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*Strategic Workforce Services – Dental Service Workforce Assessment June 2017*
Executive Summary

The Workforce Strategy Group commissioned this workforce assessment to identify the current state, key trends and emerging issues impacting occupations within DHB the employed the Dental Workforce. The drivers for the assessment were that:

- No workforce assessment has been done to date on the various workforces within the dental workforce;
- Concern over the sustainability of the dental service workforce.

Occupations targeted within this workforce assessment are:

- Dentists (RMOs and SMOs)
- Dental Therapists
- Dental Assistants
- Dental Technicians (to a limited extent)

The key findings of the assessment are outlined below.

Service Demand

Demand for the Dental Service workforce is growing both in the provision of adult and child/adolescent care. Demand for adult services is also driven by an aging population with increased incidence of complex conditions and those who cannot afford private care. Population growth is also driving demand in the child/adolescent service alongside the push to increase coverage (particularly to pre-schoolers and those of high need). Poor dental health and delays in seeking treatment are impacting on both services.

There is some demand to extend hours for the child/adolescent service to improve access for patients e.g. Auckland Region Dental Service and Northland.

Workforce Supply & Operational Capacity

DHBs expressed concern with the supply of Dental Therapists to meet demand. Regional centres report difficulty filling vacancies and overall there are problems filling vacancies outside the graduation cycle i.e. in the middle of the year. DHBs are concerned with resourcing their child adolescent dental services in the future with 45% of the Dental Therapy workforce aged over 55. DHBs are also worried they will face difficulties attracting and retaining graduates who are now dual trained (i.e. in both dental therapy and hygiene) when service models do not generally include a hygiene service. DHBs are responding in a variety of ways locally to ensure future supply but considered overall they were not being successful.

DHBs report that the supply of Dentists is sufficient but there are issues sourcing Specialist Dentists, Oral Surgeons and Maxillofacial Specialists.

There was extra funding in 2008 that resulted in the recruitment of a large number of Dental Assistants to improve the capacity of Dental Therapists in the child/adolescent service. Since then DHBs report that there are no real issues recruiting Dental Assistants although there are some issues with attracting and retaining experienced staff.

The dental workforce had inadequate representation of Maori and Pacific People and it is surprising that there is not better representation amongst the Dental Assistant workforce.
**Operational Flexibility**

Regulatory requirements limit the procedures that can be performed by each occupational group. Dental specialties typically are not interchangeable with each other and require separate qualification and accreditation requirements.

DHBs report that there is scope for greater operational flexibility but it requires Dental Therapists to be able to be registered with both under 18 years old and adult scopes. There is also an emerging demand for more flexible employment arrangements from dual trained Therapists to enable them to practice dental therapy in the public sector and hygiene in the private sector.

**Workforce overview and demographics**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Headcount</th>
<th>FTE</th>
<th>Mean FTE</th>
<th>Mean Age</th>
<th>% Female</th>
<th>Mean Length of Service</th>
<th>Annual Turnover Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Assistant</td>
<td>613</td>
<td>533.2</td>
<td>0.87</td>
<td>45.8</td>
<td>96.2%</td>
<td>6.7</td>
<td>12.3%</td>
</tr>
<tr>
<td>Dental Technician</td>
<td>13</td>
<td>12.8</td>
<td>0.98</td>
<td>44.3</td>
<td>46.2%</td>
<td>12.5</td>
<td>10.5%</td>
</tr>
<tr>
<td>Dental Therapist</td>
<td>568</td>
<td>483.0</td>
<td>0.85</td>
<td>48.3</td>
<td>96.5%</td>
<td>14.4</td>
<td>12.2%</td>
</tr>
<tr>
<td>Dentist/Dental Specialist</td>
<td>128</td>
<td>75.9</td>
<td>0.59</td>
<td>49.7</td>
<td>47.7%</td>
<td>10.7</td>
<td>6.1%</td>
</tr>
<tr>
<td><strong>DENTAL SERVICE</strong></td>
<td><strong>1,322</strong></td>
<td><strong>1,104.9</strong></td>
<td><strong>0.84</strong></td>
<td><strong>47.2</strong></td>
<td><strong>91.1%</strong></td>
<td><strong>10.5</strong></td>
<td><strong>11.6%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Other Ethnicity</th>
<th>Asian</th>
<th>Maori</th>
<th>Pacific</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Assistant</td>
<td>73.1%</td>
<td>14.2%</td>
<td>9.0%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Dental Technician</td>
<td>66.7%</td>
<td>11.1%</td>
<td>22.2%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Dental Therapist</td>
<td>71.1%</td>
<td>17.0%</td>
<td>9.8%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Dentist/Dental Specialist</td>
<td>81.6%</td>
<td>13.2%</td>
<td>3.5%</td>
<td>1.8%</td>
</tr>
<tr>
<td><strong>DENTAL SERVICE</strong></td>
<td><strong>73.0%</strong></td>
<td><strong>15.3%</strong></td>
<td><strong>8.9%</strong></td>
<td><strong>2.9%</strong></td>
</tr>
</tbody>
</table>

*Excludes Counties Manukau DHB who do not directly employee Dental Service employees. Auckland DHB manage a regional service which includes the Counties Manukau DHB catchment area. Excludes an estimated 40 Dental Resident Medical Officers (headcount). See section 12 for further details.*
Summary

The key statistics suggest:

- **Dentists/Dental Specialists** a gradually increasing but ageing (40% > 55 years old) and part-time workforce, with very low turnover and a balanced female and male representation. There is under-representation of Maori and Pacific ethnic groups relative to the resident population and varying regional distribution relative to other dental service occupations. The number of APC have gradually increased since 2006, with new registrations evenly split between NZ and Overseas graduates and a steady supply of graduates since 2012. 4.4% of Dentists/Dental Specialists indicate a DHB as their primary area of work (2011). ‘Dentist’ features on the Immigration New Zealand Immediate Skills Shortage List of occupations for all Northern region DHBs.

- **Dental Assistants**, the largest and an increasing workforce is predominantly female with an average age of 46 years, a shorter length of service relative to other Dental Service occupations, varying turnover and working close to full-time. The Northern Region DHBs have seen the greatest increase in Dental Assistants in the last six years, albeit the increase brings it into line with the dental service occupation distributions of other regions. Nationally Dental Assistants are increasing in their representation across the whole dental service workforce. There is under-representation of Maori and Pacific ethnic groups relative to the resident population.

- **Dental Therapists**, the second largest dental workforce occupation shows little change in FTE/headcount since 2010, is predominantly female, have an average age of 48 years (45% over 55 years old), with the longest length of service relative to other Dental Service occupations (14.4 years), stable turnover and working close to full-time. There is under-representation of Maori and Pacific ethnic groups relative to the resident population. The number of APC have increased 43% since 2006, with new registrations predominantly from NZ graduates. 77% of Dental Therapists indicate a DHB as their primary area of work (2011).

- **Dental Technicians** a stable workforce small in size, employed only in large DHBs, with low turnover and a balanced female and male representation. They have the youngest age distribution of all Dental Service occupations, are under-representative of Pacific ethnicities but over represented relative to the resident population. The number of APC have remained mostly unchanged since 2006, with new registrations predominantly from NZ graduates and a reduction in domestic registrations in Dental Technician degrees since 2012. 14% of Dental Technicians indicate a DHB as their primary area of work (2011), and since 2012 there has been 50% reduction in domestic enrolments to Bachelor of Dental Technology degrees. ‘Dental Technician’ also features on the Immigration New Zealand Immediate Skills Shortage List of occupations for all New Zealand regions.
Recommendations

It is recommended that the Workforce Strategy Group consider the following actions in relation to the DHB employed Dental Service:

Request the Directors of Allied Health to:

- **Maori and Pacific representation:**
  1. Review current practices and consider how we could attract more Maori and Pacific towards a career in the Dental Service.
  2. Write letter to AUT and Otago Universities seeking information on what they are currently doing to increase Maori and Pacific enrolments to Oral Health Therapy Degrees and how this could be improved by measures such as preferential entry.

- **Supply, Recruitment and Retention of Dental Therapists:**
  3. Monitor the supply of Dental Therapists and consider ways that training institutions could increase enrolments in dental therapy courses.
  4. Support a national position for an accredited scope of practice for Dental Therapists (under 18 and Adult scopes) and advise the NZ Dental Council of this agreed national position.
  5. Consider how dual trained Dental Therapists (Therapy and Hygiene) can utilise both their scopes of practise to prevent recruitment and retention barriers in the future.
  6. Consider ways which enable staff to work part-time when returning to work following parental leave or to support staff to perform hygiene scope in private clinics.
  7. Seek HWNZ agreement to include Dental Therapists on the Voluntary Bonding Scheme especially for high need locations that consistently have trouble recruiting and retaining staff.
  8. Consider standardising professional development opportunities.
  9. Share local initiatives that have successfully been used to aid recruitment, retention and succession planning of Dental Therapists that could be applied regionally/nationally.
  10. Repeat workforce assessment for just Dental Therapists in two years to monitor the ongoing status of the workforce and the progress of initiatives suggested above.
  11. Note that the SWS Team are undertaking further forecasting and analysis to understand the likely changes to the supply of Dental Therapists over the next 5-10 years.

- **Supply of Dental Specialists:**
  12. Liaise with Health Workforce New Zealand about the supply and funding for the training of:
      - Maxillofacial Specialists
      - Special-needs Dentists
      - Oral Medicine Specialists
      - Oral Surgeons
  13. Explore ways that regional sharing of resources could occur specifically for dental specialties.

- **Immigration New Zealand Essential Skills Shortage List:**
  14. Consider the requirement for having Dental Technicians on the NZ Immigration Skills Shortage List.
1. Purpose

The purpose of this paper is to provide an overview of the current state of the various occupations within the DHB employed dental service and recommend actions for the development of these workforces DHB feedback and workforce information.

The report has been developed in consultation with the Directors of Allied Health and was presented to the Workforce Strategy Group (WSG) in August 2017.

Background / Context

Ongoing health workforce development is a key accountability for DHBs and has a significant impact on DHB outcomes. WSG has an operational governance role over 20 DHB workforce activity and has mandated a range of advice to ensure that workforce planning via Strategic Workforce Services (SWS) is well supported.

The purpose of the operational advice is to ensure that annual workforce planning processes have the required level of workforce analysis, wherever additional focus or information is required. It is about improving overall accuracy of information to this group in order to allow informed decisions to be made regarding any potential intervention required. The purpose is to identify any staffing capacity and/or capability issues related to DHB operational delivery and/or service development needs; some of which may be addressed through the annual WSG workforce work planning process.

The catalyst for this paper comes from the annual planning process directly.

Scope of this report

This paper contains a summary of information that is predominately on DHB employed workforces that make up the dental service. The DHB dental service consists of the following occupations:

- Dentists (RMOs and SMOS);
- Dental Therapists;
- Dental Assistants; and
- Dental Technicians.

Please see Dental Service Occupation Codes (ANZSCO) table on page 34 for details on each occupation.

A small amount of information has also been included on the non DHB employed workforce. Sources for this information are contained in the body of the report.

Note that in July 2017 the New Zealand Dental Council also released its own Workforce Analysis Report for 2013-2015 (available from the DCNZ website). These statistics were not considered as part of this assessment.
Dental Service Workforce Overview

This section provides a snapshot of the DHB workforce as at 30 September 2016:

- Increasing number of Dental Service employees, especially Dentist/Dental Specialists and Dental Assistants (HWIP trend analysis from 2010 to 2016).
  - The number of Dental Technicians and Dental Therapists has remained constant over the period.
  - Excluding Dental RMOs, Dental Assistants account for around 46% of employees, Dental Therapists 43%, Dentist/Dental Specialist 10% and Dental Technicians 1%.
  - 13 Dental Technicians are employed nationally (September 2016) and are only employed across 5 DHBs.
  - Data sourced from DHB payroll show there are 34 Dental House officers and 6 Dental Registrars employed in DHBs as at 31 December 2015.

- The FTE per 100,000 resident population has remained constant for Dental Technicians (since September 2010). Dentist/Dental Specialist sit at 1.6 FTE per 100,000 national resident population (Sep-16). Dental Assistants have nationally seen a gradual increase (since 2010), with the Northern Region DHBs FTE per 100,000 local population increasing to become ‘on par’ with the other regions. Only the FTE per 100,000 population for Dental Therapists has remained flat in terms of growth, with the Southern Region DHBs rate being the lowest of the four regions.

- Although there have been varying increases in FTE by region, the distribution of occupation types remains similar across the four regions. Small variations include the Southern Region DHBs employing proportionally more Dentists/Dental Specialists than the other regions – closely followed by the Central Region DHBs. All regions have observed a proportional decrease in Dental Therapists and little change in Dental Technician distribution.

- Mean FTE (part-time status) across all Dental Service occupations has remained constant in the last 6 years. Dentists/Dental Specialist as at September 2016 have a Mean FTE of 0.6, Dental Assistants and Therapists around 0.85 and Dental Technicians around 1.0.

- The annual year to date turnover rate has been between 6%-16% from 2010 to 2016 for Dental Therapists and between 5%-25% for Dental Assistants. Dental Technicians and Dentist/Dental Specialists are excluded from the long-term analysis due to the small number of employees. The turnover is based on employees leaving their position and could well include movement between DHBs.

- The mean length of service has been increasing across all Dental Service occupations; the highest observed in Dental Therapists at around 14 years, the lowest in Dental Assistants at around 7 years.

- The average age for all Dental Service occupations has been increasing, except for Dental Therapists that has seen a gradual decrease since March 2015. With the increase in average age also comes an increase in the percentage of employees over 55 years old. Dental Therapists have around 46% of the workforce over 55 years old, Dentist/Dental Specialists are around 40%, Dental Assistants and Dental Technicians both around 25% and 23% respectively.

- A large proportion of the Dental Service occupations are classified as ‘Other’ ethnicity (73.0%) followed by Asian, Māori and Pacific groups with ratios of 15.3%, 8.9% and 2.8% respectively.

- The difference between workforce ethnicity and population ethnicity proportions indicates under-representation of Māori and Pacific ethnic groups in the workforce.
• The proportion of females to males has remained high, with a predominantly female workforce in Dental Assistants and Dental Therapists (>90%). Dental Technicians is around 67% female and Dentists/Dental Specialists are around 48% female. New entrants to all the Dental Service occupations are increasingly more male.

• The Regulatory Authority, the Dental Council of New Zealand reports a steadily increasing number of Annual Practising Certificates issued since 2006, with a 4.5% increase seen between 2015 and 2016. The largest growth has been seen in Dental Hygienists and Therapists, with a smaller increase in Dentists and Technicians.

• Most additions to the Dental Council of New Zealand Register across all the professions were New Zealand educated practitioners, although for Dentists, New Zealand practitioners account for 54%. Dental Council’s 2011 Workforce Analysis report indicates around 5% of all Dentist/Dental Specialist are employed in DHBs, 77% of Dental Therapists are employed in DHBs and 4.6% of Dental Technicians are employed in DHBs or Ministry of Health.

• Data from the Tertiary Education Commission shows that the number of enrolments across all Dentistry degrees has remained at similar levels since 2010 so it would be reasonable to expect to see similar overall numbers in the number of completions until 2020. There has been a significant decline since 2012 in domestic Bachelor of Dental Technician degrees for domestic students.

• Data from Immigration New Zealand shows that Dental Technicians and Dentists are contained in the Immediate Skill Shortage List (LTSSL).
2. **Current Status of the DHB Dental Service**

**Assessment of the Occupations within the DHB Employed Dental Service**

The current status of DHB employed dental service workforces were assessed by DHB Allied Health Directors, Allied Health Service Managers, Allied Health Team Leaders, Dental Team Leaders, Human Resources Managers, Dentists, Therapists, Assistants using a structured screening tool.

The screening tool assigns a score to the workforce being considered according to:

1. **Service Need** - the operational stability/instability of the service;
2. **Supply** - demographic factors impacting on the overall availability of this workforce;
3. **Operational Flexibility** - operational flexibility around this workforce for service delivery and innovation; and
4. **Operational Capacity** - recruitment and retention.

The purpose of the screening tool is to provide an overall assessment of the workforce to highlight any pressures impacting on the workforce operationally and/or in the context of wider planning processes. Results of the screening, place the workforce in one of 4 categories as shown in the figure below. Results should be considered indicative only.

<table>
<thead>
<tr>
<th>Health Workforce Classification Table</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall Classification</strong></td>
</tr>
<tr>
<td>Stable Occupation</td>
</tr>
<tr>
<td>Transitional Occupation</td>
</tr>
<tr>
<td>At Risk Occupation</td>
</tr>
<tr>
<td>Occupation Under Pressure</td>
</tr>
</tbody>
</table>

**Dentist Workforce Scores**

<table>
<thead>
<tr>
<th>Domain</th>
<th>Score out of 4</th>
<th>Descriptor for Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Need</td>
<td>3</td>
<td>Service Demand Progressively increasing / impacting on service level or peak demand periods increasing.</td>
</tr>
<tr>
<td>Supply</td>
<td>2</td>
<td>Some distribution issues emerging and wider issues with supply, but these are localized issues (i.e. with a particular specialty) rather than the entire workforce.</td>
</tr>
<tr>
<td>Operational Flexibility</td>
<td>3</td>
<td>Emerging requirement for more flexible workforce options.</td>
</tr>
<tr>
<td>Operational Capacity</td>
<td>2</td>
<td>Some recruitment and retention issues are occurring with slightly longer timeframes for gaining this workforce.</td>
</tr>
<tr>
<td>total</td>
<td>10</td>
<td>Transitional Occupation – SOME INTERVENTION REQUIRED</td>
</tr>
</tbody>
</table>
Dental Therapist Workforce Scores

<table>
<thead>
<tr>
<th>Domain</th>
<th>Score out of 4</th>
<th>Descriptor for Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Need</td>
<td>3</td>
<td>Service Demand Progressively increasing / impacting on service level or peak demand periods increasing.</td>
</tr>
<tr>
<td>Supply</td>
<td>3</td>
<td>Distribution and supply issues increasingly impacting on wider system. Issues with overall size of workforce available.</td>
</tr>
<tr>
<td>Operational Flexibility</td>
<td>3</td>
<td>Emerging requirement for more flexible workforce options</td>
</tr>
<tr>
<td>Operational Capacity</td>
<td>3</td>
<td>Generalised recruitment and retention issues are occurring</td>
</tr>
<tr>
<td><strong>total</strong></td>
<td><strong>12</strong></td>
<td><strong>AT RISK OCCUPATION – INTERVENTION REQUIRED</strong></td>
</tr>
</tbody>
</table>

Dental Assistant Workforce Scores

<table>
<thead>
<tr>
<th>Domain</th>
<th>Score out of 4</th>
<th>Descriptor for Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Need</td>
<td>3</td>
<td>Service Demand Progressively increasing / impacting on service level or peak demand periods increasing.</td>
</tr>
<tr>
<td>Supply</td>
<td>2</td>
<td>Some distribution issues emerging and wider issues with supply, but these are localized issues (i.e. with a particular specialty) rather than the entire workforce.</td>
</tr>
<tr>
<td>Operational Flexibility</td>
<td>2</td>
<td>Some sector requirements to begin looking at alternative models of care and roles for this workforce, as greater flexibility required.</td>
</tr>
<tr>
<td>Operational Capacity</td>
<td>2</td>
<td>Some recruitment and retention issues are occurring with slightly longer timeframes for gaining this workforce.</td>
</tr>
<tr>
<td><strong>total</strong></td>
<td><strong>9</strong></td>
<td><strong>Transitional Occupation – SOME INTERVENTION REQUIRED</strong></td>
</tr>
</tbody>
</table>

Note that the number of Dental Technicians who participated did not warrant scoring. Also, as the headcount of the entire DHB employed Dental Technician workforce is only 13 it was not considered appropriate to apply this tool but rather consider them in the qualitative analysis around the overall state of dental service workforces.

The Strategic Workforce Team will be reviewing the workforce tool and its operation over the next few months. Originally designed for use as an input to bargaining strategy development, it may be that some adjustments are required for wider application.
## Summary of the Current Status of DHB Employed Dental Service Workforces:

The table below provides a summary of the key elements of the workforce occupations within the DHB Employed Dental Service.

### Summary of Key Service, Operational Workforce and Employment Drivers

<table>
<thead>
<tr>
<th>1. <strong>Operational Service Needs</strong></th>
<th>Current</th>
<th>Increasing demand in both child/adolescent and adult services</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 month outlook</td>
<td></td>
<td>Current trends likely to continue</td>
</tr>
<tr>
<td>1-3 year outlook</td>
<td></td>
<td>Progressive increases in demand driven primarily by increasing enrolment of U18s and aging population.</td>
</tr>
<tr>
<td>5-10 year outlook</td>
<td></td>
<td>Aging workforce (particularly therapists) reaching retirement age and little growth in graduates resulting in potential shortages in supply.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. <strong>Employed Workforce Structure (Demography)</strong></th>
<th>Average age</th>
<th>Average age 47.2 for the dental service. Dental Therapists 45% over 55 yo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td></td>
<td>Lack of Maori and Pacific</td>
</tr>
<tr>
<td>Gender balance</td>
<td></td>
<td>Predominantly female</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. <strong>Recruitment</strong></th>
<th>Current vacancies</th>
<th>Issues exist with filling Therapist roles &amp; specialist Dentistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average time to fill</td>
<td></td>
<td>Long lead times for some roles</td>
</tr>
<tr>
<td>Distribution</td>
<td></td>
<td>Some issues with attracting staff to provincial centres</td>
</tr>
<tr>
<td>Pressures on related workforces</td>
<td>No major issues identified</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. <strong>Retention Factors</strong></th>
<th>Turnover</th>
<th>Relatively stable across service</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sick Leave</td>
<td>No reports of current issues</td>
<td></td>
</tr>
<tr>
<td>Part-time /Fulltime</td>
<td>Stable</td>
<td></td>
</tr>
<tr>
<td>Skill Mix</td>
<td>Issues with having adequately experienced skill mix in all areas</td>
<td></td>
</tr>
<tr>
<td>Access to Clinical leadership</td>
<td></td>
<td>Relatively good access to clinical leadership</td>
</tr>
<tr>
<td>Clear career path</td>
<td>Some issues identified</td>
<td></td>
</tr>
<tr>
<td>Development</td>
<td>Some issues identified</td>
<td></td>
</tr>
<tr>
<td>Workload management</td>
<td>Some issues identified</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. <strong>Ongoing Training and Development</strong></th>
<th>Entry/ Transition competency</th>
<th>No reported issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Match to service requirements</td>
<td>Some reported issues</td>
<td></td>
</tr>
<tr>
<td>Access to ongoing training (progression)</td>
<td>Some reported issues</td>
<td></td>
</tr>
<tr>
<td>Access to training to maintain practising cert</td>
<td>Some reported issues</td>
<td></td>
</tr>
</tbody>
</table>
Key

- **Working Well** - no current problems, no immediate action required
- **Moderate Alert** - action required in short / medium term
- **High Alert** - immediate action required, extreme risk to occupation group

Key Issues

The observations below highlight likely trends that are impacting on DHBs based on sector expert views and currently available workforce information.

2.1.1 Service Demand

Service stability:

- Service demand is generally increasing across DHB provided dental services for the following reasons:
  - Adult Services:
    - Population growth and regional migration pressures;
    - Aging population on fixed incomes who cannot afford private dental care;
    - Increased number of low-income adults seeking pain relief care;
    - People living longer (and keeping their teeth longer) with increased co-morbidity (e.g. type 2 diabetes) and complex conditions with the resultant increased demand for anaesthetic services;
    - Increased demand for special needs and disability services; and
    - Increasing interdisciplinary referrals (e.g. Oncology patients being referred with secondary effects of chemotherapy drugs).

  - Child and Adolescent (<18 YO) Services:
    - Population growth and regional migration pressures;
    - Public health contributors e.g. public water fluoridation, healthy nutrition, lifestyle factors etc;
    - Push to increase preschool enrolments and those of high need contributing to increased enrolments;
    - Delays in seeking treatment attributing to higher incidence of dental extractions and other serious / resource intensive procedures; and
    - Increasing number of DNAs resulting in the treatment of more serious conditions that might otherwise have been prevented.

Operational deployment and intensity of use:

- There is variation in how dental services are delivered across the country but in general services are provided as follows:
  - Adult Services:
    - Within hospitals and community treatment centres traditionally within business hours;
    - As determined by surgical lists; and
    - On call for emergency treatment.

  - Child and Adolescent (<18 YO) Services:
- Within community treatment centres or via mobile examination and treatment units (at schools) within traditional business hours which are somewhat regulated by existing MECA agreements; and
- Extended business hours have recently been introduced in several DHBs to provide improved access for patients.

- There is a desire to move towards increased preventative care although demand for restorative and extraction services means that DHB dental services tend to operate in a reactive way.
- For child and adolescent services demand fluctuates in line with the school year.
- Given the nature of oral health there are no seasonal variations in demand.

Clinical processes / models of care influence on occupational requirements:

- The main issues from stakeholders for the child and adolescent service were:
  - The ratio of dental assistants per dental therapist; and
  - Administrative requirements taking away from treatment time.

- Many DHBs do not meet the best practice Ministry of Health standard of one dental assistant for every therapist. This results in the assistants splitting their time between therapists which can decrease the efficiency of the therapist and their capacity for treatments. (DHBs report where they have been able to achieve a 1:1 ratio, they have been able to increase the number of interventions.)

- Running services involves booking appointments, rescheduling, following up on did not attends etc. This administration impacts on all the workforces and stakeholders considered the service could better meet demand where administration is undertaken by a non-clinical resource.

- Some DHBs use Examination Mobile units where patients are assessed and an appointment for treatment is set for a later date (at fixed treatment centres). Stakeholders commented treating each patient at the point of assessment would be more efficient and require less administration.

- The main issues from stakeholders for the adult service were:
  - Referrals from specialist inpatient and outpatient services are given priority over general dental which contributes to late treatment of low income adults;
  - Patients in beds, wheelchairs and those who require interventions (e.g. haematology) before treatment require longer appointments;
  - Difficulties in accessing support for general anaesthetics for restorative or extraction work leads to delays in treatment; and
  - Increased coordination requirements of multidisciplinary care require a senior member of staff.

- In response to increases in demand services DHBs have responded by:
  - Increasing mobile schools visits;
  - Seeing pre-schoolers in groups rather than individually, and
  - Increasing waiting times across the board.
2.1.2 Supply

Community / population health requirements and distribution factors:

- Each of the workforces within DHB run dental services face different supply challenges according to underlying trends in local service models, migration, training pathways, graduate throughput etc. The main issues that were expressed by stakeholders for:
  - General Dentists were:
    - Overall no significant issues but some DHBs servicing isolated communities are experiencing local shortages.
  - Oral Surgeons and Specialists were:
    - Shortage of Maxillofacial Surgeons throughout the country. This is driven by being a small speciality/recruitment pool, the lengthy training pathway through Medical and Dental Schools, strict registration criteria and significant financial incentives to practice in Australia. It was suggested that there could be more regional planning required for the effective utilisation of this scarce resource. Inclusion on the NZ Immigration Skilled Migrants List was strongly advocated by stakeholders.
    - A shortage of Oral Surgeons especially within regional areas out of major cities.
    - A national shortage of special needs dental specialists.
  - Dental Therapists were:
    - DHB experts considered that there insufficient graduates to meet current demand with approximately 60 dental therapy graduates per year, of which 50% go to private. In the future stakeholders consider that this situation will be exacerbated as the aging dental therapy workforce begin to retire. This is of particular concern to regional areas where DHBs have some difficulty filling vacancies.
    - Some of the older Dental Therapists are registered with an adult scope of practice. With recent graduates only registered to work on under 18yo’s there may be some gaps in services that rely on Therapists with an adult scope.
  - Dental Assistants were:
    - The majority of DHBs have a sufficient and stable pool of dental assistants although in others, a limited pool of experienced assistants exists. As there are minimal educational and experience requirements for Dental Assistants most DHBs find it relatively easy to find new entrants to the dental service. However retention becomes an issue as they become more experienced and financial incentives attract them to the private sector.

Demography:

- Key demographic characteristics of the DHB employed dental services include:
  - An aging workforce;
  - A workforce service which is predominantly female (although Dentists and Dental Specialists now have a relatively equal gender split); and
  - Inadequate representation of Maori and Pacific.

- The aging Dental Therapy workforce is of particular concern. Some DHB’s are proactively approaching staff on their retirement plans and others are offering part time options to free up
resources for new hires to assist succession planning. DHBs report limited success with these approaches and that it is not financially viable to overstaff positions to ensure the future supply of the workforce.

- The number of Maori and Pacifica in the workforce is not representative of the population and this is particularly apparent in DHBs with high Maori populations (e.g. Tairawhiti and Lakes DHB).

### 2.1.3 Operational Flexibility

#### Regulatory Influences:

- The statutory framework governing oral health practitioners is set out in the Health Practitioner Competence Assurance Act. (HPCAA) 2003. Under the HPCAA oral health practitioners may be registered in one or more scopes of practice.
- Dental Therapists have a scope of practice for the care of children and adolescents up to 18 years of age. Dental therapists undertaking dental care for adults must be registered with a separate scope of practice for adult care.
- The NZ Dental Council is the regulatory body for oral health professions constituted under the HPCAA. All practitioners must be registered with the Dental Council and hold an Annual Practising Certificate in order to practice in New Zealand. The exception is Dental Assistants who are not required to be registered.

#### Ability to substitute:

- Regulatory requirements limit the procedures that can be performed by each occupational group. Dental specialties typically are not interchangeable with each other and require separate qualification and accreditation requirements.
- DHBs advise for greater operational flexibility, DHBs require Dental Therapists with both under 18 years old and adult scopes (see below).

#### Qualifications / Training:

- **Graduates:**
  - Dental Assistants do not require a professional qualification to practice.
  - Dental Therapists:
    - University of Otago and Auckland University of Technology (AUT) currently offer curricula that are accredited by the New Zealand Dental Council which since 2010 have trained graduates to perform a dual scope in Dental Therapy and Hygiene.
    - There is no current training programme for adult care in NZ although AUT is developing a training course for adult care to submit to the Dental Council which is designed to meet the requirements for an adult scope of practice.
  - Dentists and Specialists:
    - No issues were raised in conjunction with current New Zealand educational pathways.

- **Professional Development:**
  - For Dental Assistants:
    - The NZDA offer a Certificate in Dental Assisting as a modular, online correspondence course which includes a mix of self-directed learning activities, lectures, on-line assessments and practical experience. Most DHBs support staff to undertake this certificate however it is not mandatory. With some DHBs
experiencing retention issues there may be less of an incentive to invest in these staff however there are few other opportunities to develop professionally or to progress within the DHB.

- For Dental Therapists:
  - Access to professional development opportunities including ongoing training and attendance at annual conferences is not consistent across the DHBs varying with the size of the service, the availability of training resources (e.g. proximity to training institutions) and by funding decisions. Some DHBs offer generous support via annual subsidies to attend conferences, study dates etc. but others provide very limited support, prioritising resources towards immediate operational priorities. Therapists are generally in competition for development funds with other allied health employees. There was concern that this could impact on staff maintaining annual practicing certificates.

- Dentists and Specialists
  - Dentists receive development opportunities as per their employment agreements and registration requirements and are not in competition for funding with other workforces.

**Scope of practice:**

- Dual Trained Therapists.
  - Since 2009 no new dental hygienists or dental therapists have graduated in New Zealand - only oral health therapists. A new oral health scope of practice is due to come into effect on 1 November 2017. The Dental Council has applied for recognition of oral health therapy as a profession under the HCPAA.
  - Currently, only a limited number of DHBs are providing dual trained therapists the ability to practice their Hygiene scope. Currently most DHBs do not have a service model that utilises the hygienist scope. This may become a barrier to recruitment into the future.

- Adult scope of practice for Dental Therapists:
  - In other counties (e.g. Australia) Dental Therapists are trained and accredited to perform an adult scope of practice. The Dental Council no longer accredit therapy graduates (NZ or overseas trained) with an adult scope of practice.
  - DHBs employ about 30 Therapists who have an adult scope of practice (trained prior to 2008) that allows them to treat adults in addition to children and adolescents. DHBs report that having this dual scope allows therapists to treat hard to reach adults when they present with their children. The view was that this would reduce the requirement for future emergency treatments.
  - DHB experts advised that there is some concern from the New Zealand Dental Association (NZDA) about the development of the adult scope training course for Therapists as it may take work away from dentists.
2.1.4 Operational Capacity

Recruitment issues:

- Challenges with recruitment varied across the different occupational groups within DHB employed dental services as follows:
  - For Dental Assistants:
    - There was consensus that new Dental Assistants were readily able to be recruited, however some challenges were experienced attracting experienced staff.
    - There are also some emerging difficulties recruiting Dental Assistants in areas with increasing living costs such as Auckland and Wellington.
  - For Dental Therapists:
    - There are some concerns regarding the number of Dental Therapy graduates that are being produced in New Zealand. There are difficulties filling vacancies, particularly in regional areas and isolated communities. Some DHBs are offering scholarships and bonding schemes with the intention of growing workforce from within the local community.
    - DHBs find that recruitment cycles revolve around the university year and graduation times. If a vacancy is advertised outside of the months following graduation most struggle to fill the position.
    - DHBs report a pay differential for graduate Dental Therapists between the public and private sectors for private sector hygiene jobs. Some DHBs are employing new graduates on higher pay steps / levels to try to be more be more competitive which can lead to retention issues down the track as staff reach top pay bands and then look to the private sector.
    - There is significant concern around aging Dental Therapists as they reach retirement age within the next 5-10 years especially within regional DHBs who struggle to recruit younger staff.
  - For General Dentists:
    - Some regional DHB are having trouble recruiting experienced general dentists (e.g., Whanganui, Northland etc.) but because of the small number required and a staple pool of this occupational group other DHBs do not face the same issues.
    - Dentists were included on the Voluntary Bonding Scheme which attracted five applications and placements over the past 24 months but these were not in DHB employment.
  - For Oral Surgeons and Specialists:
    - Specialist Dentists are difficult to recruit throughout New Zealand.
    - It is especially difficult to attract Special Needs Dentists and Maxillofacial Surgeons given the small pool of these staff in New Zealand.

Retention issues:

- Like recruitment, reported retention challenges varied by occupational group as follows:
  - For Dental Assistants:
    - In many respects retention issues for Dental Assistants are tied to the NZDA qualification combined with a lack of opportunity for career progression. Many Dental Assistants use the NZDA Certificate as a pathway to seeking employment outside the DHB.
For Dental Therapists:

- The pay differential between public and private sectors underpins challenges that are experienced by DHBs to retain experienced dual trained Dental Therapists. Many staff join the DHB and stay for 1-2 years and move off into the private sector;
- Some DHBs have restrictions on staff working part-time (driven primarily by service and facility design) which means Dental Therapists are unable to divide their time between the public and private sector and utilise their hygienist training;
- Opportunities for career development are also limited which can lead to experienced staff leaving the service; and
- Northland DHB provide a retention allowance to its Dental Therapists.

For General Dentists, Oral Surgeons and Specialists:

- Retention of general dentists is generally not an issue for most DHBs;
- Similar to Therapists some DHBs have restrictions on staff working part-time driven primarily by service and facility design which means Dentists are unable to divide their time between the public and private sector; and
- As the age profile of dentists is increasing future issues may arise when these staff reach retirement age; especially in hard to fill roles like Specialist Dentistry, Oral and Maxillofacial Surgeons.

Lead in time for recruitment:

- Lead in time for recruitment can be mostly be attributed to increasing DHB requirements to vet candidates and approve recruitment and can take from 3-6 months from application to start date.
- For international candidates NZDA delays granting registration or annual practicing certificates can mean extended delays to recruitment.

Ability to provide the environment / context for this workforce:

- The local configuration of dental services varies significantly around New Zealand. While most DHBs provide child and adolescent dental care (Therapy Services), specialist care, inpatient care and community services focused on adult care varies by DHB. For example Waitemata holds the current contract child and adolescent care in the Auckland Region while Auckland DHB provides specialist hospital services. Other DHBs (Northland, Whanganui, Nelson Marlborough, etc.) provide all inclusive birth to death care. In some DHBs private providers hold contracts for the delivery of services. In Canterbury, there is no integration and separate services for target groups.
- Private contracts called Combined Dental Agreements has not had a significant fee rise for some time which may impact on the willingness of private providers to pick up contracts.
3. Operational Workforce Analysis

Headcount

Headcount by Occupation Type

Over the six years of data shown, the DHB employed Dental Service workforce has seen a steady increase in the overall number, from 1,108 employees in September 10 to 1,322 in September 16. The increase in headcount between September 2010 and June 2016 was 215, equivalent to a 19% increase. Dental Technician numbers have remained unchanged over the reference period, Dentist/Dental Specialist has increased by 38% (n=48), and Dental Assistants has increased by 28% (n=173). Dental Therapist numbers have remained close to the average (mean) figure of 570 observed over the reference period.
Headcount Distribution by Sex

Two snap-shots of data have been taken to show how the distribution of sex has changed over the last six years. The bar height does not represent the absolute number, rather how the male and female employees are spread. When observing the changes in the headcount by sex since September 2010, the distribution of employees for Dental Assistant and Dental Therapists are predominantly female and have barely changed (nominal increases for males have been observed). For Dental Technicians and Dentist/Dental Specialist there has been a noticeable increase in the proportion of female employees.

There are a few regional and DHB size variations observed from the national picture, details as follows for September 2016;

- Midland region DHBs – around 30% female Dentists/Dental Specialist
- South Island region DHBs – around 60% female Dental Technicians, around 50% female Dentists/Dental Specialist
- Medium Sized DHBs – No Dental Technicians as at 30-Sep-16
- Small Sized DHBs – All Dental Assistants are female, 99% of Dental Therapists are female, and around 36% of Dentists/Dental Specialist are female.
Full Time Equivalent (FTE)

Overall FTE

Similar to the observations in headcount, nationally the increase in full time equivalent (FTE) of Dental Service employees has been steady. The increase in FTE between September 2010 and June 2016 was 249.3, equivalent to a 29% increase. Dental Technician numbers have remained unchanged over the reference period, Dentist/Dental Specialist has increased by 97% (n=37.2), and Dental Assistants has increased by 58% (n=195.9). Dental Therapist numbers in September 2016 are similar to levels seen in September 2010, and has remained mostly consistent for the duration of the period.

FTE by Region

When observing the change in FTE over the last six years at a regional level, it shows the greatest relative increase has occurred in the Northern region DHBs, an increase of 41%. Between September
2010 and September 2016, the Northern region DHBs also saw the greatest increase in Dental Assistants – 84%.

Since September 2010 the other regional DHB Dental Service FTE increases has been as follows;

- Midland region - 15%
- Central region - 25%
- South Island region - 5%

**FTE Distribution of occupations within the dental service**

Although there have been varying degrees of FTE increases across the four regions there is consistency when observing the dental service occupation distributions. Two snap-shots of data have been taken to show the distribution between September 2010 and September 2016. Across the four regions a proportional increase in Dental Assistants and Dentist/Dental Specialist has been observed as well as a proportional decrease in Dental Therapists. Dental Technicians proportion has remained unchanged.

Of note neither Medium sized DHBs nor Small sized DHBs employed Dental Technicians in September 2016.
Graph 1: Technicians and Dentists

Graph 2: Dental Assistants
Graph 2: Assistants

Graph 3: Therapists

Graph 1 shows since September 2010, the national FTE per 100,000 population for Dental Technicians has remained constant, at around 0.3 FTE per 100,000 population. The national FTE per 100,000 population for Dentists/Dental Specialists has increased from around 0.9 FTE per 100,000 population in September 2010 to 1.61 in September 2016.

Graph 2 shows the regional FTE per 100,000 population for Dental Assistants. It shows over the reference period the Northern region ratio has increased most to be on par with levels observed in the Midland and Central region DHBs. The rate in the South Island DHBs has remained mostly consistent, albeit slightly below the other regions as at September 2016.

Graph 3 shows the regional FTE per 100,000 population for Dental Therapists. It shows over the reference period across all four regions a small and gradual decrease. The rate in the South Island is the lowest, the Midland region the highest.
**Turnover**

Turnover is calculated by summing the number of positions terminated (headcount) over the previous year, then divided by the mean number of positions employed (headcount) at each of the reporting quarters over the previous year. Turnover calculations exclude those staff with zero contracted hours and those on fixed-term contracts.

Due to the small number of employees Dental Technicians and Dentist/Dental Specialists are excluded from this analysis. (Small numbers of leavers can have significant impacts on turnover rates).

The chart demonstrates a variable annual year-to-date turnover rate, especially for Dental Assistants. The rates for Dental Therapists have remained between 6% and 16% for the duration of the reference period, which indicates a reasonably stable workforce in terms of leavers. It is important to note that the turnover rates include movement between DHBs. DHBs do not provide enough information to HWIP on the intended destination of leavers.

**Mean Length of Service (LOS)**
The mean length of service has very gradually increased in a consistent manner across all Dental Service occupations, except Dental Therapists which has remained constant. Dental Assistants have observed the shortest mean length of service.

**Age Distribution**

The charts above detail age distribution per age group for each of the Dental Service occupations and is based on two snap-shots of data. The snap-shots show how the age distribution has changed over the last six years. The line chart heights do not represent the absolute number, rather how the employees are spread across the age bands.

Between 2010 and 2016 the distribution of Dental Assistants has remained almost unchanged, with those in the 45-54 age groups still making up around one third of the workforce. Dental Technicians have seen a distribution skewed more towards those employees’ ages 25 to 54 since 2010. For Dental Therapists, a large proportion of employees are still in the 55 and over age groups, though more employees have been observed in the 34 and under age groups in 2016 than in 2010. For Dentists/Dental Specialists, since 2010 there has been a shift towards employees 55 and over and a reduction in the proportion of employees between 35 and 54 years old.
Between 2010 and 2016 the average age of Dentists/Dental Specialists has increased very slightly by 1.2 years, the same increase in average age is also observed in Dental Assistants. Dental Therapists have since March 2015 observed a small decrease in the average age.
When observing the average age by sex at September 2016, there are some observed variances for Technicians and Dentists/Dental Specialists where the male average age is higher than the female average age. For Dental Assistants and Dental Therapists the converse is observed.

### Percentage of Workforce Over 50 Years Old

<table>
<thead>
<tr>
<th>Dental Occupation</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Assistant</td>
<td>46.1</td>
<td>39.3</td>
</tr>
<tr>
<td>Dental Technician</td>
<td>35.4</td>
<td>52.0</td>
</tr>
<tr>
<td>Dental Therapist</td>
<td>48.8</td>
<td>34.8</td>
</tr>
<tr>
<td>Dentist/Dental Specialist</td>
<td>45.5</td>
<td>53.5</td>
</tr>
</tbody>
</table>

The percentage of all Dental Service occupations over 55 years old has gradually increased over the referenced period. Dental Therapists and Dentists/Dental Specialists are the occupations observed with the greatest proportion of employees over 55 years.
Ethnicity

Percentage of unknown ethnicity (headcount)

The chart shows the percentage of Dental Service occupations whose ethnicity is unknown. As at September 2016, 7% have an unknown ethnicity. This figure has been very gradually reducing since March 2010. The under reporting of ethnicity by DHBs has the potential to skew analysis when unknown ethnicities subsequently become known. It is worth considering this when interpreting the ethnicity analysis.

DHB Workforce ethnicity compared to population ethnicity

Dental Assistants

Dental Technicians

Excluded due to small number of employees
For the purposes of the charts above the ethnicity categories are those described by Statistics New Zealand. ‘Other’ ethnicity is a grouping which includes all ethnicities except Maori, Pacific and Asian.

Between 2010 and 2016 the ethnicity distribution of Dental Service occupations when compared to the ethnicity distribution of the population has seen small changes. What can be seen as consistent is the over-representation of the ‘Other’ ethnicities in the workforce across all designations when compared to the population, though ‘Other’ workforce ethnicity representation has decreased since 2010.

Asian ethnicity has increased in proportional representation for all Dental Service occupations, and for Dental Therapists, now exceeds the resident population distribution.

Except for Dental Assistants Maori ethnicities have increased in the DHB workforce, but are under-represented when compared to the distribution of the population. For all occupations Pacific ethnicity has remained at similar levels, again with an under representation when compared to the distribution of the population.
If DHBs had Māori or Pacific representation in their workforce in the same proportions as their population then the ratio would be at 1. A rate higher than 1 indicates that the DHB has Māori or Pacific representation in the workforce more than the local population, and a rate lower than 1 indicates that the DHB has Māori or Pacific representation less than the local population.

**DHB Employed Resident Medical Workforce**

Dental Resident Medical Officers (RMOs) are only identifiable in HWIP if a detailed and descriptive Job Title is provided by DHBs. DHB Payroll data has been used to report on Dental RMOs and the results are shown below. For further information regarding data sources please see Supplementary Information section.

<table>
<thead>
<tr>
<th>DHB</th>
<th>31-Dec-14</th>
<th>31-Dec-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auckland DHB</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Canterbury DHB</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Capital &amp; Coast DHB</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Hawke's Bay DHB</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Hutt Valley DHB</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>MidCentral DHB</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Nelson Marlborough DHB</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Northland DHB</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>South Canterbury DHB</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Southern DHB</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Taranaki DHB</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Waikato DHB</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>31</strong></td>
<td><strong>34</strong></td>
</tr>
</tbody>
</table>
Two data observations show that 12 DHBs employ Dental House Officers and 3 DHBs employ Dental Registrars. The headcount between December 2014 and December 2015 increased by 4 RMOs. When looking at the distribution of Dental SMO, House Officers and Registrars both years see that the split of these designations remains unchanged with levels seen in 2015 at 76%, 20% and 4% respectively.

**HWIP Technical Notes**

- The data is drawn directly from the central repository (HWS) of all HWIP data, except population data which has been supplied by Statistics New Zealand.
- Excludes staff with zero contracted hours and those on long term leave (where paid Employment Status = 'Contractor', 'Leave without Pay' or 'Parental Leave' in HWIP).
- Only staff employed on the reporting dates (quarter end dates) are included - except those used for leaving/turnover calculations.
- All FTE figures are Contracted FTE (2086 hours per annum) - see the [Practical Guide to FTE Calculations](#) for more details on how this is calculated.
- Turnover is calculated by summing the number of positions terminated over the period being measured, then divided by the mean number of positions employed at each of the reporting quarters over the reporting period. Turnover calculations exclude those staff with zero contracted hours, those on fixed-term and all Junior Medical staff.
- Calculations involving sex exclude the few employees with an unreported sex.
- Calculations involving ethnicity exclude employees with an unknown ethnicity unless otherwise stated.
- Averages are shown as mean unless otherwise stated.
- Disclaimer: While care has been used in the processing, analysing and extraction of information to ensure the accuracy of this report, TAS gives no warranty that the information supplied is free from error. TAS should not be liable for provision of any incorrect or incomplete information nor for any loss suffered through the use, directly or indirectly, of any information, product or service.

Dental Service occupations are identified by the ANZSCO codes described in table 1

<table>
<thead>
<tr>
<th>ANZSCO Occupation</th>
<th>ANZSCO Code</th>
<th>ANZSCO Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Specialist</td>
<td>252311</td>
<td>Diagnoses and treats diseases, injuries, irregularities and malformations of teeth and associated structures in the mouth and jaw using surgery and other specialist techniques. Registration or licensing is required. Skill Level: 1 Specialisations:</td>
</tr>
<tr>
<td>Occupation</td>
<td>ANZSCO Code</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Dentist</td>
<td>252312</td>
<td>Alternative Titles: Dental Practitioner Dental Surgeon Diagnoses and treats dental disease, injuries, decay and malformations of the teeth, periodontal tissue (gums), hard and soft tissue found on the mouth and other dento-facial structures using surgery and other techniques. Registration or licensing is required. Skill Level: 1</td>
</tr>
<tr>
<td>Resident Medical Officer</td>
<td>253112</td>
<td>Diagnoses, treats and prevents human physical and mental disorders and injuries under the supervision of medical specialists or senior general practitioners. Registration or licensing is required. Skill Level: 1 Specialisation: Medical Intern</td>
</tr>
<tr>
<td>Dental Technician</td>
<td>411213</td>
<td>Constructs and repairs dentures and other dental appliances. Registration or licensing may be required. Skill Level: 2 Specialisation: Dental Laboratory Assistant</td>
</tr>
<tr>
<td>Dental Therapist</td>
<td>411214</td>
<td>Examines and treats diseases of the teeth in preschool, primary and secondary school children under the general supervision of a Dentist. Registration or licensing is required. Skill Level: 2 Specialisation: Oral Health Therapist</td>
</tr>
<tr>
<td>Dental Assistant</td>
<td>423211</td>
<td>Alternative Titles: Dental Chairside Assistant Dental Nurse Prepares patients for dental examination and assists Dental Practitioners, Hygienists and Therapists in providing care and treatment. Skill Level: 4</td>
</tr>
</tbody>
</table>

**Table 1: Dental Service Occupation Codes (ANZSCO)**

Two other ANZSCO codes for Dental Service occupations exists, Dental Hygienist and Dental Prosthetist. None were found to be employed by DHBs.
Application of HWIP ANZSCO codes

Prior to producing this report the HWIP team at DHBSS undertook detailed analysis of the quality and accuracy of the employees identified by Dental Service ANZSCO occupation codes. Unfortunately, significant data quality issues were identified which meant that using the ANZSCO code as the sole identifier of Dental Service occupations was not possible. Instead a combination of searching for occupations using ‘Job Title’ and ANZSCO code were applied. This approach meant the most appropriate Dental Service occupation code could be applied.

Using this methodological approach for Dentists and Dental Specialist it was still not possible to distinctly identify each occupation. This was due to the fact that DHBs used the Job Title and ANZSCO codes interchangeably. For this reason a single homogenous occupation group called ‘Dentist/Dental Specialist’ was created.

In instances where the most accurate Dental Service occupation could not be identified by the HWIP team, the DHBs were asked to validate the occupation.

Dental Resident Medical Officers (RMOs) are only identifiable in HWIP if a detailed and descriptive Job Title is provided by DHBs. One of the restrictions of the ANZSCO occupation classification system is that all RMOs are grouped together. No separate ANZSCO codes exists to identify the different designations of RMOs, e.g. House Officers or Registrars. Therefore DHB Payroll data has been used to report on Dental RMOs.
4. Non DHB Employed Workforce Information

Dental Council of New Zealand – Annual Report

The Dental Council is a regulatory authority created by the Health Practitioners Competence Assurance Act 2003. The Dental Council ensure oral health practitioners meet and maintain standards in order to protect the health and safety of the public of New Zealand.

The oral practitioners that the Dental Council regulate are dentists, dental specialists, dental therapists, dental hygienists, clinical dental technicians, dental technicians, and orthodontic auxiliaries.

To practise in New Zealand, all oral health practitioners need to be registered and hold a current annual practising certificate (APC). Practitioners can register in one or more of 20 scopes of practice.

Dental Council of New Zealand Stats at a Glance

Source: Dental Council of New Zealand Annual Report 2016

Details of the numbers of registered practitioners by scopes of practice for 31 March 2016 and 31 March 2015 can be seen below.
Registration Statistics

As at 31 March 2016, 5,100 practitioners were registered with the Council, of which 4,362 held an APC. This is an increase of 152 practitioners (3.1 percent) from last year, in line with similar increases recorded over the past five years.

Number of registered oral health practitioners by profession as at 31 March 2016

[Diagram showing the number of practitioners by profession]

Source: Dental Council of New Zealand Annual Report 2016

The increase in practitioners is made up of net increases of 9% more dental hygienists, 4.7% more dental therapists and 1.3% more dentists. The number of dental technicians decreased by 0.7% from the previous year. This continues an annual decline that started in 2009 and has seen an overall decrease of 14.7% since then.

Annual Practicing Statistics

The chart above, based on information from Dental Council of New Zealand Annual Reports since 2006, shows the changes in the number of practitioners holding Annual Practising Certificates. Since 2006, Dentist APCs have increased by 40%, Dental Hygienists have increased 114%, Dental Therapists have increased 43% and Dental Technicians have increased 16%.
Breakdown of new registrations

The Dental Council received 393 applications for registration in the year to 31 March 2016. Of these 381 were registered and one was registered with conditions.

Dental Council of New Zealand – Workforce Survey

The Dental Council collects workforce data from all oral health practitioners during its annual practising certificate renewal process. The data is analysed and workforce reports are published. The workforce reports are used by stakeholders to inform inquiries about the oral health workforce composition, identifying workforce trends, and to plan workforce development. Workforce analysis reports are available from 2003 to 2011. The report for 2011/12 had a 100% response rate. Of the 2,085 APCs issued, all applicants completed the workforce survey (though not every question in the survey).

This section of the report contains analysis based on extracts from the 2011 report and should be treated as indicative only. The reporting period for the 2011 report is as follows:

- Dentists and Dental Specialists: 1st October 2011 – 30th September 2012
- Dental therapists, hygienists, and technicians: 1st April 2011 – 31st March 2012

The Dental Council has re-instated the Workforce Analysis report with the latest version proposed to be publically available by the end of March 2017. This intent is to update this report with the latest data once available and if applicable.
Dentists and Dental Specialists

Table 1-15: Type of practice – general dentists and dental specialists

<table>
<thead>
<tr>
<th>Type of practice</th>
<th>Number (%)</th>
<th>Overall percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-employed dentists &amp; dental specialists*</td>
<td>243 (39.5)</td>
<td>21.2</td>
</tr>
<tr>
<td>Solo practice</td>
<td>443 (59.5)</td>
<td>21.2</td>
</tr>
<tr>
<td>Group practice</td>
<td>1077 (70.9)</td>
<td>51.7</td>
</tr>
<tr>
<td>Subtotal</td>
<td>1520</td>
<td>72.9</td>
</tr>
<tr>
<td>Employees dentists &amp; dental specialists</td>
<td>123 (59.5)</td>
<td>5.9</td>
</tr>
<tr>
<td>Private practice</td>
<td>91 (59.3)</td>
<td>4.4</td>
</tr>
<tr>
<td>DHB</td>
<td>65 (30.9)</td>
<td>3.1</td>
</tr>
<tr>
<td>School of Dentistry</td>
<td>21 (6.8)</td>
<td>1.0</td>
</tr>
<tr>
<td>Government Department, not MoH</td>
<td>10 (3.2)</td>
<td>0.5</td>
</tr>
<tr>
<td>MoH</td>
<td>1 (0.3)</td>
<td>0.0</td>
</tr>
<tr>
<td>Ministry of Health</td>
<td>311</td>
<td>14.9</td>
</tr>
<tr>
<td>Subtotal</td>
<td>123</td>
<td>14.9</td>
</tr>
</tbody>
</table>

Other forms of employment | 20 | 0.9 |
No reply to question | 234 | 11.3 |
Total | 2485 | 100.0 |
*Note: only the information on the primary employer was analysed.
(Data source: Workforce Survey)

Table 1-15 from the Dental Council 2011-12 Workforce Analysis report shows type of practice setting. 89% of survey respondents replied to this question. Of those that replied the number of general dentists and dental specialists working in a DHB was approximately 4.4% of all active dentists/dental specialists (n=91). The HWIP reporting period of 30 September 2012 reported a headcount of 107 dentists and dental specialists.

Dental Therapists

Table 2-4: Type of practice among dental therapists

<table>
<thead>
<tr>
<th>Type of practice</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private practice</td>
<td>95 (17.5)</td>
</tr>
<tr>
<td>Self-employed, solo</td>
<td>6 (1.6)</td>
</tr>
<tr>
<td>Self-employed, group</td>
<td>21 (3.7)</td>
</tr>
<tr>
<td>Employee</td>
<td>68 (12.1)</td>
</tr>
<tr>
<td>DHB</td>
<td>435 (77.3)</td>
</tr>
<tr>
<td>Government Dept. not MoH</td>
<td>2 (0.4)</td>
</tr>
<tr>
<td>University Dental School</td>
<td>12 (2.1)</td>
</tr>
<tr>
<td>MoH</td>
<td>4 (0.7)</td>
</tr>
<tr>
<td>Other</td>
<td>4 (0.7)</td>
</tr>
<tr>
<td>Total</td>
<td>563 (71.3)</td>
</tr>
<tr>
<td>No reply to question</td>
<td>228 (28.8)</td>
</tr>
</tbody>
</table>

*Note: only the information on the primary employer was analysed.
(Data source: Workforce Survey)

Table 2-4 from the Dental Council 2011-12 Workforce Analysis report shows type of practice setting. 71% of survey respondents replied to this question. Of those that replied the number of dental therapists working in a DHB was approximately 77.3% of all active dental therapists (n=435). The HWIP reporting period of 30 September 2012 reported a headcount of 577 dental therapists.
Dental Technicians

Table 4-2 from the Dental Council 2011-12 Workforce Analysis report shows type of practice setting. 89% of survey respondents replied to this question. Of those that replied the number of dental technicians working in a DHB was approximately 4.6% of all active dental therapists (n=14). The HWIP reporting period of 30 September 2012 reported a headcount of 15 dental technicians.

Dentist and Dental Specialists cohort study

Table 1-18: Cohort remainder rate for University of Otago graduates*

As mentioned previously, it is not possible to identify internationally-funded students who became New Zealand permanent residents during the course of their study and chose to remain in New Zealand subsequent to graduation.

Table 1-18 from the Dental Council 2011-12 Workforce Analysis report shows the Bachelor of Dental Surgery graduate cohort remainder rate for University of Otago. What can be observed is that graduates more than three years out from completing their degree see a drop in the numbers still practising to around 50%.
Tertiary Education Commission: Education Counts

Total Student Enrolment

The following tertiary qualifications are available in Dentistry in New Zealand:

- Bachelor of Dental Surgery (and with Honours) - University of Otago
- Bachelor of Dental Technology (and with Honours) - University of Otago
- Bachelor of Oral Health - University of Otago
- Bachelor of Health Science (Oral Health) - Auckland University of Technology

A Bachelor of Oral Health is an education pathway for hygiene, therapy and oral health promotion.

Domestic and international students enrolled in a Dentistry degrees 2008-2015

Bachelor of Dental Surgery

![Student Enrolment Graph for Bachelor of Dental Surgery](image)

Bachelor of Dental Technology

![Student Enrolment Graph for Bachelor of Dental Technology](image)
Bachelor of Oral Health

The charts above consolidate qualifications with qualifications with honours. Each chart demonstrates, with the exception of Bachelor of Dental Technology degrees, both domestic and international students are gradually increasing. Of note is the increase in international enrolments in Bachelor of Dental Surgery between 2009 and 2012 (100% increase), the increase in domestic enrolments in Bachelor oral health between 2008 and 2009 (28% increase), and the decrease of domestic enrolments in Bachelor of Dental Technology degrees between 2012 and 2015.

Domestic students enrolled in a Dentistry degree by ethnic group 2008-2015

Notes:
1. Data relates to a student completing a formal qualification in dentistry as specified.
2. Data relates to students enrolled at any time during the year with a tertiary education provider in formal qualifications of greater than 0.03 EFTS (more than one week’s full-time duration).
3. International students are those studying here without New Zealand/Australian citizenship or permanent residence status. Students studying off-shore at tertiary education providers that are registered in New Zealand are considered international students unless they hold New Zealand citizenship.
4. Totals also include those students with unknown values.
5. Data in this table, including totals, have been rounded to the nearest 5 to protect the privacy of individuals, so the sum of individual counts may not add to the total.
The chart above shows the ethnicity distribution of domestic students enrolled in all Dentistry degrees. There has been an increase the distribution of ethnicities in enrolments in Bachelor of Dental Surgery and Bachelor of Oral Health for Asian, Pasifka and Maori ethnicities and decreases in European ethnicities. For Bachelor of Dental Technology enrolments, different ethnicity changes have occurred. Since 2008 there have been decreases Pasifka ethnicities, increases in European and Other ethnicities, Asian ethnicity distribution has remained unchanged and for the entire reference period no Maori ethnic representation.

**Domestic and international students completing a qualification in Dentistry 2008-2015**

The chart above demonstrates between 2008 and 2010 the number of domestic students completing a qualification in Dentistry increased and has since remained at similar levels before a slight decline in 2015. For international students, the numbers between 2008 and 2011 remained similar before an increase in 2012 which has since remained at similar levels.

Enrolment across all Dentistry degrees has remained at similar levels since 2010 so it would be reasonable to expect to see similar overall numbers in the number of completions from until 2020.
Immigration New Zealand Information

Skill Shortage List

The Ministry of Business, Innovation and Employment maintains three lists consisting of: the Long-term Skill Shortage List, the Immediate Skill Shortage List and the Canterbury Skill Shortage List. The lists help to ensure that New Zealand’s skills needs are met by facilitating the entry of appropriately skilled migrants to fill shortages. However, this objective must be balanced by the need to ensure that there are no suitably qualified New Zealand citizens or resident workers available to undertake the work. The Immediate Skill Shortage List (ISSL) includes occupations where skilled workers are immediately required in New Zealand and indicates that there are no New Zealand citizens or residents available to take up the position. The Long Term Skill Shortage List (LTSSL) identifies occupations where there is a sustained and on-going shortage of highly skilled workers both globally and throughout New Zealand.

Dental Technicians and Dentists are contained in the Immediate Skill Shortage List (LTSSL). In the table below are extracts from the Immediate Skill Shortage List, effective from 30 May 2016.

<table>
<thead>
<tr>
<th>Occupational Group</th>
<th>Occupation and ANZSCO number</th>
<th>Required standard for work visa applicants with an offer of employment</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health and Social Services</td>
<td>Dental Technician (411213)</td>
<td>NZ registration as a Dental Technician with the Dental Council of New Zealand</td>
<td>All regions</td>
</tr>
<tr>
<td>Health and Social Services</td>
<td>Dentist (252312)</td>
<td>NZ registration as a Dentist or Dental Specialist with the Dental Council of New Zealand</td>
<td>Waikato/Bay of Plenty, Central North Island, Wellington, Canterbury/Upper South Island, Otago/Southland</td>
</tr>
</tbody>
</table>
## 5. Appendices

### Health Workforce Classification Scoring Matrix

<table>
<thead>
<tr>
<th>Rating</th>
<th>Service Demand</th>
<th>Supply</th>
<th>Operational Flexibility</th>
<th>Operational Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Service is stable and there are no anticipated major changes to service delivery or demand in the short term</td>
<td>No major distribution or supply issues, overall stable supply pattern.</td>
<td>No current workforce flexibility issues.</td>
<td>No significant recruitment and retention issues and easy access to this workforce when required.</td>
</tr>
<tr>
<td>2</td>
<td>Some instances of demand pressure on service but the majority of the time it is stable overall.</td>
<td>Some distribution issues emerging and wider issues with supply, but localised issues (i.e., with a particular specialty), rather than the entire workforce.</td>
<td>Some sector requirements to begin looking at alternative models of care and roles for this workforce, as greater flexibility required.</td>
<td>Some recruitment and retention issues are occurring, with slightly longer timeframes for gaining this workforce.</td>
</tr>
<tr>
<td>3</td>
<td>Service demand progressively increasing / impacting on service level or peak demand periods increasing.</td>
<td>Distribution and supply issues increasingly impacting on wider system. Issues with overall size of workforce available.</td>
<td>Emerging requirements for more flexible workforce options. Substitution can occur, however it may be difficult.</td>
<td>Generalised recruitment and retention issues for specialist skill. Operational environment is affected by potential lack of this workforce due to higher level of workforce specialisation required. Longer lead times (i.e., 6 months to 1 year for recruitment).</td>
</tr>
<tr>
<td>4</td>
<td>Service operating at full capacity, peaks in service demand driving instability in service delivery.</td>
<td>Significant distribution and or supply issues currently occurring, problems with small size of available workforce. Real issues with the pipeline supply for this workforce.</td>
<td>Requirements for flexible workforce options, but very limited/no available substitute workforce that can perform the critical function of this workforce.</td>
<td>Significant recruitment and retention issues for specialised skills. Issues exist with gaining appropriately skilled individual. Long and often difficult recruitment processes for gaining sufficiently qualified individuals (i.e., 1-2 years for recruitment).</td>
</tr>
</tbody>
</table>

### Health Workforce Classification Table

<table>
<thead>
<tr>
<th>Overall Classification</th>
<th>Intervention</th>
<th>Overall Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable Occupation</td>
<td>WATCHING BRIEF</td>
<td>4 ≤ 6</td>
</tr>
<tr>
<td>Transitional Occupation</td>
<td>SOME INTERVENTION RECOMMENDED</td>
<td>≥ 6 &lt; 10</td>
</tr>
<tr>
<td>At Risk Occupation</td>
<td>INTERVENTION REQUIRED</td>
<td>≥ 10 ≤ 15</td>
</tr>
<tr>
<td>Occupation Under Pressure</td>
<td>INTERVENTION IMPERATIVE</td>
<td>≥ 15</td>
</tr>
</tbody>
</table>