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*Strategic Workforce Services*

# **Workforce Assessment Report**

## DHB Audiology (Reo Ataata) Workforce 2018



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## **Document History**

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## Executive Summary

The Workforce Strategy Group commissioned this workforce assessment to identify the current state, key trends and emerging issues impacting on the various occupations which make up the audiology (reo ataata) workforce.

A summary of the key issues for the audiology workforce are as follows:

- Demand for audiology services has increased significantly during the reporting period and is forecast to continue throughout the next 5-10 years.
- DHBs are increasingly rationing access to non-acute adult services to focus on paediatric workloads.
- DHBs have experienced challenges associated with the 2017 introduction of paediatric certification for audiologists in particular the capacity of senior staff to provide supervision, the length of time to become fully qualified and maintaining service continuity in DHBs with a small headcount.
- The small number of audiologists being trained each year and the difficulty of overseas trained audiologists gaining practicing certificates in NZ.
- Most DHBs have experienced difficulties filling vacancies at all experience levels.
- Limited opportunities for flexibility exist between audiologists and other allied health staff as a result of agreed guidelines of who can perform or assist with paediatric work.
- The majority of audiologists and clinical leaders consulted within this assessment perceived that the disparity in salaries offered between public and private providers is the most significant factor influencing DHBs ability to recruit and retain audiologists.

The key findings of the assessment are outlined below.

### Service Demand

Demand for the audiology workforce has been growing significantly due to a variety of reasons but led by the ageing nature of New Zealand's general population, better awareness of hearing loss coupled with an increase in the interventions available. This has resulted in an expansion of private providers offering services primarily to adults facing hearing loss later in life.

Demand for paediatric services has also increased due to the introduction of the Universal Newborn Hearing Screening Programme (UNHSEIP) by the New Zealand Ministry of Health (MoH). The growth in vision and hearing testing being carried out by DHBs has also grown significantly. This has led to additional referral and treatment volumes. Another major driver of demand for specific audiology services has been the increase in Ear, Nose and Throat (ENT) and oncology referrals which are a major service area for DHBs.

High vacancy rates for audiologists in many DHBs has resulted in a perception that demand is growing. This is evidenced by rapidly increasing waiting lists for treatment and follow up appointments. Many DHBs have increasingly rationed adult audiology services that are not referred from acute services. This has left the majority of DHBs focused on the delivery of paediatric audiology services. These services are subject to peaks in service demand around the school year and in the winter months when OME or glue ear is most prevalent.

### Workforce Supply & Operational Capacity

The audiologist workforce is small with 416 members of the New Zealand Audiological Society (NZAS) including 319 full and 55 provisional members and only 56 of these working for a DHB. The audiologist headcount did not grow during the years 2010 to 2017 during which period New Zealand's resident population has grown from 4.35 million to 4.81 million (StatsNZ, 2018). 15-30 audiology students graduate annually, few of which have been employed by DHBs in the past three years. In recent years DHB stakeholders report that they have increasingly relied on overseas recruitment to fill vacancies. However, audiologists do not currently appear on the Immigration New Zealand essential skills lists.

The DHB audiologist workforce is relatively young with only 15% over the age of 55. This contrasts with audiometrists and Vision and Hearing Technicians (VHTs) who have 57% and 39% over the age of 55. The vast

majority of audiologists are Female (86%) and there are fewer than 5 male staff among the 166 audiometrist and VHT staff. The ethnicity of the audiologist workforce is not representative of the population it serves with an underrepresentation of Maori and Pacific and an over representation of Asian staff.

Stakeholders report that there has been a general migration of staff towards the private sector. This is likely because of the recent growth in the demand for adult services caused by New Zealand’s aging population and a constrained supply of audiologists. The private sector have an incentive to build capacity to accommodate growing demand and with a fixed supply of audiologists (in the short term) which can lead to upward pressure on wages. Some stakeholders believe this is leading to audiologists choosing to work in the private practice over DHBs. Others report that they continue to stay working within DHBs for the opportunity to take on a more stimulating workload. Despite this, DHBs face ongoing challenges recruiting and retaining staff at all levels and particularly those with paediatric experience. This has been evidenced by elevated vacancy and voluntary turnover rates seen within the reference period.

### Operational Flexibility

Most DHBs focus their services around the delivery of paediatric audiology which has strict guidelines around which occupational groups can perform specific tasks. Audiometrists scope of practice does not include the delivery of paediatric services and due to the increasing focus on the delivery of these particular services, many DHBs have replaced audiometry FTEs with audiologists. This trend has resulted in a declining headcount for audiometrists. allied health assistants have a limited role in the provision of DHB audiology services. However, some DHBs are increasingly utilising administration staff to assist with frequently asked questions, troubleshooting basic hearing aid enquiries and assisting with grant applications.

The NZAS introduced the requirement in 2017 for audiologists to become certified to work with children and whanau. This has had an impact on the availability and flexibility of the DHB employed audiology workforce. With such a small headcount some DHBs may not have an audiologist certified to work on paediatric patients or provide supervision. This means these DHBs ability to deliver services is compromised if audiologists are absent from work or depart the service. Since paediatric certification was introduced, 30 DHB audiologists have become qualified on at least one of three competencies prescribed by the NZAS. It is unclear at this stage whether the challenges caused by the introduction of the certification framework will persist or if this is a temporary situation caused by a large volume of staff undergoing certification within a short period of time.

### Workforce overview and demographics

	Headcount	FTE	Mean FTE	Mean Age	% Female	Mean Length of Service	% Over 55 years old*	Annual Voluntary Turnover Rate**	Quarterly Sick Leave %***	% Vacancy FTE****
<b>Audiologist</b>	56	42.3	0.76	40.0	85.7%	6.7 years	14.9%	21.8%	1.6%	15.23% (7.6 FTE)
<b>Audiometrist</b>	9	6.2	0.69	51.5	100.0%	14.1 years	55.6 %	0.0%	2.2%	0% (0.0 FTE)
<b>Vision &amp; Hearing Technician<sup>1</sup></b>	157	115.7	0.74	51.2	98.7%	8.2 years	38.6 %	11.3%	3.7%	1.78% (2.1 FTE)

<sup>1</sup> These figures combine New Born Hearing Screeners and Vision and Hearing Technicians as role titles within the Health Workforce Information Programme (HWIP) are not always consistently applied.

	Other Ethnicity	Asian	Maori	Pacific
<b>Audiologist</b>	69.9%	23.2%	1.8%	3.6%
<b>Audiometrist</b>	75.0%	25.0%	-	-
<b>Vision &amp; Hearing Technician</b>	75.7%	5.6%	15.3%	3.5%

*Table 1: Audiology workforce overview*

## Purpose

The purpose of this paper is to provide an overview of the current audiology (reo ataata) Workforce based on qualitative information from staff involved in the delivery or management of audiology services and analysis of workforce data.

The report has been developed in consultation with the Directors of Allied Health (DAHs).

## Background / Context

On-going 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 DHBs 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 and to highlight where additional focus or information is required. It is about improving overall accuracy of information in order to allow informed decisions to be made regarding any potential intervention required.

## Audiology Role Definition

### Audiologist

“Audiologists are autonomous providers of health care. They specialise in the prevention, identification, assessment, diagnosis, management and treatment of disorders of the auditory, balance and other related neural systems. Audiologists provide habilitation and rehabilitation to infants, children and adults. Audiologists select, fit and dispense amplification systems such as hearing aids, frequency modulation systems, cochlear implants, and classroom amplification systems. Audiologists help prevent hearing loss through the provision and fitting of hearing protection, consultation on the effects of noise on hearing and consumer education. Audiologists work as clinicians, researchers, therapists, educators, consultants, administrators and business persons. Audiologists serve as expert witnesses in litigation related to their areas of expertise.” (NZAS1, 2018)

### Audiometrist

“Audiometrists conduct hearing screening, audiological assessment including diagnostic hearing assessment, rehabilitation and hearing aid fitting and follow-up specific to adults with non-complex hearing loss. Audiometrists may also evaluate hearing assessment results and determine appropriate interventions in adults with non-complex hearing loss subject to criteria set down” within approved NZAS Scope of Practice. (NZAS2, 2018)

### Advisers on Deaf Children (AoDC)

“Advisers on Deaf Children (AoDCs) work alongside children identified as deaf and hard of hearing and their families and whānau from birth to year 3 at school. AoDCs provide advice and guidance on communication and language development. They also help provide resources and programmes required to meet the developmental and educational needs of the child and their family and whānau through early childhood and into school. AoDCs work collaboratively with other service providers including the Deaf Education Centres, the Northern Cochlear Implant programme and the Southern Cochlear Implant programme, and Deaf Aotearoa New Zealand, among others.” (Education NZ, 2018)

### Hearing Therapist

“Hearing Therapists provide a comprehensive aural rehabilitation service for adults with hearing impairment and their families / whanau. The aim of Hearing Therapy is to facilitate the use of any device, procedure, information, interaction or therapy which lessens the communicative and psychosocial consequences of a hearing loss, minimise barriers to communication arising from hearing impairment, and to facilitate the individual’s adjustment to the psychological impact of living with hearing impairment.” (HTAoNZ, 2018)



## Vision and Hearing Technicians (VHTs)

“Hearing and Vision Technicians (VHTs) visit pre-school, primary and intermediate schools on a regular basis to carry out screening tests on all New Zealand children. These tests are important to identify hearing problems and vision problems requiring further assessment and/or treatment. VHTs play a central role in delivering the Ministry of Health Universal Newborn Screening Programme which was introduced in 2014. Their role is to carry out the mass screening of a defined cohort of children (4 and 11 years old) to identify undetected hearing loss and reduced visual acuity requiring further assessment and/or treatment.” (MoH, 2014)

## New Born Hearing Screeners (NBHS)

New Born Hearing Screeners (NBHS) work as members of a team in neonatal units, postnatal wards and in hospitals and clinics. They are involved in identifying which babies need testing and explain the screening procedure.

## Workforce Covered within this Assessment

This paper contains a summary of information predominately on the DHB employed audiology workforce. A small amount of information has also been included on the non DHB employed workforce. Sources for this information are contained within the body of the report.

## Terms and Abbreviations

- **ABR** - Auditory Brainstem Response
- **AoDC** - Advisers on Deaf Children
- **APD** - Auditory Processing Disorder
- **CCC** - Certificate of Clinical Competence
- **DHB** – District Health Board
- **DAH** - National Directors of Allied Health
- **ENT** – Ear, Nose and Throat
- **ERSG** - Employment Relations Strategy Group.
- **ESPI** - Elective Services Patient Flow Indicator
- **FTE** – Full Time Equivalent
- **HAB** - Paediatric Habilitation
- **HWIP** - Health Workforce Information Programme
- **HWNZ** - Health Workforce New Zealand
- **MAud** – Master of Audiology
- **MoH** - Ministry of Health
- **NBHS** – New-born Hearing Screener
- **NZAS** – New Zealand Audiological Society
- **NZHIA** - New Zealand Hearing Industry Association
- **OME** -Otitis media with effusion
- **The Act or HPCAA** - Health Practitioners Competence Assurance Act 2003
- **SWS** - Strategic Workforce Services
- **TEC** – Tertiary Education Commission
- **UNHSEIP** - The Universal Newborn Hearing Screening Programme.
- **UC** – University of Canterbury
- **UoA** – University of Auckland
- **VHTs** - Vision and Hearing Technicians
- **VRA** - Visual Reinforcement Audiometry

## Methodology

The workforce assessment tool provides a structured method in which to assess and classify health workforces whilst observing wider contextual factors which impact on the New Zealand health system. It provides an evidence based method for DHBs to review their workforces as part of a reoccurring annual planning process.

The workforce assessment tool uses a mixture of qualitative and quantitative processes, assessing the workforce on four domains which cover a range of drivers influencing the current state of a workforce. These are detailed at Appendix A: Workforce Assessment Domains which include:

- Demand;
- Supply;
- Operational Flexibility; and
- Operational Capacity.

Use of the tool relies on the consensus view of DHB stakeholders agreeing on a workforce classification and making suggestions for further investigation where required. A one-page schematic guide to the workforce assessment process is attached at Appendix A.

The tool provides information at the particular point in time in which the process is undertaken, but the process can be repeated at a later date to identify any changes or trends.

## Audiology Workforce Overview

This section provides a snapshot of key statistics available during the study period 30 March 2010 to 31 December 2017.

### Audiologists:

- HWIP<sup>2</sup> trend analysis from March 2010 to December 2017 showed a small fluctuation, a 2.9% increase to the national DHB audiologist funded FTE but no change to the overall headcount over the reference period. All regions have faced recent declines in FTE apart from the South Island which has experienced gradual increases since 2013.
- The demographic profile of the DHB employed audiologists indicates:
  - A young workforce with most staff within the 25-34 age group with the percentage of workers over 55 years of age at 14.9%.
  - A female dominated workforce with only 14% of male staff (8/56).
  - An underrepresentation of Maori (2%) and Pacific (4%) and an overrepresentation of Asian (24%) staff members compared to NZ's resident population.
- The number of domestic graduates from the NZ Master of Audiology (MAud) programmes fluctuates year to year but has increased in recent years (2012-2016) from 15 to 30 graduated per year. Each programme is fully enrolled (and oversubscribed) as currently funded by HWNZ.
- The audiologists gaining full membership with the NZAS are increasing at an average of 37 per year in the years 2015-17. Following introduction in 2017, an increasing number of staff are undertaking paediatric certification with 30 DHB staff currently holding at least one of three paediatric certificates.

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<sup>2</sup> See Appendix E for details on HWIP.

- The part-time status measured by mean FTE has marginally increased during the reference period from 0.73 to 0.76. This remains relatively low indicating that a reasonably large number of audiologists work on a part-time basis.
- Vacancy rates have remained high as a proportion of total FTE, the last three quarters of 2017 fluctuating from around 9% to 17%.
- Turnover rates for DHB employed audiologists have fluctuated significantly over the reference period (between 10% and 29% at an average of 22%) due to the small size of the workforce. It should be noted that this is voluntary turnover (i.e. excludes fixed-term employees) and also includes movement between DHB employers.
- At a national level the average annual leave balances are trending higher reaching 99.3 hours in the last quarter of 2017. The quarterly sick leave<sup>3</sup> percentage is low at 1.6% for audiologists, 2.2% for audiometrists and 3.7% for Vision and Hearing Screeners.
- The key statistics when considered together suggest an audiologist workforce that has not grown over the 8 year reporting period and has declined relative to New Zealand's population. A significant amount of vacancies remain unfilled around the country (18% of the total workforce [FTE] in December 2017) and a limited pool of graduates is available annually to meet ongoing increases in demand for hearing services. Audiologists are a young, female dominated workforce under representative of Maori and Pacific and over representative of Asian staff members. A large portion of the workforce is employed on a part-time basis and turnover rates are high at 22%. Overall, these findings indicate an unstable workforce which lacks diversity and shows signs of increasing pressure in line with a growing population.

### **Audiometrists and Vision & Hearing Testers (VHTs)**

- During the period March 2010 to December 2017 audiometrists have declined in headcount by 40% to 9. Most of this decrease has occurred since December 2015. This very small and declining workforce is female dominated and has an older age demographic with 57% over the age of 55. Many audiometrists tend to have worked for the DHB for long periods with a mean length of service of 14 years.
- There has been a 39% increase in the headcount and FTE of VHTs from March 2010 to December 2017 at which time there were 157 staff employed by the DHBs. VHTs are also a female dominated workforce and are of an older demographic with 39% of staff over the age of 55. 15% of VHTs are Maori, representative of New Zealand's resident population. Most VHTs have worked for the DHB for long periods with a mean length of service of 8 years.
- Overall the national FTE per resident population for audiometrists and VHTs has increased by 14% over the reference period. However, it must be noted that the FTE for audiometrists decreased while at the same time increased significantly for VHTs.
- Key statistics suggest that audiometrists are a very stable workforce that is in decline while VHTs are also a stable but aging workforce. Both workforces are female dominated, have a high rate of part time employees but show low turnover rates and have a high average length of service.

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<sup>3</sup> Sick Leave Rate = Sick Leave Hours Taken / Total Hours Paid – See Appendix E: Notes on Quantitative Health Workforce Analysis.

## Assessment of the Audiology Workforce using the Workforce Assessment Tool

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 four categories as shown in Table 2 below. Results should be considered indicative only.

Health Workforce Classification Table		
Overall Classification	Intervention	Overall Score
Stable Occupation	WATCHING BRIEF	4 < 8
Transitional Occupation	SOME INTERVENTION RECOMMENDED	≥ 8 < 11
At Risk Occupation	INTERVENTION REQUIRED	≥ 11 < 14
Occupation Under Pressure	INTERVENTION IMPERATIVE	≥ 14

Table 2: Health Workforce Classification Table

Domain	Score out of 4	Descriptor for Score
Service Need	3.07	Service demand progressively increasing / impacting on service level or peak demand periods increasing.
Supply	3.39	Distribution and supply issues increasingly impacting on wider system. Issues with overall size of workforce available.
Operational Flexibility	3.29	Emerging requirement for more flexible workforce options
Operational Capacity	3.36	Some recruitment and retention issues are occurring, with slightly longer timeframes for gaining this workforce
<b>Total</b>	<b>13.11 (13)</b>	<b>AT RISK OCCUPATION – INTERVENTION REQUIRED</b>

Table 3: Scoring of workforce domains taken from the survey was as follows:

Table 3 displays the DHB Audiology Workforce Assessment (aggregated results from the online survey) as ranked by sector experts. Forty seven stakeholders from various roles (including Directors of Allied Health (DAHs), allied health service managers, allied health clinical leaders, audiologist team leaders and human resources managers) contributed to this workforce assessment.

The aggregation of individual responses has resulted in a score in the 'at risk' range. Comments referenced the difficulty in recruiting graduate audiologists and experienced audiologists, specifically those with certification to work within the paediatric scope as well as a wide variety of other topics further explained within Key Issues for the Audiology Workforce from page 11.

Two subsequent teleconferences with a subset of the group (18 participants) above confirmed this assessment. Issues of increasing demand, difficulties in filling vacancies and capacity to provide training and supervision for less experienced staff.

## Summary of the Current Status of the DHB Employed Audiologist Workforce

Table 4 below provides a summary of the key elements of the audiology workforce.

Summary of Key Service, Operational and Employment Drivers			
<b>1. Operational Service Needs</b>	Current	Increasing demand for both paediatric and adult services but particularly pronounced for adult services.	●
	12 month outlook	Current trends likely to continue.	●
	1 - 3 year outlook	Current trends likely to continue.	●
	4 – 10 year outlook	On-going increases in demand. Further increases in service demand are projected within adult scope services over the next 10 years.	●
<b>2. Employed Workforce Structure (Demography)</b>	Average age	Age profile of the audiologist workforce is relatively young with only 15% over the age of 55 years whereas audiometrists and VHTs are an aging workforce with 57% and 37% over the age of 55.	●
	Ethnicity	Audiologists: Maori (2%) and Pacific (4%) Audiometrists: Maori (0%) and Pacific (0%) VHT: Maori (15%) and Pacific (4%)	●
	Gender balance	Predominantly female workforce: Audiologists (86%), audiometrists (100%), VHT (99%)	●
<b>3. Recruitment</b>	Current vacancies	Issues exist with graduate and experienced audiologist roles, vacancy rates between 9-17% in last three quarters of 2017.	●
	Average time to fill	Long lead times for the recruitment of audiologists experienced at most locations.	●
	Distribution	Due to the small size of the audiologist workforce 1-2 vacancies can exert significant pressure on local service provision. Some distribution issues experienced within regions.	●
	Pressures on related workforces	Pressure experienced in some locations who have held audiology vacancies for significant periods of time.	●
<b>4. Retention Factors</b>	Turnover	Turnover rates for audiologists are relatively high at an average of 22%. Rates for audiometrists and VHTs were significantly lower.	●
	Sick Leave	No reports of current issues	●
	Part-time /Fulltime	Audiometrists have a relatively low mean FTE at 0.76. audiometrists (0.69) / VHTs (0.74).	●
	Skill Mix	Limited opportunity to utilise audiometrists and assistant workforces, especially for paediatric scope.	●
	Access to Clinical leadership	No suggestion that there is not access to clinical leadership.	●

	Clear career path	Some issues identified with length of NZAS certification process, particularly for paediatric certificates.	●
	Development	Some issues identified	●
	Workload management	Increases in intensity of workload and case management requirements.	●
	Roster management	No major issues identified	●
<b>5. Ongoing Training and Development</b>	Entry/ Transition competency	Some issues identified for DHB staff requiring paediatric certification.	●
	Match to service requirements	Some reported issues.	●
	Access to on-going training (progression)	Some reported issues	●
	Access to training to maintain practising cert	No reported issues	●

*Table 4: Summary of key service, operational workforce and employment drivers.*

Key	
●	<b>Working Well</b> - no current problems, no immediate action required
●	<b>Moderate Alert</b> - action required in short / medium term
●	<b>High Alert</b> - immediate action required, extreme risk to occupation group

# Key Issues for the Audiology Workforce

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

## Service Demand

### Service stability

- There was a general consensus that audiology services have been seeing increases in demand which has been driven by:
  - An increase in ENT support which is driven by MoH Elective Services Patient Flow Indicator (ESPI) 4 Month Targets;
  - An increase in the volume of oncology related referrals;
  - Increasing awareness and testing for Auditory Processing Disorder (APD). However, most DHB's do not offer assessment and treatment;
  - Increasing referrals from The Universal Newborn Hearing Screening Programme (UNHSEIP);
  - Increasing awareness of hearing loss and early intervention;
  - International literature showing the significant benefit of fitting very young children with hearing aids which often require more/lengthier appointments (Yoshinaga-Itano et al, 1998). This is combined with the increasing availability of specialised bone conduction hearing aids which also impact on fitting time;
  - A growing population (particularly DHB birth rates) and regional migration pressures;
  - Changing demographics of New Zealand's population which is geographically diverse;
  - Increasing migrant populations in some areas which has impacts on treatment times due to lack of translation services; and
  - Late diagnosis effects (such as increasing complexity) driven by increasing waiting times.

A small number of stakeholders report that they have not seen increases in demand for audiology services in recent times (e.g. Tairāwhiti & South Canterbury). Demographics of DHB populations are a significant determinant of demand for audiology services which could contribute to these findings.

- As a local example see Figure 1 which shows the growth in demand at Nelson Marlborough, a smaller DHB, which has seen significant increases in the number of children with known permanent hearing loss who were being monitored and supported through the DHB audiology service. From September 2014 to February 2018 69 more children were on the services active paediatric caseload, a 42% increase.

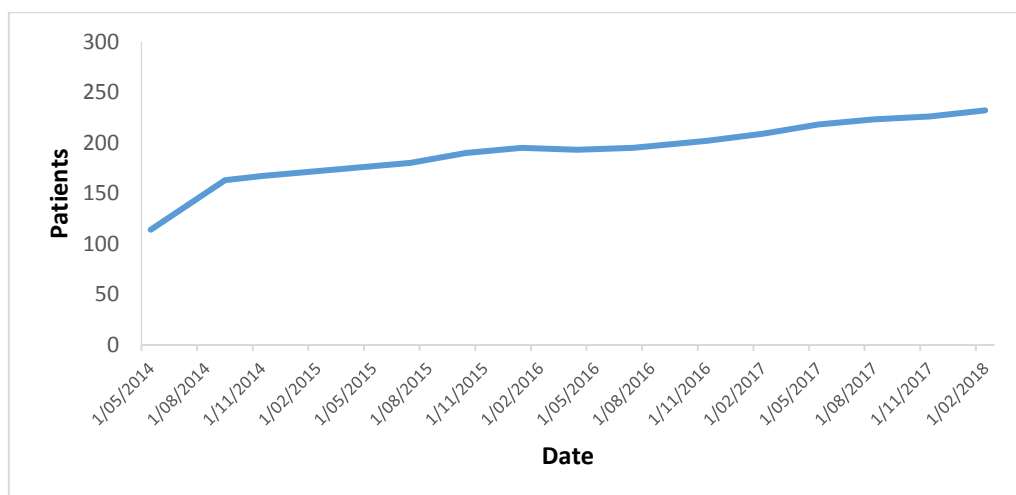


Figure 1: Children with permanent hearing loss monitored and supported by the Nelson Marlborough DHB audiology service.

- Internationally, there has been a large growth in demand for audiology services. The American Speech Language Hearing Association project the job growth in audiology to exceed 29% from 2014-2024 (ASHA, 2017). The Australian Federal Government also project the future job growth as “Very Strong” (Job Outlook, 2017). See Figure 2 below which demonstrates the increased demand for audiology services that can be expected in New Zealand based on the aging population and equivalent hearing loss prevalence rates for each age group.

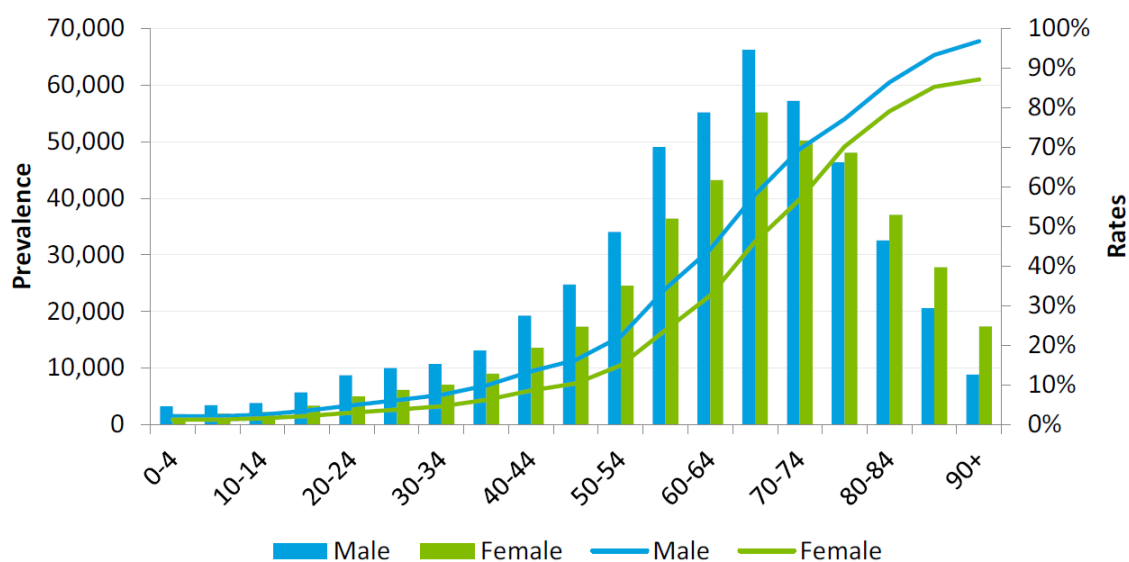


Figure 2: New Zealand hearing loss prevalence by age and sex (NFD, 2017)

- In most DHB stakeholders believed that they were experiencing increased demand. However, some acknowledged that reduced capacity (caused by unfilled vacancies) may lead to experiences where staff may feel that demand for audiology services has increased more than is actually the case. This is demonstrated by a stakeholder at Waikato who expressed the following:

*“The actual numbers of referrals to the audiology service have been declining over the last 3 years, however due to significant difficulty filling vacancies the waitlist has been growing.”*

A small number of stakeholders such as Capital and Coast and Lakes DHBs expressed that while other DHBs have faced difficulties attracting and retaining staff, they have been fully staffed and have had the capacity to keep up with growing demands. A stakeholder at Auckland DHB expressed that at the times they are fully staffed, they are able to manage the service demand.

- A further contributor to demand is the growing waiting list for follow-up appointments. For example, one stakeholder at Counties Manukau reported to be as long as two years, unless the patient faced significant hearing or co-morbidity. Another stakeholder from Counties Manukau DHB acknowledged they faced difficulties prioritising new referrals with follow ups.
- Paediatric services are subject to some seasonal pressures including:
  - Otitis Media with Effusion (OME) or glue ear is more prominent in the winter months; and
  - Peaks associated with the school year.

### Operational deployment and intensity of use:

- DHBs are cutting the services they offer to adult patients or raising the thresholds for treatment in order to meet the demands of their paediatric service and essential hospital referrals for adult patients. One exception to this is South Canterbury who still deliver a range of adult services serving the particular demographic profile of the DHB.



- Some DHB stakeholders commented that sometimes audiologists shorten their appointments in an effort to keep up with service demands or catch up on waiting lists. Stakeholders commented that this places additional pressures on clinicians which could result in some decline in clinical standards and could lead to poorer outcomes for patients.

### **Clinical processes / models of care influence on occupational requirements:**

- Audiology has well defined scopes of practice which restrict audiometrists and assistant workforces from working within paediatric audiology. Since DHBs focus most of their resources around the paediatric scope, this has meant that audiometrists are limited in what services they can provide. This has led to a declining headcount of audiometrists working in the DHBs. Several DHB Managers have commented that in the past when audiometrists have left they haven't been replaced and rather exchanged for audiologist FTE equivalent resources (E.g. Southern, Nelson Marlborough DHB).
- Three DHBs outsource services from private providers and four DHBs have arrangements with other DHBs to provide hearing services on their behalf as follows:
  - Waitemata contract out to Auckland DHB
  - Tairāwhiti contract out paediatric services to Waikato (Provided from Gisborne hospital)
  - Wairarapa contract out paediatric under 3 year olds to Hutt Valley DHB.
  - Whanganui contract out ABR referrals to Auckland DHB.
  - Canterbury and West Coast contract out their paediatric rehab services to Triton Hearing.
  - Northland contract APD assessments out to Hear Better Audiology.

## **Supply**

### **Community / population health requirements:**

- The increasing demand for adult audiology services driven by New Zealand's aging population is a cause of growth in the private sector (MoH, 2016).
- The audiologist workforce is small with 416 practitioners registered (at March 17) with the NZAS. The DHB employed audiologist workforce makes up a fraction of this at 56 practitioners (as at 31 December 2017) a headcount which has not grown since March 2010 (see Figure 16).
- Many DHB stakeholders and educational providers stated that every student graduating from the MAud programmes in the past two years has been recruited by private providers. This generally occurs around the commencement of their second year of the two-year master's programme and often leaves no opportunity for the DHBs who recruit following graduation.

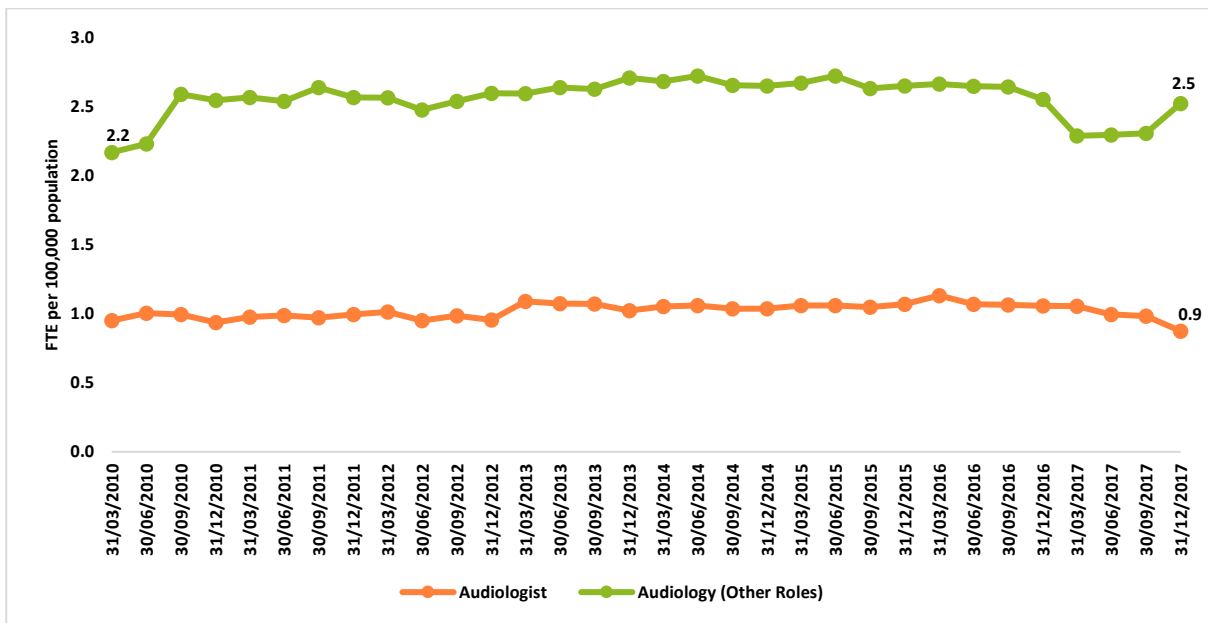


Figure 3: National DHB audiology FTE per 100,000 resident population

- Figure 3 shows the National DHB FTE per 100,000 resident population of audiologists and for other audiology staff (VHTs and audiometrists). The rate of audiologists per 100,000 has fluctuated from 0.9 to 1.1 since 2010 and has been tracking down since March 2016 to the current rate of 0.9 FTE per 100,000. The rate for other audiology staff has fluctuated between 2.2 to 2.7 and currently sits at 2.5. Since June 2016 there was a sharp decline which can be explained by a decrease in audiometrist FTE. There has been a recovery in the final period which can be explained by the recruitment of a number of VHTs across the DHB sector.
- Audiologists are required to gain and maintain a Certificate of Clinical Competence (CCC) on graduating from an accredited university programme. This and the paediatric certification are assessed via practical experience and examination. The CCC is generally required before practicing unsupervised and being recognised as an audiologist qualified to practise with adults. Because a practitioner is required to have a CCC before commencing the hours required for paediatric certification it can take over 3 years for a graduate to gain the three paediatric competency certificates and become fully qualified to work unsupervised on paediatric patients. Some stakeholders held the view that the requirement to hold paediatric certification provided a disincentive to working at a DHB.
- There is a limited supply of those carrying a paediatric certification. This was introduced to ensure that audiologists have the particular skillset and clinical experience required to carry out paediatric audiology work. The DHB National Directors of Allied Health endorsed the NZAS proposal to introduce this certification and DHBs require audiologists to be certified in order to perform paediatric work unsupervised.
- The paediatric certification was only introduced in 2016 so there are relatively few certified senior paediatric audiologists who are available to supervise others undertaking the certification. A ‘train the trainer’ type arrangement exists where audiologists qualified on a single certificate can perform client reviews. However, due to the size of the workforce, small and some medium-sized DHBs require at least one experienced practitioner to hold all three certifications to ensure all service areas are covered and ensure effective supervision.
- Overseas qualified audiologists who have had experience in paediatric audiology are increasingly hard to recruit and face a lengthy supervision and training period before being able to work independently.

**Distribution:**

- The audiology services provided by DHBs are variable throughout New Zealand based on services that are designed or have evolved to cater for the particular demographics of the resident population of each DHB. Most DHBs are almost completely focused on the delivery of paediatric services with some support provided to acute hospital services. Others with aging resident populations, such as South Canterbury DHB which provides a wider range of audiology services across the age continuum. See Figure 4 and Figure 5 for details on the regional distribution of the DHB employed audiology workforce and changes to its distribution over the 5 years to December 2017.

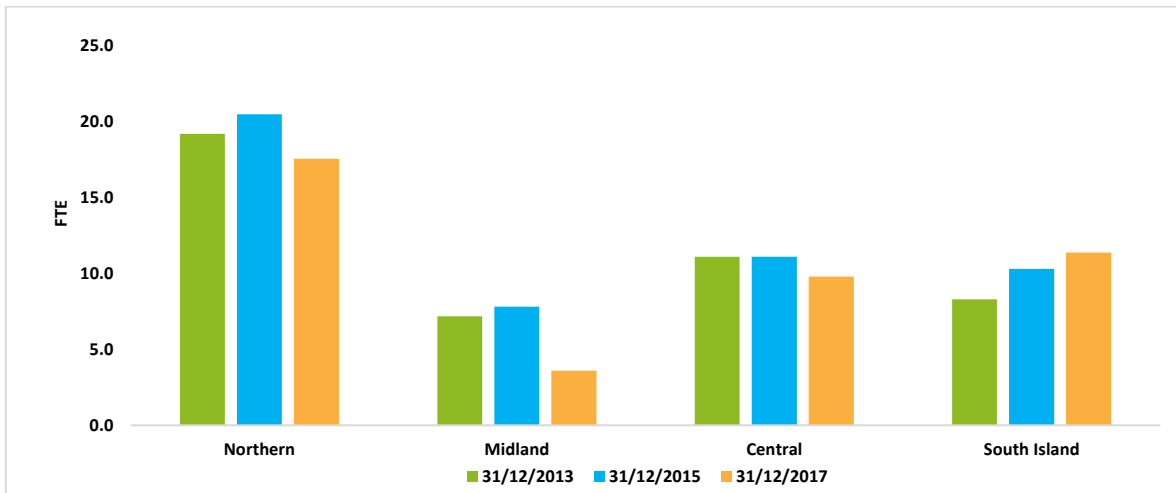


Figure 4: National DHB employed audiologist contracted FTE by region

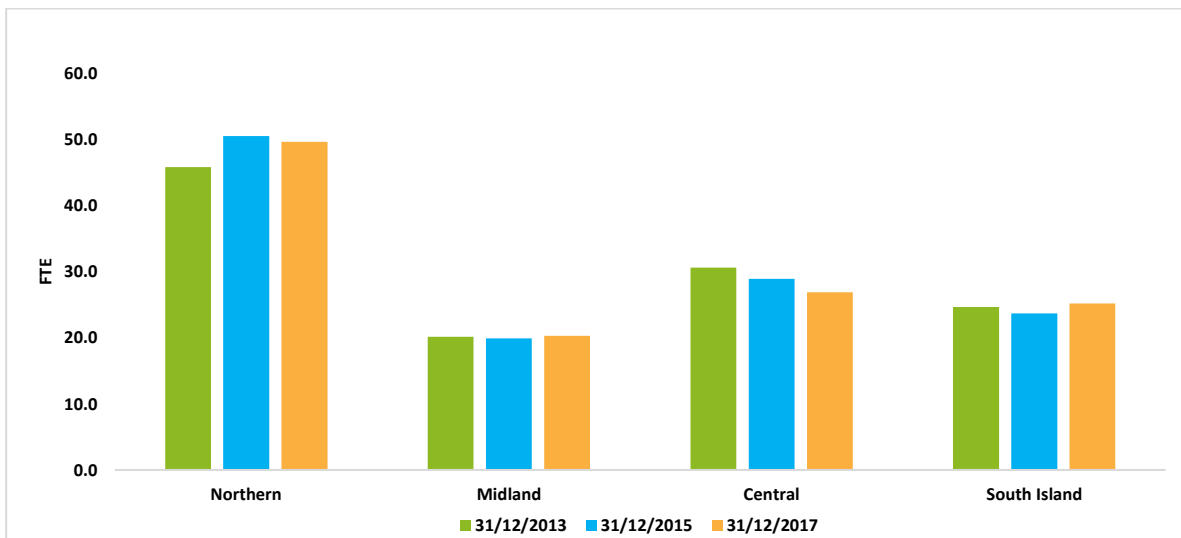


Figure 5: National DHB employed other audiology (other roles) staff contracted FTE by region

- Seven DHBs have third party arrangements with other DHBs or private providers to carry out services on their behalf. Stakeholders from Canterbury DHB highlighted the risk if the private provider decided to drop their support of the service. Stakeholders from other DHBs raised concerns about DHBs extending contracts to provide paediatric services to private providers.
- Stakeholders from some DHBs serving rural and isolated populations noted that services are mostly delivered from regional hubs and rarely provide outreach services. Services at these regional hubs require their patients to travel to them (e.g. In South Canterbury they receive patients in Timaru

Hospital from as far as Twizel to receive audiology services and in Southern DHB patients may travel several hours from Omarama and Central Otago to Dunedin Hospital).

- Various DHBs have cross-boundary relationships in which patients can seek treatment in neighbouring DHBs who provide services within easy reach of patients. For example, South Canterbury DHB provide audiologists for clinics in Ashburton (Ashburton falls within Canterbury DHBs coverage).

### Demography:

- As illustrated in Figure 6 the DHB employed audiology workforce has a relatively young age profile with an average age of 40 years of age. This contrasts with Figure 6 which shows that the other professions within audiology which assist and provide screening services to audiology have an aging workforce, a large proportion of which are approaching retirement.

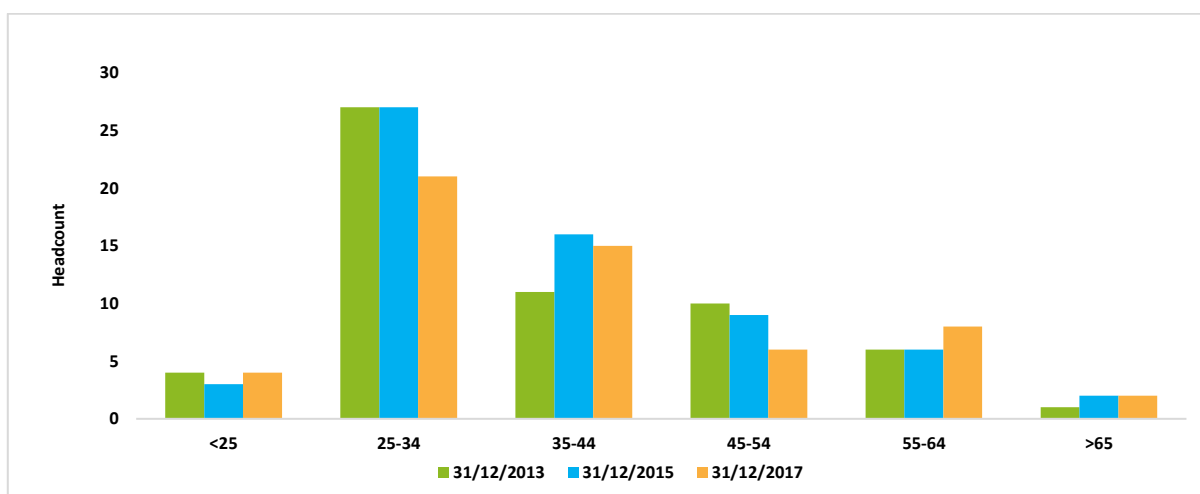


Figure 6: National DHB audiologist age distribution

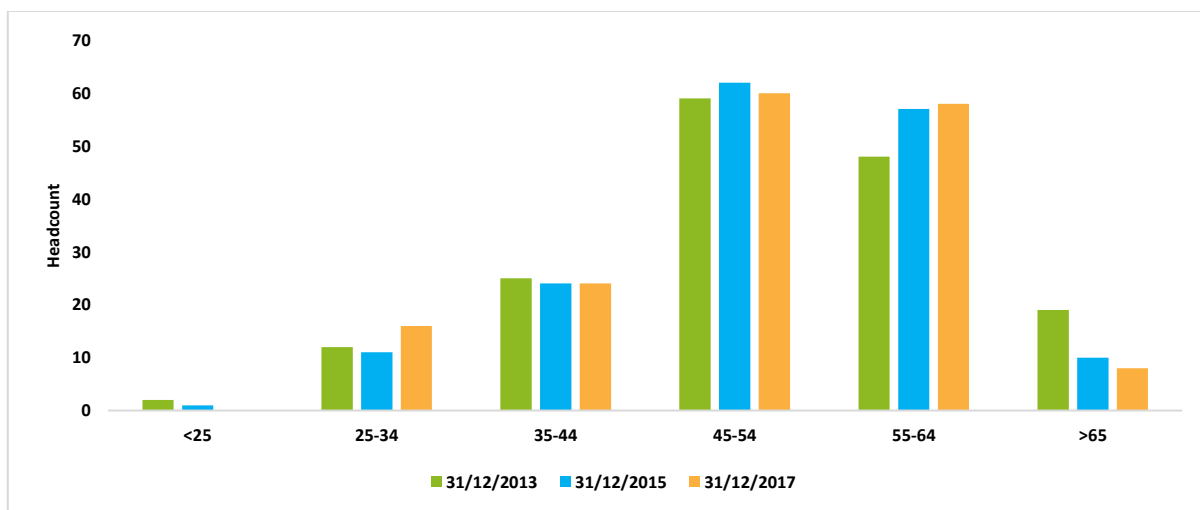


Figure 7: National DHB other audiology staff age distribution

- Audiometrists have a mean age of 52 and VHTs a mean age of 51 which is much higher than their audiologist colleagues. As seen within Figure 8, the percentage of other occupational groups within audiology has increased from 29.7% in March 2010 to 39.9% in December 2017. The aging nature of the occupational groups that support and refer to audiologists is seen elsewhere across the allied health disciplines particularly dental therapist and allied health assistant workforces. This is an ongoing risk faced by the audiology and wider allied workforces.

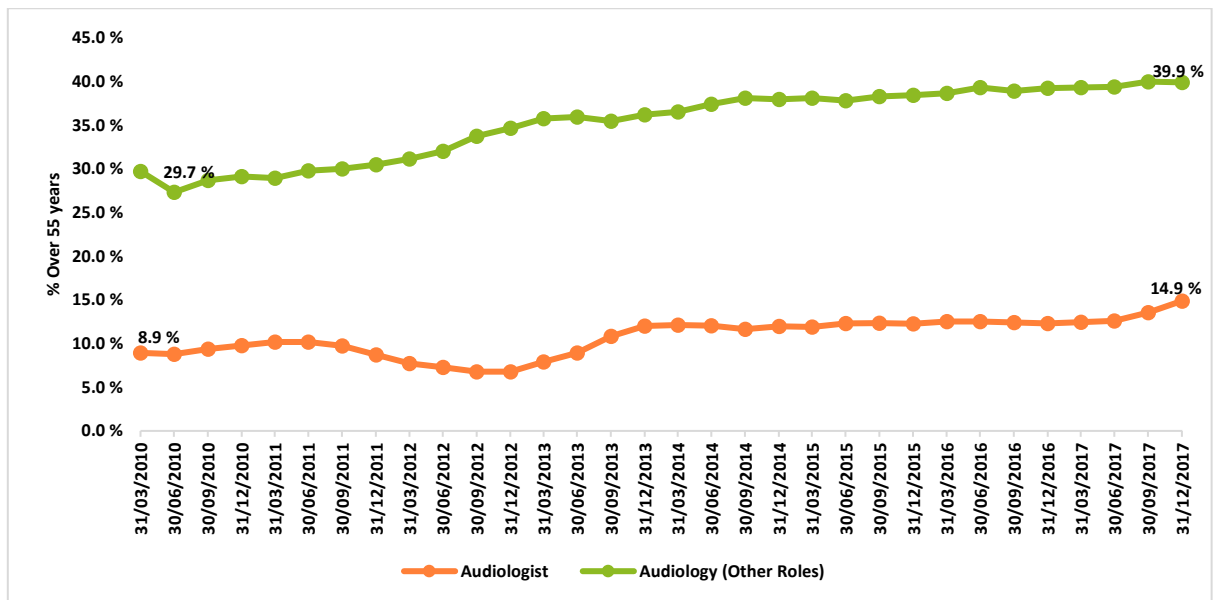


Figure 8: National DHB audiology percentage over 55 years old

- A significant majority of audiologists in public practice are female (86%), see Figure 9 which shows a slow decline in males practicing within DHB audiology services. An even higher proportion is seen within the referring and assistant staff with 99% of VHT staff and all of audiometrists are female, see Figure 10.

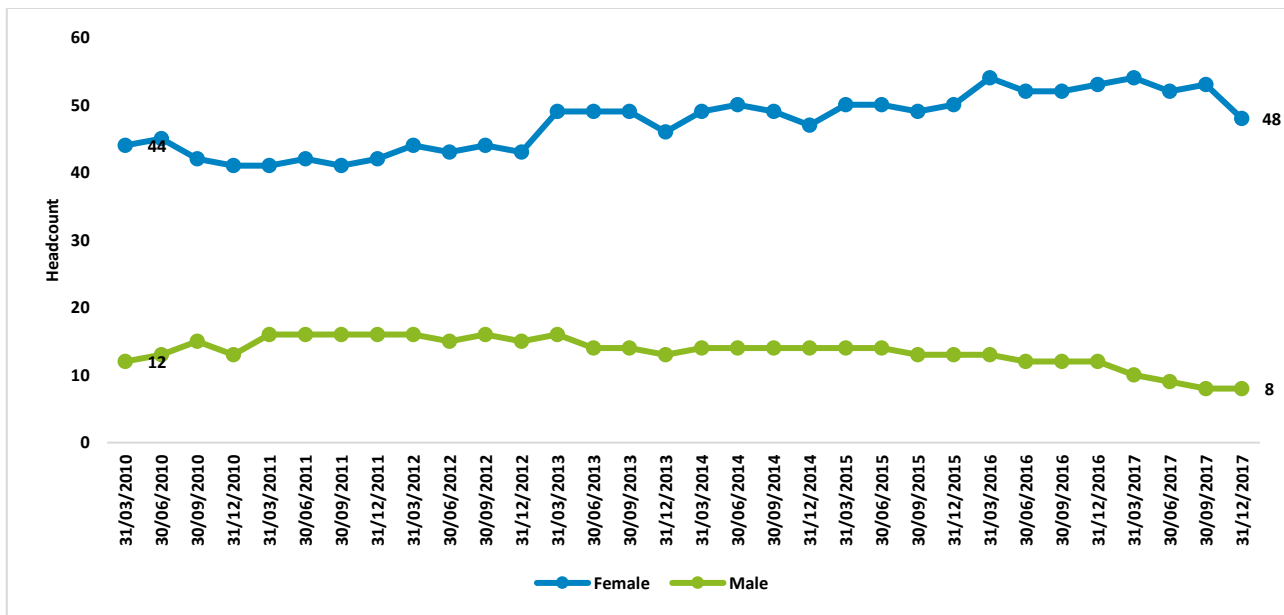


Figure 9: National DHB audiologist headcount by sex

- Representatives from University of Auckland (UoA) and University of Canterbury (UC) believed the reason that more females were entering the profession was that audiology is highly competitive and female students tend to have higher grade point averages. UoA expressed that they had only two male students come through as new enrolments to the programme in 2017 and 2018. At UC males tend to have a larger presence enrolling, 1/3 in 2016, 1/2 in 2017 and 1/3 in 2018.

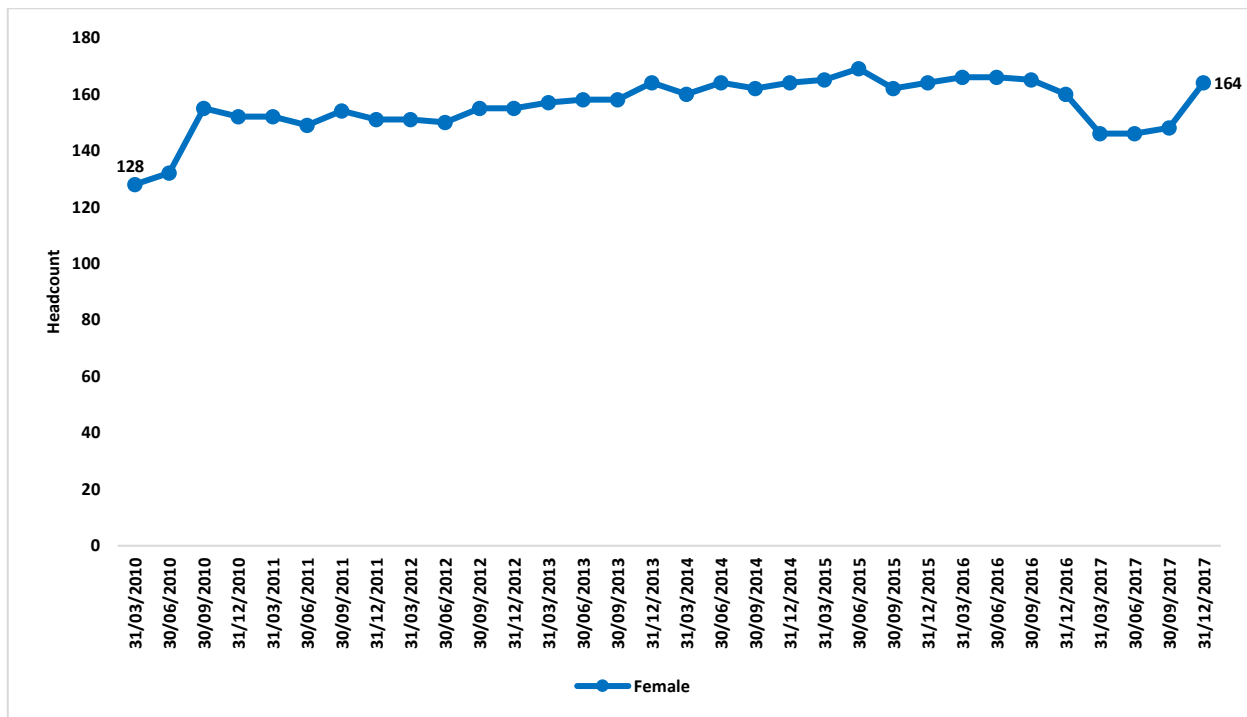


Figure 10: National DHB other audiology staff headcount by sex<sup>4</sup>

- The ethnicity of the audiologist workforce is not representative of the populations it serves. This is particularly pronounced for Maori and Pacific. Only 2% (or 2 Headcount) of Maori are represented in the DHB employed audiologist workforce, far below the 16% of Maori within the resident population (Figure 11). Reinforcing this trend is the fact that no Maori students have enrolled in the Master of Audiology programmes at either UoA or UC in the years 2013-2016 (see Figure 13 and Figure 14 on page 20). Figure 11 shows that Pacific people are also poorly represented in the DHB employed workforce, with only 4% representation compared to 7% of the resident population. Similarly, Figure 13 and Figure 14 show no Pacific students enrolled for the entire 9 year reporting period.
- There are efforts being made to encourage more Maori and Pacific students into the workforce. Some DHBs have incubator programmes to feed students into health careers (including audiology) however, audiology requiring a masters level qualification requires commitment over a lengthy time horizon. A major barrier to Maori and Pacific Island students is the living costs associated with being a student for a minimum of 5 years. Also, the major challenge across all workforces is to get a pipeline of students into tertiary education, let alone progress them through to a post graduate education such as the audiology masters level qualifications. There are a lack of scholarship opportunities in the field of audiology specifically for Maori. Both UC and UoA offer generic scholarships for Maori to undertake study across university programmes but a scholarship was not able to be found for audiology. The NZAS looking have a scholarship proposal pending with MAud programmes targeting Maori and Pacific Island students (NZAS, 2017).
- Another factor is that the Master of Audiology course specifically at UC is disconnected from other health sciences courses, specifically those located at Otago Medical School. The Otago Health Science curriculum have a good proportion of Maori represented in enrolments evidenced by recent data which shows proportionate representation of Maori in first year medicine courses. At UoA the Master of Audiology programme now sits in the School of Population Health which was reported to have more Maori and Pacific enrolments. However, this does not appear to be resulting in enrolments from these groups evidenced within enrolment statistics from the Tertiary Education Commission (TEC) (Figure 13

<sup>4</sup> Note: Data for male audiology (other roles) have been removed due to the low headcount (less than 5).

and Figure 14). The College of Science (UC) and The School of Population Health (UoA) looking to build their pipeline of Maori and Pacific students.

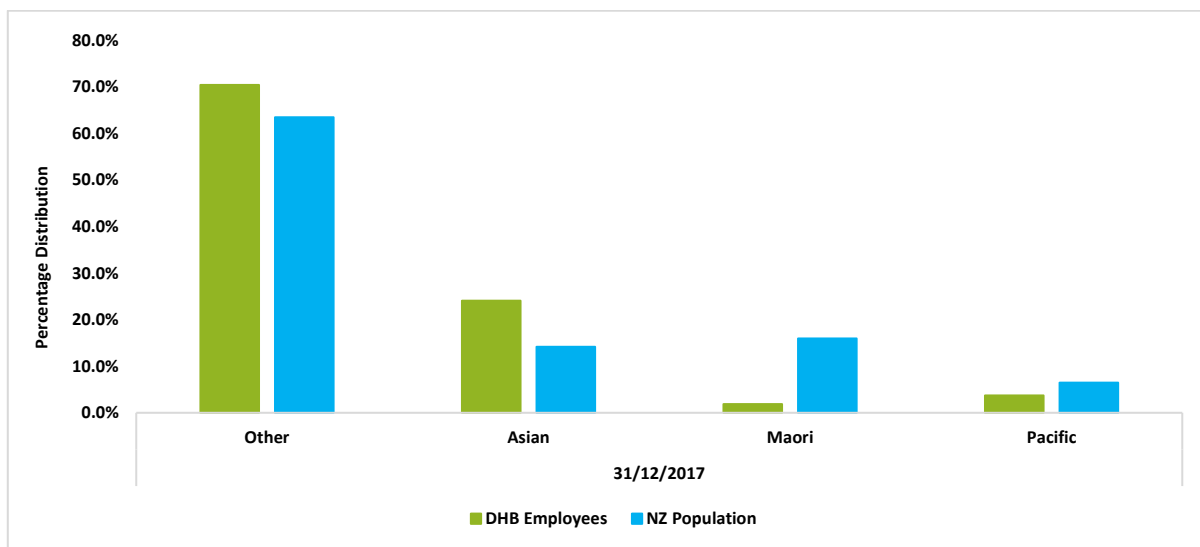


Figure 11: National DHB audiologist distribution by ethnicity (Headcount) vs resident population

- As with other allied workforces, higher representation particularly of Maori is seen in assistant and support roles in audiology. This is seen in Figure 12 which shows that Maori make up 15% of the workforce which is almost representative of the resident population of New Zealand.

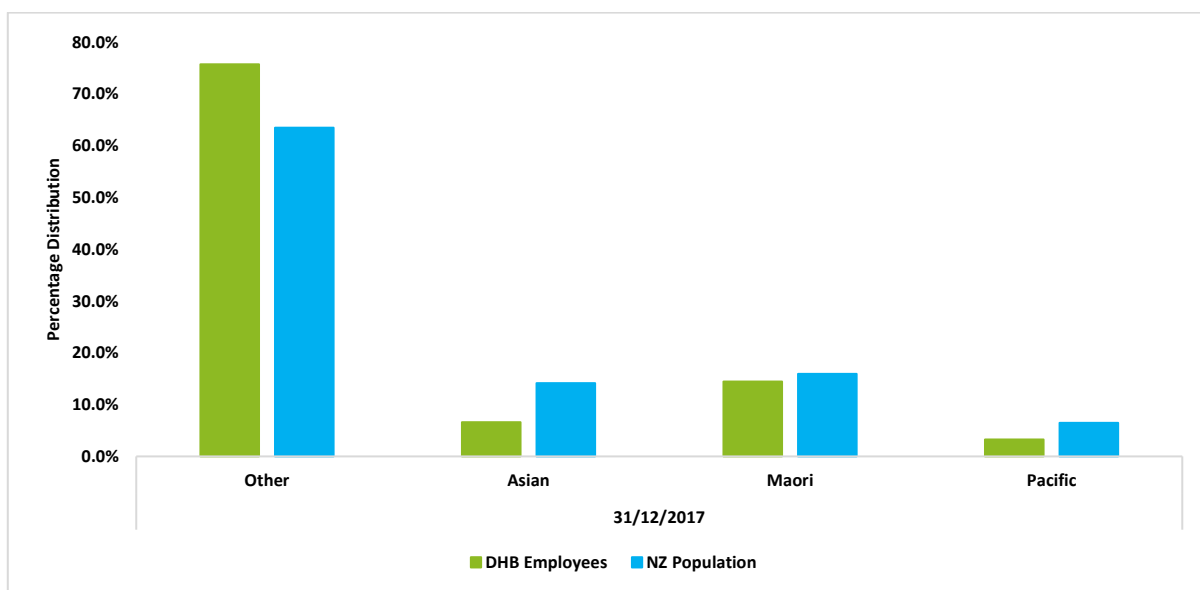


Figure 12: National DHB other audiology staff distribution by ethnicity (headcount) vs resident population

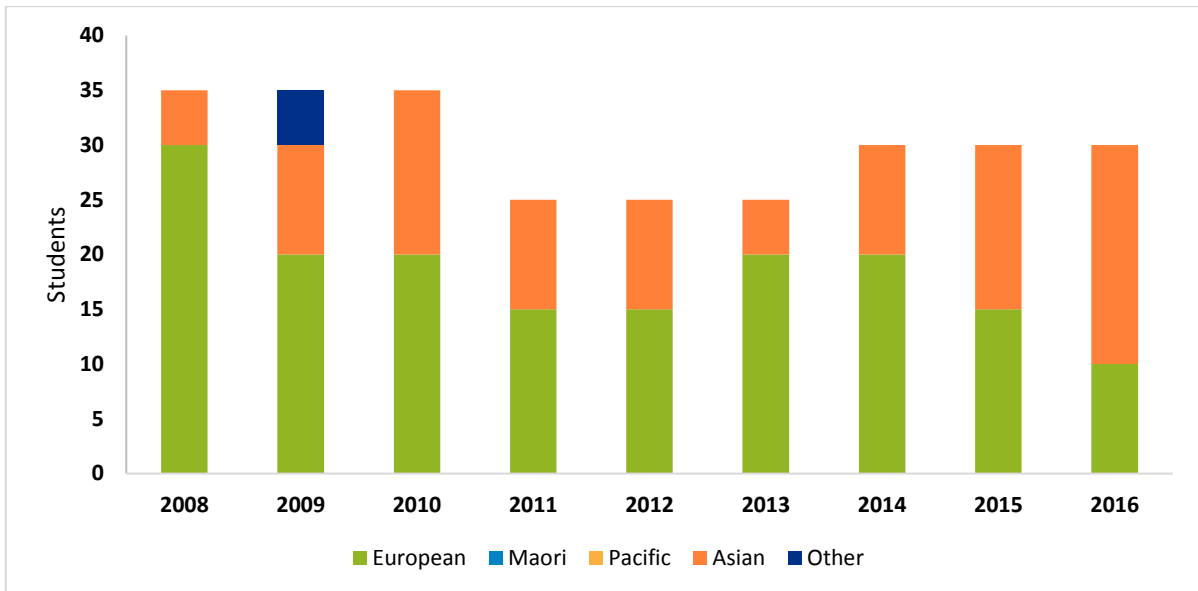


Figure 13: Ethnicity of Domestic Students enrolled in 2 year Master of Audiology degree (University of Auckland)

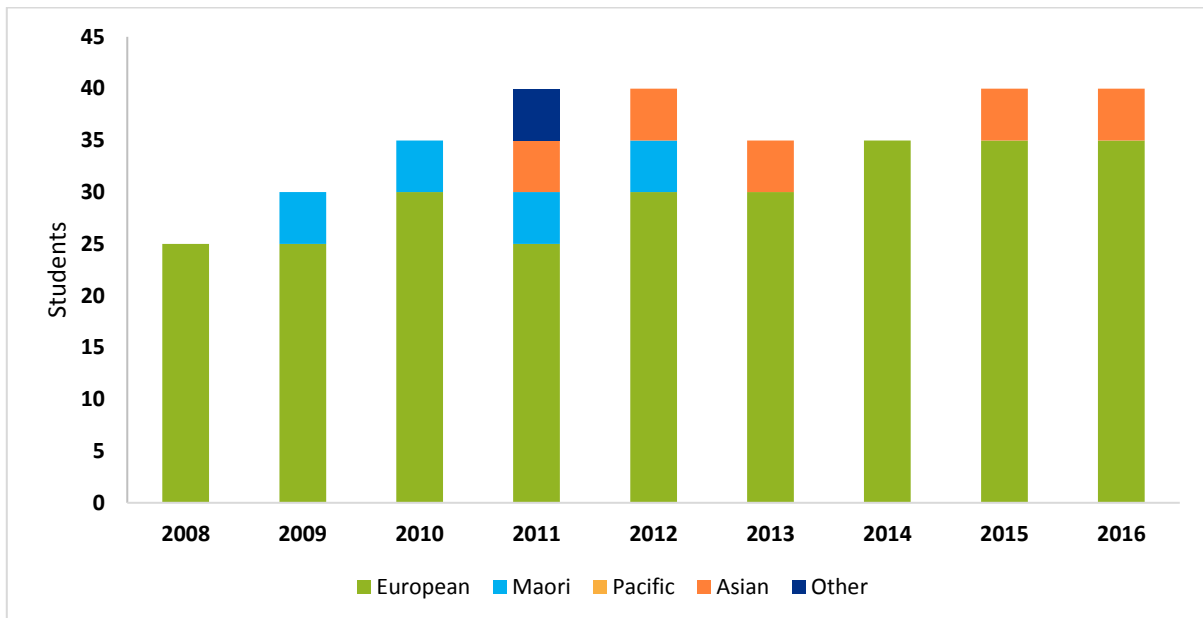


Figure 14: Ethnicity of domestic students enrolled in 2 year Master of Audiology degree (University of Canterbury)

## Operational Flexibility

### Ability to substitute:

- Most DHBs focus their services around the delivery of paediatric audiology which has agreed guidelines around which occupational groups can deliver services in this area. Audiologists have almost complete autonomy in paediatric service delivery due to the complex nature of practice.
- The scope of practice for audiometrists restricts them from delivering services to children and their stakeholders have reflected that there is little opportunity for allied health assistants to substitute or assist certified audiologists to perform paediatric work. Also, as it can take up to 3 years to qualify with paediatric certification from graduation. Some services struggle to staff services with fully certified audiologists.



- The impact of the introduction of the audiometrist scope of practice has resulted in a reduction of audiology headcount (across audiologists and audimetrists). This has been demonstrated in recent years as DHBs have increasingly converted audiometrist to audiologist FTE in an effort to increase practitioner’s flexibility to treat a wider range of conditions.
- Audiometrists can be used to see basic adult diagnostic and rehab cases (under audiologist supervision) which provides flexibility for DHBs who continue to provide a significant workload in this service area. Delegating clinical tasks to anyone other than an audiometrist puts an NZAS member in breach of the NZAS code of ethics.
- Some DHB stakeholders reported that over time their administrators / receptionists pick up knowledge which can be valuable to provide information and troubleshooting patient’s issues with hearing aids. In cases (e.g. MidCentral DHB) AoDC’s are reported to perform a range of tasks including assisting with Visual Reinforcement Audiometry (VRA), taking ear impressions which can free up capacity for audiologists. In Waikato an administration assistant is utilised to carry our funding applications.
- The female dominated nature of the audiology workforce may contribute to the high number of part time staff. Several DHB stakeholders commented that they faced difficulties staffing busy services with a lack of full time staff. This is seen within Figure 15 where audiologists have a part-time status of 0.76 and other audiology staff a slightly lower rate of 0.73. Since March 2016 has seen a slight decline in the part time status of all roles across the DHB employed audiology service.

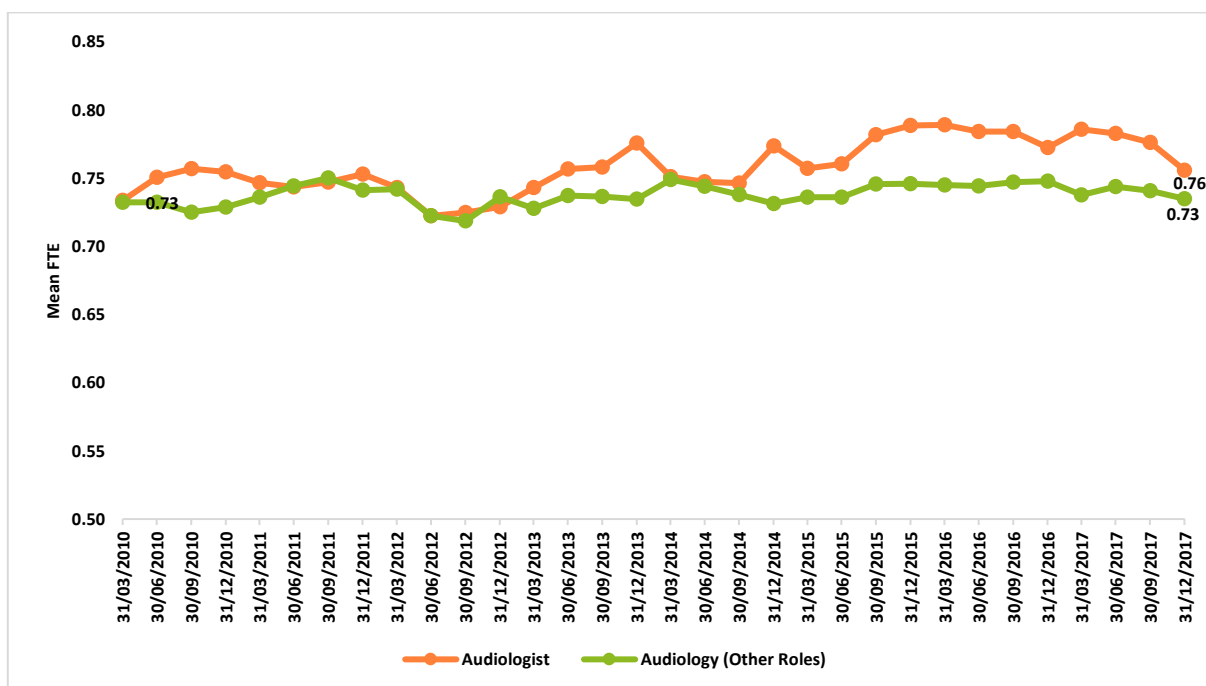


Figure 15: National DHB audiology mean FTE (part-time status)

### Regulatory Influences:

- Audiology is a non-statutory regulated workforce within the New Zealand Health System. That is, they are expected to be full members of NZAS but not covered by the Health Practitioners Competence Assurance Act (HPCCA) 2003. The HPCCA determines scopes of practice that health practitioners are deemed competent to practice and also systems to ensure that no health practitioner practices in that capacity outside his or her scope of practice. The NZAS maintains strong

professional standards. There are a range of reasons why a profession may not be regulated under HPCCA. The MoH states the reasons include:

- a low level of risk of harm.
  - practitioners work with, or under the supervision of a regulated, profession.
  - employment arrangements provide an appropriate form of regulation outside the Act to minimise risk of harm to the public.
  - self-regulation by the profession can provide an appropriate form of regulation.
- The audiological workforce in New Zealand is an accredited workforce under the NZAS. The NZAS is a self-governing body representing audiologists and audiometrists in New Zealand. The NZAS have prescribed scopes of practice for both audiologists and audiometrists which are fully supported by the 20 DHB DAHs. The NZAS also manage Certificates of Clinical Competence (CCC) for both professions and paediatric certification for audiologists.
  - MoH have a significant role in determining the priorities for delivering audiology services via New Zealand's public health service. Examples of this include:
    - The introduction of the National Vision and Hearing Screening Programme of 2014 which aims to undertake mass screening of children 4-11 years of age to identify undetected hearing loss and reduced visual acuity requiring further assessment and/or treatment. This programme has a significant role in driving demand specifically for paediatric audiology services.
    - The New Zealand Health Strategy has also had a significant role in determining the way services are provided by DHBs through action areas / priorities such a "Closer to Home" which involves shifting to delivering care out of specialist centres into the community.

### **Size of Occupational Grouping**

- The audiology workforce is made up of (for definitions see Page 4):
  - Audiologists
  - Audiometrists
  - Hearing Therapists
  - Advisors on Deaf Children (AoDC)
  - Vision and Hearing Technician(VHT)
  - New-born Hearing Screeners (NBHS)
- Within Figure 16 the audiologist national headcount has remained stable from 2010 to 2015 fluctuating between 55-65 staff. This corresponds to a contracted FTE of between 40 and 50 as seen within Figure 17. However, since March 2016 the head count (and FTE) have steadily declined from 67 (52.9) to 56 (42) which represents a 16% decline in the DHB audiologist headcount.

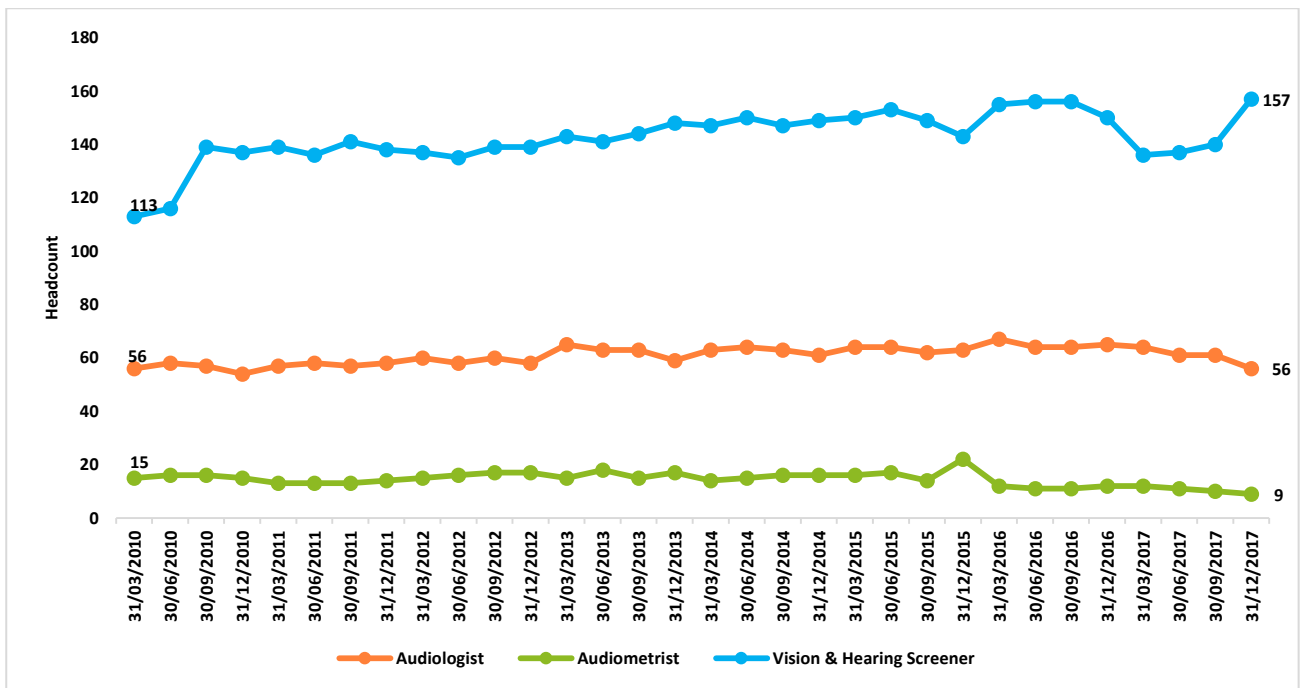


Figure 16: National DHB employed audiology headcount

- The audiometrists role has been relatively limited with a maximum of 22 headcount and 15.6 FTE seen throughout the DHBs during the period March 2010 and December 2017. As seen within Figure 16 and Figure 17 this high of 22 headcount (15.6 FTE) in December 2015 has been ever declining since and now sits at 9 headcount and 6.2 FTE as DHBs look to convert audiometrist FTE into audiologist in recognition of the new audiometrist Scope which limits audiometrists role with paediatric patients. If this current trend continues there will be no audiometrists working within DHBs within the next 5-10 years.
- VHTs who are responsible for paediatric screening and referrals into DHB audiology services as part of the National Vision and Hearing Screening Programme have increased in size from 113 headcount (83.4 FTE) to 157 headcount (115.7 FTE) between March 2010 and December 2017. This has likely contributed to increases in service pressure for DHB audiology services as significantly more resources are invested in screening while no additional audiologist staff are employed to meet the additional demand for paediatric services.

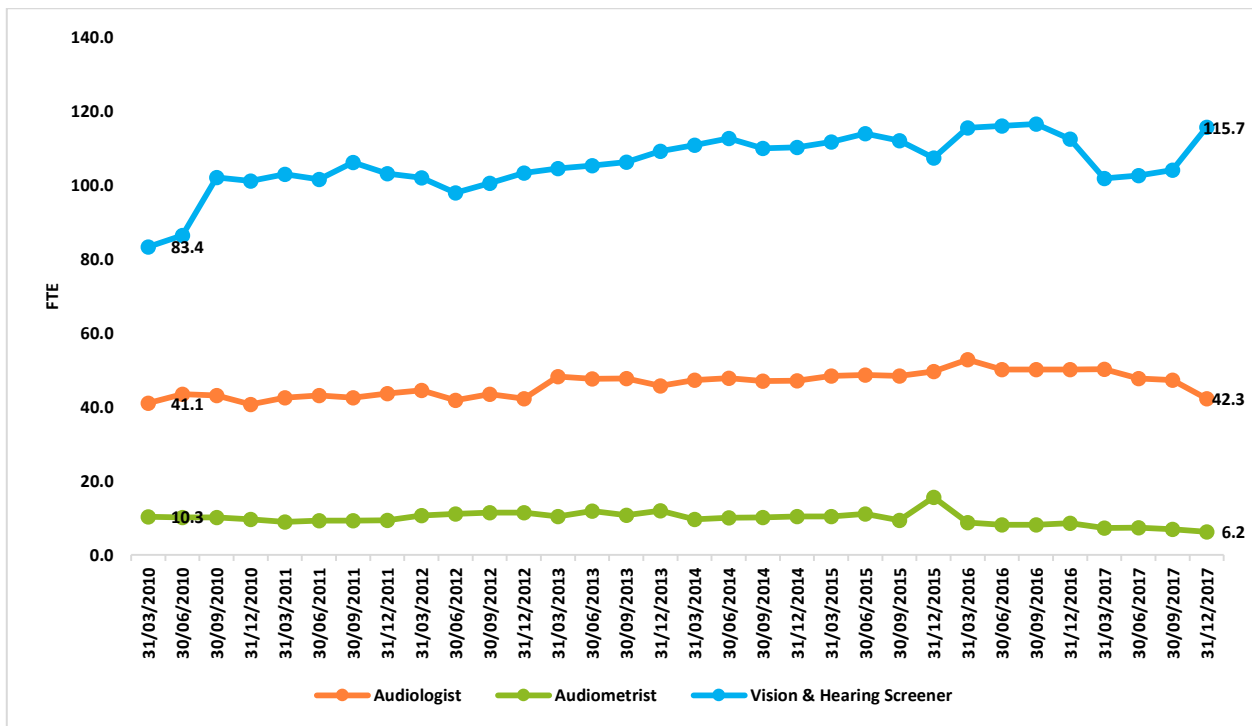


Figure 17: National DHB employed audiology FTE

- The decline shown in Figure 16 for audiologists since March 2016 does not reflect what is occurring in the wider workforce (within and external of DHBs) illustrated within Figure 18 which shows a significant growth in the amount of Full and Provisional audiologists registered by the NZAS. This is likely explained by the growth in the demand for hearing solutions within New Zealand’s aging population which is primarily served by private audiology providers.

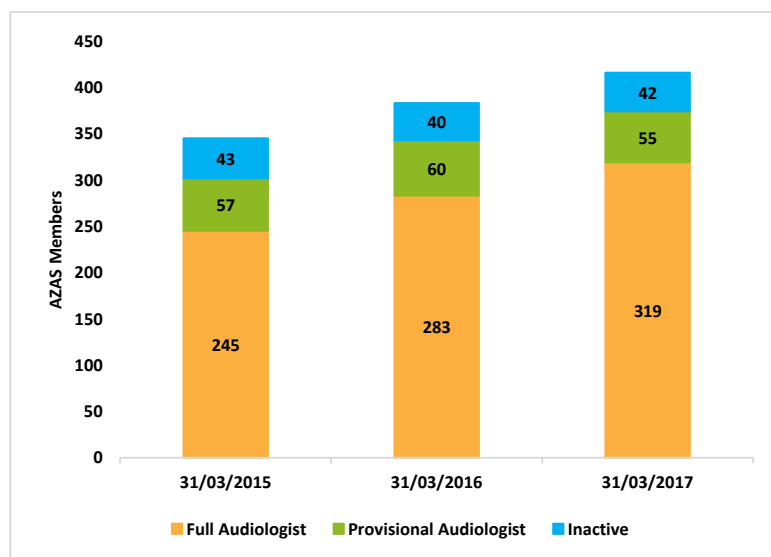


Figure 18: NZAS audiologist headcount (membership status)

- From 2015 the NZAS set up a membership criterion for audiometrists. The requirements of the NZAS for audiometrist category membership include a bridging course and 2 years of supervision which is specified in the *Supervision and Membership Requirements Booklet* (NZAS, 2015). NZAS data in Figure 19 shows that provisional audiologists are completing the NZAS requirements but the size remains around 35-40 currently practicing in the workforce. However, Figure 16 shows that the number of audiometrists practicing within DHBs has declined since 2015 from 22 to 9 as DHBs choose to employ audiologists to replace audiometrist FTE as discussed above).

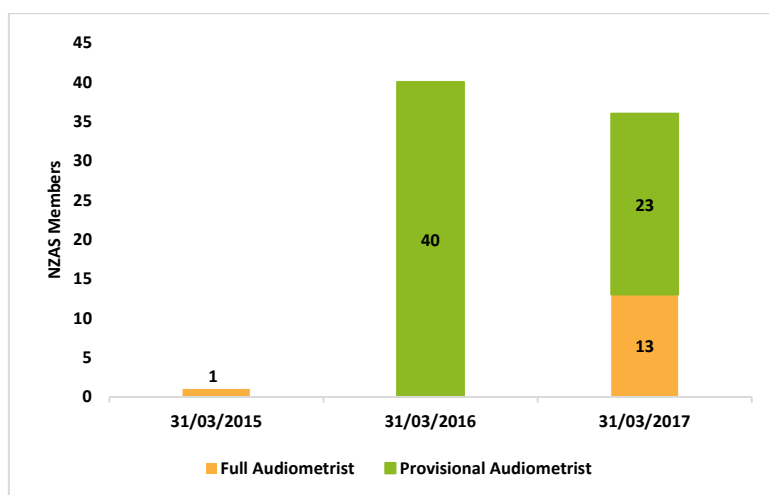


Figure 19: NZAS audiometrist headcount (membership status)

- There are hearing therapists and New Born Hearing Screeners (NBHS) employed by some DHBs. However, there is no consistent coding of these occupational groups within the HWIP dataset. The staff within these groups that are employed by DHBs are likely captured within the Vision and Hearing Screeners line within Figure 16. Therefore the size and trends occurring with this particular occupational group is unclear.

### Scope of practice:

- The scope of practice is variable throughout the DHBs and is determined by:
  - Demography, particularly the age of the general population that the particular DHB serves. Generally, DHBs with high paediatric populations are placing further restrictions or discontinuing their provision of services to treat degenerative hearing disorders faced by an aging population.
  - Underlying levels of demand within each service which is driven mainly by demography factors.
  - Government priority setting (e.g. The National Newborn Screening Programme has elevated the referral rate of paediatric patients and sets treatment of this cohort as a priority over the provision of adult services).
  - Government strategy (e.g. Closer to Home, which is resulting in the increased use of technology into the provision of audiology services remotely).

### Qualifications and Professional Development:

- To qualify to work as an audiologist in New Zealand practitioners are required to obtain a Master of Audiology from the UC or UoA. The qualification comprises two years of full time study and incorporates a mixture of coursework, research and practical experience. In addition to these domestic qualifications, the NZAS recognise overseas audiology programmes in the US and Canada. At the UoA most MAud students come from their undergraduate pipeline through the School of Population Health. In contrast, at UC around one third of students use audiology as a mid-career change and less than half come from the UC undergraduate programmes.

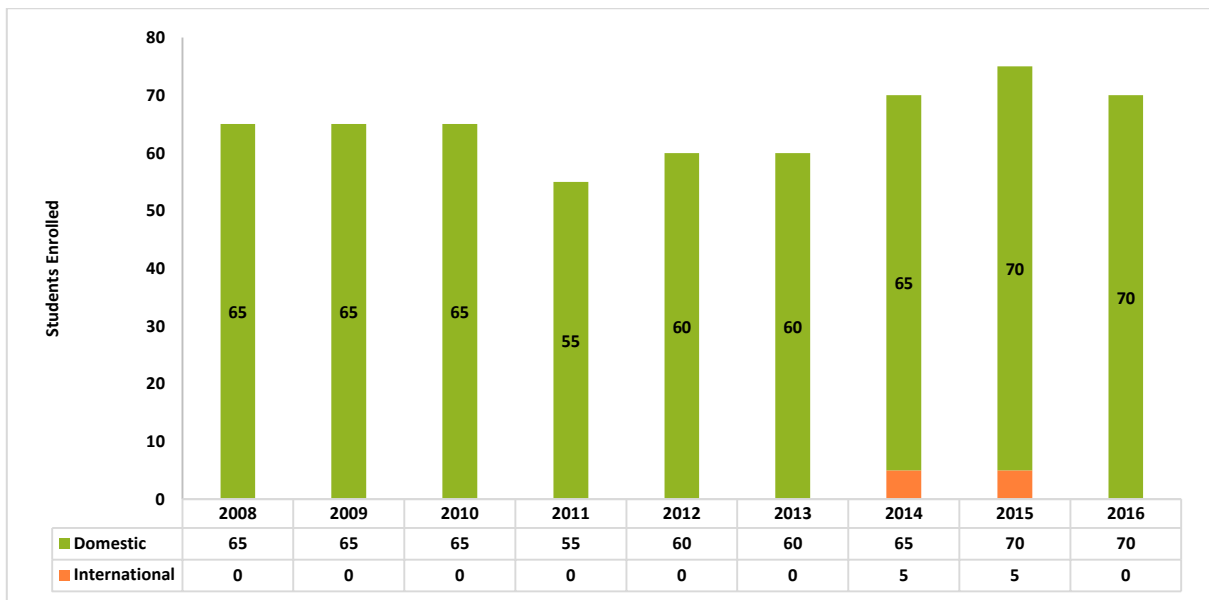


Figure 20: UoA and UC enrolments in 2 year Master of Audiology programmes

- Figure 20 shows the total students that were enrolled in the 24 month Master of Audiology programmes offered by UoA and UC. In the years 2015 and 2016 there were 70 domestic students enrolled between the two programmes. Nationally the two university programmes have graduated increasing numbers of domestic graduates from 15 in 2012 to 30 in 2016 (See Figure 21). Note that the TEC only funds 14 domestic places within each training programme each year which means that completions will likely continue at a rate of 25-35 graduates/year.
- Evidence from stakeholder feedback suggests that an increase to the output of Master of Audiology programmes would easily be absorbed by the sector. Also, feedback from both UoA and UC is that programmes have been oversubscribed in recent years. Each year both universities have to turn away many potential audiology students who meet the entry requirement for each programme. However, the main challenge for DHB stakeholders will be how to find ways to provide capacity to supervise new staff and student placements.



Figure 21: AU and UC completions in Master of Audiology programmes

- In order to practice unsupervised the NZAS require graduates of domestic and approved overseas training programmes to gain and maintain a CCC which takes around one year, as specified on the NZAS website. Changes in the number of CCC qualified audiologists can be assimilated from Figure 18: NZAS audiologist headcount determined by the number of NZAS Full Members.

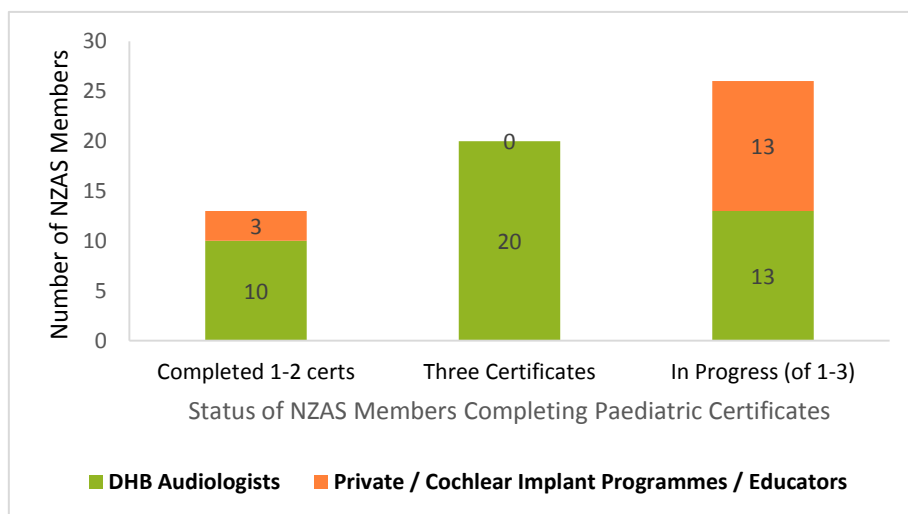


Figure 22: Status of NZAS Members completing paediatric certificates

- In order to practice within the paediatric scope the NZAS also requires audiologists to hold paediatric certificates. The Paediatric Certification Scheme was rolled out in September 2017 and most certificates reported in Figure 22 and Figure 23 have been granted under a grand parenting scheme (NZAS Annual Report, 2017). Certification currently requires one further year of supervised clinical practice. Three certificates are available for different service areas including:
  - **Auditory Brainstem Response (ABR):** Diagnostic testing used to assess hearing in newborn babies when they are in natural sleep or in children who are difficult to test because they do not give clear behavioural responses. The ABR test measures electrical responses to sound from the auditory brainstem to obtain hearing thresholds, which can be used to programme hearing aids without needing behavioural responses to sound.
  - **Visual Reinforcement Audiometry (VRA):** Diagnostic test performed on infants or children with developmental delay who are not able to perform play audiometry, the test that is usually used to assess hearing in preschool children. Reliable hearing thresholds are obtained using VRA by conditioning the child to turn when they hear a sound and reinforcing this behaviour with an interesting visual stimulus, usually a puppet or a brief video clip.
  - **Paediatric Habilitation (HAB):** This abbreviation is used to refer to the audiological management of children diagnosed with a hearing loss. This includes obtaining the correct diagnosis of type and degree hearing loss, the selection, programming, verification and validation of hearing instruments for the child and a range of other supports for the family and child such as referral to other professionals.
- Figure 22 shows how many certificates are held and are currently being completed by NZAS Members (as at March, 2018). This graph illustrates that 30 DHB audiologists hold at least one paediatric certificate from the DHBs and 13 are underway completing at least one certificate. Figure 23 breaks down the number of certificates that have been granted or are underway within each of the three areas of paediatric certificate. It shows that there is a good pipeline of NZAS Members being certified across each certification area by staff within and outside of the DHB employed workforce.

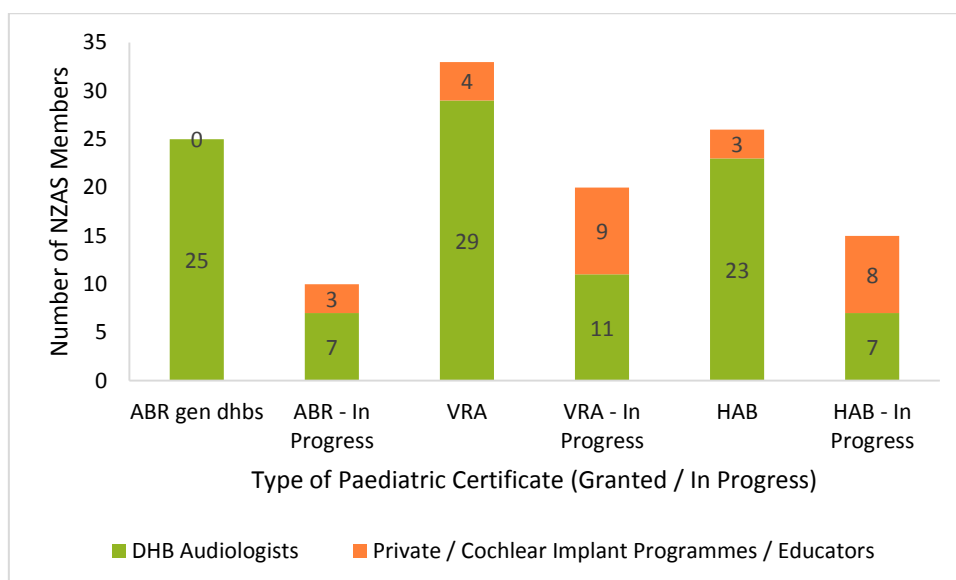


Figure 23: Breakdown of paediatric certificates granted and in progress

- DHB audiologists and managers from a number of DHBs expressed concerns that graduates of audiology programmes are not able to begin working towards their paediatric certification until they have a CCC. There are currently examples of audiologists accruing clinical experience that would be counted for paediatric certification areas prior to gaining CCC. Following the CCC audiologists are required to gain at least 70 paediatric hours per paediatric certificate. Managers expressed frustration that it can take up to 3 years to qualify to work independently on paediatric service delivery.
- There is currently no qualification available in New Zealand to qualify as an audiometrist. The NZAS require audiometrists to carry out a 1 year diploma course from TAFE (Australia) which is available to students by distance learning. See page 25 for further details previously discussed on NZAS requirements for membership.
- The establishment of a domestic audiometrist programme was first proposed in the 2000's when audiometrists were recognised by the NZAS. However, this was not progressed at the time. There remains several ongoing drivers for a training pathway including:
  - An increase in audiometrists will assist to meet increasing demand for adult hearing aid services and have the potential to free up capacity within the sector.
  - Issues with the course delivered by TAFE such as:
    - Gaps in curriculum requiring NZAS bridging course;
    - Student difficulties with distance learning;
    - Limitations around gaining clinical competency.
  - Most MAud enrolments have no pre-existing knowledge of education in audiology and a NZ run course could provide a pathway into the MAud programme.

The main considerations around introducing a domestic training programme for audiometrists would include:

1. Whether there is an appetite from the private sector to employ audiometrists?
2. Determining the level of qualification required (i.e. are we talking about several courses within an existing bachelor programme)?
3. How will the programme achieve clinical competencies and do private providers have capacity or willingness to accommodate student placements?
4. Does (How will) this proposal affect the current MAud Programme?
5. Do existing training providers have the capability teach new courses?
6. Will there be sufficient student demand to undertake undergraduate courses which qualify them to work at an audiometrist scope?
7. Will the TEC / HWNZ support funding a new programme?



The next step, if this were to progress, would be to raise the idea with the New Zealand Hearing Industry Association (NZHIA). Secondly, if there was appetite from private providers, feasibility could be taken forward by the Educational Liaison Committee which is made up of current University providers of MAud and the NZAS.

## Operational Capacity

### Recruitment issues:

- There was a substantial amount of feedback around the difficulties in recruiting graduates of the MAud Programmes to work within the DHBs. The main factors that stakeholders believe are deterring graduates away from public sector jobs are:
  - Private providers connect with students early in the programme and are able to offer contracts for employment up to one year in advance of graduation. Some have even offered to pay off student loans as additional incentive to sign on early.
  - Private providers are able to pay graduates a much more attractive starting salary and conditions.
  - Private providers offer to pay NZAS membership and CCC application fees.
  - The requirement to obtain paediatric certificates discourages some graduates as it lengthens the time before they can work independently.
  
- DHB stakeholders report general difficulties and ongoing unfilled vacancies across a range of audiology vacancies nationwide. See Figure 24 which shows national vacancy rates from September 2016 to December 2017. A particularly high number of vacancies was reported in September 2017 with 9.6FTE representing 17% of the audiologist workforce. See Table 5 for details on which DHBs reported vacancies. However, some DHBs reported a particularly stable audiologist workforce observing that either they had a situation where:
  - They have small numbers of audiologists with a long length of service (e.g. South Canterbury); or
  - They felt that their DHB attracted audiologists due to its location and the interesting nature of a mixture of services that the service provides.

Several stakeholders including claimed that the national vacancy rates were much higher than reported below up to 44% of DHB audiologist positions.

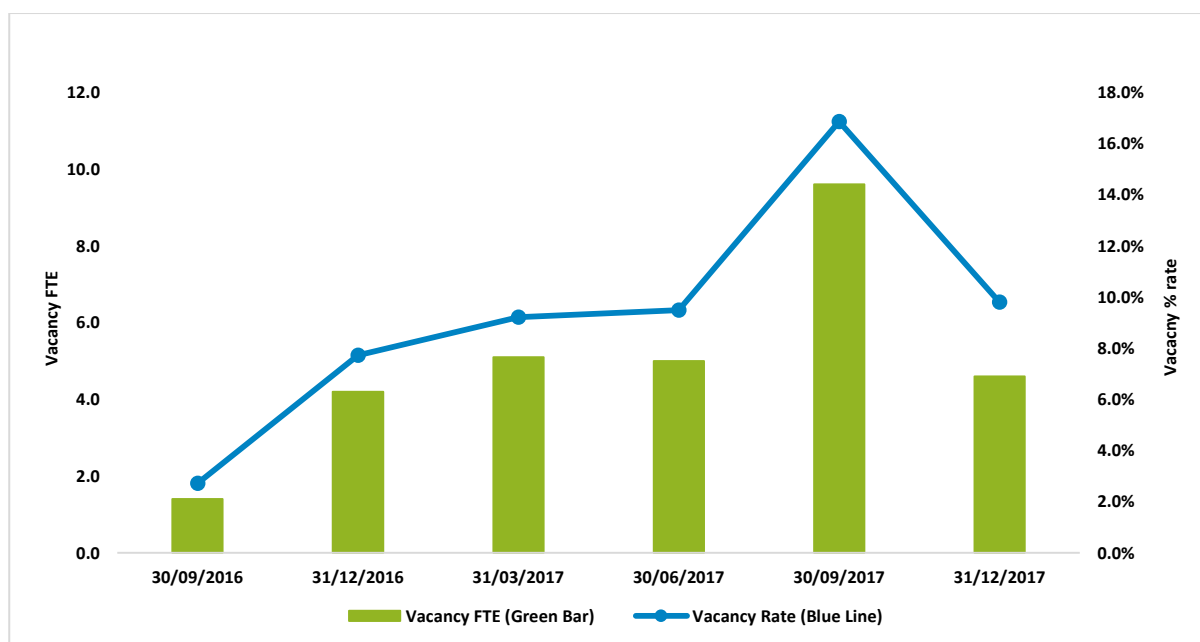


Figure 24: National DHB audiologist vacancy FTE and % rates

DHB	30-Sep-16	31-Dec-16	31-Mar-17	30-Jun-17	30-Sep-17	31-Dec-17
Auckland					1.6	1.6
Bay of Plenty		1.0	1.0	1.0		
Canterbury				1.0		
Hawke's Bay					2.0	2.0
MidCentral		1.0			1.0	1.0
Nelson Marlborough		0.8	0.8			
Northland					1.0	
Southern	0.4	0.4				
Waikato	1.0	1.0	3.3	2.0	3.0	2.0
Waitemata				1.0	1.0	
Whanganui						1.0
<b>Totals</b>	<b>1.4</b>	<b>4.2</b>	<b>5.1</b>	<b>5.0</b>	<b>9.6</b>	<b>7.6</b>

Table 5: DHB summary of audiologist FTE vacancy at the end of each quarter

- The majority of DHB stakeholders felt that the differential between what public and private providers are willing to pay is the most significant factor why DHBs are seeing vacancies going unfilled for lengthy periods of time. Other points were raised in conjunction with pay were:
  - That CCC and paediatric certificates were not tied to any graduation in pay step to acknowledge the additional responsibility and administration required of fully certified staff members.
- Concerns were raised over difficulties involved recruiting overseas audiologists and confirming the NZAS requirements, eligibility and recognition of overseas qualifications. NZAS are currently reassessing their recognition of overseas qualifications and have agreed to fast track CCC and paediatric certificates for UK registered clinical scientists in audiology.

#### Retention issues:

- The DHB employed audiologist workforce is subject to greater risks arising from retention due to its small size. Outside of metropolitan Auckland and Capital and Coast DHB, most audiology services have between 2-5 audiologists. Losing a single member of staff can have significant implications on the capacity of these services. Although the paediatric certificate is valued its introduction can make DHB audiology services even more vulnerable to turnover.
- Figure 25 indicates the voluntary turnover rates which for audiologists during the period March 2010 to December 2017 has shown a wide variability between 9-29%. Additional sensitivity is shown due to the size of the workforce. In the last quarter of 2017 the turnover rate rose from 12.8% to 21.8%. For the other roles (audiometrists and VHTs) the rate is low (between 3-15%) but has increased over the reporting period. Between March 2015 and June 2017 we saw an increase in voluntary turnover rates which could be explained by the decrease in audiometrist FTE.

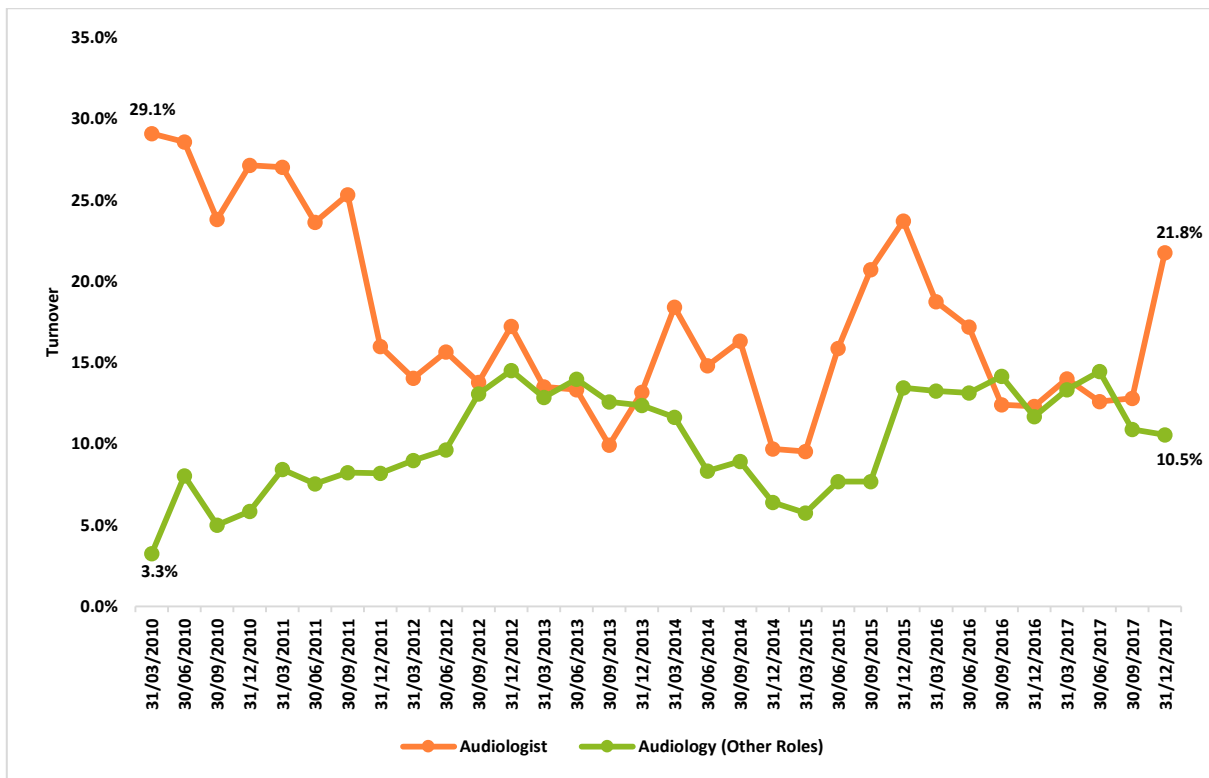


Figure 25: National DHB audiology voluntary turnover rates

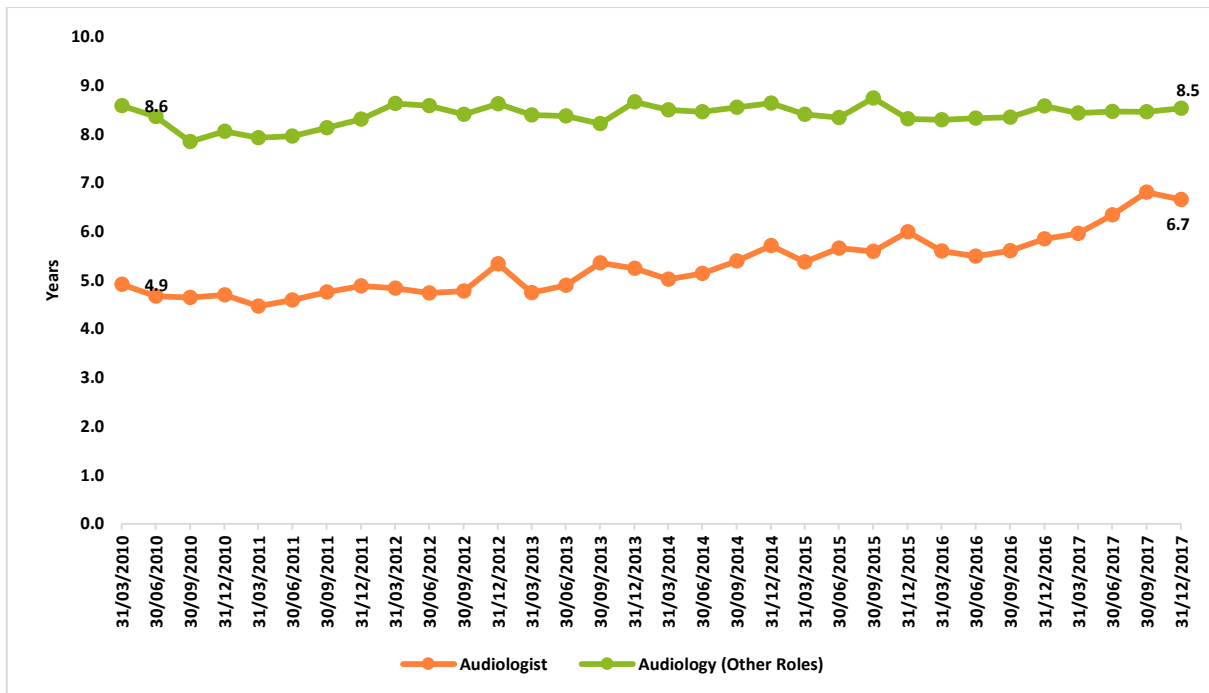


Figure 26: National DHB audiology mean length of service

- Figure 26 shows the audiologist mean length of service to showing a slow but steady growth from 4.9 Years in March 2010 to 6.7 years in December 2017. For the other roles (audiometrists and VHTs) the rate is slightly higher at 8.5 (December 2017) and remained stable the entire reporting period.

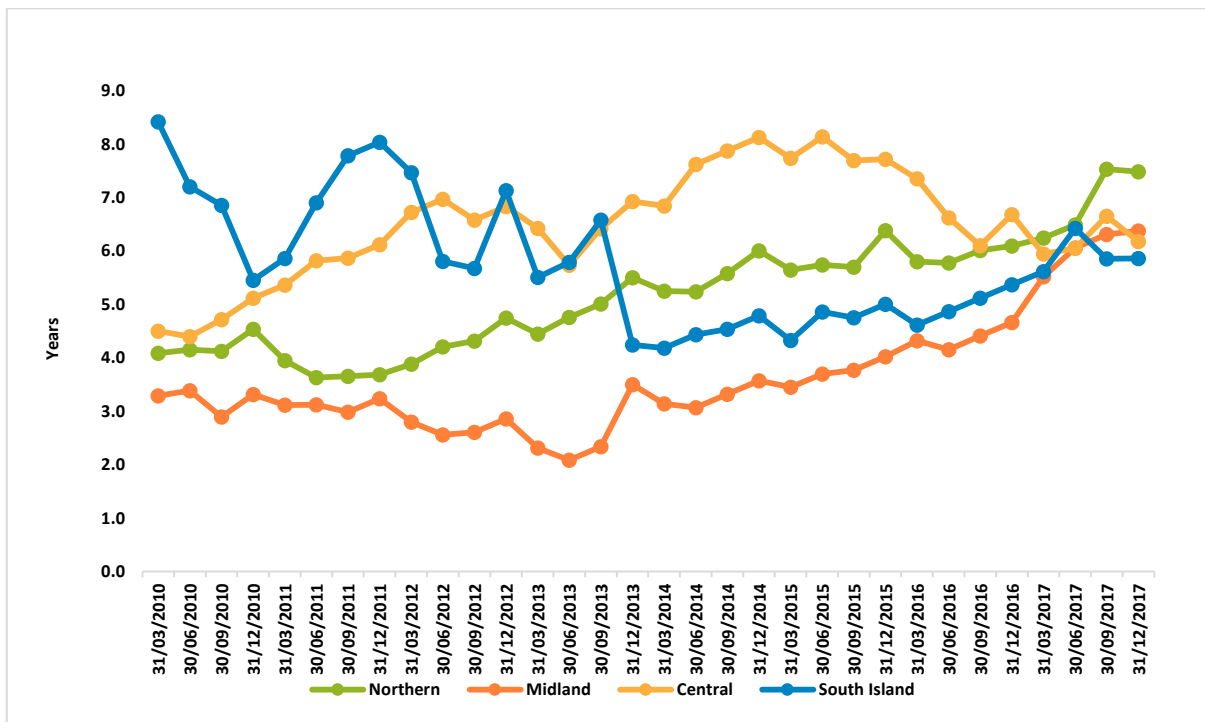


Figure 27: DHB audiologist mean length of service by region

- Figure 27 above shows the mean length of service by DHB region which have shown large fluctuations between 2010 and 2017 which can be expected with the small size of the workforce. However, in the last few quarters to December 2017 the regions have all converged towards a within a year of the national average seen in Figure 25.
- Figure 28 details the other audiology roles mean length of service and displays variation in the trend lines for each region. The Northern Region have the lowest mean length of service trending up from around 5 years to 6.5. The South Island Region has seen a decline in mean length of service from 11 to 8 years. Central and Midland Regions have fluctuated over the reporting period but have been converging over the period 2010-17 to a mean length of service of 11 years.

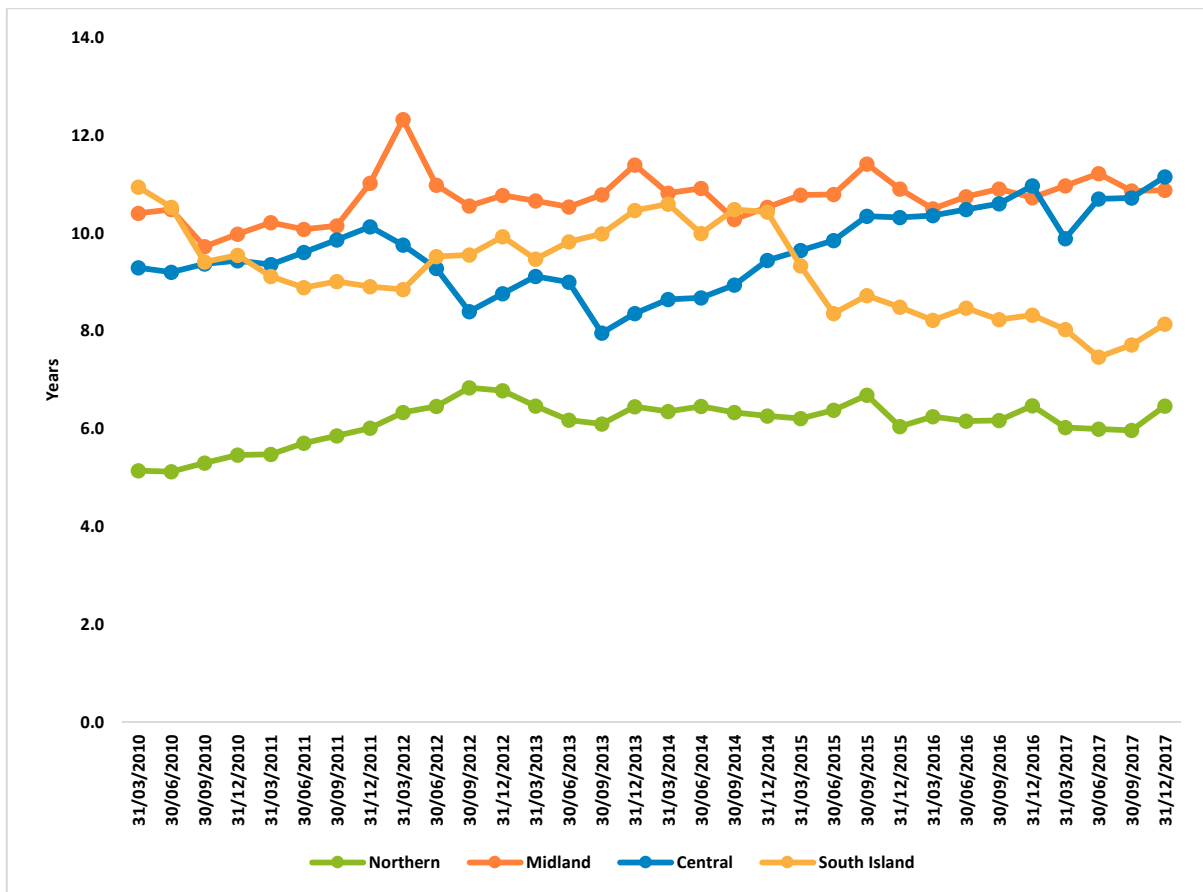


Figure 28: DHB other audiology roles mean length of service by region

- Some of the DHB stakeholders that took part in this workforce assessment noted that in some cases audiologists work in DHBs until they have completed the clinical competency and leave to private practice within 2-5 years of commencing work. Potential issues foreseen by these stakeholders includes:
  - Growing pay disparity as practitioner’s progress through their careers.
  - Some DHBs do not pay NZAS membership fees (\$700-\$1000 per annum) which includes their annual practicing certificate.
  - Increasing pressure of administration and responsibility once practitioners get certified.
  - Perceived lack of support in regards to professional development (funding and opportunities).

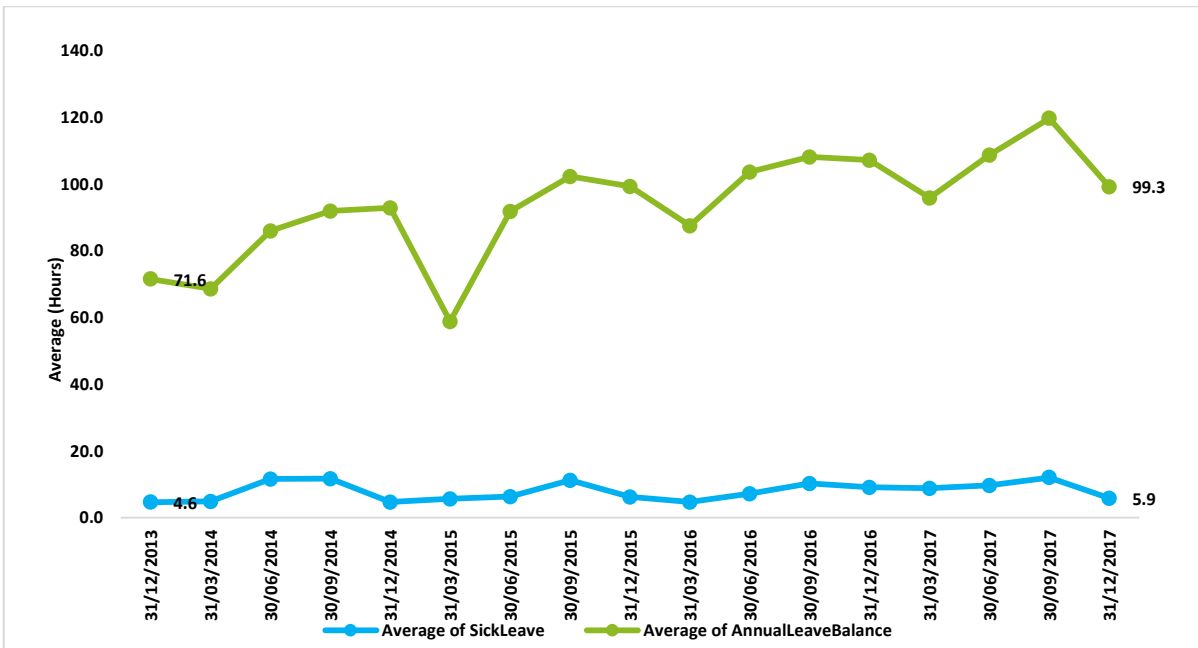


Figure 29: National DHB audiologist average sick leave and annual leave balances

- Figure 29 shows the national audiologist mean annual leave balances compared with sick leave taken per quarterly reporting period during December 2013 and December 2017. The graph shows a relatively constant average sick leave taken at around 6 hours taken per quarter. The annual leave balance is on an upward trajectory and has increased from around 70 hours to 100 hours in the latest reporting period.

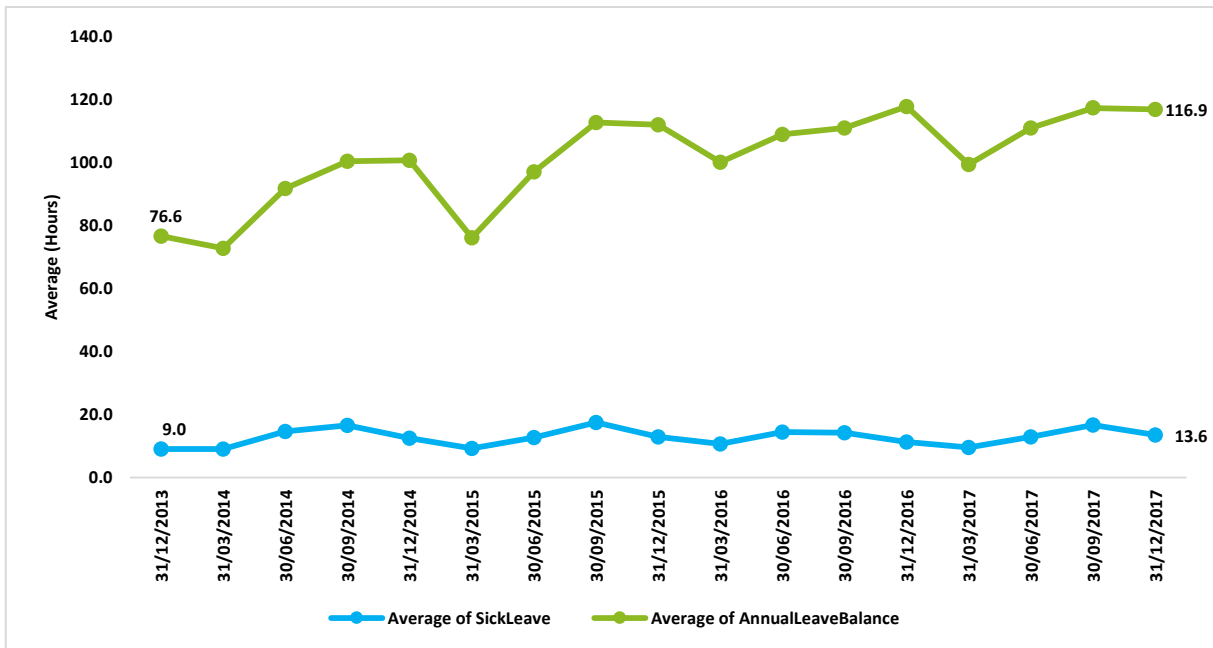


Figure 30: National DHB audiology (other roles) average sick leave and annual leave balances

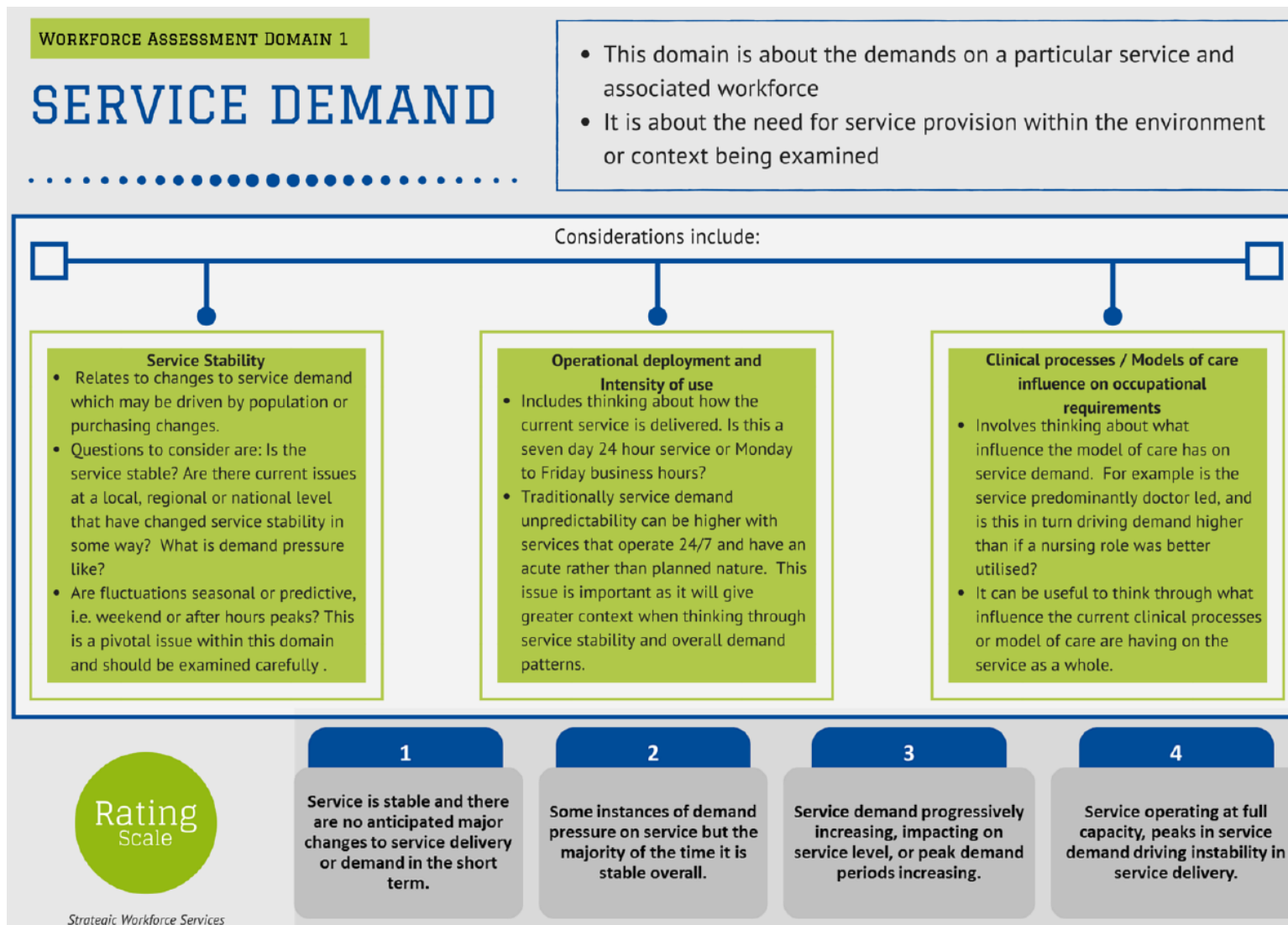
- Figure 30 shows the national audiology other roles (VHTs and audiometrists) average sick leave and average annual leave balances over the period December 2013 to December 2017. Compared with audiologists the average annual leave balances and sick leave taken are much higher. The average annual leave balance is on an increasing trajectory rising from 77 hours to 117 hours during the reference period. Average sick leave has shown small seasonal fluctuations but remains stable.

**Lead in Time for Recruitment:**

- The DHBs report difficulties and lengthy timeframes for the NZAS certification process for overseas candidates. The NZAS recognises some countries as having equivalent CCC requirements, such as Australia and Canada. If candidates meet the above criteria and also have a current and recognised membership to the professional body in their country of origin they will be eligible to apply as a fast track Provisional Member, meaning they will not be subject to the same supervision requirements as those going through the full CCC process. The candidate is also eligible to sit the clinical exam as soon as they have completed the requirements of this process and are ready to take the exam.

# Appendices

## Appendix A: Workforce Assessment Domains





# SUPPLY

- This domain is about the actual quantity and distribution of a workforce
- The current demographics should be considered, including size and distribution, gender, ethnicity, age, etc.
- Includes the quantity and quality of students/graduates

Considerations include:

### Community / Population health requirements

- Involves thinking about whether there are sufficient numbers of this occupational grouping within the system (via both education and immigration)?
- Also, are both inward and outward flows balanced?

### Distribution

- Includes thinking about whether there are any issues with distribution of the workforce overall.
- If there are, then determining whether there is a general distribution issue or a specific local / regional maldistribution? Is the distribution issue rural vs urban?
- Or, is there a generalised issue with the workforce nationally?

### Demography

- Requires thinking about whether there are any demographic issues associated with the workforce in question, such as gender, ethnicity and age.
- For example, is the workforce particularly aging? This can be an additional risk factor. Are there adequate Maori and Pacific representation to meet the needs of specific communities? Is this a predominantly female profession?

Rating Scale

Strategic Workforce Services

1

No major distribution or supply issues, overall stable supply pattern.

2

Some distribution issues emerging and wider issues with supply, but these are localised issues (i.e. with a particular speciality) rather than the entire workforce.

3

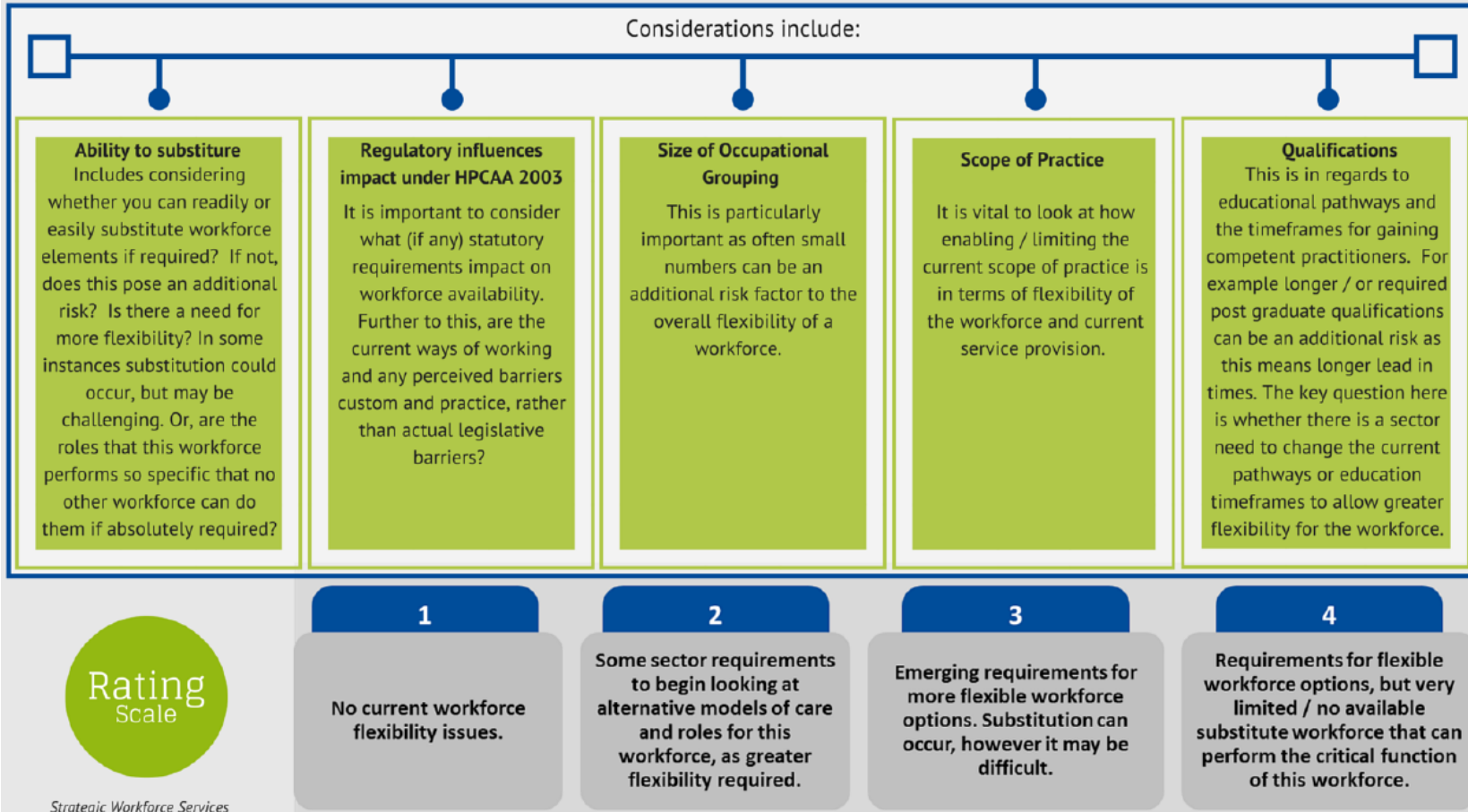
Distribution and supply issues increasingly impacting on wider system. Issues with overall size of workforce available.

4

Significant distribution and or supply issues currently occurring, problems with small size of available workforce. Real issues with the pipeline supply for this workforce.

# OPERATIONAL FLEXIBILITY

- This domain is primarily about substitution of a workforce and the ability for other workforces to potentially take on the roles involved
- It is about specificity of skills and how specialised particular roles / scopes of practice are in regards to delivery of required care
- It is also about how enabling or limiting a current scope of practice is on workforce utilisation

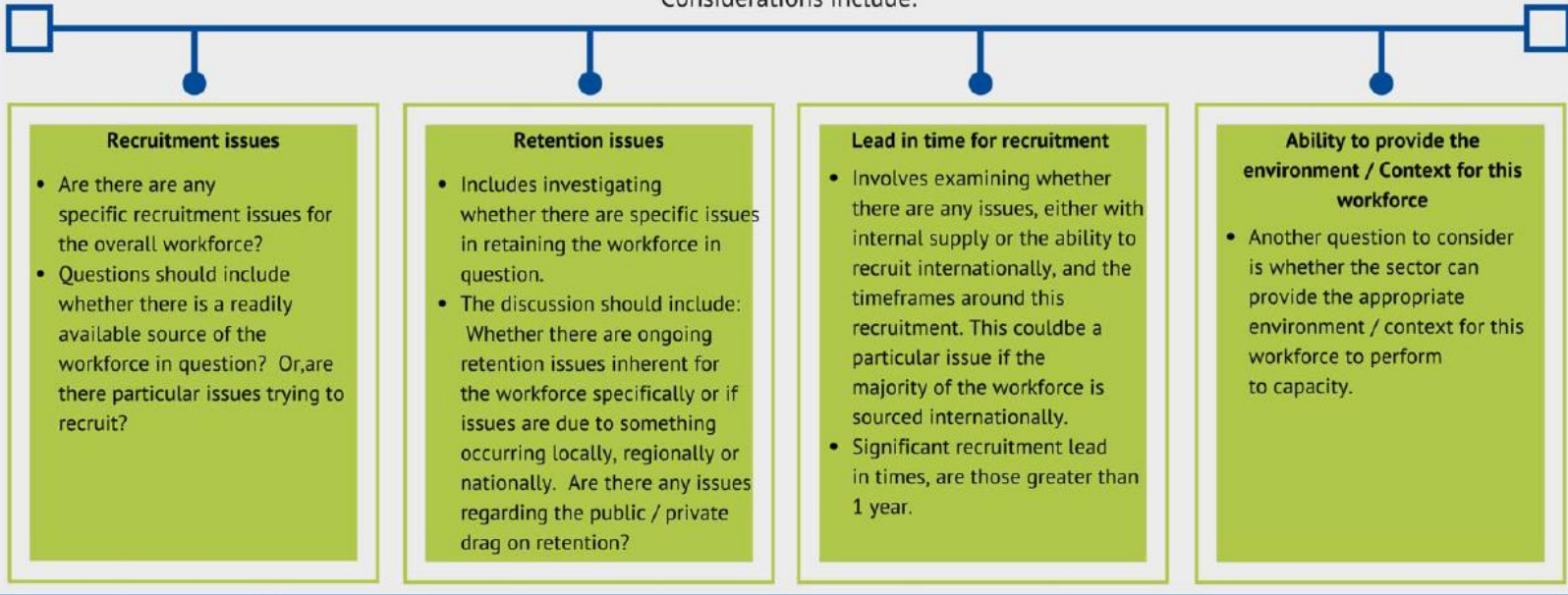


# OPERATIONAL CAPACITY



- This domain is essentially about recruitment and retention of a workforce
- It is about availability and the ability to buy / bring in more of a particular workforce as required

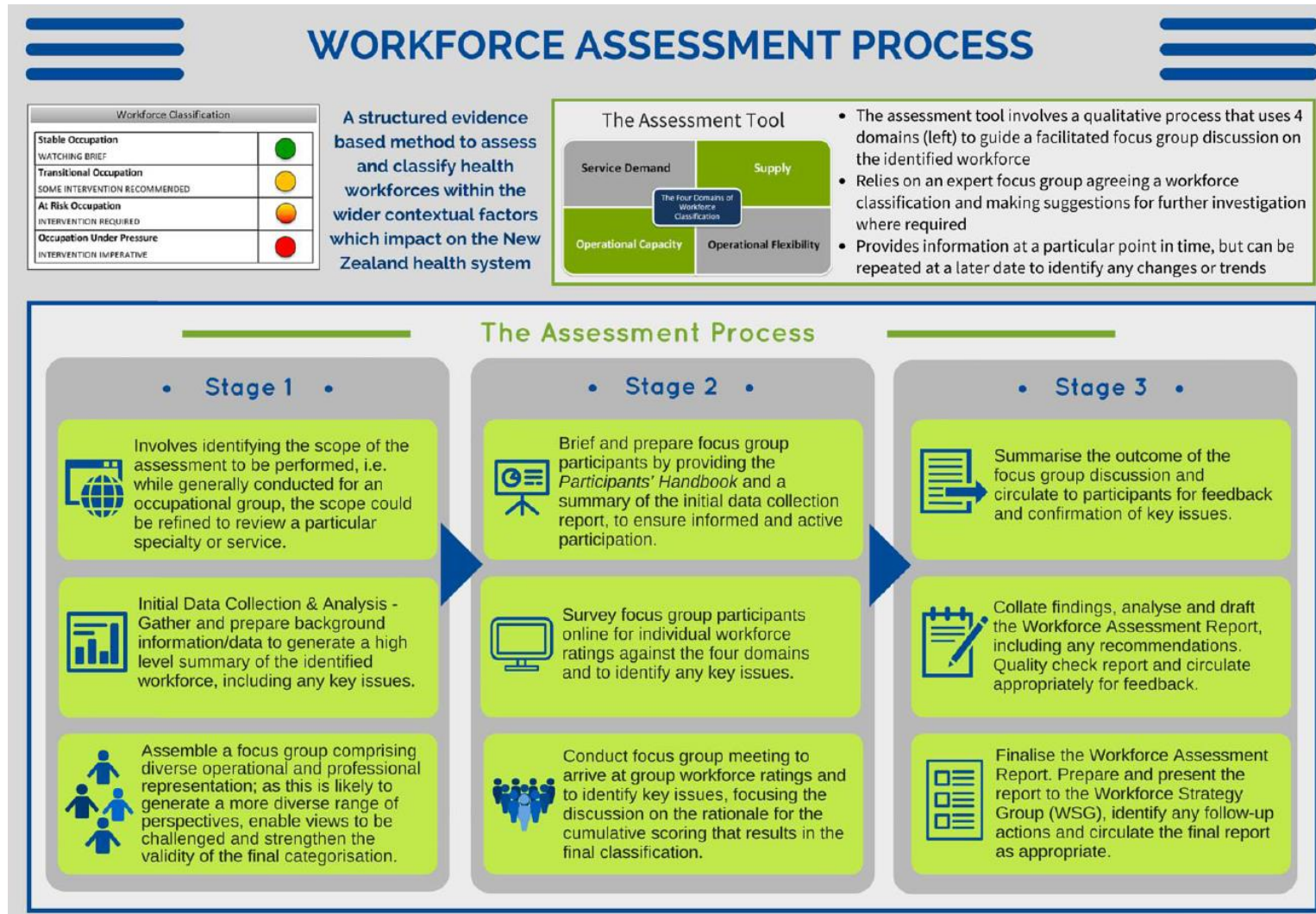
Considerations include:



Strategic Workforce Services

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<p>No significant recruitment and retention issues and easy access to this workforce when required.</p>	<p>Some recruitment and retention issues are occurring, with slightly longer timeframes for gaining this workforce.</p>	<p>Generalised recruitment and retention issues for specialised skills. 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.</p>	<p>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.</p>

## Appendix B: Workforce Assessment Process Schematic



## Appendix C: Health Workforce Classification Scoring Matrix

Rating	Service Demand	Supply	Operational flexibility	Operational Capacity
1	Service is stable and there are no anticipated major changes to service delivery or demand in the short term	No major distribution or supply issues, overall stable supply pattern.	No current workforce flexibility issues.	No significant recruitment and retention issues and easy access to this workforce when required.
2	Some instances of demand pressure on service but the majority of the time it is stable overall.	Some distribution issues emerging and wider issues with supply, but localised issues (i.e. with a particular speciality), rather than the entire workforce.	Some sector requirements to begin looking at alternative models of care and roles for this workforce, as greater flexibility required.	Some recruitment and retention issues are occurring, with slightly longer timeframes for gaining this workforce.
3	Service demand progressively increasing / impacting on service level or peak demand periods increasing.	Distribution and supply issues increasingly impacting on wider system. Issues with overall size of workforce available.	Emerging requirements for more flexible workforce options. Substitution can occur, however it may be difficult.	Generalised recruitment and retention issues for specialised skills. 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.
4	Service operating at full capacity, peaks in service demand driving instability in service delivery.	Significant distribution and or supply issues currently occurring, problems with small size of available workforce. Real issues with the pipeline supply for this workforce.	Requirements for flexible workforce options, but very limited/no available substitute workforce that can perform the critical function of this workforce.	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.
Score				

Health Workforce Classification Table		
Overall Classification	Intervention	Overall Score
Stable Occupation	WATCHING BRIEF	4 < 8
Transitional Occupation	SOME INTERVENTION RECOMMENDED	≥ 8 < 11
At Risk Occupation	INTERVENTION REQUIRED	≥ 11 < 14
Occupation Under Pressure	INTERVENTION IMPERATIVE	≥ 14

## Appendix D: Reference List

- NZAS, 2015. Accessed online at:  
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  - NZAS1, 2018. Accessed online at:  
<https://www.audiology.org.nz/userfiles/file/pdf/Scope%20Practice%20Audios.pdf>
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<https://www.education.govt.nz/school/student-support/special-education/supporting-children-who-are-deaf-and-hard-of-hearing/>
  - Hearing Therapists Association of New Zealand (HTAoNZ), 2018. Accessed online at:  
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  - Ministry of Health, 2014. Accessed online at:  
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- Yoshinaga-Itano C, Sedey AL, Coulter BA, Mehl AL. Language of early and later-identified children with hearing loss. Pediatrics. 1998;102:1168–1171.

## Appendix E: Notes on Quantitative Health Workforce Analysis

### HWIP technical Notes

The Health Workforce Information Programme is a well established programme that has been capturing and reporting credible and timely DHB employee demographic data since 2006. The data collected consists of 29 variables supported by an agreed data standard and code sets. The HWIP information is used to inform strategic and operational workforce analysis, development and planning at the local, regional and national level as well as inform ER strategic negotiations. It provides a foundation on which to build a richer picture on how best to deliver to New Zealand's future health sector workforce needs.

### 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.
- Enrolment and completion data has been supplied by TEC.
- Statistics on NZAS membership status supplied by NZAS.
- Excludes staff with zero contracted hours and those on long term leave (where paid Employment Status = '4', '5' or '6' 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 contracts, those with a reason for leaving in the following list: (42, 43, 51, 53)
- Calculations involving sex exclude the few employees with an unreported sex.
- Calculations involving ethnicity exclude employees with an unknown ethnicity.
- Averages are shown as mean unless otherwise stated.
- Percentage of employees over 55 years old is a year to date calculation to smooth out quarterly variation occurring due to the way ages are calculated in HWIP using birth year.
- Disclaimer: While care has been used in the processing, analysing and extraction of information to ensure the accuracy of this report, TAS gives no guarantee 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.

### Key for Table 1

\* Year to date to calculation

\*\*Not all DHBs provide the reason for leaving

\*\*\* Sick Leave % equals total number of paid and unpaid sick leave hours taken by DHB employees during the quarterly reporting period divided by the total number of DHB paid hours during the quarterly reporting period. Refer to Appendix E: Notes on Quantitative Health Workforce Analysis.

\*\*\*\* Measures Vacancy FTE (unfilled positions) as a percentage of the FTE allocation. Calculated as follows:  $\text{Vacancy FTE} / (\text{Contracted FTE} + \text{Vacancy FTE}) \times 100$ . Refer to Appendix E: Notes on Quantitative Health Workforce Analysis.

## Calculations

### Voluntary Turnover

Key Definitions	
<i>Vacancy</i>	An unfilled position that has funding allocated and will be actively recruited for within the next six months. It is a permanent position that is part of the FTE allocation (if applicable). Where a vacancy exists, it remains a vacancy when temporarily filled.
<i>Contracted FTE</i>	Contracted FTE uses the number of hours that an employee is contracted to work, based on a 2086 hour annual contract representing a full-time equivalent employee. The Contracted FTE definition used here allows a comparison to be made across DHBs and occupations through a universal standard.
<i>Overall FTE</i>	This is the sum of all Contracted FTE figures for all the vacancies covered under the job title or ANZSCO codes.
<i>FTE Allocations &amp; Funding Application</i>	The way that certain DHBs operate their services means that they have the flexibility to determine FTEs and do not have pre-determined FTE allocations (excluding Management/Administration staff which have an FTE cap in all DHBs). In these instances a vacancy exists where a permanent FTE position has been identified as necessary to deliver services and the position has not been permanently filled.

Turnover is calculated by summing the number of positions terminated (by headcount) over the previous year, then divided by the mean number of positions (by headcount) employed at each of the reporting quarters over the previous year.

Turnover calculations exclude those staff with zero contracted hours, those on fixed-term contracts, those with a reason for leaving in the following list: (Restructuring / Redundancy, Dismissed, Health, Death).

### Vacancy FTE %

The Vacancy FTE percentage is the Vacancy FTE (unfilled positions) as a percentage of the FTE allocation. Calculated as follows:  $\text{Vacancy FTE} / (\text{Contracted FTE} + \text{Vacancy FTE}) \times 100$

Vacancy FTE is vacancies unfilled on the last day of a reporting quarter for the period and is for all permanent and fixed term employees and excludes casuals, locums and any employees on long term leave, including parental leave.

There were some quarters when some DHBs, for various reasons, were not able to provide vacancy FTE information. The table below indicates with an 'X' where no quarterly HWIP Vacancy FTE submission was provided by a DHB.



## Sick Leave

Adapted from MOH – Hospital Benchmarking Information (HBI) 1 July 2006

Measure Overview	
<b>Description</b>	A rate based Measure of paid and unpaid sick leave hours taken by employees within the District Health Board (DHB).
<b>Rationale</b>	Important measure of the extent to which employee time is lost to absence due to sickness/ ill health.
<b>Interpretation</b>	Measure the proportion of DHB employees' paid and unpaid hours that are lost to sick leave. Provides an indication of relative effectiveness in maintaining healthy staff and managing absenteeism in the DHB. Does not measure all forms of absenteeism. Low and/ or declining rates are desirable.
<b>Data Source</b>	HWIP (via DHBs' HRIS)

Measure Formula	
<b>Element A (numerator)</b>	The total number of paid and unpaid sick leave hours taken by DHB employees during the reporting period.
<b>Element B (denominator)</b>	The total number of DHB paid hours during the reporting period.
<b>Reported as</b>	Percentage

Measure Definitions		
	Data Elements A (numerator)	Data Elements B (denominator)
<b>Inclusions</b>	All paid and unpaid sick leave hours. Annual leave hours used for sick leave (normally when employee has run out of sick leave) Leave not covered by ACC e.g. the first week normally paid from the employees' sick leave balance.	All paid hours. Paid hours classified as ordinary plus all forms of paid leave e.g. annual leave, study leave jury duty etc. Paid hours to include zero rated hours e.g. leave without pay.
<b>Exclusions</b>	Leave covered by ACC.	NB: Prior to March 2017 - Overtime hours and penal hours paid excluded

Measure Definitions		
<b>Data Collection Period</b>	Sum of all actual hours of sick leave taken from the first day of the reporting period through to the last day of the reporting period.	Sum of paid hours from the first day of the reporting period through to the last day of the reporting period.

### Notes for Tertiary Education Figures

- Data relates to any student enrolled in a Master of Audiology.
- 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).
- 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.

### Occupational Coding for Audiology

- i. For **Audiologists**, it includes:
  - employees with ANZSCO 252711 (Audiologist).
  - employees with other ANZSCOs but job titles not containing text which included '%assist%'.
  
- ii. For **Audiometrists**, it includes:
  - employees with ANZSCO 251999 (Health Diagnostic & Promotion Professionals nec), 311299 (Medical Technicians nec) and 399999 (Technicians and Trades Workers nec).
  - employees with other ANZSCOs but job titles containing text which included '%audio%'.
  
- iii. For **Vision & Hearing Screeners**, it includes a combination of two groups:
  - 1) **Hearing Screeners**, it includes:
    - employees with other ANZSCOs but job titles containing text which included '%new%born%hear%'.
    - employees with other ANZSCOs but job titles containing text which included '%hear%screen%'.
  - 2) **Vision and Hearing Technicians / Testers**, it includes:
    - employees with other ANZSCOs but job titles containing text which included '%visio%hear%' and '%hear%visio%'.

(It is important to note that Audiometrist and Vision & Hearing Screeners have both been referred to as Audiology (Other Roles) throughout the report).