



Hearing Dogs for Deaf People New Zealand

Research Report
December 2008

Research First. Better Results.

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1	Introduction	3
1.1	Hearing Dogs for Deaf People New Zealand	3
1.2	Research Objectives	3
2	Research Design	4
2.1	Overview	4
2.1.1	Secondary Source Research	4
2.1.2	Key Informant Interviews	4
2.1.3	Quantitative Analysis	4
3	Results: Secondary Source Review	5
3.1	A Note about Definitions	5
3.2	The United Kingdom	5
3.2.1	Hearing Dogs for Deaf People, UK	5
3.3	The United States	6
3.3.1	Context	6
3.3.2	International Hearing Dogs Incorporated (IHDI)	6
3.3.3	Who Qualifies for a Hearing Dog?	6
3.4	Australia	7
3.4.1	Context	7
3.4.2	Lions Hearing Dogs	7
3.5	New Zealand	8
3.5.1	Context	8
3.5.2	Hearing Dogs for Deaf People, New Zealand	8
3.5.3	Preparation of Hearing Dogs	8
3.5.4	Funding	8
3.5.5	Role of Dogs	9
3.5.6	Who Qualifies for a Hearing Dog?	9
4	Key Informant Interviews	10
4.1	Primary Drivers of Change among the Deaf Population	10
4.2	Knowledge of Hearing Dogs	11
4.3	Understanding of how Hearing Dogs can benefit the deaf community	11
4.4	Assessment of how Hearing Dogs Currently meet Community Needs	12
4.5	Awareness of the Effectiveness of Hearing Dogs	12
4.6	Aware of Promotion Undertaken by Hearing Dogs	13
4.7	Estimated Proportion of the Community that Could Benefit from having a Hearing Dog	13
4.8	Actions Hearing Dogs Could Undertake to Help Meet These Needs	14
5	Quantitative Survey Results	14
5.1	Level of Hearing Impairment	14
5.2	Perception of Hearing Impairment Status	15
5.3	Requirements for Assistance	15
5.4	Use of Cochlear Impants	16
5.5	Living Situation	16
5.6	The Role of Hearing Dogs	16
5.7	Role of Hearing Dogs for the Deaf	17
5.8	Demographic Details	18
6	Conclusions	20
7	Appendix One – List of Informants from Key Interviews	21

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1 Introduction

1.1 Hearing Dogs for Deaf People New Zealand

Specially trained Hearing Dogs provide valuable services to deaf and hearing-impaired people in much the same way as guide dogs for blind people. In 1998 Hearing Dogs for Deaf People New Zealand (HDDPNZ) was formally established and incorporated as a charitable trust. Previously no organisation for training and placing these dogs existed in New Zealand. Hearing Dogs for Deaf People New Zealand have the same access rights as Guide Dogs for the blind - they are allowed into all public places, including food premises. Hearing Dogs training organisations operate in other countries, including Australia, the UK and the USA.

In the seven years that HDPNZ has been in full operation, 50 dogs have been trained and entered on the national register of hearing dogs in New Zealand. In the past 12 months, 11 dogs have been trained and placed. The present permanent staff of five is engaged in the training, placement and follow-up assessments of the dogs in addition to recipient support, fund raising and administration work.

The purpose of HDDPNZ is to enhance independence and well-being of Deaf and severely hearing-impaired New Zealanders through the provision of specially trained Hearing Dogs. These dogs have been trained to internationally recognised standards.

HDDPNZ has a vision that incorporates:

- That Hearing Dogs for Deaf people become as common-place and universally accepted as Guide Dogs for the Blind;
- That HDDPNZ is able to give many unwanted and abandoned dogs as possible lives of useful service as specially trained hearing dogs;
- That the lives of New Zealanders who become Hearing Dog recipients are enriched as a result of receiving a Hearing Dog; and
- That HDDPNZ is recognised by its peers and the public at large as the leading assessor and provider of competent Hearing Dogs in New Zealand.

1.2 Research Objectives

Over recent years, the profile of HDDPNZ has slowly been heightened through presentations, speaking engagements, fundraising activities and general word of mouth. To date, potential recipients for hearing dogs have been identified by people approaching the organisation. This has been mainly a passive, reactionary process which from time to time has resulted in problems matching supply and demand.

In order to plan its resources into the future, HDDPNZ wishes to obtain more definitive information on the potential size of the market for its services. This information will be used to set performance targets for the annual numbers of dogs to be sourced and trained; and to provide the correct level of human and financial resources necessary to deliver these objectives.

The primary objective is therefore to estimate the numbers of people in the New Zealand hearing impaired and deaf communities that meet the criteria for becoming a recipient of a Hearing Dog.

2 Research Design

2.1 Overview

Various methods of estimation of the potential population that would meet the criteria for becoming a Hearing Dog recipient have been used by Research First. The methodologies that were utilised in this preliminary report are:

- Secondary Source Research;
- Thematic Interviews of Key Opinion Leaders; and
- An online survey of the deaf and hearing impaired communities

2.1.1 Secondary Source Research

Research First has reviewed a variety of secondary sources to determine the role, function and levels of Hearing Dog utilisation. This has included a review of information from nations who have greater duration of experience in working with Hearing Dogs, as well as a review of all New Zealand based information.

2.1.2 Key Informant Interviews

For this research, a 'thematic' interview design has been utilised. This design uses a semi-structured interview protocol based around key themes and provides the researcher with more flexibility for dealing with novelty. The researcher guides the respondent into particular areas, but what path is actually followed is usually decided by the person doing the talking.

Balancing quality, timeliness and cost in this evaluation hinges on the careful choice of key informants, and the use of 'theoretical saturation' in data gathering. In line with all small qualitative projects, the sample was drawn by the deliberate selection of theoretically important units (here, different kinds of informants). Interviews were conducted amongst organisations servicing the Deaf and Hearing Impaired communities in New Zealand, as well as key audiologists in major centres, and other opinion leaders such as Grey Power, the RSA and relevant Academic organisations. Research First has limited the number of completed interviews to ten.

2.1.3 Quantitative Analysis

Research First is currently in the process of conducting a survey of members of organisations of Hearing Impaired and Deaf people. These organisations are being contacted and asked for permission to use their databases of deaf people to generate a suitably broad population for investigation.

A survey questionnaire was developed in conjunction with HDDPNZ. Two survey options were available to HDDPNZ; (1) a mail survey and (2) an e-mail survey. The current data represents an initial report on the completions from an e-mail survey. In addition, further data is being collected from a mail version of the survey, and will be reported on at a later date.

3 Results: Secondary Source Review

3.1 A Note about Definitions

The parameters of 'deaf' or 'hearing impaired' are basically guided by an audiological definition, which "refers to those who are unable to hear well enough to rely on their hearing and use it as a means of processing information"¹. However it is also acknowledged there is a cultural aspect to the definition of those who have only a partial hearing loss, who may or may not choose to classify themselves as such because they may not desire to affiliate themselves with the deaf community. Various data sources quote different populations being measured, including 'deaf' and 'hearing impaired'. Data is also quoted for 'those for whom sign language is the primary form of communication' and for whom 'hearing impairment impacts on an individual's ability to communicate'. Where relevant, all statistics are quoted including the specifics of the condition being described.

3.2 The United Kingdom

According to Hearing Dogs of the United Kingdom, nearly 9 million people in the United Kingdom experience some degree of hearing loss from a total population of 60.8 million (which equates to one person in every seven). Over 650,000 of these people are severely or profoundly deaf and could benefit from a hearing dog².

The dogs are trained to respond to everyday household sounds that hearing people take for granted which include the sounds of: an alarm clock, doorbell, telephone, cooker timer, baby cry, the call and, of course, the danger sounds such as the smoke alarm, carbon monoxide alarm and burglar alarm. Additionally, all of the dogs are trained to alert their deaf owners to the fire siren in public places such as hotels, restaurants, shops etc. as they are, by law, allowed to accompany their recipient into public premises.

3.2.1 Hearing Dogs for Deaf People, UK

The Hearing Dogs for Deaf People, UK (HDDPUK) programme was established over 25 years ago, and as of 2007 had placed 1,400 dogs placed with individuals who are deaf or hearing impaired. Lady Wright, who was an early champion for the hearing dogs, is on record noting that:

Deafness is the least understood major disability, that it is financially speaking the most neglected and that often, rather than empathy; most deaf people can actually meet ridicule because of their sensory loss³

Because of this, it was thought to have been too difficult to achieve adequate funding for the programme, even through the existing deaf charities. It became apparent that the profile of Hearing Dogs in community needed to be raised, even though the organisation operated under the auspices of the Royal National Institute for the Deaf. HDDPUK launched their first potential hearing dog at the high profile Crufts Dog Show in London during February 1982. The organisation also benefited from gaining The Princess Royal as their Patron. Subsequent to the official launch it took HDDPUK 8 years to train 100 dogs and handlers. The process accelerated, and over the following three years, a further 100 dogs were trained. The programme has been gathering momentum ever since.

Approximately 70% of the HDDPUK's dogs have been selected through dog rescue centres, and many breeds are used as hearing dogs. Visually, the hearing dogs are distinctive because of the burgundy jacket 'uniform' they wear while working. The presence of the dog inherently provides a subtle advantage to the deaf person with the dog because it makes their disability visible. A further

¹ <http://www.nad.org/site/pp.aspx?c=foINKQMBF&b=180410&printmode=1>

² <http://www.hearing.org.uk/>

³ <http://www.hearingdogs.org.uk/history.php>

advantage to the deaf person is the companionship provided by the dog (as deafness can be an isolating and lonely disability). The research done by HDDPUK demonstrates that deaf people provided with hearing dogs gain greater confidence and independence and generally feels a greater sense of security.⁴

3.3 The United States

3.3.1 Context

Out of the total population of the United States of America of 290 million, approximately 28 million have a hearing impairment (around 1 in 10 individuals). In addition, the population of Canada is 31.6 million, with a population estimated to include some form of hearing loss estimated at 4.4% of the population⁵, including up to 40% of those aged over 65⁶. The research also shows that in the United States:

- Hearing loss is greater in men.
- Almost 12 percent of men who are 65 to 74 years of age are affected by tinnitus.
- Only one out of five people who could benefit from a hearing aid actually wears one.
- About two to three out of every 1,000 children in the United States are born deaf or with some form of hearing loss. Nine out of every ten children who are born deaf are born to parents who can hear.
- Hearing loss affects approximately 17 in 1,000 children under age 18.
- The incidence of deafness increases with age - approximately 314 in 1,000 people over age 65 have hearing loss and 40 to 50 percent of people 75 and older have a hearing loss⁷.

3.3.2 International Hearing Dogs Incorporated (IHDI)

International Hearing Dog Incorporated (IHDI) (<http://www.ihdi.org/>) is an organisation which started operations in 1973. Since then IHDI has trained over 1,000 dogs for deaf in the United States and Canada. As with the programme in the United Kingdom, these dogs are also selected from animal shelters and once arranged of breeds and dog sizes are selected (their selection criteria are dogs 'approximately six months to a year old, in good health, an aim-to-please, and energetic personalities'). The dogs selected from the programme are given a full medical examination and desexed. When the dog is delivered to its new home, the dog's trainer works with the handler and the dog for three to five days, teaching the handler how to maintain the dog's training and to make sure dog and handler have a good working relationship.

The funding of this programme was set up initially by donations from Lions International and they were able to train 6 hearing dogs. This organisation was the first of its kind in the world, and subsequent programmes have utilised the idea extensively throughout at least the Western world.⁸

3.3.3 Who Qualifies for a Hearing Dog?

The guidelines that IHDI require are as follows:-

- Candidates are over 18 years old
- Have at least a 65 decibel hearing loss (unaided)
- Live alone or with other persons who are deaf or hard of hearing
- Do not have another dog in the home
- Are physically able and willing to care for and continue the training of a hearing dog⁹

⁴ <http://www.hearingdogs.org.uk/dogs-partnerships.php>

⁵ <http://www.statcan.ca/english/freepub/89-577-XIE/tables/table7.htm>

⁶ http://www.chha.ca/documents/en/beyond_the_hearing_aid_8x11_01.pdf

⁷ <http://www.deafness-and-hearingaids.net/2007/03/07/us-statistics-about-hearing-disorders-and-deafness-from-nidcd>

⁸ http://www.ihdi.org/ihdi_index.htm

3.4 Australia

3.4.1 Context

The total population of Australia as of June 2008 is 21.3 million, with 1.0 million who are deaf or have some sort of hearing loss¹⁰ (representing one in 23 people in the population). In contrast, other data suggests one in six Australians is affected by hearing loss. While data are structured in different formats from different sources, it is suggested that of this population is a sub-set of those with some level of hearing impairment. For example, data from Western Australia suggests the population for whom hearing impairment has an effect on their ability to communicate on a daily basis is as high as 17%¹¹. Of these, relatively few are constrained to use sign language. This data also provides estimates of the usage of Auslan total 18,000, nationally, which can be interpreted as the population for whom total loss of hearing means alternate communication skills are required.

Prevalence rates for hearing loss are associated with increasing age, rising from less than 1% for people aged younger than 15 years to three in every four people aged over 70 years.

With an ageing population, hearing loss is predicted to increase to 1 in every 4 Australians by 2050.

Australia has also attempted to 'monetise' the cost of deafness to its economy¹². Research has outlined that:

- In 2005, the real financial cost of hearing loss was \$11.75 billion or 1.4% of GDP.
- The financial cost does not take into account the net cost of the loss of wellbeing (disease burden) associated with hearing loss, which is a further \$11.3 billion.
- The largest financial cost component is productivity loss, which accounts for well over half (57%) of all financial costs (\$6.7 billion).
- The second largest component¹³ of this cost to the economy is the cost of informal carers to assist people with hearing loss to communicate in a variety of settings. The costs are calculated on a replacement valuation basis.

3.4.2 Lions Hearing Dogs

The Lions Hearing Dogs programme (<http://www.hearingdogs.asn.au/>) was launched in 1980 by two (then) District Governors of Lions Australia, who were attending a Lions International Convention in the USA at the time. There they found out about a Hearing Dogs Training Centre in Colorado. After what they describe as 'an enormous amount of effort and against considerable scepticism' these members convinced the Lions Clubs of Australia to undertake a similar project in Australia.

The first Australian dog, Amber, was placed in 1982 in Adelaide and was with her recipient until 1995 when she died. Since then there have been over 330 dogs placed with deaf people all over Australia^{14, 15}.

In Australia, the Lions International social group raise the funds for their hearing dog programme, whilst calling on other social agencies to also contribute. There is also a scheme where there is sponsorship through various companies and organisations, for example Animal Welfare League, Bayer, or Woolworths. At the moment there is a drive on where different individuals or groups can

⁹ http://www.ihdi.org/ihdi_index.htm

¹⁰ <http://www.vicdeaf.com.au/statistics-on-deafness-amp-hearing-loss>

¹¹ <http://www.wadeaf.org.au/index.php?id=42#What%20are%20the%20statistics%20of%20Deaf%20population?>

¹² <http://www.vicdeaf.com.au/files/listenhearreport.pdf>

¹³ The largest cost to the economy being the loss of productivity.

¹⁴ <http://www.hearingdogs.asn.au/history.html>

¹⁵ Lions hearing dogs also places dogs with the hearing impaired in Papua New Guinea

'purchase a paver' of graduated levels, from \$10 to over \$2,500 as Lions Hearing Dogs build their new facilities.¹⁶

3.5 New Zealand

3.5.1 Context

Of New Zealand's population of 4,200,000, approximately 390,000 having a hearing loss of some degree. This includes over 250,000 who report having a disability caused by hearing loss. Other data demonstrates a total population of 24,000 use New Zealand Sign Language (an official language in New Zealand)¹⁷. The research also shows that:

- People over 65 are three times more likely to have hearing loss than younger adults.
- Men are much more likely than women to suffer from hearing loss. 90,400 more men than women report hearing loss, and 31,500 more men than women report disability caused by hearing loss.
- The difference in hearing problems between men and women first emerges in the age-group 25-44 years.
- By far the greatest public health problem related to hearing loss is occupational noise.
- In future it is anticipated that not as many men will develop hearing loss¹⁸.

3.5.2 Hearing Dogs for Deaf People, New Zealand

As noted previously, Hearing Dogs for Deaf People New Zealand (HDDPNZ) was established in 1998 as a charitable trust. Prior to this trust, no organisation for training and placing these dogs existed in New Zealand. In the seven years that HDPNZ has been in full operation, 50 dogs have been trained and entered on the national register of hearing dogs in New Zealand. In the past 12 months, 11 dogs have been trained and placed. The present permanent staff of five is engaged in the training, placement and follow-up assessments of the dogs in addition to recipient support, fund raising and administration work.

3.5.3 Preparation of Hearing Dogs

HDDPNZ dogs are selected through several criteria such as a good temperament, sound reactivity and keenness to work. They are then put through basic obedience. If the dogs pass these criteria of socialising they are then trained specifically in sound alerting. This process can take from 3 months to a year. In this time they learn to lead their handler to a sound such as a boiling jug or doorbell, or conversely away from certain sounds such as a fire alarm.¹⁹

3.5.4 Funding

In New Zealand the estimated cost of training a dog is approximately \$13,000, of which there is no charge to the recipient, and so the organisation usually demands a strict adherence to their guidelines so that the dog can continue to provide an optimal service. However it is also noted that a growing number of deaf and hearing impaired people are undertaking the challenge of training their own dogs.²⁰

Within New Zealand, funding is also received through the sponsorship of companies and organizations, and through events such as New Zealand Relay. Hearing Dogs for Deaf People New

¹⁶ <http://www.hearingdogs.asn.au/engraved%20pavers.html>

¹⁷ <http://en.wikipedia.org/wiki/NZSL>

¹⁸ http://www.grevilleconsulting.co.nz/nz_hearing_impaired_population.htm

¹⁹ http://en.wikipedia.org/wiki/Hearing_dog

²⁰ http://en.wikipedia.org/wiki/Hearing_dog

Zealand is also a registered charitable trust. As with Australia, the participation with Lions International is there, but they are not the principle driving force.

The United Kingdom also is funded through sponsorship and private donations, but they also have specific fundraising events each month of the year. It is probably reasonable to note that the profile of the United Kingdom's organization is more exposed than it is in New Zealand because of the longevity in the community since 1982. In the United Kingdom, Australia and New Zealand, none of these groups have any government funding.

3.5.5 Role of Dogs

The role of the hearing dog is to alert their handler to important sounds, such as telephones ringing, alarm clocks, doorbells, smoke alarms. In each country, the dogs have a 'uniform', which in New Zealand is a yellow jacket so that they are identified by the general public that they are more than a pet and therefore require full access to shops and so forth.

3.5.6 Who Qualifies for a Hearing Dog?

The guidelines HDDPNZ uses to select recipients of hearing dogs include:

- People who are profoundly deaf, or have moderate to severe hearing loss. This includes individuals with a cochlear implant.
- People with a need for a Hearing Dog. That is, people who want and need to be alerted to the sounds regularly at home and possibly at work.
- People who live alone; with other deaf people; or with hearing people who will allow a Hearing Dog to work to sounds every time a sound occurs.
- People who are happy with a dog inside their home at all times.
- People who have no other dogs living in their home.
- People with an 'escape proof' fenced area that will allow the dog to have exercise and be able to toilet without supervision.
- People who genuinely value the close companionship of a dog, and want to develop a working relationship with one.
- People who are physically and financially able to care for a dog; able to give the dog regular exercise, grooming, suitable food and shelter, and ensure that the dog will receive appropriate veterinary care.
- People who are able to obtain the support of their employers to have a Hearing Dog at work in work; or the support of their education provider if in study²¹.

²¹ <http://hearingdogs.orconhosting.net.nz/apply.htm>

4 Key Informant Interviews

Research First conducted a number of phone interviews with organisational leaders servicing the Deaf and Hearing Impaired communities in New Zealand, as well as key audiologists in major centres, and other opinion leaders such as Grey Power, the RSA and relevant academic organisations. These interviews were conducted either in a face-to-face structure or by telephone where appropriate. Where the interviews were with profoundly deaf or hearing impaired individuals, technology such as Instant Messaging or an iterative e-mail structure was used. A range of questions were asked of the various informants, using a thematic style focused on obtaining a depth of information, rather than specific responses to fixed questions. Details are as follows:

4.1 Primary Drivers of Change among the Deaf Population

Most people interviewed cited technology as being a primary driver of positive change. Texting, Email, NZ Relay and the new '3G' mobile telephone system with video calling capabilities were all nominated as providing benefits for the deaf community, and helping to remove the isolation that the community may have experienced in the past. Specifically, these initiatives have opened up accessibility and communication with the hearing world. In addition, the development and placement of Cochlear implants among many profoundly deaf or hearing impaired individuals. In addition hearing aids are being improved to interact with cell phones, MPS, and computers through 'Bluetooth' technology. While texting has been a significant benefit to the deaf community, the limits on the numbers of texts available through various plans have an impact in limiting the benefit. Instant Messaging (online) has provided a portal for real-time communication.

One individual noted that the development of hearing screening programmes amongst newborns were being introduced throughout New Zealand, and that with these programmes, interventions and / or hearing aids could be provided for children as young as six months old. This will help the next generation of deaf or hearing impaired individuals to be less disadvantaged by hearing loss than previous generations. In addition, new government subsidies are coming into place for hearing aids.

In contrast, experience from the United Kingdom suggests that while technological advances are providing a benefit to the deaf and hearing impaired communities, the technical support items that function inside a house are rarely transportable, and as a result, the 'out and about' role of hearing dogs presents a far greater benefit than that offered by technology.

A recent governmental change has shown specific acknowledgement of the deaf and hearing impaired populations in New Zealand. This has been the recognition of Sign Language as the third official language of New Zealand has been cited as a positive move toward deaf awareness, though it is generally agreed that there is much more work to be done in providing resources.

"There are more positive attitudes towards Deaf people now, as compared with before when Deaf people were forced to be oral. Our language is the 3rd official language in NZ, so while we still have got a lot of work to do around this, it shows that attitudes towards Deaf people are changing, and that is making more and more Deaf people feel more proud to be Deaf."

Improvement in funding for hearing aids, for detection of hearing loss, and intervention services was also frequently mentioned. There has been a greater use of interpreters. Mainstream provisions for children in school are improving due to availability of teaching support, though one person interviewed made the following interesting observations:

"Hearing impaired and Deaf are very different... The range of what going deaf or hearing impaired means is very wide. Deaf people have typically struggled with education as they are mainstreamed and do not do as well as they do not have other deaf around them. Thus communication is difficult. In terms of education it tends to be poor. Many adult deaf have a reading age of 10-12. The poor reading age means that the phone relay and caption TV are difficult. In the hearing impaired community these technologies work well."

None of the individuals interviewed independently identified (without prompting) that Hearing Dogs were or could be a driver of change or an opportunity in the deaf or hearing impaired communities.

4.2 Knowledge of Hearing Dogs

Of the informants interviewed, only one noted that they had an in depth knowledge of the hearing dogs programme. Three informants had some personal knowledge of the service, in so far as they either knew of someone who had a hearing dog; or knew of someone who was going through the process of applying for one. For other respondents, understanding of hearing dogs was best described as 'superficial'. Most were aware of hearing dogs only through their own reading, with only one informant having received a mailer on the subject.

It was generally understood that hearing dogs can alert the deaf person to dangers, and could advise of doorbells and other audible alarms in a household setting, but their value in a community setting was uncertain.

One of the informants, who knew of someone with hearing dog, summed his thoughts as follows:

"It is easy to understand the benefits of a dog for the blind as opposed to the deaf. It needs better promotion within NZ. (I have) been in the field for 30 years and should have been approached by now."

In support of the perception that there are sociological as well as functional benefits available from owning and maintaining a hearing dog, one respondent noted that they were aware of an individual who cheated on the hearing test with the aim of implying their impairment was more severe than it actually was, purely to qualify for the programme, as they had (what this informant defined as) psychological issues for desiring a hearing dog. One informant noted that those who had a hearing dog were strongly attached to them, and found them to be a benefit both from companionship and functionality.

4.3 Understanding of how Hearing Dogs can benefit the deaf community

As with the questions around awareness of the Hearing Dogs programme, understanding of the benefits of a Hearing Dog among the informants was relatively low and generally based on the knowledge of the parallel benefits of a guide dog for the blind. It was understood that Hearing Dogs alert their deaf companions to household sounds such as someone at the door or audible alarms. At the same time, many of those being interviewed perceived that these needs are also serviced by new trends in technology. Two areas in which the Hearing Dogs were perceived to offer a benefit over a technological solution were in the areas of safety and companionship. A key benefit identified was independence – the presence of a hearing dog provides a deaf person with the confidence to live alone, without the need for audible cues

While one informant suggested that hearing dogs cost a lot to train and were only beneficial to the severely hearing impaired, others thought they might offer special benefit for those who prefer not to use technological support or for those who are unable use hearing aids effectively. The companionship aspect of the dogs was rarely noted, but the experience from the UK showed that companionship was actually a major factor in providing both safety and lifestyle benefits for the owner.

One informant noted that while people benefit from hearing dogs, they are not 'essential'. While there is a passive demand for the dogs, the need for the dogs is a 'would like', as against a 'need'.

4.4 Assessment of how Hearing Dogs Currently meet Community Needs

While most of the informants interviewed felt that they had too little experience with the issue to answer this question, those that did answer view Hearing Dogs as an interesting development. While the feeling is that the deaf are very capable in the world with the assistance of technology, the personal nature of a dog offers unique advantages. As one informant said:

“Hearing loss is very isolating so this is hugely significant. (A dog is) not only a friend, but would allow you to go out safely and engage in the wider community, e.g. walk to the mall.”

Another informant noted that most of the Hearing Dogs communications are probably not directed through Audiologists, but should be as Audiologists would add value.

One informant highlighted the increasing range of technological supports for the deaf and hearing impaired communities. In these communities, devices such as baby alarms, door alarms; and visual alarm clocks, are all made especially for the deaf and hearing impaired communities. The devices are either subsidised or free, meaning that many of the service provided by the hearing dogs can be provided just as effectively through technological means. Bearing in mind the ‘community’ and ‘companionship’ aspects of hearing dogs, this informant believed that the hearing impaired community may be better placed to take on hearing dogs than the deaf community. However, other issues arise in the hearing impaired community – these tend to be older people, who have lost their hearing later in life, and their living situation may have lower relevance for hearing dogs (such as living in retirement homes).

Experience from the United Kingdom showed that a wide range of community benefits can and do accrue, and that acceptance of the role of hearing dogs helps to generate greater awareness, which in turn generates greater community benefit. Examples are the status of hearing dogs, which are now designated as ‘assistance dogs’; and as such have the same status as guide dogs for the blind and support dogs for disabled. The dogs are now permitted into communities such as retirement centres, where there has been seen to be a community as well as an individual benefit.

In a more recent pilot programme in the United Kingdom, hearing dogs are being provided for deaf children, even while living in a family with no other hearing impairment issues. Although only in pilot stage, issues such as confidence for the child, being able to sleep in their own bedroom rather than sharing a room with parents, and confidence when mixing with hearing-capable individuals at school and other social circumstances all highlighted the benefits of hearing dogs being utilised in this role.

4.5 Awareness of the Effectiveness of Hearing Dogs

None of the informants interviewed felt that they had enough information to answer this question. One informant noted

“All I know it takes about six months to train each dog. I am not sure how the dogs are assessed, nor if the programme is effective. However I have personally seen one or two Hearing Dogs with their deaf owners and they seemed to be doing their job. But mind you, that’s only one or two dogs! I don’t know about the other dogs...”

Another informant said,

“[I am] not aware of the programme, but it did work very well in the one case I was closer to, but I see nothing of the Hearing Dogs organisation, (except) possibly in association with Deaf Week and the hearing association.”

Awareness has been promoted in the UK through a range of media, any or all of which could be utilised to help raise the profile of HDDPNZ. In the UK a mix of local, regional and national television and radio are available, and public interest stories can often be placed in the local and / or regional

media, as there is significant interest in the 'public service' role played by these media outlets. Similarly, awareness has been effectively generated by use of articles demonstrating the benefits and successes of hearing dogs, placed in national women's magazines. Finally, in the UK, information presented at dogs shows, from local kennel club shows to Crufts all has been shown to both increase public support and awareness for hearing dogs.

4.6 Aware of Promotion Undertaken by Hearing Dogs

There was very little awareness among the informants of promotion by Hearing Dogs for Deaf People. Only one informant noted that they had received any information by post on the subject, while another mentioned seeing a promotion at a Hearing Association meeting.

One informant made the following comment:

"As a deaf community member, I don't recall any promotions about Hearing Dogs to the deaf community. I know of lots of promotions to the hearing community but not to the deaf community specifically. I do see some deaf owners bring their dog to the Deaf Association or to Auckland Deaf Society, but I have never seen any workshops to the deaf community. I think this should be done because I know some people including myself have some questions we would love to ask Hearing Dogs for clarification..."

4.7 Estimated Proportion of the Community that Could Benefit from having a Hearing Dog

It was generally felt among the informants that the market for Hearing Dogs would be very small (suggestions were in the range of 'tiny' to 1% of the deaf population). The role and opportunity for hearing dogs was generally based on perceptions of personal preference. Candidates for a hearing dog would be people profoundly deaf who do not already live with hearing friends or family members, and many in this group may be comfortable with technological aids and not want the responsibility of a dog.

Numerically, based on an estimated 'deaf' or 'hearing impaired population' in New Zealand of 390,000, this would lead to an overall requirement of **no more than 4,000**. If the primary focus is limited to the deaf or profoundly hearing impaired (estimated at no more than 40,000), this estimate would decrease to **around 400**. As a cross reference of this number, experience in the United Kingdom has demonstrated that the total available number of individuals who can or may benefit from a hearing dog is limited by a wide range of other factors, including the ability to house, service, feed and provide veterinary support for the dogs, personal health issues (such as real or perceived allergies to dogs), personal preferences (such as simply not liking dogs), and the time and ability required to train dogs. As such, the ability to reach the maximum audience in a short to medium term is limited, and the total number of placements is likely to be significantly lower than the theoretical number that the population could take. To date, HDDPUK have placed around 1,500 dogs.

Suggested target markets include:

- Students from deaf families, where the entire family would benefit from the dog,
- Young deaf adults leaving school and home,
- Older deaf adults who rely only on sign language,
- Cochlear implant patients who may need the security of a dog at night when their implants are removed.

In the United Kingdom, demand has increased steadily over the 26 years of operation, and there is currently a two year waiting list for placements. Issues that have lead to this waiting list have included the availability of dogs and the time and availability of trainers. The issue of trainer availability has been a significant issue in recent years, as record low unemployment has meant that

people who otherwise may have made their time available are now being asked to work longer hours, and being rewarded accordingly. As such, the ability to obtain voluntary labour has decreased.

4.8 Actions Hearing Dogs Could Undertake to Help Meet These Needs

More information and promotion is needed so that the deaf community and the organisations that service them are more aware of how to access Hearing Dogs, how they may be of benefit, how much support they would receive, and costs involved.

One informant thought that Hearing Dogs for Deaf People need to bring in the youth perspective and not just be associated with older folks (over 60 years). This informant added that on asking his deaf son, his son said he and his wife would be keen to have a Hearing Dog, and know of other families that would be interested in one, but does not personally know of anyone who actually has a Hearing Dog.

5 Quantitative Survey Results

An online survey was developed by Research First in conjunction with HDDPNZ. Individuals were invited to complete the survey through the form of an e-mail invitation made through a range of deaf and hearing impaired population databases, during the period from August 7 to August 26, providing an indicative response from the population. As of August 27, 60 completions had been received from the on-line survey, primarily among the 'Deaf' community. This was supplemented by a mail survey. Various organisations involved in providing services to the deaf and hearing impaired communities were asked to include a copy of the research survey in any scheduled mail-outs (to reduce costs for specific one-off mail outs). Following the option for on-line completions, various hearing associations did send out questionnaires to their members, and a further 105 responses were received by December 3, 2008. The resulting information provides insights into the differences in the two communities.

While both an on-line methodology and mail surveys provide some level of direction for researchers, this small sample size can not be used with any degree of statistical confidence, particularly as only those who are motivated to respond have completed the survey (providing a level of self-selection bias). However, the results do provide insights into the two relevant communities (Deaf and Hearing Impaired), and from these surveys, results can realistically be used to support the perceptions from the qualitative research. Results are as follows:

5.1 Level of Hearing Impairment

Respondents were asked to indicate their level of hearing impairment. The majority (60%) of respondents from the on-line survey (primarily deaf) described their hearing loss as profound, and 96% suffered their hearing loss in both ears. In contrast, among the mail-survey respondents (primarily hearing impaired); the largest responses were 'moderate' (37%) or 'severe' (36%). This distinction is important, as it helps to highlight and identify the populations for whom hearing dogs may be of greater or lesser benefit. The overall result was that 'profound' and 'severe' were the largest two groups identified. Details are shown in Table 5.1.

Table 5.1 Level of Hearing Impairment

Level of Impairment	E-mail Survey Results	Total Survey Results
Mild	3.5%	7.4%

Moderate	10.5%	26.2%
Severe	26.3%	33.6%
Profound	59.6%	32.9%
One Ear	3.6%	9.4%
Both Ears	96.4%	90.6%

5.2 Perception of Hearing Impairment Status

As noted previously, the population of 'deaf' and 'hearing impaired' have various forms of differentiation. Respondents were asked whether they would describe their situation 'deaf' or 'hearing impaired'. The results from the on-line survey were evenly spread, with 52% describing themselves as 'deaf' while 48% described themselves as 'hearing impaired'. In contrast, the results from the mail survey demonstrated response of 78% 'hearing impaired', resulting in a total sample of 65% hearing impaired and 35% deaf. Some respondents sought to define their status in greater detail, with comments such as

Totally deaf without hearing aids, but only hearing impaired when using my hearing aid

Some noted that their hearing impairment was frequency based, for example:

Upper Frequency impaired. Low Frequency OK

5.3 Requirements for Assistance

Respondents were asked whether they require assistance to detect sounds / be alerted to sounds like: sounds include alarm clock, doorbell, door knock, smoke alarm, baby cry monitor and cooker timer. From the on-line survey, 86% of respondents agreed that they would require some form of assistance to hear these sounds. This response rate reduced to 71% for the combined population of both forms of survey.

Respondents were then asked whether this need for assistance would be a risk to the safety of the individual. Responses were sought on a seven point scale, where 1= major threat to 7 = no threat at all. From the e-mail survey, results showed that 31% believed there was some level of threat, while 58% did not believe there was a threat to their safety. When this was compiled with the mail survey, the results showed that 63% did not believe that the loss of hearing was a risk to their health, with only 26% believing that there was a threat. Results are shown in Table 5.2.

Table 5.2 Perception of Threat to Safety from Hearing Impairment

Response	E-mail Survey Results	Total Survey Results
1 (high concern)	15.4%	9.9%
2	3.8%	7.0%
3	11.5%	9.2%
4	11.5%	10.6%
5	15.4%	17.6%
6	23.1%	27.5%
7 (minimal concern)	19.2%	18.3%

5.4 Use of Cochlear Implants

A cochlear implant is a surgically implanted electronic device that provides a sense of sound to a person who is profoundly deaf or severely hard of hearing.²² Cochlear implants were used approximately 10% of respondents. Of these, all removed them while sleeping, and the majority (80%) have security fears whilst your cochlear implant is not in place. Of those responding, only 4% are looking to have a cochlear implant inserted in the coming five years.

5.5 Living Situation

Respondents were asked whether they lived alone. From the online survey, 13% of respondents live alone, while from the combined surveys 24% live alone, again highlighting the difference in the two populations. Respondents were then asked whether there were others in the household who were able to hear, or if they also suffered hearing impairment. Of the 63% who live with others, 29% live with other individuals who are also hearing impaired or deaf. The family situation was also evaluated. From the e-mail data, 26% of respondents have children they are responsible for, and an additional 12% are looking to have children in the next few years. The responses from the 'hearing impaired' community (mail survey) are in significant contrast, only 4% have children living with them. 26% of the respondents from the email survey acknowledged that if they had children, they would reconsider their perspectives about safety in their household.

5.6 The Role of Hearing Dogs

Detail was sought with regard to the role of a dog in the household. Key responses were:

31% of respondents from the online survey, and 16% of respondents from the mail survey have a dog in the house;

60% of respondents from the online survey would consider a dog that was able to alert individuals to a range of important noises. In contrast, 34% of respondents from the mail survey would consider a dog that was able to provide alerts.

These respondents were then asked whether they would be able to care for, maintain, feed and provide veterinary requirements for a hearing dog. Of those responding

62% believed they would be able to provide for these needs;

71% would be able to exercise such a dog;

63%, would be able to provide a fully fenced property that would meet the dog's safety and toileting requirements;

²², http://en.wikipedia.org/wiki/Cochlear_implants

54% would be capable of taking part in the early training of such a dog;
 53% of respondents would be capable of having a dog in work or study situations

5.7 Role of Hearing Dogs for the Deaf

In general, the population was aware of Hearing Dogs for the Deaf (84%). When asked how they were aware of HDDPNZ, the majority had heard through word of mouth, although other media had been used to communicate. Details are shown in Table 5.3.

Table 5.3 Sources of Awareness of HDDPNZ

Media	Percentage of Respondents
Magazine	34%
Promotional Literature	33%
Television	21%
Word of Mouth	56%

From the details of these questions, respondents were asked whether they would (1) benefit from a hearing dog, currently; or (2) possibly benefit from a hearing dog in the future. Several responses from the mail survey (hearing impaired) noted that they live in nursing homes, and while they would benefit, they would not be able to have a dog in the retirement home in which they reside. One respondent noted that they already have a hearing dog, while two others noted that they had trained their own dogs to meet some needs that a hearing dog may provide. Responses are shown in Table 5.4.

Table 5.4 Requirements for a Hearing Dog

Response	Online Survey Respondents	Total Survey Response
Yes, benefit from a Hearing Dog	32%	23%
No, would not benefit	10%	34%
Possibly benefit from a Hearing Dog in the future	38%	34%

Respondents were then asked how they would best prefer to be communicated with, with regard to Hearing Dogs. Respondents could provide multiple responses. The most preferred forms of communication were through an organisation they were members of and through e-mail. Details are shown in Table 5.5.

Table 5.5 Preferred Form of Communication about Hearing Dogs

Response	Number of Respondents
Magazine	15%
E-mail	53%
Promotional Literature	10%
DVD	9%
Through an organisation you are a member of	38%
Not interested	13%

5.8 Demographic Details

A range of details were sought with regard to the demographic details of the individuals, with regard to how long they had experienced hearing loss, their age, gender, and location. Details are shown in Tables 5.6

Table 5.6 Age at which Hearing Loss Commenced

Response	Percent of Respondents
From Birth	21%
0-10	14%
11-20	6%
21-30	15%
31-40	8%
41-50	12%
51-60	14%
61+	10%

Table 5.7 Current Age

Response	Percent of e-mail survey	Percentage of total responses
Under 20	10%	5%
21-40	38%	12%
41-60	27%	24%
61+	18%	48%
Not Stated	6%	11%

Table 5.8 Gender

Response	Percent of e-mail survey	Percentage of total responses
Male	27%	31%
Female	52%	57%
Not Stated	22%	12%

Table 5.9 Location

Response	Percentage of total responses
Auckland	10%
Wellington	7%
Other North Island	26%
Canterbury	26%
Other South Island	19%
Not Stated	12%

6 Conclusions

The interpretation of these two specific data sets implies the population of deaf and hearing impaired people who may qualify for the services of a hearing dog will be somewhere between 24,000 and 390,000. While the primary objective of the survey was to validate the number of Hearing Dogs that the New Zealand Deaf and Hearing Impaired community could utilise, the first issue is developing a baseline criteria of those individuals for whom hearing impairment is of sufficient level that they have safety issues. This range would appear to fit well with other data gathered, validating a total potential population of approximately 40,000 individuals.

The data from the qualitative research implied that up to 1% of the overall population of profoundly deaf, or 400 dogs, could be used in the New Zealand community. The data from the quantitative analysis would imply that a higher percentage of the population would *be interested* in having a hearing dog. It should be noted that not all of those who would be interested would necessarily qualify for having a hearing dog. The two populations identified (deaf and hearing impaired) have different requirements. From the results of the survey, the deaf group tend to be younger, and the opportunity of a hearing dog being available to meet their needs for a safe and normal life would be higher. In contrast the results from the hearing impaired community tend to identify the group as being older, not having concerns with needing to care for families with younger children (although grandchildren were noted in more than one response, and possibly being in a living situation such as a retirement home where a hearing dog would not be permissible, even if it were of benefit.

Key results from the data were that 23% of respondents stated that they would benefit from a dog currently, while a further 40% would consider having a dog in the future. Based on the estimate of 40,000 deaf or profoundly hearing impaired people in New Zealand, this would translate to a total opportunity for around 9,000 dogs. However, experience from the United Kingdom has shown that uptake is significantly lower than the available market. When calculations are based purely on the quantitative data, Research First would suggest that the figure of 400, as proposed by the qualitative analysis, would be a credible estimate. Again, comparing the number of placements to the existing service provided in the United Kingdom, it may take many years to reach this target of placement, and a more credible short term estimate (based on pro-rata placement with the United Kingdom) would be around 80-100 dogs.

7 Appendix One – List of Informants from Key Interviews

The following individuals were included in the review of key informants from the deaf and hearing impaired communities:

Tom Purvis, Kelston Deaf Education Centre;
Anne Greville, researcher;
Barry Newcombe, Principal of van Asch Deaf Education Centre;
Catherine, DEAFinitely Youth Group;
Alan Bensley, Secretary, NZ Federation for Deaf Children;
Chris Peters, Hearing Association PR Manager;
Michele Pokorny, Audiological Society;
Karen Puller, Oticon;
Rachel Noble, Deaf Association of New Zealand; and
Kelly Bensley, Deaf Sports Association
Jenny Moir, PR Manager, HDDPUK