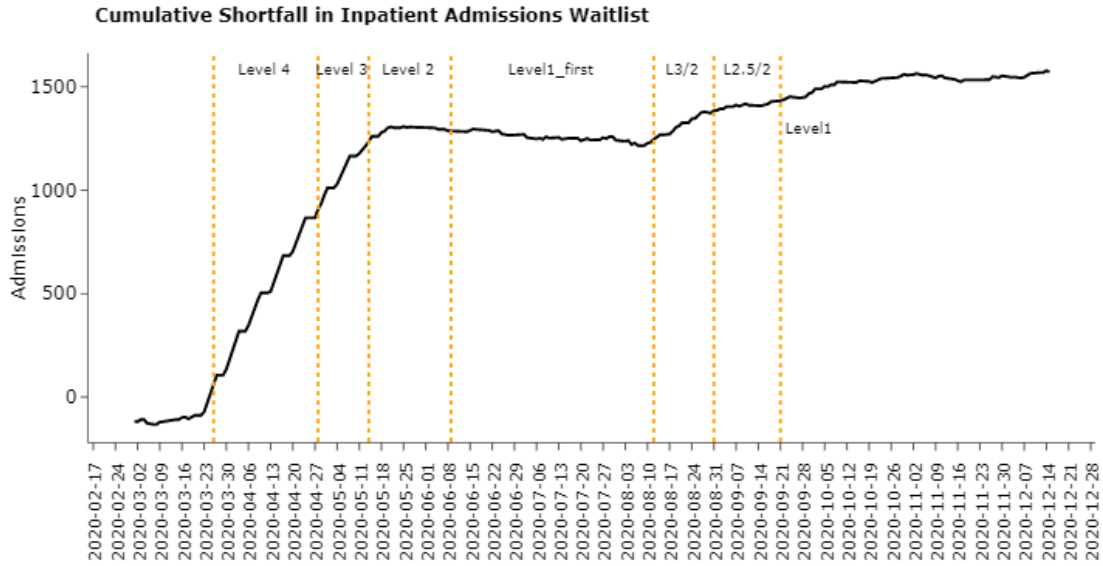


Figure 3 Weekly shortfall for all dental surgery admissions

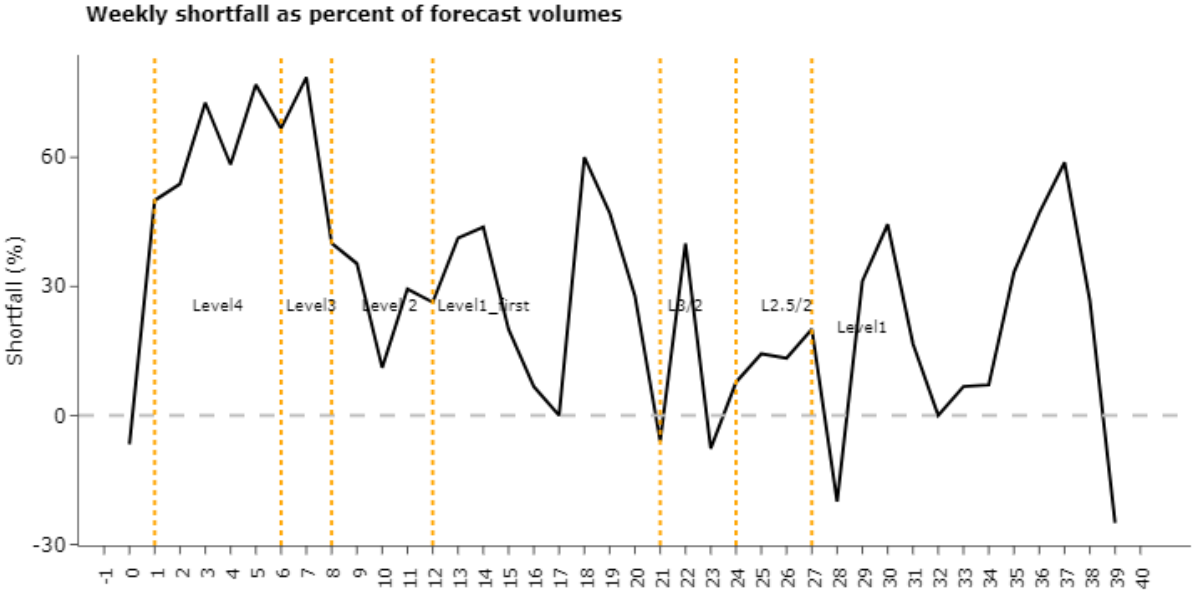
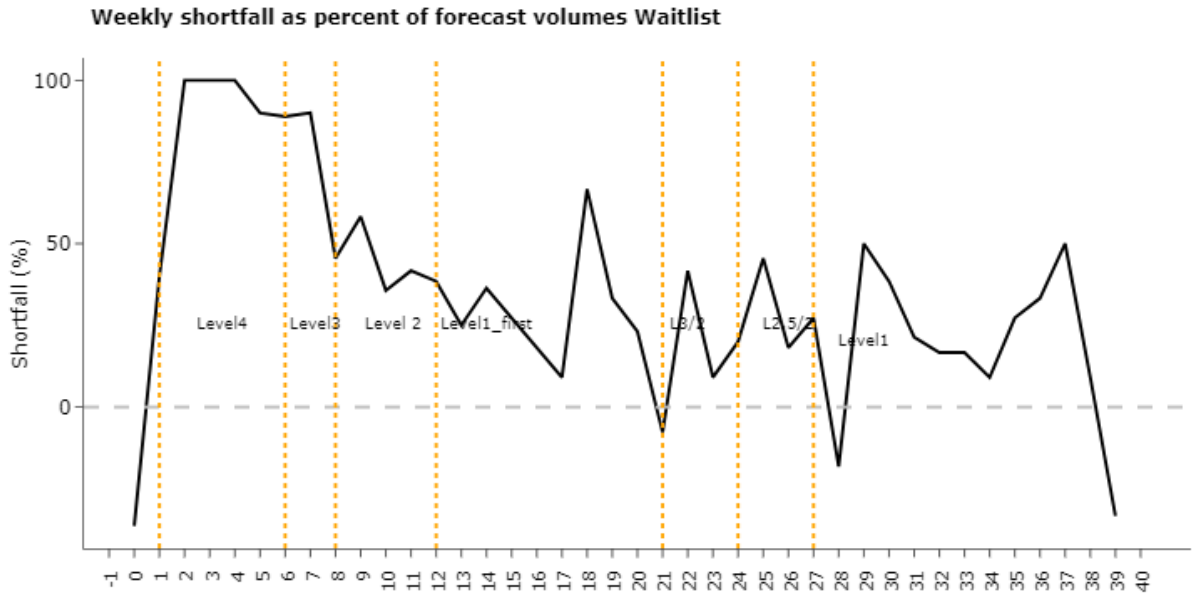


Figure 4 Weekly shortfall for waiting list admissions



Further, 75% of all the waiting list work and shortfall is dental extractions and restorations, although the relative shortfall percentage is greater for oral and dental disorders (see table 1) this accounts for less than 10% of the total shortfall.

Table 1 Waiting list admission shortfalls by selected DRGs

DRG	**Shortfall**	**Shortfall %**	**% of total shortfall**
Total	1680	20.7	100
Dental Extractions and Restorations	1271	17.9	75.7
Oral and Dental Disorders	155	34.8	9.2

And over 80% of the shortfall of dental extractions and restorations are for 0-15 year olds.

Table 1 Waiting list admission shortfalls by age group (dental extractions and restorations)

Age	**% of total shortfall**
0-15	81%
16-44	12%
45-64	5%
65-74	<1%
75-84	<1%
85+	<1%

Given this pattern, the rest of this analysis concentrates on waiting list dental extractions for 0-15 year olds

Waiting list dental extractions for 0-15 year olds

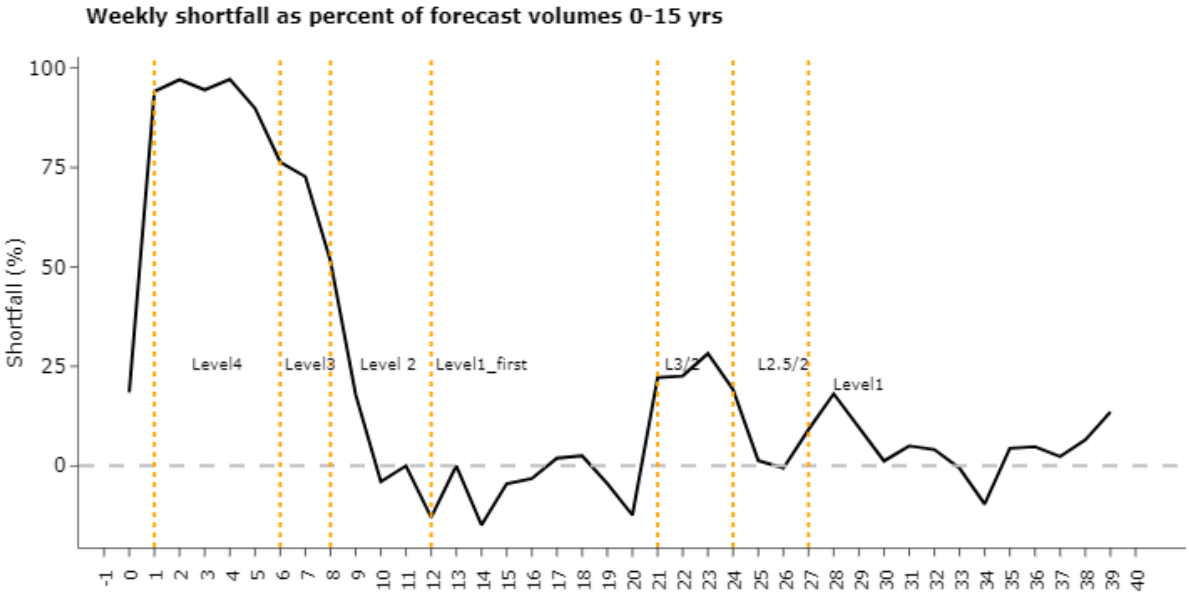
Considering this group of patients by ethnicity shows both that the historic trend is for considerably higher admission rates for dental surgery for Māori, Pacific and Asian a higher shortfall for all groups during the period. Expressed as a rate per 1,000 population the expected activity for Māori children would have been about twice as high as for European and Other (9.2 admissions per 1,000 population compared with around 4.7, while the "missing" activity based on historic trends has been just under three times as high (1.9 per 1,000 compared with 0.7). Similar, though less extreme discrepancies exist for Pacific and Asian children. It seems unlikely that the "missing activity" for dental extractions reflects a change in need for the service.

Table: Dental surgery admissions for waiting list dental extractions for 0-15 year olds by ethnicity (March to December 2020)

Ethnicity	Total shortfall	Total shortfall %	Expected activity	expected activity per 1,000 population	"Missing activity" per 1,000 population
Māori	502	21.1	2,377	9.2	1.9
Pacific	195	24.5	600	7.8	1.9
Asian	239	26.3	908	7.0	1.8
European/Other	305	14.6	2,092	4.7	0.7

Looking at shortfall by week for this cohort of patients there is a clear pattern of almost complete cessation of activity in the initial weeks with a return to just slightly higher than expected levels of activity on the move to level 2, eight weeks after the initial lockdown. This pattern continued until the second lockdown in late August. Since then the overall level of activity has never quite returned to expected historic norms (only one week in the last 16 has had more activity than anticipated)

Figure 5 Weekly shortfall for dental surgery admissions for waiting list dental extractions for 0-15 year olds (March to December 2020)

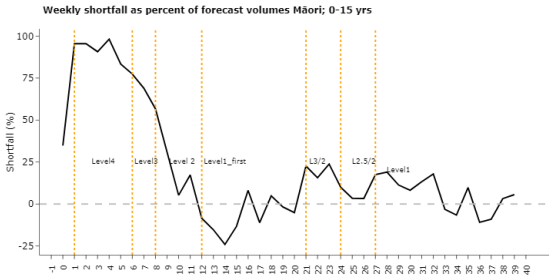


Looking at the shortfall by week for the different ethnic groups, while the patterns are broadly similar, it is fairly clear that the European and Other group return to normal levels of access much more quickly than other ethnic groups. In eleven out of 19 weeks since the start of the second lock down in August

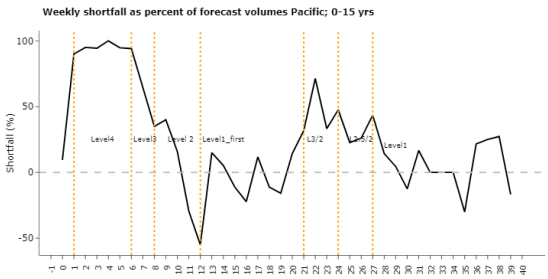
admissions for the European and other group were at the expected level or higher. For the other groups this level of admission was reached in only 4 weeks (for Māori and Asian) or 3 weeks (for Pacific) For both Asian and Pacific groups there is a clear higher shortfall during the period of the second lockdown – and this is likely to reflect a higher proportion of children in these groups living the Auckland metro area where level 3.

Figure 6 Weekly shortfall for dental surgery admissions for waiting list dental extractions for 0-15 year olds, by ethnicity (March to December 2020)

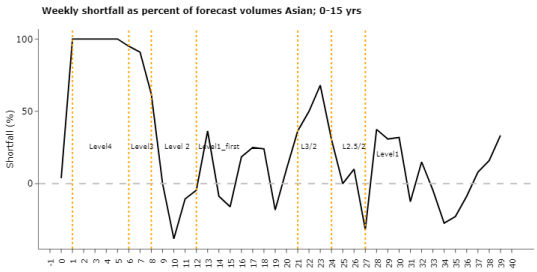
Māori



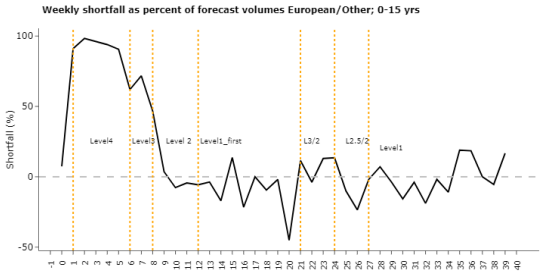
Pacific



Asian



European/Other



More generally this type of visualisation makes clear the relative scale of the cohort of displaced patients (effectively the area under the curve but above the "0" line) compared with the "bounce-back" (the area above the curve and below the 0 line, post week 10 in the overall presentation). In broad terms, as things currently stand, there is no chance of ever catching up with the "backlog" (this is a deterioration from the position six months ago, where catching up was theoretically possible in between one and two years on the then current trends of activity).

Essentially, it is hard not to conclude that even if the *status quo ante* before COVID was meeting community need (a probably heroic assumption), there is likely a cohort of around 1200 young people who need access to dental extraction or restoration who have not received it. These young people are disproportionately Māori, Pacific and Asian, and if current trends continue they will not have access to the care they need.