# Background Paper for Senate Select Committee on Health

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Submitted by Australian Hearing

## Hearing Loss in Australia

Hearing loss has social, educational and economic consequences for society. Currently the prevalence of hearing loss in Australia is estimated to be one in six; a figure which is expected to increase by 2050 to one in four. In 2006, Access Economics published a report called "Listen Hear. The economic impact and cost of hearing loss in Australia". In their report, hearing loss was estimated to affect 3.55 million Australians in 2005[1]. Of these:

- 10,268 were children aged up to 14 years (0.29% of the total)
- 3,534,963 were adults 15 and over
- 49.5% were of working age (15–64 years)
- 64% of people with hearing loss were aged over 60 years with 37% aged 70 years or more.

Across Australia, approximately 340 (1.1 per 1,000) babies are born each year with a moderate or greater, permanent, bilateral hearing impairment. Unilateral (single-sided) hearing loss of similar severity occurs in approximately 185 (0.6 per 1,000) babies[2]. Current research evidence supports identification, amplification and intervention by six months of age and cochlear implantation (if required) by 12 months of age as providing the best outcomes for children with congenital hearing loss.

By late primary-school age, 4.7 children per thousand births have been fitted with hearing devices to manage the effects permanent or long term hearing loss of any degree. Each year Australian Hearing fits over 2,500 young Australians under 26 years of age with their first set of hearing aids.

Chronic conductive hearing loss due to middle ear disease (otitis media) is a major reason for fitting hearing aids to Aboriginal and Torres Strait Islander children. Whilst 4% of the Australian child population are Aboriginal or Torres Strait Islander, nearly 10% of the Australian Hearing aided child population is Aboriginal and Torres Strait Islander children, the majority of whom have hearing loss associated with ear disease.

Approximately one quarter of children with permanent hearing loss have at least one other disability. Data from the Longitudinal Outcomes of Children with Hearing Impairment (LOCHI) study , undertaken by the National Acoustic Laboratories and the HEARing CRC, indicates 24% of participants have disabilities in addition to hearing loss[3], whilst Fortnum et al (2002:176)[4] reported that 27.4% of children with hearing loss have at least one other disability.

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[1] **Access Economics 2006** Listen Hear. The economic impact and cost of hearing loss in Australia.

[2] **Australian Hearing 2014.** Demographic Details Of young Australians aged less than 26 years with a hearing impairment, who have been fitted with a hearing aid or cochlear implant at 31 December 2013 http://www.hearing.com.au/demographic-2013-report-children-young-adults-hearing-loss/ **downloaded 6/7/15**

[3] Ching TYC, Leigh G & Dillon H (2013) introduction to the Longitudinal Outcomes of Children with Hearing Impairment (LOCHI) study: Background, desine, sample characteristics. Int J Aud 2013: 52: S17-S28

[4] Fortnum H, Marshall DH, Summerfield AQ (2002) "Epidemiology of the UK population of hearing impaired children, including characteristics of those with and without cochlear implants – audiology, aetiology, co-morbidity and affluence" *International Journal of Audiology* 41:170-179.

## About Australian Hearing

Australian Hearing is a statutory authority constituted under the *Australian Hearing Services Act 1991*, and is subject to the requirements of the *Public Governance, Performance and Accountability Act 2013*. Australian Hearing reports through a Board to the Minister for Human Services, Senator the Hon Marise Payne.

The functions that Australian Hearing can undertake are defined in the *Australian Hearing Services Act 1991*. The activities relating to service provision that Australian Hearing can provide, are limited to people who meet the eligibility criteria under the Australian Government Hearing Services Program. Australian Hearing does not provide services to private clients.

The Australian Government Hearing Services Program is administered by the Department of Health through the Office of Hearing Services. The Hearing Services Program has two streams; the Voucher program and the Community Service Obligation (CSO) program.

**Voucher Program**
A person is eligible for the Voucher program if they are an Australian citizen or permanent resident 26 years or older and they are:

- a Pensioner Concession Card Holder
- receiving Sickness Allowance from Centrelink
- the holder of a Department of Veterans' Affairs Gold Card issued for all conditions
- the holder of a Department of Veterans' Affairs White Card issued for specific conditions that include hearing loss
- a dependent of a person in one of the above categories
- a member of the Australian Defence Force; or
- part of the Australian Government funded Disability Employment Services (DES) – Disability Management Service and referred by their Disability Employment Services case manager.

Australian Hearing competes with over 250 service providers to deliver services under the Voucher Program. In 2013 – 14 services under the Voucher Program accounted for 70% of Australian Hearing's revenue.

**Community Service Obligations Program**
A person is eligible to receive hearing services through the Community Service Obligations (CSO) program if they are an Australian citizen or permanent resident and they are:

- younger than 26 years
- an eligible adult with complex hearing needs
- an Aboriginal and Torres Strait Islander who is over 50 years
- an Aboriginal and Torres Strait Islander participant in the Remote Jobs and Community Program or a former Aboriginal and Torres Strait Islander participant in a Community Development Employment Projects Program, who received hearing services before 30 June 2013.

Australian Hearing is the sole provider of services to clients who are eligible under the CSO program under a Memorandum of Agreement with the Office of Hearing Services. Australian Hearing receives fixed funding annually to deliver services under the CSO Program.

**National Disability Insurance Scheme participants**
National Disability Insurance Scheme participants may access hearing services through the Voucher and CSO programs if they are referred for services by their National Disability Insurance Agency Planner.

Australian Hearing employs almost 1,200 staff with nearly half being Audiologists. At 30 June 2014, Australian Hearing had 127 Permanent Sites and 368 Visiting Sites.

Australian Hearing is committed to access and equity, quality clinical care and excellence in customer service. Clinical standards, protocols and quality measures ensure consistency of service delivery and device provision for all client groups and across all locations.

In 2013-14 Australian Hearing:

- Provided 446,870 hearing health services to Australians.
- Visited 217 Outreach sites to support the hearing needs of Aboriginal and Torres Strait Islander communities.
- Fitted and followed up over 150,000 hearing devices.
- Total revenue was $212 million.

## NATIONAL ACOUSTIC LABORATORIES

The National Acoustic Laboratories (NAL) is the research division of Australian Hearing. NAL is recognised as a world leader in applied research on hearing loss.

The *Australian Hearing Services Act 1991* defines the functions that NAL can perform. NAL undertakes research in the following areas:

i. assessment of hearing
ii. hearing aids and procedures for fitting hearing aids
iii. hearing rehabilitation
iv. hearing loss prevention and
v. the effects of noise on the community

NAL is funded through:

- A Funding Agreement with the Department of Health's Office of Hearing Services
- The HEARing Co-operative Research Centre (CRC)
- Research grants
- Other research contracts
- Commercialisation of some inventions

NAL provides leading research that is used worldwide. Assessment methods, prescription methods, evaluation methods, and signal processing software used within hearing aids developed at NAL, are used on a daily basis throughout the world.

### Child Outcomes Study

The Longitudinal Outcomes of Children with Hearing Impairment (LOCHI) study has provided world-first evidence for the benefits of early intervention resulting from universal newborn hearing screening.

### Central Auditory Processing Disorder (CAPD)

NAL has led the world in developing diagnostic and remediation software of a type of CAPD – spatial processing disorder (SPD). Children who have SPD are disadvantaged at school because they find it difficult to hear in the classroom environment. NAL has developed both diagnostic software and remediation software that cures children of this condition.

## CSO Service Delivery

**Profile of CSO clients**

| Client Category | Snapshot @ 30 June 2014 |
|---|---|
| Aided Young Australians (0-20 years) | 18,896 |
| Aided Young Adults (21-25 years) | 2,527 |
| Complex Adults | 22,346 |
| Indigenous Eligibility | 2,808 |
| **Total CSO Clients** | **46,577** |

In addition to supporting the above aided clients, in 2013-14 Australian Hearing also provided services to 15,746 unaided young Australians aged from 0-20 years, some of which went on to be fitted with hearing aids and some that did not require further services after assessment.

5,275 CSO clients used a cochlear implant in one or both ears, with 47% of implantees aged under 26 years.

CSO clients have complex clinical needs and an increased vulnerability compared with Voucher clients due to:

- The interaction between hearing loss and children's developmental outcomes, and the impact of a hearing loss diagnosis on the child's family.
- The impact of additional disabilities and poor speech understanding upon the ability of adult clients to communicate and participate in work and social settings.
- The complexities of delivering culturally appropriate services coupled with the high prevalence of middle ear disease and the health and socio-economic challenges faced by Aboriginal and Torres Strait Islander communities.

**Service and Quality Principles**

*1. Access and Equity*

Clinical standards, protocols and quality measures ensure consistency of service delivery and device provision. Australian Hearing has a broad coverage nationally, particularly in rural and remote areas. Consistency of access is supported by the ability to move staff between locations if there is a shortage of appropriately skilled audiologists in the district. Tele-audiology is being increasingly used to allow specialists in one location to provide remote support to regional centres. Audiologists who visit remote Aboriginal and Torres Strait Islander communities fly in from all parts of the country, so the service is not reliant purely upon local clinicians. This allows continuity of service provision.

Australian Hearing works closely with referral services, educational and rehabilitation service providers to ensure:

- Residential care facilities are supported in meeting clients' hearing needs. Frail elderly clients can receive services in their own home or residential care facility.
- Clear pathways and timely transition from Universal Newborn Hearing Screening through diagnosis, hearing aid fitting and onto early intervention
- Consistency of equipment used in educational settings, and support for teachers to use the equipment.

*2. Service Quality and Clinical Outcomes (Skilled Workforce)*

Clinical service delivery to CSO clients requires specialised practitioner skills, for which Australian Hearing has developed unique training programs. Consistency of service delivery is supported by documented clinical standards, quality measures and evidence based practice guidelines, which are monitored by a program of clinical audits and supported through ongoing surveillance of peer reviewed scientific literature and interaction with leading researchers both locally and internationally, including NAL.

Australian Hearing runs internal training courses and mentoring programs to ensure that staff have the skills to work with CSO client groups. All staff are provided with cultural competency training to support service delivery to Aboriginal and Torres Strait Islander clients.

*3. Service Effectiveness and Efficiency (Value for Money)*

Australian Hearing delivers value for money to Government, through a range of measures that include using savings from high volume technology purchases and the infrastructure available through its Voucher business to provide cost efficiencies in the delivery of CSO services.

Australian Hearing also uses various strategies to ensure services are delivered within the available funding and are effective including:

- Using nationally consistent referral management protocols ensuring that services are targeted towards clients who have or are at risk of having a permanent hearing loss, so that other clients are appropriately directed towards screening and secondary diagnostic services funded by state/territory governments.
- Managing the rollout of new technology through protocols that ensure the funds are directed towards those who will gain the greatest benefit from the technology.
- Using a strategic approach in planning outreach services to Aboriginal and Torres Strait Islander Communities to ensure services link with other appropriate agencies, are supported by the community and are targeted to achieve the goals and outcomes of the Community.
- Using national standards and protocols to ensure consistency of service delivery and device provision.
- Having a quality framework in place to support continuous quality improvement. This includes utlising feedback from outcome measures and client surveys.
- The collection of data to support service planning and service delivery. Australian Hearing's aided child demographic data, published annually, is an invaluable resource for monitoring and planning service delivery across health and education sectors.

## Current issues in Hearing Service Delivery

**1. Availability of primary and secondary diagnostic services.**

Limited availability of state/territory-funded services in some parts of Australia has the potential to delay the diagnosis of late onset hearing loss in children. Australian Hearing's data shows two peaks in age of first hearing aid fitting; the first is associated with the successful implementation of universal newborn hearing screening; the second occurs in the early school years and is mainly due to late onset hearing loss, including development of hearing loss due to chronic middle ear disease.

**2. Access to surgery for children with chronic conductive hearing loss.**

While this issue is most commonly identified with services to Aboriginal and Torres Strait Islander children, Australian Hearing now receives a small but increasing number of referrals to provide hearing aids for non-Indigenous school-aged children who are on the public waiting list to receive surgical intervention to treat chronic middle ear disease. The fitting of hearing aids has two impacts upon the child and family; the

psychosocial impact of coming to terms with the impact of using hearing aids and the necessity to attend a number of appointments related to hearing aid fitting and ongoing management. The cost to government of managing the child's hearing needs increases due to the cost of providing hearing aids and associated clinical services in addition to the cost of surgery when available. Aided children usually also require some educational support to ensure the technology is used appropriately.

**3. Access to travel assistance funding for audiology services**.

Current schemes are focused upon support to attend medical appointments, which introduces access barriers for those who need to travel for audiological assessment. Whilst audiologists try to coordinate services with medical appointments or use tele-audiology to minimise travel, this is not always possible. Infants with hearing loss require frequent appointments in the first 12 months of life to optimise hearing. The majority of these require face to face contact – for example making earmould impressions for hearing aids due to rapid growth in the first year of life.

**4. Minimising loss to follow up from Universal Newborn Hearing Screening (UNHS).**

Children who are born with hearing loss require intervention and amplification before six months of age in order to optimise outcomes. There is currently no national data base or single patient identifier that tracks the progress of infants from screening through diagnosis to provision of amplification and early intervention. Achieving a positive long-term impact of UNHS is dependent upon monitoring diagnoses to ensure no children 'fall through the cracks". A recent review of Australian Hearing's demographic data revealed that early amplification rates are significantly lower for Aboriginal and Torres Strait Islander children than for non-Indigenous children, despite similar rates of screening attendance. Australian Hearing has begun to work with state screening programs to develop strategies to reduce loss to follow up.

**5. Increasing complexity of hearing technology and its interface with educational technology.**

Schools face increasing challenges to integrate communication technology provided through a range of programs. An increasing number of schools are using classroom amplification systems, funded by either state/territory education departments, parents' use of Better Start resources funding or private funds. These systems interact with personal Remote Microphone technology provided by Australian Hearing, requiring additional planning and troubleshooting in the school environment.

**6. Growth in the number of individuals using implantable technology.**

Over the past ten years cochlear implant candidacy criteria have broadened to cover a much greater range of hearing losses and age ranges. Implantable bone conduction hearing aids and middle ear implants are being used for a wider range of clients and hearing losses. The changes have a positive impact upon clients achieving good communication outcomes, but also place increasing costs on public funding and upon individuals if device provision and maintenance are not covered by public funding.

**7. An ageing population.**

The ageing population will increase the need for hearing services and consequently lead to increased demand for services to support the very frail and complex clients, such as those with dementia. The total number of people with hearing loss was projected to grow from 3.55 million in 2005 to 7.85 million in 2050. This includes a growth of 69% (approximately 2.86 million people) in the over 71 year old age group. There will be a total of 4.17 million people over the age of 71 estimated to have a hearing loss in 2050. [5]

[5] **Access Economics 2006** Listen Hear. The economic impact and cost of hearing loss in Australia.