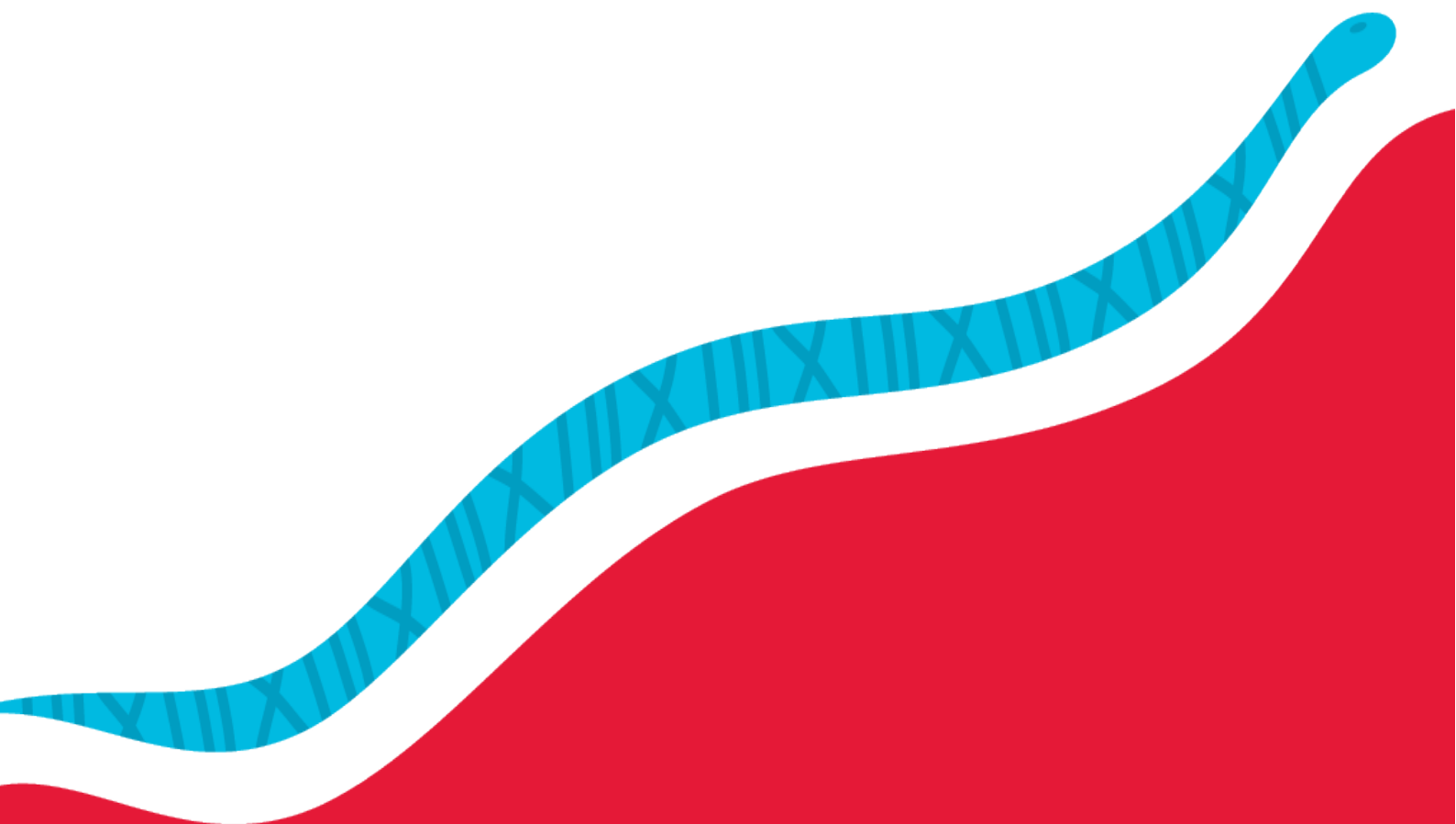




strong schools • strong communities



Royal Commission into the Protection and Detention of Children in the NT

March 2017





NT COGSO Submission to the Royal Commission Into the Protection and Detention of Children in the Northern Territory

Hearing in Education for Learning Project (HELP) to break the cycle

The Northern Territory Council of Government Schools Organisation (NT COGSO) welcomes the Royal Commission into the Protection and Detention of Children in the NT.

We make this submission as the peak organisation that advocates for the parents of children attending public schools throughout the Northern Territory.

NT COGSO reaches out to nearly 19,000 parents across the Northern Territory and has a 100% affiliation with all of the Northern Territory's public schools.

In our work we come across many issues that affect the wellbeing of our Territory children. We acknowledge the significant commitment being provided in education by parents, principals, teachers and staff in our schools and Department of Education. While much is being done to close the gap of disadvantage we believe that far greater investment needs to be made in preventative measures to ensure every effort is being made to divert children away from the child protection and criminal justice system and give them access to a quality education.

To continue to deliver an Education system without the changes we submit to the Royal Commission would be accepting a cycle of failure and ignoring evidence-based research on the tools required to provide all Territory children with the chance of listening and learning in our classrooms.

The reality is that many of our children have great difficulty hearing their teacher. Imagine sitting at school as a student with hearing loss and English as your second language, lost in your own world because the classroom acoustics simply don't enable you to hear your teacher.

Sadly, this is the case for almost half of our Aboriginal and Torres Strait Islander students at any time. How do you learn when you simply can't hear?

The shocking statistics are known. **Otitis Media (middle ear infection) is the predominant cause of hearing loss and of the 4,371 Aboriginal and Torres Strait Islander (ATSI) children and young people who received audiology services from July 2012 to June 2015 some 45% suffered hearing loss.** (*Australian Institute of Health and Welfare AIHW*).

“In remote communities it is common for as many as 90 per cent of the children to have abnormal ears; that is, they have current middle ear infection or perforation or scarring of the eardrum related to past infections (Couzos et al., 2001). In urban classrooms it is typical for up to 50 per cent of the Indigenous children to experience conductive hearing loss at any point in time (Quinn, 1988).” (Conductive Hearing Loss and Behaviour Problems Amongst Urban Indigenous Students, Damien Howard 2006 p5).

In its recent submission to the House of Representatives Standing Committee of Health, Aged Care and Sport *Inquiry Into the Hearing Health and Wellbeing of Australia*, the Council of Presidents of Medical Colleges wrote: “The Council concurs with the World Health Organisation which described otitis media among Indigenous Australians as ‘a massive public health problem ... which needs urgent attention’. (World Health Organisation: Prevention of hearing impairment from chronic otitis media. WHO/CIBA Foundation Workshop (1996).

“The Council is concerned that otitis media affects children’s ability to participate in the education system because not being able to hear properly impacts on their learning with delayed language development. This in turn leads to higher absenteeism rates and lower employment opportunities later in life, negatively impacting on the broader Australian economy. Of concern is that hearing impairment is directly linked to the judicial system, with evidence that up to 60 per cent of children in youth detention centres are Aboriginal, of which approximately 80 per cent have ongoing significant hearing issues when tested. (*Aboriginal Law Bulletin 3 (65) (1993): 58*)”

NT COGSO felt it important to provide the Royal Commission with a significant excerpt from the Australian Medical Association (AMA) 30 November 2016 submission to the House of Representatives Standing Committee of Health, Aged Care and Sport *Inquiry Into the Hearing Health and Wellbeing of Australians*:

“The Australian Medical Association (AMA) is pleased to provide a brief submission to the Inquiry into the Hearing Health and Wellbeing of Australia. This submission is of relevance to the Terms of Reference related to Aboriginal and Torres Strait Islander people, and the hearing care for vulnerable populations.

“The AMA is particularly concerned about the unacceptably high rates of hearing loss and deafness among Aboriginal and Torres Strait Islander people. Deafness and perforated eardrums are at pandemic levels in remote Aboriginal communities.

“Former AMA President, Dr Bill Glasson, as part of his involvement in the Northern Territory ‘intervention’, noted that Indigenous communities rated chronic ear disease as the most pressing health problem for their children.

“One area we wish to draw the Committee’s attention to is the relationship between hearing loss and deafness, and the criminal justice system. The AMA has previously raised the issue of the impact of hearing loss and deafness in our submission to the Senate Inquiry into the indefinite detention of people with cognitive and psychiatric impairment in Australia (April 2016).

“The high rates of hearing loss, deafness and poor auditory perception, especially among Aboriginal and Torres Strait Islander people, significantly contributes to difficulties in understanding. This, in turn, exacerbates problems in regard to interactions with law enforcement and criminal justice. The Senate Inquiry Hear Us: Inquiry into Hearing and Health in Australia is especially relevant to this current inquiry, as it established the link between early onset hearing impairment and increased engagement with the criminal justice system. The previous Senate inquiry also noted the association between conductive deafness in Aboriginal and Torres Strait Islander people and the high rates of substance abuse, truancy, illiteracy, and unemployment – factors which contributed to interactions with the criminal justice system.

“The association between deafness and rates of incarceration of Aboriginal and Torres Strait Islander people has been documented by medical practitioners, and we refer the Committee to the work of Associate Professor Christopher Perry FRACS, President of the Australian Society of Otolaryngology Head and Neck Surgery (ASOHNS). For example, see Complications of otitis media in Indigenous and non-Indigenous children.

[<http://healthbulletin.org.au/articles/complications-of-otitis-media-in-indigenous-and-non-indigenous-children/>]

“The AMA’s position statement Health and the Criminal Justice System 2012 notes that contact with the criminal justice system provides a valuable opportunity to detect and address health conditions experienced by detainees/prisoners. In our position statement, the AMA recommends:

- upon admission, all prisoners and detainees should receive screening from a medical practitioner for physical, addiction-related and psychiatric disorders, and potential suicide risk. Additional screenings should be undertaken periodically and as an individual is transferred between facilities or different stages of the justice system;
- health assessments should be promptly undertaken to define more fully the nature of health issues identified during screening, and to determine appropriate types of treatment. Health assessments must be undertaken by a medical practitioner or nurse, and mental health assessments should be administered by a trained mental health clinician;

- health assessments should include evaluation of substance use, hearing loss, acquired brain injury, intellectual disability and other cognitive disabilities given the significant implications these issues have for both health and recidivism outcomes; and
- prisoners with an intellectual or physical disability are provided with relevant services and facilities, including for dual disabilities and/or multiple morbidities associated with disability.”

In a Background Paper entitled *Deaf Justice*, Dr Damien Howard, wrote in March 2010: “Childhood hearing loss has also been found to contribute significantly to learning and behavioural problems at school (Howard, 2004). Aboriginal children with Conductive Hearing Loss were found to tease other children more, peers often rejected them socially and they are more disruptive in class than other students (Howard, 2005).

“The behaviour problems of Indigenous students at school pave the way for their later involvement in the criminal justice system. There is evidence that a higher proportion of Indigenous prison inmates have a higher degree of hearing loss when compared with the general incidence of Conductive Hearing Loss in the total Indigenous population (Bowers, 1986, Murray & La Page, 2004). This suggests that:

“Involvement in the criminal justice system may be the end product of a cumulative link, whereby hearing-related social problems contribute to low educational standards, unemployment, alcohol and substance abuse, these being the more obvious antecedents of contact with the criminal justice system.”(Howard, Quinn, Blokland & Flynn, 1991, p 9).”

Deaf Justice concludes with the words of Alison Wunungmurra and we provide an extract:

‘Children with hearing loss:

- *Don’t have self-esteem.*
- *Don’t have self-confident. (sic)*
- *Don’t have self-respect.*
- *Their anti-social behaviours increase throughout their entire lives. This becomes a major problem in our society.*

Now I really want you to imagine, I want you to put yourself in that classroom you’re the little kids that can’t hear properly what the teacher are saying.

Imagine the child in the classroom without hearing.

Without good hearing the child is ignored.

Without good hearing the child is scared, frustrated and angry.



And without good hearing everyday would be full of noise with no chance to listen.

The picture that I just painted for you is really a scary world and this is happening to our children all around the country.

That's enough in world without good hearing: now let's imagine the world with good hearing.

Imagine the world with good hearing.

In a world with good hearing people would be able to better themselves.

In a world with good hearing there would be nobody left embarrassed and shame in the classroom, a community would be full of pride and respect.

In a world with good hearing there would be only a few black people in jail.

In a world with good hearing there would be understanding."

NT COGSO urges the Royal Commission to read the entire Howard Background Paper and have provided it as **Attachment 1**.

The Australian Institute of Health and Welfare (AIHW) report, Child protection Australia 2015-16, shows that Aboriginal and Torres Strait Islander children were 7 times as likely as non-Indigenous children to have received child protection services (157.6 per 1,000 children compared with 22 for non-Indigenous children).

The AIHW report states that children from very remote areas were four times as likely as those from major cities to be the subject of a substantiation.

Otitis Media is a disease of poverty which extremely high prevalence rates in very remote communities. While there are a multitude of factors that lead to these unacceptably high rates of Indigenous over-representation in child protection we submit that the preventative measures being considered by this Royal Commission must surely include addressing the needs of children with hearing loss in our schools. Evidence exists linking hearing loss to challenging behaviour.

We urge the Royal Commission to acknowledge the clear and credible links between the effects of otitis media (conductive hearing loss) and the ongoing over-representation of Indigenous children in our child protection and juvenile detention systems. Sadly, this is also highly prevalent among our adult prisoners.

An investigation among inmates in Northern Territory correctional facilities found more than 90% of Indigenous inmates had a significant hearing loss. *Investigation into hearing impairment among Indigenous prisoners within the Northern Territory Correctional Services Report* is provided (albeit with redacted sections) as **Attachment 2**.

The *Investigation into hearing impairment among Indigenous prisoners within the Northern Territory Correctional Services Report* of July 2011 makes the following recommendations:

- Training be provided to all correctional staff with regards to the prevalence of hearing loss of indigenous prisoners in the Darwin Correctional Centre and the importance of effective communication with hearing impaired inmates.
- Hearing testing of inmates not tested in this project should be carried out and medical follow up of all inmates found through this testing to have a hearing loss be undertaken.
- The medical induction questions asked of inmates be reviewed and changed to better detect self-reported hearing impairment and tinnitus as well as the implementation of routine hearing tests for all inmates on induction be introduced to identify hearing impairment and make appropriate medical referrals if needed.
- A tinnitus management program be developed for inmates.
- Depending on the outcomes of the trial of amplification devices being conducted within the Darwin Correctional facility that amplification devices be used widely when communicating with inmates in situations where there is a high risk of communication breakdown, or there are demonstrated benefits to their use.
- This report be disseminated throughout the Department of Justice to inform both policy and operational management.
- That more formal research be undertaken to identify and address the impact of widespread hearing loss on Indigenous inmates.

It would be informative for the Royal Commission to ask the Northern Territory Department of Justice as to how many of these recommendations were implemented.

NT COGSO has been advised by the Department of Education that juvenile offender programs are offered at Tivendale School in Darwin and Owen Springs Education Centre in Alice Springs. Both schools operate under an MOU between the Department of Education and the Department of Justice. We have been advised that over 90% of students are Indigenous.

Do the acoustics of these classrooms meet the national acoustics standards, do these classrooms have sound field amplification systems, do any students have access to individual amplification devices, have all students been provided audiology services to assess hearing loss?

It would be highly informative for the Royal Commission to receive the answers to these questions and to consider any unmet need as critical to its recommendations.

In its submission to the Australian Senate Community Affairs Committee 2010 Report *Hear Us: Enquiry Into Hearing Health*, Audiology Australia recommended the supply and maintenance of sound field amplification systems in classrooms where there is a significant population of Aboriginal students.

“There is not a readily identified pathway for funding of sound field amplification systems for schools in the NT. Certainty of funding for sound field systems and their supply, installation, training, maintenance, repair and replacement, and procedures to guide this are lacking in the NT.” (Audiology Australia, Submission to the NT Indigenous Education Review).

By way of explanation, “Sound field amplification is an educational tool that allows control of the acoustic environment in a classroom. Teachers wear small microphones that transmit sound to a receiver system attached to loudspeakers around the classroom. The goal of sound field amplification is to amplify the teacher’s voice by a few decibels and to provide uniform amplification throughout the classroom without making speech too loud for normal hearing children”. (**Attachment 3:** *Article in the Australian Journal of Indigenous Education, Volume 33, 2004*).

There needs to be a significantly increased investment in audiology assessments and support interventions for our children. Today in the Northern Territory, more than 2,000 children are on a referral waiting list for assessment.

Moreover, there needs to be strategies in place that support the referral of appropriate Aboriginal children with hearing loss for audiology assessment. There are cultural factors, that have been identified through research carried out in the Northern Territory, that obstruct children who have hearing loss being perceived by teachers and child care workers as needing an audiology assessment. (**Attachment 4:** *Classroom Case Study: Cross Cultural Obstacles to the Referral of Aboriginal Children for Hearing Tests, Dr Damien Howard, The Australian and New Zealand Journal of Audiology, Vol 28 May 2006*). This means that there is a need for school-based screening programs and family educational programs to help prompt appropriate audiology referrals.

Hearing Australia receives Federal Government funding for the assessment of remote Indigenous children. We suggest that a service delivery model, which has specialist audiologists working with the Aboriginal Medical Services who operate remote health clinics, is an additional or alternative service well worth investigating if Australia is to achieve a sustainable service delivery that addresses the existing backlog and is capable of working with preventative researchers such as Menzies School of Health.

One of the problems has been a lack of structural changes to our schools to enable our children to hear during the periods of hearing loss. If you’ve ever had a middle ear infection you’d know what it’s like trying to hear through a fog – the sound is muffled, words become indistinct. Add the dynamic that it’s a second language you’re trying to hear, and learn, in a noisy classroom and it becomes all the more challenging.



This has an impact on behaviour and learning outcomes. Persistent and ongoing hearing loss in children impacts on literacy, learning, behaviour and communication skills.

To be truly effective in systemic change to close the gap of disadvantage, all tiers of Government – Territory, State and Federal – need to work in a National Partnership as this is an issue that affects children across state and territory borders.

It has been proven through Queensland and Northern Territory studies that, the employment of local Aboriginal people as teacher aids and teachers in the classrooms is incredibly effective because they understand the local sign language and use it as an effective communication tool.

The reality is that Auslan is not delivered as a language across remote schools for conductive hearing loss students (about 90% of the school cohort) and is only provided as a communication language for sensory/neural hearing loss deaf children. Recent funding cuts to Deaf Children NT has dramatically reduced the Auslan teacher service. As a consequence, access to Auslan is diminishing, rather than improving.

Further, it is known that Aboriginal communities have their own sign languages as well as develop family-based signing systems for individuals. In her submission to the Royal Commission into the Protection and Detention of Children in the Northern Territory, Jody Barney – a Deaf Indigenous Community Consultant and Deaf Cultural Broker, who has more than 25 years professional experience working in the field and is also an Indigenous Deaf person – said she is fluent in eight (8) different Aboriginal and Torres Strait Islander sign languages and systems, and has knowledge of over 55 separate signing systems used in Indigenous communities across Australia.

Ms Barney has already submitted to the Royal Commission that: “In many Indigenous communities, hearing loss is an unidentified, undiagnosed and therefore unaddressed concern. If many in a community have a hearing impairment of some level, there may be no self-awareness of loss because the hearing loss has been normalised.”

“This is particularly important when people are asked to self-identify that they have a hearing loss. It also means Indigenous people often don’t have the capacity to advocate for themselves for treatment and services.”

“As a result, in both Indigenous communities and more broadly, Indigenous people with hearing loss may often be wrongly identified as having some other medical or more commonly cognitive impairment.”

Evidence-based research shows that to improve our hearing loss children's ability to learn we need:

- **classrooms with improved acoustics**
- **sound field amplification systems in classrooms with predominantly Indigenous students**
- **individual amplification devices for one-on-one learning and group learning**
- **community members employed in the classroom fluent in the local language and cognisant of local sign languages**
- **audiology assessments**
- **education and awareness of parents, teachers and staff of conductive hearing loss**
- **referral to audiology services of students with suspected hearing loss**
- **access to audiology services**

Our advocacy to deliver acoustic upgrades and sound field amplification systems into our schools has become known as Hearing in Education for Learning Project (HELP) and we've been thrilled with the support of the Minister for Education, the Hon. Eva Lawler MLA, the Minister for Health, the Hon Natasha Fyles MLA, AMSANT, Deaf Children Australia and experts such as Dr Damien Howard who completed his PhD in the faculty of Education on Conductive Hearing Loss and Behaviour Problems Amongst Urban Indigenous Students in 2006.

As a result of NT COGSO and AMSANT advocacy a HELP Working Party has been established with the NT departments of Health and Education.

We are keen to implement acoustic upgrades, deliver sound field amplification systems, produce operational protocols for schools in education and awareness of hearing loss, provide employment in schools and clinics for Aboriginal people fluent in local languages and cognisant of local sign languages and fast-track referral and assessments to audiology.

We urge the Royal Commission to support these crucial initiatives by providing them as Recommendations because without a genuine collaboration between the Territory and Federal Governments, with funding provided for implementation, it will be a continued cycle of disadvantage, neglect and incarceration.

Sometimes, from little things, big things grow. This Royal Commission presents a significant opportunity to ensure that the AMA described "pandemic" of Otitis Media and its heartbreaking effects on our children and society is no longer swept under the carpet.



Imagine a child sitting at school in a classroom with acoustics that reduce noise and with a sound system amplifying the teacher so that they have no difficulty hearing and learning. Imagine that child with the support of a local Aboriginal adult competent in the local sign language. The world of learning will finally open up to them instead of being a student with hearing loss destined for our child protection, juvenile detention and ultimately adult prison systems. Who knows, we may actually succeed in 'Closing the Gap'.

"Education is the most powerful weapon we can use to change the world." - Nelson Mandela

Tabby Fudge
President
NT Council of Government Schools Organisation

Background PAPER

24 March 2010

Dr Damien Howard
Phoenix Consulting

Office: 1 Phoenix Street, Nightcliff NT
Mail: PO Box 793, Nightcliff NT 0814

Email: damien@phoenixconsulting.com.au

DEAF JUSTICE

HEARING LOSS AND INDIGENOUS CRIMINAL JUSTICE: A NEGLECTED ISSUE IN THE OVER REPRESENTATION OF INDIGENOUS PEOPLE WITHIN THE CRIMINAL JUSTICE SYSTEM

EXECUTIVE SUMMARY

This documents begins by discussing the problems of hearing impaired Indigenous people in the criminal justice system. Widespread Indigenous hearing loss contributes to poor communication with police, lawyers, corrections staff and the judiciary. It discusses evidence of how hearing loss among Indigenous people increases the likelihood of these individuals being charged and arrested when they have an encounter with the police.

These communication issues associated with hearing loss can lead to:

- Difficulties in explaining themselves to the police, with the result that they are more likely to be arrested and charged;
- Difficulties when the police take statements from Indigenous defendants and witnesses;
- Problems giving instructions to solicitors or being credible witnesses in court;
- Management difficulties for corrections staff;
- Problems coping, both socially and emotionally, in correctional settings.

It is an urgent priority to train police, solicitors and judiciary in relation to communications strategies with Indigenous people with hearing loss.

The extreme disadvantage of Deaf Indigenous people is also briefly discussed. Their limited life experience and communication problems make Deaf Indigenous people highly dependent on family. Without family support, Indigenous Deaf people often have difficulty in knowing how to behave appropriately and are unable to develop the social skills they require to negotiate relations with people who do not know them well. These difficulties can often result in actions that bring them into contact with the criminal justice system. Similarly, their responses, in various situations, arise from the extreme frustration of their battle to cope in a hearing world. Indigenous Deaf people are also highly likely to being blamed for the criminal acts of others, as well as being victims of crime themselves.

Secondly, this document outlines the practical outcomes of research into cross-cultural communications. This research indicates that cultural differences in communication processes result in a dynamic process that then tends to lead to Indigenous people feeling that they are being criticised excessively and unreasonably. Such criticism can slowly erode their confidence to a point where individuals may become demoralised, disempowered and disengaged; or result in upset, angry, resentful and sometimes retaliatory actions. Such 'retaliation' appears inexplicable and undeserved from the perspective of non-Indigenous people, who are not privy to the multitude of experiences to which Indigenous people are exposed.

Conversely, the reluctance of Indigenous people to 'give feedback' results in non-Indigenous people having minimal exposure to negative Indigenous feedback about their behaviour, and consequently results in them remaining unaware of the things that Indigenous people don't like about what they say and how they behave. This ignorance can result in the stereotype of the 'rude, disinterested and racist white-fella'. This process of mutual, unclarified misunderstanding often generates real ongoing and entrenched antagonism. Therefore, what begins as culturally based misunderstanding, ends in

embedded mutual antagonism that appears, to all parties, like racism.

INTRODUCTION

My background is that I have been an educator, psychologist and researcher/consultant in the Northern Territory for over 30 years. I first worked as a teacher in remote and urban schools and then as a school psychologist focusing on issues of Indigenous schooling. I have a particular interest in the impact of widespread hearing loss on Indigenous schooling. My doctoral studies were on the relationship between Conductive Hearing Loss and school behaviour problems among Indigenous students. Some of this work is outlined in the first section of this document.

In private practice in Darwin over the last 20 years, I have encountered many issues that impact on the over representation of Indigenous people in the criminal justice system. Work in examining the multiple issues involved in cross-cultural staffing problems in the health sector, highlighted aspects of cross-cultural communication that led to further research. Some of these research findings are outlined in the last section of this document.

Over the last 20 years I have endeavoured, unsuccessfully, to undertake work on the contribution of widespread hearing loss among Indigenous people to their over representation in the criminal justice system.

A rationale is outlined in the document describing the pervasive neglect of critical issues.

Suggestions are made for preventative programs and strategies around the issues of hearing loss, cross-cultural training and education.

CONDUCTIVE HEARING LOSS AMONGST INDIGENOUS AUSTRALIANS

As noted in other documents Australian Indigenous children are likely to experience hearing impairment from a younger age (Boswell, J., Leach, A., Nienhuys, T., Kemp, K., & Mathews, J., 1993] and for longer periods (OATSIH, 2001] in early childhood and decreases with age. It occurs more often among children living in remote communities, but urban Indigenous children also experience rates of Conductive Hearing Loss that are higher than their non-Indigenous urban peers.

The damage caused by persistent ear disease leaves between 40 per cent (urban) and 70 per cent (remote) of Indigenous adults with mostly Conductive Hearing Loss. Endemic Conductive Hearing Loss can also lead to a secondary listening problem -Auditory Processing Problems. There is general awareness of the relationship between ear disease and Conductive Hearing Loss and the high prevalence of both among Indigenous children, so I will not describe this further. However, I would like to highlight another listening problem related to childhood ear disease about which there is less awareness.

AUDITORY PROCESSING PROBLEMS

Research shows that early, mild Conductive Hearing Loss from middle-ear disease leads to Auditory Processing Problems that can be persistent or permanent (Hogan & Moore, 2003). It is the cumulative total, from various periods of Conductive Hearing Loss experienced by children while they are growing up, that is the critical factor that leads to the development of Auditory Processing Problems. Since Indigenous children experience middle-ear disease and associated Conductive Hearing Loss at an earlier age, more often and for longer periods than do other groups, they are therefore at a high risk of developing Auditory Processing Problems.

Auditory processing has been described as 'what we do with what we hear'. To derive meaning from words, our neurological system must process the sound that we hear. As with hearing loss, Auditory Processing Problems can contribute to problems in the perception of speech. Auditory Processing Problems are not detected by standard hearing tests, there are specific assessments used to identify auditory processing deficits (Bellis, 2002).

There are a number of ways that Auditory Processing Problems may affect speech perception (Bellis, 2002). People with Auditory Processing Problems may have a diminished ability to differentiate between sounds-auditory discrimination. This difficulty has implications for their understanding of what is said, their ability to follow directions and their capacity to learn to read and spell.

People may have difficulties with their auditory memory and find it difficult to remember information presented in spoken form. One common problem for people with auditory processing difficulties occurs when they try to listen in the presence of background noise. While people may cope with communication one-to-one in a quiet environment, they have difficulties when there is background noise and/or more than one person is speaking at the same time.

Auditory Processing Problems impact on communication in many large institutional settings. For example, in facilities such as schools or remand and detention centres that congregate people together increases the noise levels. The capacity of the individual to control their listening environment is also reduced in these settings.

Some of the signs that Auditory Processing Problems may exist are as follows (Patton, 2004). People may:

- Interpret words too literally;
- Often need remarks repeated;
- Ask many extra informational questions;
- Have difficulty following a series of directions;
- Have difficulty remembering information that has been presented verbally;
- Hear better when watching the person who is speaking;
- Have problems hearing when there is background noise present.

Between seven and ten per cent of the general population are thought to be affected by Auditory Processing Problems (Hogan & Moore, 2003; Rowe, Rowe & Pollard, 2001). In a study involving six Northern Territory Independent schools and 1050 Indigenous secondary students, 38 per cent showed indications of Auditory Processing Problems (Yonovitz & Yonovitz, 2000). Given that this study was based on secondary school students who attended school, it did not include students who had no longer attended school because of problems related to listening or who were absent for reasons that may have included hearing related problems (Couzos, 2004). It is likely, therefore, that the findings in this study underestimate the proportion of Indigenous secondary students with Auditory Processing Problems.

HEARING LOSS AND THE CRIMINAL JUSTICE SYSTEM

The high incidence of middle ear disease in Aboriginal communities contributes to massive levels of Conductive Hearing Loss among Aboriginal children. It has been estimated that, on average, Aboriginal children have middle ear disease for more than two and a half years during their childhood. The equivalent figure for non-Aboriginal children is three months (OATSIH, 2001). Although middle ear disease is usually considered a health problem, it also contributes to poor social and emotional outcomes. The West Australian Aboriginal Child Health Survey (WAACHS) found

significantly poorer social and emotional wellbeing for children who had 'runny ears' (caused by perforation of the eardrum) than other Aboriginal children (Zubrick et al., 2005). Childhood hearing loss has also been found to contribute significantly to learning and behavioural problems at school (Howard, 2004). Aboriginal children with Conductive Hearing Loss were found to tease other children more, peers often rejected them socially and they are more disruptive in class than other students (Howard, 2005).

The behaviour problems of Indigenous students at school pave the way for their later involvement in the criminal justice system. There is evidence that a higher proportion of Indigenous prison inmates have some degree of hearing loss when compared with the general incidence of Conductive Hearing Loss in the total Indigenous population (Bowers, 1986; Murray & La Page, 2004). This suggests that:

"Involvement in the criminal justice system may be the end product of a cumulative link, whereby hearing-related social problems contribute to low educational standards, unemployment, alcohol and substance abuse, these being the more obvious antecedents of contact with the criminal justice system." (Howard, Quinn, Blokland & Flynn, 1991, p 9).

Linguistic and cultural differences are frequently presumed to be the reason why an Indigenous witness may misinterpret a question, give an inexplicable answer, remain silent in response to a question, or ask for a question to be repeated. The potential contribution of hearing loss in this break-down of communication is generally not considered. However, it is probable that the distinctive demeanour of many Australian Indigenous people in court is related to their hearing loss. Where this is the case, there is a very real danger that the court-room demeanour of Indigenous people (not answering questions, avoiding eye contact, turning away from people who try to communicate with them) may be interpreted as indicative of guilt, defiance or contempt (Howard, 2006).

Court communication processes are largely an artefact of 'Western' culture. The social processes are structured and highly formal, and the language used is often obscure, even to native English speakers. Yet Indigenous people can be disadvantaged if they do not participate fully in court processes that involve archaic examples of 'Western' social etiquette and a specialized English vocabulary. An anthropologist made the following comment after observing Indigenous defendants in court proceedings:

'(The) most frequent response is to withdraw from the situation, mentally, emotionally and visually. One magistrate in a country town complained to me that "Aborigines in the dock are always gazing out of the window, or looking down and either ignoring questions or mumbling inaudible answers".' (Howard et al., 1991, p 10)

The following anecdotes are indicative of ways in which communication elsewhere in the criminal justice system can also be adversely affected by Conductive Hearing Loss, with perverse consequences.

'A defendant with hearing loss was crash tackled when being transported from court when he did not obey a verbal order to stop, that he did not hear.'

'After sentencing, a defendant with hearing loss was placed in an unfamiliar room to be told what his sentence meant. His usual

lawyer was not available because of other commitments, so another unfamiliar lawyer tried to explain the sentence. However, the man became wild and 'trashed' the room when the new lawyer tried to explain the court outcome. He only calmed down when familiar staff from the detention centre arrived.'

'A long-term feud developed between a hearing impaired prisoner and another prisoner after a hearing related misunderstanding during a game of cricket in prison.' (Howard, 2006, p 9)

There is strong evidence to suggest that Indigenous students' anti-social school behaviour is related to widespread hearing loss (Howard, 2004). Recent research (Richards, 2009) shows that police are more likely to arrest and refer to court young Indigenous individuals, compared with non-Indigenous youths. This may be seen as related to racial profiling and negative stereotypes of Indigenous people among police. It is highly probable, however, that the outcomes of police contact with Indigenous people are influenced by the effects of widespread hearing loss among Indigenous youth impacting on communication with police.

Communication with police

One important but little considered 'other measure' is addressing the effects of hearing loss on communication with police.

Hearing loss can act as an obstacle to communication with the police. The misunderstandings that arise when these obstacles are encountered can contribute to negative outcomes resulting from contact with the police. This was highlighted by an Indigenous client, who had a moderate hearing loss, and long history of antagonistic relations with the police.

Case Study

His involvement with the police often resulted in his arrest. He described a process whereby he had difficulty understanding what a police officer had asked him, when they raised their voices, and shouted so that he could hear what they said, he became angry, thinking they were being aggressive or trying to shame him. This often resulted in a violent altercation with police.

The author encouraged this man to borrow an inexpensive personal amplification device. With his permission, I also spoke to the police in his community, explaining about his hearing loss and suggesting how they could communicate with him more effectively and so avoid communication problems from escalating into conflict. There was a significant change in the way that he and the police related to each other.

Sometime later, I spoke to him and his family about whether the amplification device had improved his communication. They, and he, described more engagement with family, less problem drinking and recent success in obtaining work after a long period of unemployment.. They also commented: on his improved relationship with police. His improved communication with the police was not confined to the times when the police stopped him regarding some matter. His family described how his ability to hear better had enabled him to have discussions with the police on other social occasions in the community, rather than avoiding them as he had been accustomed to do.

The easier communication and greater contact meant that he developed conversational relationships with the police officers in his community, which helped to change his negative attitude towards the police in general. His more positive communication and better relationship with the police, combined with improved hearing when questioned by the police on some matter helped him not to 'blow up' as he did in the past.

In this case, improved hearing operated to diminish this man's contact with the police in three ways. Firstly, his improved hearing enhanced his family life and employment prospects, these positive changes in his life-style contributed to a reduction in his problem drinking. This meant he displayed fewer of the problematic drinking related behaviours that had attracted the attention of the police in the past. Secondly, his generally improved relationship with police helped to diminish his antagonistic attitude towards the police. Lastly, his improved communication caused him to be less frustrated on those occasions when he was stopped and questioned by the police.

He used the amplification device until he was fitted with a hearing aid over a year later. He had been trying to obtain a hearing aid for many years, without success. When he was a young man in his twenties, he was not eligible and even when the rules changed and people on CDEP (work for the dole) became eligible, this particular individual was still not eligible because his hearing related social problems meant that he could not participate in CDEP.

A special case was argued and the Australian Hearing Service audiologist who examined him exercised some personal discretion to enable him to be fitted and provided with a hearing aid. Soon after being fitted with a hearing aid, he successfully took on a supervisory position at his workplace.

This case study highlights the fact that hearing loss may be a significant factor in problems that bring people into contact with the police and may also be one of the reasons why that contact can have poor outcomes. Poor outcomes were related to this man's hearing related communication problems. Over time, these communication problems contributed to the development of a negative attitude towards police.

There is also limited awareness among police officers of the prevalence of hearing loss among Indigenous people and how that hearing loss results in limited communication skills. This lack of awareness, on the part of the police, also contributes to poor outcomes from interactions between police officers and Indigenous individuals with hearing loss. The intervention in this case study, included provision of an amplification device and some time spent with the police to raise awareness and provide a brief training session on cross-cultural communications.

I would not like to present 'hearing aids alone' as a fix all solution. The man in the above case study was in his forties and his lifetime of listening difficulties made him ready to accept the use of an amplification device, and then a hearing aid. The acceptance of any kind of amplification is more difficult for younger people. Identifying their hearing loss and then convincing Indigenous youths with hearing problems to accept the use of amplification, as a solution to some of the issues in their lives, is usually very difficult to achieve. A long-term strategy needs to be developed and, even then, the implementation of such a strategy will take a lot of work. Communications training for police of the type that occurred with this man is likely to be easier to achieve.

The potential for ill-informed police officers to escalate problems when dealing with Indigenous youth with hearing loss can be seen in an interview carried out with Steven T.

People with hearing loss often have difficulty selecting the appropriate volume when speaking. Firstly, people with Conductive Hearing Loss may talk quietly and, they are often accused of mumbling. This is caused by their difficulty in judging the right volume when speaking, in a given situation. For someone with Conductive Hearing Loss, their voice often sounds louder to them than it actually is heard by others. This is the result of their voice being 'conducted' past their damaged middle ear through the bones in their skull. As a consequence, they may speak in a way that sounds very quiet and indistinct to others although, to the individual themselves, it sounds fine.

Steven, a man in his thirties, had a longstanding hearing loss. In spite of his hearing loss, Steven held a senior position in his employment and had almost finished a law degree. Here, Steven describes his experience with the police.

"I've been pulled up by police when I was younger and I was sort of mumbled out a response and they say 'Quit your mumbling, you know, blah, blah, blah', start to make fun of me, you know. And I'm still so offended, made me out to be some sort of-treated me like I was a second class citizen, or a dumb person. This is the way he, this particular policeman (responded) and that gave me a negative view of him I guess. But then you do mumble sometimes, to you it doesn't sound like that to you."

Steven described how the police officers 'offended' him by the way they spoke to him about his 'mumbling'. For many other Indigenous people with hearing loss such an encounter may have escalated into an argument and arrest.

Alternatively, people with hearing loss may speak more loudly than is needed in order for others to hear them. Their difficulty with hearing, especially in the presence of background noise, means that they need other people to speak loudly so that they can hear and understand what is being said. They often speak to others at this same high volume, but others find it too loud. Their loud speech may be seen as being aggressive.

For example, one young Indigenous man with hearing problems, with whom I worked was perceived by a group of non-Indigenous women as being aggressive when he used a loud speaking voice to communicate with them in their noisy work environment. He was then approached by management about the aggression he was displaying towards his work mates. He vehemently denied that he had been aggressive and stated that he had simply been speaking normally. Since he knew he had not been intentionally aggressive he felt that their complaint was spurious and based on racist attitudes. He responded antagonistically toward them and soon afterwards he left the job.

Communication problems associated with speaking too loudly may occasion complaint, which prompts involvement by the police. When the police enter the situation, the loudness of speech may be equated with aggression, and result in arrest. Alcohol compounds the problem, partly by further reducing hearing acuity but also by lessening people's inhibitions, in which case they are more likely to express past or current frustrations. Frustrations that are often related to their hearing loss.

The potential exists to, almost immediately, provide for better outcomes in the types of situations we have spoken of above. If training were to be put in place to enable police officers to be aware of the communication issues around hearing loss and give them the skills and knowledge base to manage these types of communication more effectively, I believe there would be immediate positive results.

When these cases are considered, and compared with the statistics relating to the use of police discretion, it suggests that one important way to diminish the number of arrests of Indigenous youths would be to train police officers about the communication issues around Indigenous hearing loss. There would be, nevertheless, challenges to overcome when implementing this.

After the experiences with the clients, in the case studies above, I made contact with the training section of the Police Force in one of the states that has a huge Indigenous prison population. I suggested that they may wish to include, in their training schedule, information on hearing loss and its impact on communication. I received the reply that 'the issue was not relevant for their training'. This response demonstrates that the police do 'not know what they don't know'.

Clearly, there is a need for formal research to be done in the area of Indigenous hearing loss and the impact of that hearing loss on communication and interactions with the police. Such research would raise awareness of the need for police officers to be appropriately trained in this area. It would

also enable the development of suitable training that would be based on the real life experiences encountered by the police and by Indigenous individuals with hearing loss. Then, having an effective training program and a police force that implements such training, we can hope for a scenario where Indigenous individuals with hearing loss are no longer so very disadvantaged in their interactions with the police force.

Communication problems contributing to having contact with police

There are also indications that hearing loss operates to interact and compound other forms of Indigenous disadvantage-for example crowded housing as illustrated in the following stories:

One woman with hearing loss accused her husband of 'mumbling' when she could not understand him at a time when there was lots of noise at home because of many visitors. She got angry with him and threw something at him, in response to which he retaliated and hit her, which led to him being arrested and jailed.

A young husband with hearing loss described how the birth of a new baby made it harder for him to hear. Communication demands on him were greater because his wife wanted more support from him to look after their new baby, but she got angry when he had trouble understanding her above the baby's crying. On one occasion, he had to go to hospital after she got angry and hit him after she asked him to get something from the shop and he misunderstood and bought the wrong thing.

Communication in Court

Fair and just outcomes are more difficult within court processes not only because of the defendant's hearing loss but also because of the hearing loss among Indigenous witnesses (Howard, 2006). Hearing loss related communication difficulties often interact with cultural and linguistic issues, but to date it is only the cultural and linguistic factors that have been considered in research and practice in the justice system. One example is the greater propensity of Indigenous people to have a long silence before responding to questions.

*"Long periods of silence are generally avoided in mainstream Australian discourse except among intimate friends or relatives. Particularly in formal proceedings, there is a felt need to 'fill in' silent periods. In Aboriginal societies, on the other hand, lengthy periods of silence are the norm, and are expected during conversation, particularly during information sharing or information-seeking."
(Queensland Government, p 39)*

Diana Eades describes the importance of understanding this for courtrooms.

"An Aboriginal woman from central Queensland, who was in prison in Brisbane. She asked to give evidence at a Criminal Justice Commission hearing in Brisbane in the mid-1990s in a case

investigating allegations of police wrong doing (in their investigation of a crime). This woman had been a witness to certain events she wanted to tell the commission about. I was to give evidence later that day about Aboriginal communication, and was asked to listen to evidence of a few of the witnesses including this woman.

Although it had been she who had approached the lawyers, when she took the stand, she seemed unable to tell her story, or answer the questions. Doubtless she felt some unease in the situation, but the thing that struck me was the fast pace of questions, with no time for answers --the old Western Anglo thing of feeling uncomfortable after about 1 second silence, and then going on to ask the next question.

The lawyers and the commissioner were getting frustrated, so they asked the witness to step outside while they discussed the problem. When they asked for my opinion, I said they needed to allow longer time of silence as the first part of the answer to their questions.

When asked exactly what they should do, I said, "ask your question and then shut up". When asked how long they should wait, I said "till after the answer". The commissioner directed the lawyers to proceed according to my advice and the witness was brought back in. To the lawyers' credit they followed my instructions, and the transformation in the witness was amazing. She did pause noticeably before answering some questions, and then proceeded to give a very articulate and coherent account of what she needed to tell the commission. The only difference between the two sessions of evidence with this woman, was the pacing of the questions--that is, the lawyers allowing for silence as the first part of her answers.

Once she got going and got her story in full swing, she did not pause as often--and the lawyers did not ask so many questions as they had first time around." (personal communication)

The greater use of and comfort with silence by Indigenous people has deep cultural roots. It is also more evident among Indigenous people with hearing loss. I have undertaken some minor research into how hearing loss may contribute to some Indigenous people taking longer to respond. In a research project into hearing loss and employment a series of standard questions were asked of those interviewed and their responses were recorded. I had the sense that those individuals who were later found to have a hearing loss had taken longer to respond to my questions than was the case for those without hearing loss. The work placement of a trainee German psychologist (Judith Blume) provided an unexpected resource to test this impression.

A group of urban Indigenous trainees, all of whom had English as their first language, had been asked a set of standard questions and their answers were recorded. Judith measured with a stopwatch the time taken by each of the trainees, to respond to the questions. When this data was compared with results of hearing tests there was found to be a strong correlation between hearing loss and the length of time taken to respond to questions--those with hearing loss took longer to respond. This indicates that the greater silence exhibited by Indigenous people during verbal communication is not solely a result of socio-linguistic and cultural differences.

Hearing loss and auditory processing problems also play a part in the communication styles of some Indigenous people. This suggests that the use of amplification when a witness has a hearing loss, and training for judicial staff about the cultural and hearing loss related use of silence can result in improved courtroom communication.

It has been difficult to convince those in the legal profession of the importance of hearing loss. When a proposal was recently put to a state based Law Society to trial use of amplification by solicitors working with Indigenous clients the proposal was rejected on the basis that Indigenous defendants'

hearing loss was 'a health issue'.

Communication in correctional institutions

There are also issues related to the management of Indigenous inmates in detention and the rehabilitation opportunities of Indigenous inmates. One particular issue is access to amplification, another important potential response is surgical intervention, when this is needed.

In relation to access to amplification devices, often indigenous people under the age of 21 who are eligible for free devices from the Australian Hearing Service do not access them because of:

- Limited and diminishing formal school age screening;
- Geographic isolation;
- Limited outreach programs;
- Fragmented, bureaucratic and often dysfunctional referral processes.

When individuals are in detention, they are close to the services they need and, as a 'captive client', are in a situation that overcomes many of the existing problems that make it difficult for Indigenous people to access health services. However, they are not eligible for Australian Hearing Services. It is ludicrous that legislated barriers exist to prevent Indigenous detainees from obtaining hearing aids. This is a situation where disadvantage, created by context and institutional dysfunction, is compounded by legislated policy.

*...legislated barriers exist to present
Indigenous detainees from obtaining aids.
This is a situation where disadvantage,
created by context and institutional
dysfunction, is compounded by legislated
policy.*

Furthermore, good outcomes from surgical interventions to treat Conductive Hearing Loss can be best achieved in controlled hygienic conditions. Such conditions, it is sad to say, are more likely to occur when people are in detention than when they are living in their home community. However, it would appear rare, in the Northern Territory, at least, for the surgical repair of eardrums to occur while individuals are in detention.

*Indigenous inmates accessing surgery to
repair eardrums is clearly a situation
where 'a stitch in time'...*

The issue of a process that would both identify those inmates in need of surgical intervention and enable them to access appropriate services, was discussed with corrections staff. The comment was made that such a program would not be feasible because it would entail added costs for corrections officers to transport inmates and this would not be possible, given the fiscal restraint being imposed at that time. Indigenous inmates accessing surgery to repair eardrums is clearly a situation where 'a stitch in time' could potentially result in significant cost savings by reducing the costs that would otherwise be incurred when unrepaired hearing loss might contribute to future criminal acts which, in turn, may result in further detention.

Training of corrections staff has the potential to improve communications in correctional facilities. Training designed to manage hearing related behaviour problems in schools was conducted in a youth detention centre, where there were many Indigenous inmates, staff identified the same processes operated in crowded noisy detention centres as happened in often noisy schools. Staff described:

- Management problems arose most often in areas and at times when there were high noise levels from congregated inmates.
- Similar management problems arose when changes to routines increased the listening demands on detainees.
- Fights were common around a telephone in a public area that was not enclosed. When the phone was enclosed, and therefore less noise intrusion on conversations, the number of fights diminished.
- There were more arguments, aggression and violence after some detainees were moved to a new residential block that had lots of modern hard polished surfaces; unlike the old one, which had carpet and soft furnishings. Fights decreased when noise absorbing soft furnishings were introduced into the new building, thus lowering background noise levels.

RELEVANT RECOMMENDATIONS

1. That police and others involved in the criminal justice system include communication training around recognising the indications that an individual may have a hearing loss and training in how to minimise the communication breakdown that can result when such a hearing loss exists.
2. Criminal justice processes consider the impact of hearing loss as an issue with importance equal to the issues of linguistic and cultural differences. The implications of the communication issues that arise from hearing loss need to be researched but until such research is done, previous studies indicate that best practice is likely to include the following approaches:-
 - a) Screening for hearing loss when Indigenous people are in custody.
 - b) Amplification equipment be used by police, in court and in correctional facilities when needed.
 - c) Provide communication training to those who are involved at every stage of the criminal justice system.
 - d) Give consideration to the acoustic environment at all stages of the criminal justice system.
3. Hearing rehabilitation be considered as an important part of the overall rehabilitation process for Indigenous prisoners with hearing loss. There are numerous anecdotal stories of people who have been with hearing aids or undergone surgery immediately changing the profile of antisocial behaviour that had contributed to their constant involvement with the criminal justice system.

I would however, add a word of caution about the introduction of this type of training. Some years ago I was asked to give a presentation on the topic of hearing loss at a university. In the audience there was a group of prison officers who saw the relevance of the subject matter to their work in corrections. They arranged for me to give a presentation on the topic to senior corrections staff. The

The situation is more dire for the smaller number of Indigenous people who are Deaf (i.e. those who have severe to profound levels of hearing loss).

senior corrections staff were also interested and asked me to give a regular presentation to staff. I agreed but suggested that I work with interested corrections staff to identify the times and places that hearing loss among detainees impacted on communication with staff and how the adverse outcomes of hearing loss could be minimised using appropriate communication strategies by staff.

I heard no more about this and when I contacted corrections staff they told me that the decision was made not to proceed with the plan. Later I learnt that the corrections department had asked the health department to provide an audiologist to give a talk about hearing loss to their new staff. Feedback from staff who participated in the training revealed that it covered the nature of Conductive Hearing Loss and how it came about, and some very general advice on communication strategies. However, the training had not been tailored to the particular issues arising in the work environment of corrections officers.

I am not sure how often the once-off general lectures occurred, but in recent inquiries I learnt that the current three month, full-time training undertaken by new corrections officers contains no information on the implications of hearing loss among Indigenous prisoners. Nor has this subject matter been covered in any recent (last three years) professional development of corrections officers. This is in spite of the considerable increase in overall training offered to corrections staff in an attempt to improve retention rates.

There was a similar scenario when teachers were provided with a 'hearing program' that mainly informed them about hearing health but did not address educational implications of hearing loss or the strategies that teachers might employ to minimise the educational and behavioural implications for children with hearing loss. Teachers felt they had 'done' hearing loss and were often disinterested in further training that focused on the educational issues of hearing loss.

I outline this to highlight that I believe training about Indigenous hearing loss needs to be introduced for police and correctional staff, and it needs to be based on research/consultancy that has considered the impact of hearing loss on communication in the *communication environments* in which police and correctional staff operate.

NEEDS OF DEAF INDIGENOUS PEOPLE

The preceding information discussed the issues affecting 40-70 per cent of Indigenous people who are hard of hearing because of childhood ear disease. The situation is more dire for the smaller number of Indigenous people who are Deaf (i.e. those who have severe to profound levels of hearing loss).

Deaf Indigenous people, who encounter the criminal justice system, receive minimal support of the type accessed by the non-Indigenous Deaf. These individuals have often had minimal or no schooling and can only communicate with one or a few family members. The lack of the necessary culturally appropriate support (Saxton-Barney, 2010) results in these people being extremely limited in their ability to communicate. This often means that they are deprived of social contact, have limited access to information and do not have the variety of experiences needed for normal cognitive development. As a result, many Indigenous Deaf people present with cognitive impairments when they encounter the criminal justice system.

Deaf Indigenous people are highly dependent on family support. When they are away from family or seeking to satisfy a need that family cannot provide (such as sexual involvements), they engage with the wider community in ways that may bring them into contact with police. Contact with the criminal justice system often begins in adolescence. Their inability to know how to have their needs met may result in inappropriate or aggressive behaviour; or they may express their extreme frustration through property damage, aggression or violence.

Once these types of responses have resulted in Deaf Indigenous people being involved in the criminal justice system, the system has great difficulty coping with them. It is usually very difficult for police to obtain statements, for independent culturally appropriate interpreters to be found, for their lawyers to take instruction and for them to comply with court orders. Some individuals cannot be charged or go to trial because they cannot understand what is happening and it is hard for the judiciary to decide on sentencing and for corrections to manage and rehabilitate.

Deaf Indigenous people are especially helpless and isolated within the criminal justice system. They are involved in an experience whose processes are unfathomable to a degree greater than that described by Kafka¹ in his novel 'The Trial'. Detention is usually equivalent to solitary confinement because of their extremely limited ability to communicate.

Deaf Indigenous people are also highly vulnerable to being victims of crime. Non-Indigenous Deaf children are four times more likely to be victims of sexual abuse.

Another major issue is the way in which police respond to people with hearing impairment.

People with a hearing impairment are often unable to seek or provide information to police. They naturally become upset and distressed because they do not understand what they were doing 'wrong'. Instead of thinking that there is a problem with their communication, police jump to conclusions, that the person knows they are in trouble and their distress is tantamount to an admission of guilt. Or more commonly, when faced with aggression resulting from this distress, police may respond with force.

In conclusion, I must comment on the unrelenting disinterest in the issue of Indigenous hearing loss within the criminal justice system. My involvement in the area began in 1990 when myself and Sue Quinn, an audiologist who had been instrumental in raising the issue of hearing loss in Indigenous education, tried to obtain funding to investigate Indigenous hearing loss in the criminal justice system. A multitude of funding agencies rejected our proposals, the health organisations saying it was a criminal justice issue, the criminal justice organisations saying it was a health issue. A shared issue easily becomes an avoided issue. We gave up trying to undertake the research but wrote about the anecdotes we had collected along the way, together with some discussion of the importance for the legal system provided by Martin Flynn and Jenny Blockland.

Aside from the odd, unfunded foray into raising awareness of the issues, of the type that are mentioned in this document, I have little involvement in this issue within the criminal justice system. I have observed with horror over the years the continued, and in some areas increasing, involvement of Indigenous people in the criminal justice system. *I continue to believe that understanding and addressing the role that hearing loss plays in the development of antisocial behaviour and as an obstacle to communication, especially cross-cultural communication with police, judicial officers and corrections staff, can help reduce the over representation of Indigenous people within the criminal justice system.*

¹ The Trial is a novel by Franz Kafka, it tells the story of a man arrested and prosecuted by a remote, inaccessible authority, with the nature of his crime never revealed to him.

CROSS-CULTURAL COMMUNICATION, BREAKDOWN, ALIENATION AND ARROGANCE

The preceding sections have raised issues around hearing loss that contribute to the over representation of Indigenous people in the criminal justice system. This section describes in some detail important cross-cultural communication processes that interact with and compounded by hearing loss.

The distinctive cultural heritage brought to cross-cultural communication by different parties results in predictably different communication experiences for those from each culture. While Indigenous people often experience a barrage of unfamiliar and demoralising direct criticism, non-Indigenous people usually encounter very little direct criticism and this can foster unrealistic confidence, even arrogance, about the way they are working.

The following section describes the dynamic processes that contribute to such different experiential outcomes arising from shared experiences in cross-cultural communication.

Two key cultural differences between Indigenous and non-Indigenous communication styles are the relative importance of the non-verbal elements of communication and the use of indirect communication. The non-verbal elements of communication include gestures, facial expressions and body language. Indirect communication happens when people seek additional information and clarification through a third party who may be known to both of the people involved in direct communication, instead of directly from the other person.

With indirect communication, people must watch for and recognise the signals that indicate that someone is conveying an indirect message, and be able to evaluate and understand the nature of that message. To do so, they often seek information from third parties to draw out the thoughts and feelings of others. Misunderstandings can arise if non-Indigenous people do not realise that these kinds of indirect communication may be also be expected of them.

Often subtle non-verbal cues are easily missed by non-Indigenous observers. Looks and gestures that from a Western perspective may seem insignificant can, in an Indigenous context, convey significant meaning and be as effective as the spoken word in doing so.

With the more direct styles of Western communication, supervisors, colleagues and clients expect others to come to them and to raise any concerns 'directly'. However, with Indigenous communication styles, others are expected to seek clarification in the case of any indirect messages expressed. Non-verbal messages can be of great importance in Indigenous communication styles, and sometimes these are of even greater importance than the verbal communication (Lyn, Thorpe, Miles, Cutts, Butuke & Ford, 1998, p 46).

Often the subtle, non-verbal cues that are a part of Indigenous communication are easily missed by non-Indigenous observers. Looks and gestures that, from a Western perspective, may seem insignificant can, in an Indigenous context, convey significant meaning and be as important and effective as the spoken word.

"I knew that they (Indigenous people being addressed at a meeting) were all responding, they were nodding their heads. I could tell by

their eyes and the way they looked at me all through the meeting that they were taking in these ideas." (Nirrpuranydji, 1991, p 92)

"Some Balanda (term for non-Indigenous people in Arnhem Land) kept coming up to me and asking what we were talking about in Yolngu staff meetings. They were worried we were talking about them. They were getting mean and had nasty expressions on their faces that told me they were threatened and worried." (Rulinjmy, 1991, p 78)

Uncontrolled obvious facial expressions may be seen by Indigenous people as 'angry shouting' or a 'dismissive verbal put down'.

The reading and response to these non-verbal aspects of communication by Indigenous people is far greater than in Western cultures where words themselves carry most of the meaning in communication.

Indeed, Western socio-linguistic expectations are that non-verbal communications are most often treated as a less important medium of communication, except in specialist areas such as counselling or some television programs.² Western people often exercise far less control over their non-verbal expression, such as facial expression, expecting others to ignore them or see them as insignificant. It is 'what is said' that is important and 'how things' are said is much less important than it is in Indigenous communication. 'How something is said' is far more important, in Indigenous communication. Uncontrolled obvious facial expressions may be seen by Indigenous people as 'angry shouting' or a 'dismissive verbal put down'.

Western people are less likely to 'send' information by this means and are less skilled at 'reading' messages expressed non-verbally. In addition, communicative etiquette dictates that most non-verbal communications are ignored and not openly referred to. Indigenous people 'send' more information non-verbally and expect others will do so. They also read non-verbal information more and may refer to 'how' something was said in discussing communication.

Indigenous people are often vigilant in their search for non-verbal cues and indirect messages from non-Indigenous people, because they have been culturally conditioned to the proactive use of such cues, as part of communication. They may scrutinise the words and actions of non-Indigenous people for evidence of indirect messages where there were none intended.

Being blind to the greater importance of non-verbal communication, especially facial expression, non-Indigenous people can easily give unintentional offence.

An Indigenous man was accused of 'harassment' when he consistently referred to 'how' he was spoken to by his non-Indigenous female supervisor. He believed that she spoke to him in ways that were different from the ways in which she spoke to other staff. He saw the content of her discussions with him as being the same as with other staff but saw marked differences in 'how' he was spoken to. This was assessed by other non-Indigenous staff but dismissed because they could not see any substance to his complaints.

² The Mentalist, Lie to Me.

In another situation an Indigenous worker told a non-Indigenous co-worker she 'would hit him back' after he criticised her. She described that the expression on his face when he criticised her made her think he was close to assaulting her. She had been the victim of domestic violence that had only stopped when she retaliated in kind. What she meant to convey was that she would not be passive if he hit her. The non-Indigenous staff member complained about her 'threat', saying he had said nothing about hitting her.

Conversely there are social outcomes when non-Indigenous people fail to read the important messages inherent in the non-verbal and indirect communications of Indigenous people. The non-Indigenous person may send the unintended message that they are ignoring the Indigenous communication that has been carefully crafted to inform without giving direct criticism. When a non-Indigenous person does not respond to the non-verbal or indirect communication, Indigenous people will often assume this comes from a conscious decision to ignore it, rather than to a lack of awareness and skill.

When Indigenous individuals consistently experience uncontrolled and excessive non-verbal expression in their communications with non-Indigenous people, and the non-Indigenous person fails to respond to their politely expressed non-verbal communication, these experiences contribute to the stereotype of 'the rude, arrogant white person'. In fact, these responses often reflect limited cross-cultural competencies rather than deliberate rudeness and lack of consideration. This lack of cross-cultural competence can result in unintended insult being given to Indigenous people who, in turn, can result in arguments and anger. This may then escalate into retaliatory property destruction or violence that results in people's involvement in the criminal justice system.

Cross-cultural experience by Indigenous people in comfortable social situations can help them realise the unintentional nature of non-Indigenous people's responses. Indigenous workers often comment that it takes them some time to realise there was seldom 'anything personal' in responses by non-Indigenous people, and that they need not have worried so much about the possibility of non-verbal cues or indirect messages.

With more transitory relationships, for example with police, where there is already a tension there is rarely the opportunity to develop these understandings. This means that unfamiliar and uncomfortable reactions are more often seen as personal antagonism or racism. The retaliatory antagonism of Indigenous people may then provoke personal antagonism by police-the culturally based 'misperceptions' acting to create an interpersonal reality. Alternatively, those accused of racism may then be offended themselves, knowing they were 'just doing their job', not understanding that, despite their intent they nevertheless had given offence. This process of mutual, unclarified misunderstanding can then generate real ongoing and embedded antagonism. Thus, what began as culturally based misunderstanding ends in entrenched mutual antagonism that seems, to all parties, like racism.

VERBAL COMMUNICATION STYLES

There are also important cultural differences in styles of verbal communication. Two examples of this are the use of 'spotlighting' and 'broadcasting'.

Western cultures favour an individual verbal communication strategy called 'Spotlighting'. 'Spotlighting' happens when someone asks a specific person, or a series of people, a question in front of others. The technique is commonly used in Western education systems as well as by police. It can be used to foster competition or to exert social control by threatening to expose individuals to public shame.

Spotlighting as a communication strategy, is aligned with a social style based on individual

responsibility and achievement, and competitive relationships. However, in collective cultures exposing people to public shame in this way can be intimidating, and cause resentment. When confronted by spotlighting, Indigenous people often choose silence or avoidance. Spotlighting is evident in the communication of teachers, police and within the criminal justice system. Indigenous people often respond to spotlighting with confused or angry silence, or resentment and retaliation. These responses are confusing in the eyes of those doing the spotlighting since they, in their minds, are only exercising appropriate speaking rights for their official role.

Indigenous cultures, with their greater focus on collective rather than individual responsibility, tend to favour communication that promotes shared discussion and creating consensus. These styles shun putting individuals in situations where they could be shamed. 'Broadcasting' (Walsh, 1997) is one of these strategies.

Broadcasting involves commenting on a subject in a public way, and other people can choose to respond or remain silent. Broadcasting can be used to raise concerns about an issue in a gathering where collective discussion and decision-making can take place. Someone else may broadcast similar concerns, or amplify what has already been said. Broadcasting can be used to apply social pressure, by bringing the acts of individuals to the attention of others, although these individuals are often not mentioned by name.

Broadcasting by calling out loudly in a public space is commonly misunderstood as verbal aggression by non-Indigenous people who are unaware of its cultural legitimacy in the eyes of Indigenous people. To Western people it can feel intrusive, frightening and threatening.

It is seen as out of social control verbal behaviour that signifies imminent out of social control physical responses. When Indigenous people use broadcasting in a space shared by non-Indigenous people, what can often result is that the police are called to manage this out of control behaviour. When the police arrive and step in to exert physical control or verbally admonish the Indigenous person who is broadcasting, the actions of the police may be seen by the speaker as an unwarranted imposition on their legitimate speaking rights. This may result in retaliatory escalation and overt conflict.

OUTCOMES OF CROSS~CULTURALCOMMUNICATION EXPERIENCES

Important and different outcomes result from the different communication styles described above. What is experienced as a barrage of negative or critical comment from non-Indigenous people, especially those with hearing loss, can undermine the confidence of Indigenous people, or give unintended offence and sometimes precipitate conflict.

Interviews with Indigenous workers indicate that an essential cross-cultural competency for them is to find ways of:

- a. avoiding the demoralising effect of regular negative feedback and negative attitudes on the part of non-Indigenous people and
- b. managing the anger they may feel as a consequence of how they are treated by non-Indigenous people with whom they come into contact.

Negative attitudes are communicated in a multitude of individual incremental interactions that:

- a. slowly erode the confidence of Indigenous people, to a point where they may become demoralised, disempowered and disengaged or
- b. result in upset, angry resentful and sometimes retaliatory reactions; such 'retaliation' appears as inexplicable and undeserved from the perspective of non-Indigenous people.

For non-Indigenous people, one element of cross-cultural competency is being aware that there may be no, or little, direct verbal feedback of the type to which they are accustomed. Becoming cross-culturally competent involves learning to look for non-verbal and indirect cues, and to seek out Indigenous opinions on their actions.

In contrast, with minimal exposure to negative Indigenous feedback, many non-Indigenous people remain unaware of the things that Indigenous people do not like about what they do and the way they behave. This can easily lead to over confidence, even arrogance. If they are working in an Indigenous community they may not know of the dissatisfaction with their behaviour until a crisis point is reached and they are asked to leave. Because they have not received any forewarning, the dissatisfaction with their behaviour may seem sudden and recent, yet the concerns had, invariably, built up slowly, over time. For non-Indigenous people, one element of cross-cultural competency is being aware that there may be no, or little, direct verbal feedback of the type to which they are accustomed. Becoming cross-culturally competent involves learning to look for non-verbal and indirect cues, and to seek out Indigenous opinions on their actions.

This analysis is based on generalisations, and all generalisations have limitations. In situations where there is no established relationship, where someone is offended by the behaviour of someone else, or when alcohol is involved, Indigenous people can be very verbally and even physically direct in expressing their dissatisfaction. Often this is related to heightened offence having been perceived which is related to the dynamics described above, or when alcohol contributes to the dis-inhibited expression of resentments that have built up over time.

In addition, the generalisations do not apply when people become cross-culturally competent. For example, when non-Indigenous people learn to read non-verbal communication cues and give indirect feedback, and when Indigenous people learn to give direct verbal feedback.

Otherwise, these generalisations remain valid in many cross-cultural situations and should be addressed by organisations that employ, provide services to, or engage with Indigenous people. They are especially important in the interactions between Indigenous people and police/corrections staff. Understanding these processes can help them to manage more effectively these interactions, thereby reducing conflict and lessening the distress experienced by Indigenous people in cross-cultural institutions.

This information is important for agencies that wish to recruit and retain Indigenous staff and well as improve the retention of non-Indigenous staff working with Indigenous clients.

RELEVANT RECOMMENDATIONS

Cross-cultural organisations/agencies can undertake the following to become more effective.

1. Provide cultural orientation and mentoring to non-Indigenous staff to enable them to understand the issues arising in cross-cultural communication (e.g. around spotlighting and broadcasting) to help restrict excessive critical feedback to Indigenous people during cross-cultural contact.
2. Offset the effects of, the often unrelenting, verbal and non-verbal criticism that can come

from non-Indigenous staff, by providing regular compensatory positive feedback to Indigenous staff on their performance.

3. Work to build the resilience of Indigenous staff to cope with direct negative feedback.
4. Develop ways of encouraging the expression of constructive criticism from Indigenous staff and clients about non-Indigenous staff.

The following table outlines some of the related, but quite different, cross-cultural competencies for Indigenous and non-Indigenous cross-cultural staff in cross-cultural communication processes.

Cross-cultural challenges and essential competencies for staff working in cross-cultural contexts

Non-Indigenous staff	Indigenous staff
Become proactive and seek feedback from Indigenous people about what they think and how they feel	Become comfortable with less consultative and more directive ways of working with non-Indigenous staff.
Learn to recognise and understand indirect messages such as the use of humour to make a point indirectly.	Learn not to look for indirect meaning in the behaviour of non-indigenous staff and to ignore, minimise the effect of, or filter out some of the direct critical feedback from non-Indigenous people.
Learn to become more aware of non-verbal messages.	Learn to become less sensitive and less responsive to non-verbal critical responses of non-Indigenous staff.
Work closely with Indigenous people who can provide advice on Indigenous styles of communication.	Work closely with non-Indigenous people who can provide advice on non-Indigenous styles of communication.
Realise that direct feedback may upset Indigenous people	Understand and evaluate the variable nature of critical feedback; is it associated with administrative compliance issues, or is it a challenge to impress someone else, or is it a serious attack?
Try to minimise negative feedback and be careful about how it is given.	Try to become more comfortable with the use of direct negative feedback.
Avoid confrontation where someone may feel 'ashamed'.	Become more comfortable confrontation when this is needed and the use of direct positive and negative feedback.

WHY THE ADVERSE OUTCOMES OF CONDUCTIVE HEARING LOSS REMAINS AN INVISIBLE, NEGLECTED ISSUE

Current services for hearing impaired children generally ignore the needs of the many children with mild to moderate hearing loss. The reasons for this are diverse. The difficulties of those with more severe levels of permanent Conductive Hearing Loss (those who are deaf/Deaf) are obvious. In contrast, those who have less hearing impairment, who are hard-of-hearing, often attempt to simply 'get by' in a hearing world, or are even unaware of their disability. It is common for adults with mild to moderate Conductive Hearing loss to not disclose to others that they have a loss, despite often experiencing significant communication problems (Stika, 2000).

The vast majority of children with hearing loss that teachers will encounter are those with a mild to moderate Conductive Hearing loss, although usually the teachers will be unaware which children

have such a hearing loss. This fluctuating Conductive Hearing Loss among children is often not identified unless there are school screening programs, which, all around Australia, are being carried out less often. The invisibility of the problem makes it difficult to gain the attention of policy makers. The current vogue of market driven educational policy making also compounds this. Connell (1993) makes an important point about educational policy being driven by a market ideology. That is, influential sectors of the community drive the policy agenda of governments. Market driven policy empowers the advantaged. It acts to consolidate the marginalisation of those who have low 'market power' because of low numbers or low resources which limit the opportunity to self-advocate. This means that Indigenous people, who in the past have been dispossessed and oppressed at the hands of an interventionist state bent on assimilation, are now abandoned, by a newly regretful state, to the untender mercies of market driven policy.

Indigenous Conductive Hearing Loss is vulnerable to being neglected as a policy priority as it is often an invisible impairment that most affects those sections of the community with the least power to advocate on their own behalf.

The multiple other areas of disadvantage that are experienced by Indigenous people and are known to exacerbate the adverse outcomes from Conductive Hearing Loss, act together to create a cocktail of disadvantage.

The training undergone by audiologists and those who specialise in teaching the hearing impaired, provides very little information on, or support strategies for, the many children who experience inconsistent mild to moderate Conductive Hearing loss during their school years. This results in difficulties in developing effective educational programs for children with this type of hearing loss.

When programs have been developed, notably for Indigenous students, they have had a health rather than an educational focus and have promoted approaches modelled on services for the smaller number of children with Sensori-neural Hearing Loss. (That is, they have promoted amplification and individual support around language focussed teaching strategies) It is my experience that the scale of the problem, and the different needs of Indigenous children with Conductive Hearing Loss, means that programs based on a Special Education model of service delivery have often had limited success.

The manner in which educational special needs are identified also serves to disadvantage children with learning and behavioural issues that are related to Conductive Hearing Loss. Children with school learning or behavioural difficulties are usually referred for psycho-educational assessment, which is carried out one-to-one in quiet surroundings. The results of this testing determines the ability of the child to access resources. Given the important role that background noise plays for children with these types of listening difficulties and the prevalence of background noise in the classroom context, the results of tests that were conducted in a quiet environment, may often have poor ecological validity-they do not fully reflect the difficulties experienced by children in the classroom.

The learning and social capacity of a child with listening difficulties, as evidenced during one-on-one testing in a quiet environment, are likely to be significantly different to that demonstrated by the same child when in a noisy, crowded classroom. The result of the focus on out-of-class assessment to determine 'educational need', is that children with listening problems will have their needs consistently underestimated. Consequently, they are also disadvantaged when special educational resources are allocated. This creates a situation where special education resource allocation unintentionally discriminates against children with listening problems. The children who are the victims of this 'discrimination' are usually from disadvantaged and Indigenous backgrounds.

The origins of educational discrimination experienced by Indigenous students with Conductive Hearing Loss are multi-staged. The end point of Indigenous children with Conductive Hearing Loss being poorly supported is derived from a chain of neglect that includes:

- Classroom teachers having almost no training in the educational issues around Indigenous Conductive Hearing Loss;
- There being few Indigenous educators or tutors available to support Indigenous children with Conductive Hearing Loss;
- Conductive Hearing Loss not being considered in school resource allocation;
- The classroom needs of children with Conductive Hearing Loss being underestimated by the out-of-class special needs assessments;
- Poor, and in some areas deteriorating, Conductive Hearing Loss identification processes;
- Limited availability of Conductive Hearing Loss advisory support;
- Limited training of advisory teachers in the educational issues around Conductive Hearing Loss;
- Educational policy being based on research that has limited relevance to this population group;
- An absence of research into policy and practise in the area of Indigenous Conductive Hearing Loss.

CONCLUSION

In conclusion, I would like to emphasise that Indigenous over representation in, and disadvantage with, the criminal justice system is complex and multifaceted. There are various factors involved in that over representation and disadvantage.

It is very important that we get schooling right, and that we 'take note of' and address hearing loss as an important issue when considering the dynamics of cross-cultural communication. Hearing loss and the dynamics of cross-cultural communication are often invisible factors that are interacting with other more visible aspects of Indigenous disadvantage. Substantive solutions to Indigenous disadvantage and the over representation of Indigenous people in the criminal justice system must address the impacts of hearing loss and include ways of increasing understanding about the dynamics of cross-cultural communication.

I would also like to comment on the ways that different Commonwealth programs often do business around Indigenous issues.

In this document I have outlined the neglect of some key issues. However, even in those areas that the Commonwealth does prioritise, the picture from the service delivery level looks like this:

- Commonwealth funded programs increasingly involve cumbersome application processes where concerns over probity in some sectors have led to application documents that are incomprehensible, so that those who can access insider knowledge, in relation to priorities and expected information, are unduly favoured.
- There is a cavalcade of pilot programs where success often creates too many problems.
- Time limited funding often results in programs where the funding is for such a short period of time that programs are not given the chance to prove themselves.
- After the lengthy application and selection process, the funding is often late, and the period of funding may be shortened further when a new priority or policy emerges.
- These practices pressure organisations funded by the Commonwealth to be opportunistic and funds focused, rather than being able to be client focused and develop truly effective programs that can be sustained over a sufficient length of time to produce worthwhile

outcomes. Some organisations' core values appear to be eroding and their strategic directions being compromised through this process.

- There is asymmetric accountability, where stringent evidence based data is demanded of those receiving funding while the funder is largely unaccountable and appears self-preoccupied and unresponsive to external influences.
- There are often mysterious policy review processes, inevitably delayed, often with capricious outcomes.
- There is a constant process of human resource musical chairs in Canberra where people constantly and quickly move positions, resulting in restricted knowledge and limited commitment to programs.
- The funding processes cultivate a private sector and NGOs that 'selects naturally' for those who tolerate programs that are structured to deliver poor outcomes as long as they are profitable.
- The funding processes and the types of programs they engender alienate, and often burn out, committed individuals, especially indigenous people, who are working on the ground to produce the types of outcomes the Commonwealth wants.

I have no recommendations about these but hope wiser minds may be able to address these issues.

Finally, to return to my area of expertise I would like to quote Alison Wunungmurra, who I am working with on a project to help Indigenous families and workers identify Conductive Hearing Loss among children in childcare. My experiences have led me to conclude that it is informed and committed Indigenous people like her—supported by systems that are directed from a community level—that can make a difference.

When I started talking about ear project, I started learning what Conductive Hearing Loss was and what happens if you have Conductive Hearing Loss. Conductive Hearing Loss is when sound can't get through properly. It makes it really hard for children to understand and learn.

I learnt how important it is for Indigenous children to have the support, resources and education so it will help families understand issues around Conductive Hearing Loss.

I was affected by Conductive Hearing Loss while I was growing up, it was really hard, but I managed to learn different skills to help me achieve through my education.

I was lucky that I had a mother that was a health worker and she knew the bigger picture. My mother set stepping stones for me to take towards my future, and that's why I am here today. I specially thank my mother and all the supports that I had through my school years.

This leads me to the second part of my speech. Indigenous children are struggling every day with this problem and not achieving the norms of education.

Conductive Hearing Loss was hidden in the shadows for nearly 30 years.

There have been a number of research studies done on Conductive Hearing Loss that shows children that were affected by it had some kind of problem coping in this world both as an adult and a child.

Children with hearing loss:

- Don't have self-esteem.*
- Don't have self-confident.*
- Don't have self-respect.*
- Their anti-social behaviours increase throughout their entire lives. This becomes a major problem in our society.*

Now I really want you to imagine, I want you to put yourself in that classroom you're the little kid that can't hear properly what the teacher are saying.

Imagine the child in the classroom without hearing.

Without good hearing the child is ignored.

Without good hearing the child is scared, frustrated and angry.

And without good hearing everyday would be full of noise with no chance to listen.

The picture that I just painted for you is really a scary world and this is happening to our children all around the country.

That's enough in world without good hearing: now let's imagine the world with good hearing.

Imagine the world with good hearing.

In a world with good hearing people would be able to better themselves.

In a world with good hearing there would be nobody left embarrassed and shame in the classroom, a community would be full of pride and respect.

In a world with good hearing there would be only a few black people in jail.

In a world with good hearing there would be understanding.

Alison's words demonstrate how understanding about the issues around hearing loss can empower and motivate. Minimising adverse outcomes from hearing loss among Indigenous people is possible if the motivation and leadership of Indigenous people is matched with a holistic, integrated appropriately resourced service delivery.

ACKNOWLEDGEMENTS

I would like to acknowledge and thank Sheri Lochner and Chris Schubert for their work editing, proofing and formatting this document. I would also like to thank the many people who, over many years, have shared experiences and contributed to developing the ideas and research that are described in this document.

REFERENCES

- Amidon, E. J., & Hoffman, C. (1965). Can teachers help the socially rejected? *The Elementary School Journal*, 66, 149-154.
- Asher, S. R., & Wheeler, V. A. (1985). Children's loneliness: A comparison of rejected and neglected peer status. *Journal of Consulting and Clinical Psychology*, 53, 500-505.
- Brown, G. S., Bhrolchain, M. N., & Harris, T. (1975). Social class and psychiatric disturbance among women in an urban population. *Sociology*, 9, 223-254.
- Bellis, T. (2002). *When the brain can't hear: Unraveling the mystery of auditory processing disorder*. New York: Pocket Books.
- Boswell, J., Leach, A., Nienhuys, T., Kemp, K., & Mathews, J. (1993). Persistent otitis media in a cohort of Aboriginal infants: What, how and why. *Australian Journal of Audiology*, 15(4), 36.
- Bowers, M. (1986). *Hearing Impairment in Prisoners*. Auckland, NZ: Deafness Research Foundation.
- Buckskin, P., & Hignett, B. (1994). ARA Kuwaritjakutu project: Towards a new way: stages 1 & 2: A research project into the working conditions of Aboriginal and Torres Strait Islander workers. Melbourne: Australian Education Union.
- Connell, R. (1998). Schools, markets, justice: Education in a fractured world. In A. Reid (Ed.), *Going Public: Education Policy and Public Education in Australia* (pp. 88-96). West Deakin: Australian Curriculum Studies Association.
- Coombs, H.C., Brandl, M.M., & Snowdon, W.E.A. (1983). *A certain heritage: Programs for and by Aboriginal families in Australia*. Canberra: Centre for Resource & Environmental Studies, Australian National University.
- Couzos, S. (2004). Practical measures that improve human rights-towards health equity for Aboriginal children. *Health Promotion Journal of Australia*, 15(3), 186-192.
- Couzos, S., Metcalf, S., Murray, R. (2001). *Systematic review of existing evidence and primary care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander populations*. Canberra: Office of Aboriginal and Torres Strait Islander Health.
- Harris, S. (1990). *Two-way Aboriginal schooling*. Canberra: Aboriginal Studies Press.
- Harris, S., & Malin, M. (Eds.). (1994). *Aboriginal kids in urban classrooms*. Wentworth Falls: Social Sciences Press.
- Harrison, B. T., Partington, G., Godfrey, J., Harslett, M., & Richer, K. (2000). *Quality schools for Aboriginal students research project (final report)*. Perth: Edith Cowan University and the Education Department of Western Australia.
- Harslett, M.G. (1998). *Relationships, relationships, relationships: That's what sells school to Aboriginal students and parents*. Article written for the Western Australian Secondary School Principals Association. Edith Cowan University, Perth.

Harslett, M., Harrison, B., Godfrey, J., Partington, G., & Richer, K. (1998). Quality schools for Aboriginal students project. Edith Cowan University, Perth. Retrieved February 2, 2002 from <http://www.det.wa.edu.au/education/Abled/quality/quality.htm>

Hartup, W. (1992). Having friends, making friends and keeping friends: Relationships as educational contexts. ERIC Digest. Urbana, Illinois: ERIC Clearinghouse on Elementary and Early Childhood Education. Retrieved February 27, 2002 from <http://www.eric.ed.gov>

Heslop, J. (1998). Making the schools relevant: School and community in partnership. In G. Partington (Ed.), *Perspectives on Aboriginal and Torres Strait Islander education* (pp. 275-293). Katoomba: Social Science Press.

Hogan, S., & Moore, D. (2003). Impaired binaural hearing in children produced by a threshold level of middle ear disease. *Journal of the Association for Research in Otolaryngology*, 4, 123-129.

Howard, D. (1990). Exploring the educational effects of mild hearing loss on Aboriginal students. Unpublished thesis. Charles Darwin University, Darwin.

Howard, D. (1992). Hearing loss in two Aboriginal schools. Unpublished Report, Darwin.

Howard, D. (1994). Culturally responsive classrooms: A way to assist Aboriginal students with hearing loss in urban schools. In S. Harris & M. Malin (Eds.), *Aboriginal Kids in Urban Classrooms* (pp.37-50). Wentworth Falls: Social Science Press.

Howard, D. (2004). Why we need more Aboriginal adults working with Aboriginal students. *The Australian Journal of Teacher Education*, 29(1), 14-22.

Howard, D. (2005). Indigenous new apprentices' hearing impairment and its impact on their participation and retention in new apprenticeships. Darwin: Phoenix Consulting.

Howard, D. (2006). Communication, listening and criminal justice. Magistrates' conference. Darwin, NT. Available online:
http://www.healthinfonet.ecu.edu.au/html/html_communitylear_health_community/com_listening_criminaljustice.pdf

Howard, D., Quinn, S., Blokland, J., & Flynn, M. (1991). Aboriginal hearing loss and the criminal justice system. *Aboriginal Law Bulletin*, 3(65), 9-11. Available online:
<http://www.austlii.edu.au/au/journals/AboriginalLB/1993/58.html>

Hudspith, S. (1996). Learning to belong: An ethnography of urban Aboriginal schooling. PhD. Thesis, Northern Territory University, Darwin.

Ilyn, R., Thorpe, R., Miles, D., Cutts, C., Butuke, A. & Ford, L. (1998). *Murri Way! Aborigines and Torres Strait Islanders reconstruct social welfare practice*. Townsville, Australia: James Cook University, Centre for Social Research.

Malin, M. (1989). Invisibility in success, visibility in transgression for the Aboriginal child in the urban classroom: Case studies at home and at school in Adelaide. Unpublished PhD Thesis. University of Minnesota, Minneapolis.

Malin, M. (1990). Why is life so hard for Aboriginal students in urban classrooms? *The Aboriginal Child at School*, 18(1), 9-29.

Malin, M. (1997). Reconstructing Aboriginal education. *Education Australia*, 35, 12-13.

Massie, R. (1999). The effects of soundfield classroom amplification on the communicative interactions of Aboriginal and Torres Strait Islander children. Unpublished PhD Thesis. University of Queensland, Brisbane.

McRae, D. (2000). What works; explorations in improving outcomes for Indigenous students: A report prepared for the Commonwealth Department of Education Training and Youth Affairs. Canberra: Australian Curriculum Studies Association and National Curriculum Services.

Menyuk, P. (1980). Effect of persistent otitis media on language development. *Annals of Otorhinolaryngology*, 89(68), 257-263.

Miller, P.M., & Ingham, J. G. (1976). Friends, confidants and symptoms. *Social Psychiatry*, 11, 51-58.

Murray, N. & La Page, E. (2004). Hearing health of New South Wales prison inmates. *Australian and New Zealand Journal of Public Health*, 28, 537-541.

Ngarritjan-Kessarlis, T. (1994). Talking properly with Aboriginal parents. In S. Harris & M. Malin (Eds.), *Aboriginal kids in urban classrooms* (pp. 117-123). Wentworth Falls: Social Science Press.

Nirrpirranydj, S. (1991). Yolngu Rom: The beginning of Aboriginal Pedagogy at Gapuwiyak. In *Aboriginal Pedagogy: Aboriginal Teachers Speak Out* (pp. 85-97). Geelong, Victoria: Deakin University Press.

OATSIH. (2001). See Couzos, S., Metcalf, S., Murray, R. (2001).

Parker, J. G., & Asher, S. R. (1987). Peer acceptance and later interpersonal adjustment: Are low-accepted children at risk? *Psychological Bulletin*, 102, 357-389.

Partington, G., Richer, K., Godfrey, J., Harslett, M., & Harrison, B. (1999). Barriers to effective teaching of Indigenous students. Paper presented at the Joint Conference of the Australian Association for Research in Education and the New Zealand Association for Research in Education (Melbourne, Australia, November 29-December 2, 1999). Retrieved 12 October 2006 from <http://www.aare.edu.au/99pap/par99618.htm>

Patton, J. (2004). Central auditory processing disorders. Online: Learning Disabilities.

Queensland Government. (n.d.) Aboriginal English in the Courts retrieved 23 March 2010 from <http://www.courts.qld.gov.au/Factsheets/M-MC-AboriginalEnglishHandBook.pdf>

Richards, K. (2009). Juveniles' contact with the criminal justice system in Australia. Canberra: Australian Institute of Criminology. Available online: <http://www.aic.gov.au/documents/E/F/0/%7BEF09BB44-FC3D-41BD-81CD-808DE9D0DF99%7Dmr07.pdf>

Rowe, K.J., Rowe, K.S. & Pollard, J. (2001). Auditory processing for children at school entry: An evidence-based approach to an evaluation of a teacher screening and professional development program. Background paper to keynote address presented at the Third International Inter-

Disciplinary Conference on Evidence-Based Policies and Indicator Systems, University of Durham, England, July 4-7, 2001.

Ruluminy, D. (1991). Yolnguwa Gunggayunamirri Rom Aboriginal Pedagogy Project. In *Aboriginal Pedagogy: Aboriginal Teachers Speak Out* (pp. 85-97). Geelong, Victoria, Australia: Deakin University Press.

Sarra, C. (2010). Australian Broadcasting Company. Retrieved 23 March 2010 from <http://www.abe.net.au/worldtoday/content/2010/s2816636.htm?site=brisbane>

Silva, P. A., Chalmers, D., & Stewart, I. (1986). Some audiological, psychological, educational and behavioural characteristics of children with bilateral otitis media with effusion: A longitudinal study. *Journal of Learning Disabilities*, 19, 165-169.

Stehbens, C., Anderson, L., & Herbert, J. (1999). From little things, big things explode. Paper presented at the Combined Conference of the Australian Association for Research in Education and New Zealand Association for Research in Education, Melbourne.

Stika, C. (2000). Working with hearing loss: The invisible disability. The 128th Annual Meeting of the American Public Health Association in Boston. Nov 12-16, 2000.

Walsh, M. (1997). Cross-cultural communication problems in Aboriginal Australia (Discussion paper No 7 /1997). Australia: North Australian Research Unit.

Webster, J. C. (1983). Communicating in noise, 1978-1983. In G. Rossi, (Ed.), *Proceedings of the Fourth International Congress on Noise as a Public Health Problem*, Vol. 1 (pp. 451-462). Milan: Centro Ricerche e Studi Amplifon.

Yonovitz, L., & Yonovitz, A. (2000). PA-EI: A phonological awareness program for Indigenous EFL students with hearing disabilities. *Teaching English as a Second or Foreign Language*, 4(4). Retrieved April 20, 2003 from http://www-writing.berkeley.edu/TESEI-EJ/ej_16/cfl.html

Zubrick, S. R., Lawrence, D. M., Silburn, S. R., Blair, E., Milroy, H., Wilkes, T., Eades, S., D'Antoine, H., Read, A., Ishiguchi, P., Doyle S. (2004). *The Western Australian Aboriginal child health survey: the health of Aboriginal children and young people*. Perth: Telethon Institute for Child Health Research. Available online: <http://www.ichr.uwa.edu.au/files/user17/Vol1Complete.pdf>

Investigation into hearing impairment among Indigenous prisoners within the Northern Territory Correctional Services

Report

Troy Vanderpoll

**Prisoner Services Northern Territory
Correctional Services**

Dr Damien Howard

**Psychologist, Phoenix Consulting and
Adjunct senior principal research fellow James Cook University**

6 July 2011

Table of Contents

1.	Executive Summary	page 3
2.	Introduction	page 3
3.	Purpose	page 4
4.	Method	page 5
5.	Equipment	page 6
6.	Results	page 6
7.	Inmates' Self-reports	page 8
8.	Discussion	page 10
	• Implications for NT Corrections	page 12
	• Use of amplification devices	page 14
	• Hearing loss as a barrier to rehabilitation	page 15
9.	Recommendations	page 15
10.	Conclusion	page 16
Appendix A: Forms used in this project		
	(1) History Questionnaire	page 18
	(2) Audiometer Screen Test	page 19
References		page 20

Acknowledgements

The authors would like to thank the inmates and staff who participated in this project. Also Matthew Calloway for his audiological advice and his loan of equipment. Also Lewis Leidwinger for his audiological input and Sheri Lochner for her assistance with editing and layout of the report.

1. Executive Summary

An investigation among inmates in Northern Territory correctional facilities found more than 90% of Indigenous inmates had a significant hearing loss. Comments by inmates indicate that hearing impairment is often a significant disability in a custodial environment that contributes to the breakdown in communication with prison officers.

This project identified that some experienced corrections officers have developed communication skills that help them communicate more effectively with inmates with hearing loss and that the use of amplification devices can lessen communication problems experienced by inmates with hearing loss. These results suggest there are potential benefits in addressing widespread hearing loss among NT Indigenous inmates. These benefits include improved inmate management practices and enhanced wellbeing among inmates, as well as better rehabilitation outcomes and lower levels of recidivism.

2. Introduction

Within the Northern Territory Corrections, Indigenous inmates are over represented. In 2010 there were 1100 inmates with 82% being Indigenous people¹ although Indigenous people comprise only 30% of the NT population. There is national concern about the over representation of Indigenous people in the criminal justice system².

There has been speculation about the role that widespread hearing loss in Indigenous communities may play a part in the overrepresentation of Indigenous people in the criminal justice system^{3,4}. If a significant proportion of Indigenous inmates have a hearing loss there are important implications for the criminal justice system overall, including corrections facilities⁴.

The higher prevalence of hearing loss among Indigenous adults is mostly an outcome of pervasive childhood ear disease among Indigenous children. Indigenous people experience ear disease that starts earlier, lasts longer and reoccurs more often than other Australians⁵. The worst ear disease that affects a higher proportion of people occurs in communities where there is greatest general disadvantage; such as in remote Indigenous communities in the NT. For example, crowded housing spreads infection and compromises hygiene leading to more children experiencing persistent infections⁵. These persistent ear infections during childhood can damage the ear drum and other middle ear structures, so that adults with a history of persistent ear disease often have some degree of permanent hearing loss. The World Health Organisation reports Australian Indigenous people have the highest rate of perforations of the ear drum of all countries surveyed⁶. Because of the early onset of this type of conductive hearing loss, people may be unaware that they hear differently to others.

One study in a youth detention centre in the Northern Territory⁷ suggested as many as 90% of Indigenous youth in detention may have a hearing loss¹. In 2010 the Senate Hearing Health Inquiry⁴ raised serious concerns about hearing loss among Indigenous inmates.

REDACTED
PP

REDACTED
PP



3. Purpose

In response to the recommendations in the Hear Us report the superintendent of Darwin prison (Robert Miller) instigated an investigation into hearing loss among Indigenous inmates that was carried out by Troy Vanderpoll, an Aboriginal Liaison Officer who has had training and experience as an audiometrist in the defence forces.

Within the Northern Territory Corrections inmates are not routinely screened for hearing loss. As result there is a potential for inmates with hearing impairment to remain unidentified throughout the period of their incarceration.

This audiological threshold study was conducted to determine 1) if there are a significant number of Indigenous inmates with hearing loss, 2) examine the implications of hearing loss in a custodial setting and 3) consider approaches to minimise any adverse impacts of hearing loss among inmates.

4. Method

This study initially tested the hearing status of Indigenous inmates within the Darwin Correctional Centre (DCC). 44 Indigenous inmates within Darwin prison were tested over two weeks. Further testing was then conducted within the Alice Springs Correctional Centre (ASCC) where 90 inmates (20% of the Indigenous prison population). In both institutions inmates also completed a verbally administered questionnaire, (see Appendix A), which elicited comments on experiences of hearing problems. All questionnaires were conducted verbally in a face-to-face setting, using hand held amplification devices with inmates found to have a hearing loss.

Inmates involved in hearing screening included remand and sentenced prisoners, both male and female inmates. The average age of inmates tested within DCC was 38 years old with a range from 20 to 60 years old. The average age of inmates tested within the ASCC was 33 years old with a range from 19 to 68 years old. The combined average age over both groups was 34 years old. In total 5% of Darwin Correctional Centre's Indigenous population and 20% of Alice Springs Correctional Centre's were tested. In total, 13% of the total Indigenous population of NTCS have had their hearing tested.

Inmates tested within the Darwin facility had volunteered to have their hearing tested. The testing was carried out by a staff member well known to inmates. Because of concerns that the high prevalence of hearing loss at Darwin prison may be related to some type of self-selection bias, at the Alice Springs facility whole groups of inmates within various sections were tested, so that a larger and more representative sample of inmates were tested. The testing protocol involved the group to be tested being verbally briefed on the hearing test, then a hearing amplification device was displayed and after testing, participants identified as having a hearing loss, were given the opportunity to wear the device and give feedback on their experiences.

Before testing, information was read out to each of the participants explaining the purpose of the testing and that individual results would remain confidential. Each test took approximately 15 minutes and was conducted in one of six areas. These areas were chosen for their low level of background noise to ensure that the ambient noise was $\leq 45\text{dB}$.

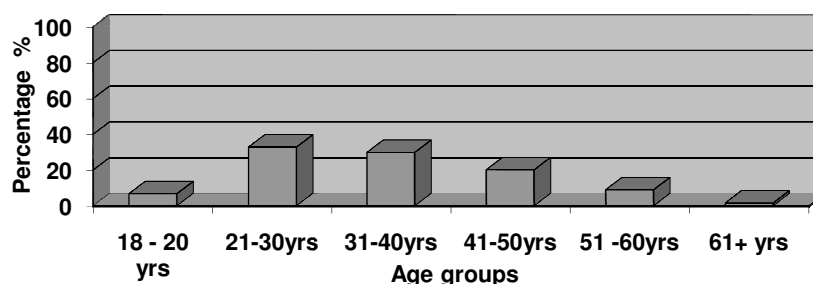
For the purpose of averaging individual test results across all frequencies, results greater than 90dB was scaled to 90dB which was the maximum setting on the Threshold testing devices. Hearing tests were conducted using Pure Tone Air Conduction Audiometry, following the basic audiometric test frequencies. While testing identified hearing loss among inmates the testing protocols used in this study were not able to identify the type of loss, whether conductive, sensorineural or mixed hearing. An investigation that conducts a full audiological assessment on inmates is required to be able to do this.

Thresholds were measured in both ears using six frequencies; 250Hz, 500Hz, 1000Hz, 2000Hz, 4000Hz and 8000Hz. Each frequency was threshold tested from 0 to 90dB as detailed below.

- <25 dB Hearing within normal limits
- 26-40 dB Mild hearing loss
- 45-60 dB Moderate hearing loss
- 65-90 dB Severe hearing loss
- >90 dB Profound hearing loss

Table 1

Ages of Subjects Tested



5. Equipment

Audiological testing was conducted in a quiet room in six locations. Each location was measured for ambient noise levels by a portable sound level meter (QM-1589 IEC Digitech IEC 651 Type II). Ambient noise levels in each room were ≤ 45 dBA. Through out the testing process further random ambient noise checks were conducted.

Within the DCC threshold testing was conducted using a Madsen Micromate 304 Screening Audiometer, with ME-70 Noise-Excluding headset fitted with THD39. In ASCC the threshold testing was conducted using a Madsen Itera II Audiometer with Sennheiser HAD 200 Noise Excluding headsets.

The officer conducting the hearing screening was trained to conduct audiological testing within the Australian Army employed while working as an Advanced Medical Assistant and had 12 years experience as an audiometrist. The testing was conducted in conjunction with Prison Medical Services

6. Results

The results of the Pure Tone audiometric testing is the combined average of all frequencies tested 250Hz, 500Hz, 1000Hz, 2000Hz, 4000Hz and 8000Hz. This was established individually for each ear and represents all types of hearing loss. The results are displayed as individual institutions and then combined as Northern Territory Corrections Services (NTCS).

Table 2: Distribution of inmates' hearing loss

Darwin Correctional Centre	Normal 0-25 dB	Mild 25-40 dB	Moderate 45-60 dB	Severe 65-90 dB	Profound 90+ dB
	6.8%	52.2%	38.6%	2.2%	0%

Alice Springs Correctional Centre	Normal 0-25 dB	Mild 26-45 dB	Moderate 46-64 dB	Severe 65-90 dB	Profound 90+ dB
	4.4%	58.8%	23.3%	13.3%	0%

Combined Correctional Centre's	Normal 0-25 dB	Mild 26-45 dB	Moderate 46-64 dB	Severe 65-90 dB	Profound 90+ dB
	5.2%	56.7%	28.3%	9.7%	0%

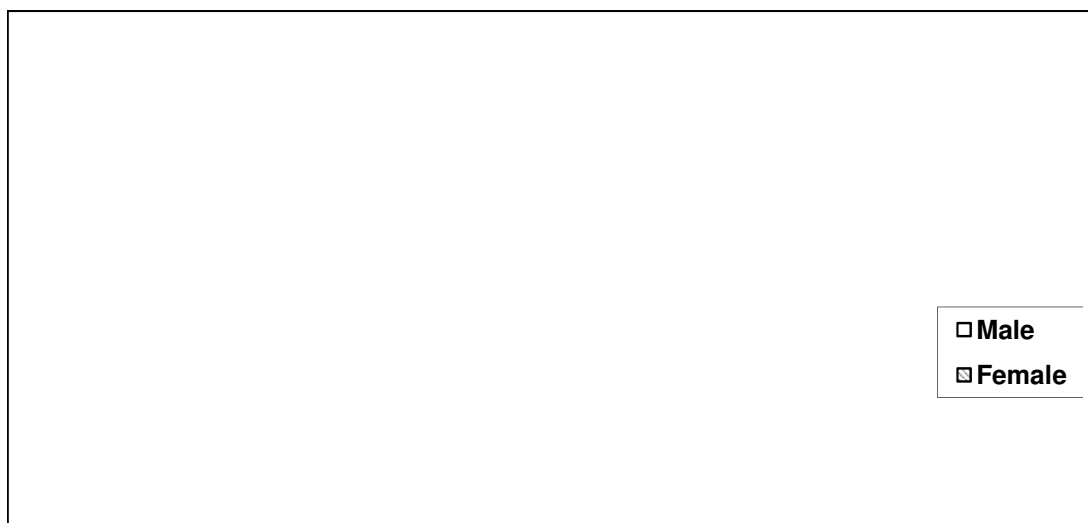
The data in these tables indicates a significant hearing loss among 93.2% of all Indigenous inmates tested within the DCC having >25dB hearing loss averaged over all frequencies tested. At ASCC where a larger group and whole sections of inmates found 95.6% on inmates tested with a significant hearing impairment.

Hearing averages over the entire test group indicated mild to moderate hearing loss across all spectrums in both ears and in both male and female Indigenous inmates.

Table 3a: Hearing average – better ear



Table 3b: Hearing average: worse ear

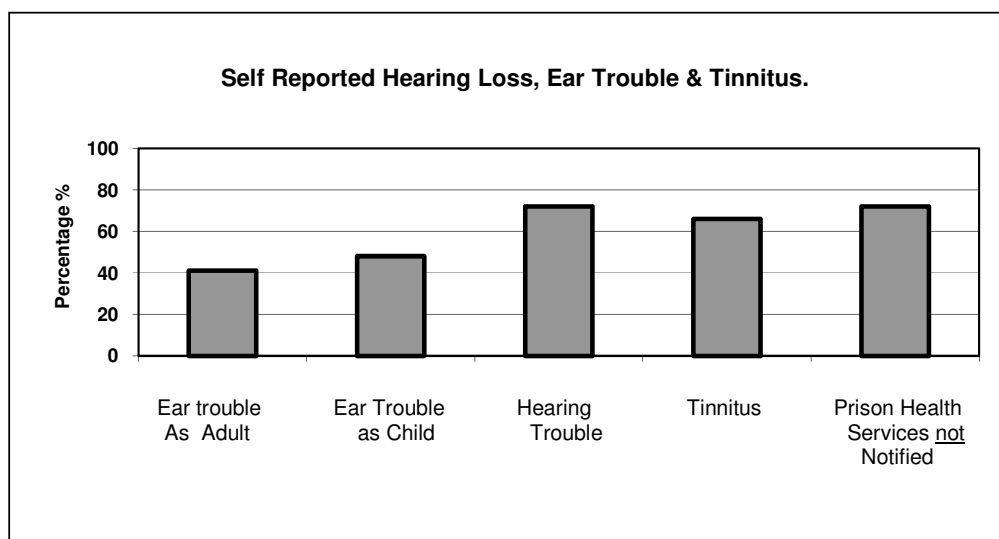


Further testing of 15 non-Indigenous inmates at Darwin Prison who volunteered to have their hearing tested was conducted. None of the non-Indigenous inmates tested had a significant hearing loss with an average of 19.8dB which falls within the Adult Australian Average⁸. Past studies among non-Indigenous inmates have generally found a higher prevalence of hearing loss among non-Indigenous inmates than in the general community^{9,10}. Given the small number of non-Indigenous inmates tested and the possibility of a selection bias it cannot be concluded that there will be no hearing loss found among non-Indigenous inmates, even though the scale of the problem is clearly of an entirely different magnitude than among Indigenous inmates.

7. Inmates' Self-report

A verbally administered survey was given to all inmates tested. Out of all participants that indicated they had hearing problems 72% had not notified Prison Medical Services of their hearing loss. A total of 66% of all subjects reported they suffer from ringing in their ears (tinnitus).

Table 4: Self-report



The information gained from inmates' self-report clearly indicates that a proactive program to identify hearing loss among inmates is needed. The majority of inmates found to have a hearing loss did not inform authorities, often because they are not aware that they have a hearing loss. With early onset hearing loss caused by middle ear disease it is common that people are not aware that they hear differently to others¹¹. The scarcity of audiological services in remote communities also means that inmates are likely to never before had their hearing tested.

Examples of some of the comments made by Indigenous inmates that reported hearing loss follow. Comments were classified in three categories 1) reported ear health problems, 2) difficulties communicating in the correctional or criminal justice environment and 3) difficulties hearing outside the correctional environment.

- 1) Reported ear health problems
Inmates with hearing loss commonly reported the use of sticks and other foreign objects to clean their ears and self-treat pain. 11.9% of inmates made these types of comments. Comments included:
 - *I put sticks in my ears to stop the pain.*
 - *I put rocks in my ears as a child when it was hurt.*
 - *Had big mob maggots in ears,*
 - *Got rock in left ear since I was kid him rattle around all the time*
 - *I hear wooden noise in ear all the time from matchstick stuck as kid in ear.*
 - *Pain at night when him cold, no sleep.*
 - *Him ear ringing I can't sleep, him too loud.*
 - *I can't concentrate the ringing make it too hard.*
 - *Big fight eyes no good same with ears no good.*

- 2) Difficulties communicating in the correctional or criminal justice environment.
Indigenous inmates with hearing loss reported difficulties following officers' instructions. 76% (of all prisoners) reported this as a detrimental element of their incarceration. Other comments included:
 - *I can't hear them officers and I get in trouble.*
 - *I can't hear on the phone most of the time.*
 - *I don't understand that court fella and I can't hear what him said.*
 - *Get in trouble from police can't hear what their talking.*
 - *Can't hear them police or them court man.*
 - *Trouble from police and officer when them talk to me can't listen good.*
 - *Little bit trouble from police cause I can't hear.*
 - *Can't hear TV at all (This inmate demonstrated how if he blows his nose air escapes his ears, indicating that he has perforations of both ear drums)*
 - *Hard for me in prison.*

- 3) Difficulties hearing outside the correctional environment
Inmates with hearing loss commonly reported that their hearing loss had resulted in violent altercations due to misunderstanding. 10.2% of inmates volunteered these types of comments. Other comments included:
 - *My old man flogs me because I can't hear him.*
 - *I can't hear what my family says.*
 - *My family know to speak loud to me.*
 - *Family always tells me stuff I can't hear*
 - *If him family sing out I can't hear.*
 - *I stop talking to friends too much trouble.*
 - *School was hard for me to listen.*
 - *Community get angry with me for no hearing.*

Key areas that were identified as being difficult to communicate within the criminal justice system included:

- Probation and Parole
- Parole Boards
- Police
- Courts
- Medicare
- Video Link Up

8. Discussion

The results of these hearing tests indicate an alarming prevalence of hearing loss among Indigenous inmates in the Northern Territory. A question that arises is how different is the prevalence of hearing loss among inmates to that of the general population in the remote NT communities where most inmates come from.

There have been few studies to identify the proportion of the adult Indigenous population that have a hearing loss in NT communities. Hearing tests of 125 adults carried out on the Tiwi islands in 1984 found 34% of adults had a significant hearing loss (>25dB)¹². Another study of a group of Indigenous tertiary students from remote NT communities attending Batchelor College in 1990 found 20% of 100 Indigenous students, drawn at that time mainly from remote NT communities, had a hearing loss of >25dB¹³.

Another 2007 study¹¹ found 45 % of a group of 33 Indigenous trainees had a hearing loss (>25dB). It also described that those workers with a hearing loss has significantly more performance, communication and interpersonal difficulties. Not all workers with hearing loss had interpersonal difficulties in this study, but all workers with interpersonal difficulties had a hearing loss. A comparison of different studies of hearing loss among people from remote NT communities is shown in table 5.

Table 5: Hearing Loss among Indigenous people from remote NT communities

Population investigated	Percentage of the investigated population with significant hearing loss	Investigation/Study source
Adult <u>Indigenous students</u> from a number of remote NT communities	20% with significant hearing loss	Lay, 1990 ¹³
<u>Adult workers</u> in one remote Indigenous community	45% with significant hearing loss	Howard, 2007 ¹¹
<u>General adult population</u> in one Indigenous remote community	33% with significant hearing loss	Rebgetz, 1984 ¹²
NT <u>Indigenous inmates</u> drawn mainly from remote communities.	94% with significant hearing loss	This study. 2011

The greater level of hearing loss among Indigenous inmates suggests that hearing loss has played a role in many Indigenous people becoming inmates. The description by some inmates of hearing loss related communication problems that contributed to interpersonal problems with family, other community members and police also supports this.

The more well known antecedents to involvement in the criminal justice system are alcohol fuelled interpersonal violence¹⁴. Excessive use of alcohol can be a way some people manage frustrations related to hearing loss, or to cope with hearing loss related anxiety, stress and suspicion in social situations. The disinhibiting effects of alcohol can also release pent up frustrations and anger arising from hearing loss related social difficulties¹⁵. For most NT Indigenous inmates the pathway to prison is muffled and hushed, although filled with alcohol and conflict that is more apparent to observers than is their hearing loss. Hearing loss appears to act as a usually unnoticed 'accelerator' to imprisonment through ways that are not as yet clearly understood.

Conversely, hearing loss appears to act as a barrier to engagement in education and employment¹⁶ and success in these areas is associated lower rates of involvement in the criminal justice system¹⁴. This is also supported by the lower prevalence of hearing loss among the others from NT remote communities (adults in the general community, Indigenous tertiary students and trainees), than found among Indigenous inmates.

Addressing the social difficulties related to hearing loss is potentially an important Indigenous crime prevention strategy. To date this approach that has not been considered by the criminal justice authorities. These results suggest that if hearing tests carried out in NT remote communities among teenagers, when ear disease has mostly resolved but has left many with permanent hearing loss, it would accurately identify most of those individuals who were at risk of becoming involved in the criminal justice system. However, social problems and educational disadvantage associated with hearing loss start much earlier. It is likely that focus on addressing the very early communication, interpersonal and education difficulties associated with ear disease and hearing loss⁴ among children could assist in the prevention of many Indigenous adults becoming involved in the criminal justice system.

REDACTED

PP

REDACTED

PP

It is not only the role hearing loss can play in contributing to antisocial behaviour that is a concern. As indicated by some inmates' comments, when Indigenous people with hearing loss come into contact with police, hearing loss is likely to create communication difficulties, which are most often seen as related to defiance, and/or cultural linguistic issues.

REDACTED

PP

REDACTED

PP

REDACTED
PP

There is evidence that hearing loss among inmates is greater in the NT than elsewhere in Australia, although it is still a serious problem elsewhere. There have been two recent studies of hearing loss among Indigenous inmates in other jurisdictions. Quinn (2006) found 6% of 109 Victorian Indigenous inmates had a significant hearing loss (>25dB) and O'Leary (unpublished study, 2010) found 46% of female Indigenous inmates in Western Australia were found to have a hearing loss (>25dB).

Table 6: Hearing loss among Indigenous inmates

Population investigated	Percentage of the investigated population with significant hearing loss	Investigation/Study source
Victorian Indigenous inmates	6%	Quinn and Rance (2006)
Indigenous women inmates in WA	46%	O'leary (2010)
NT Indigenous inmates drawn mainly from remote communities	94%	This study

It is clear a much higher proportion of NT Indigenous inmates have a hearing loss compared with other jurisdictions. This is most likely to be related to the greater level of both hearing loss and disadvantage experienced by people in NT remote communities. A Western Australian study found that the prevalence of hearing loss was greater among inmates from remote areas and less for among those from urban areas (O'Leary personal communication, 2011). The impact of hearing loss is compounded by the presence of other forms of disadvantage. To use the example of housing once again, crowded housing which contributes to childhood ear disease that causes adult hearing loss, also compounds the social effects of adult hearing loss. Overcrowded housing creates higher noise levels, especially when a high proportion of residents have a hearing loss, which increases communication problems and frustrations that prompts interpersonal disputes that can escalate into violence¹⁵. The following anecdote illustrates this.

One woman with hearing loss accused her husband of 'mumbling' when she could not understand him (he also had a hearing loss) at a time when there was lots of noise at home because of many family visitors from outlying communities. There was more background noise in the house from many visitors who stayed up to three months every year during the wet season, putting pressure on resources in the household. Frustrated at family visitors not helping around the house and stressed by the additional noise they created around the household, one day she got angry with her husband because she could not hear what he was saying. Angry at his "mumbling" she threw something at him and in retaliation he hit her, which led to him being arrested and jailed. [It is common for

people with conductive hearing loss to speak too softly making it hard for others to understand what they say. This is related to people with conductive hearing loss being able to hear their own voice clearly because sound is conducted through the bones of their skull past their damaged middle ears. This can contribute to difficulties adjusting the volume of their voice to the level that will enable others to hear them effectively, especially when there are changing levels of background noise around them.]

Conversely, when people experience fewer disadvantages and have greater levels of social support the adverse effects of hearing loss on individuals is often mitigated¹⁵. Addressing hearing loss alone is unlikely to be a 'magic bullet' that will resolve the over representation of Indigenous people in the criminal justice system. Hearing loss is enmeshed with other factors such as domestic violence and alcohol abuse in ways that are as yet not fully understood. However, reducing the impact of hearing loss will address one important factor that is currently largely ignored in crime prevention¹. Also understanding and addressing the effects of widespread hearing loss among Indigenous inmates can help make rehabilitation programs more effective.

Implications for NT Corrections of widespread hearing loss among Indigenous inmates

There are important implications for the NT Corrections with the great majority of Indigenous inmates having some level of hearing loss. 76% of inmates with hearing loss indicated that they sometimes found it hard to understand corrections staff.

Some inmates with hearing loss were asked which corrections staff were easiest to communicate with and why. Inmates indicated that a key trait that made certain officers more effective in communication was that they showed 'respect' toward inmates. Indigenous people with hearing loss are often very sensitive about being judged as having limited capacity or motivation on basis of their ability to understand what others say or express themselves well in English¹⁵.

The staff members nominated by inmates as easiest to communicate with were also asked what communication strategies they used with inmates. Communication strategies they described included the following:

- they were accepting of some inmates acting as communication brokers for other inmates;
- they observed inmates non-verbal communication closely and used more body language in their communication. This included learning Indigenous styles of non-verbal communication, such as pointing with the lips;
- they watched for visible indications of understanding or lack of understanding what was said rather than waiting for inmates to indicate they have not understood by asking questions. In Western styles of communication, it is the listener who is generally expected to take responsibility for seeking clarification from the speaker. Direct verbal questioning of the speaker is expected to minimise misunderstanding. In contrast, Indigenous cultures will often expect a speaker to pro-actively assess other people's understanding, feelings and views about what has been said, in part by actively monitoring and responding to non-verbal cues¹⁵.

It would appear there are varying degrees of communication skills among corrections staff working with Indigenous inmates. Some experienced staff have become skilled in their communication with inmates with hearing loss, without necessarily knowing that inmates have a hearing loss. This is similar to what has been found in the education sector. When the successful strategies used by insightful, experienced teachers were used to develop a teacher professional development program this program was successful in improving Indigenous students' educational outcomes and reducing school behaviour problems in participating schools¹⁷.

It is planned that Dr Damien Howard, a psychologist who has specialised in addressing outcomes of Indigenous hearing loss, will be involved in further exploration the communication skills of experienced corrections staff in developing training and orientation training for new corrections staff. It is anticipated this process can 'fast track' the development of effective communication skills that otherwise may take years to develop and then only be developed by some staff.

Use of amplification devices

REDACTED

REDACTED

One Indigenous inmate with hearing loss was provided with a hearing aid, however, this expensive device was dropped and trodden on within a few days of being obtained. Another strategy was trialled of using hand held amplification devices with some inmates. These devices have the advantage of being robust, inexpensive and can be used with a variety of inmates in targeted situations where communication may be difficult. Although still being trialled there has been positive feedback about using these devices from both inmates and staff.

One of the key factors in escaping the cycle of criminal activities and imprisonment is through education. Hearing loss can obstruct inmates' opportunity to engage in education. Educators commented on some inmates participation during education sessions improved using an amplification device. One educator described that an inmate changed from being non-responsive and disengaged in education sessions before using the device, to asking questions and making contributions to class discussions after using the amplification device.

For most inmates use of these devices is their first experience of the benefits of amplification and they have been keen to use the device and even obtain one for their personal use. Striking 'rehabilitation' can sometimes come about through access to amplification.

"A dramatic change was noted in one adult Aboriginal male with a long criminal record after he had been identified as having a hearing loss and fitted with a hearing aid. He changed from someone who was socially isolated, uncommunicative and often violent to being a cooperative family and community member."³

The access to amplification enabled by this program can be expected to have a significant rehabilitative impact on many inmates. Inmates will have experience of the benefits of amplification so they will be in an informed position to seek to have a hearing aid fitted when they are eligible for Australian Hearing Services when they leave prison. As inmates they are not eligible to access free hearing aids through Australian Hearing. Involvement in the criminal justice system may provide the first opportunity for most inmates to have their hearing loss identified, to access medical services that may be able to improve hearing and to experience the benefits of amplification.

Hearing test results indicate that the degree of hearing loss is greater among prisoners in more secure sections of the prisons. Often these inmates have a history of volatile responses with consequent injuries to staff and other inmates. The results of using hand held amplification devices with some of these inmates have been very positive, suggesting better management outcomes, lowered risk of injuries and improved inmate wellbeing may be achieved by considering and responding to the often severe levels of hearing loss among these inmates.

Hearing loss as a barrier to rehabilitation

Hearing loss may impede an individual's progress through sentence management plan and participation in rehabilitation programs. Participation in unfamiliar processes involving unfamiliar people can be difficult and stressful for those with hearing loss¹⁵. A common strategy of those with hearing loss is to avoid such situations or simply agree to what is put in place without really understanding what has been said.

Some inmates may cope with listening challenges through avoidance from participating in some corrections rehabilitation processes. Some possible examples of this are as follows.

- a. Inmates generally move from higher to lower security sections of the prison during their term of imprisonment. However, some Indigenous prisoners seek to remain in a higher security environment. The higher security environment has more routines and hearing loss may contribute to some inmates with hearing loss being uncomfortable in less secure, low routine environments where there are more demands placed on inmates' listening skills.
- b. Some Aboriginal inmates choose to do the whole time of their sentence rather than apply for parole. The parole process is communicatively quite challenging and anxiety about the communication demands of participating in this may shape some inmate's decisions to not seek parole. The consequences of this are that people are in prison longer, at greater financial cost and away from their community and family for longer than they need to be. Again this choice may be related to inmate hearing loss and communicatively challenging aspects of the parole process.

It is planned in the future to examine if hearing loss plays a part in obstructing some inmate's participation in rehabilitation processes and how this can be addressed.

9. Recommendations

In general consideration should be given to court room proceedings, interviews and internal disciplinary hearing, video linkup, Prisoner Telephone System and dealings with custodial staff, 76% of all inmates tested self reported they had difficulty hearing officer directions and instructions. Specific recommendations are as follows.

- Training be provided to all correctional staff with regards to the prevalence of hearing loss of indigenous prisoners in the Darwin Correctional Centre and the importance of effective communication with hearing impaired inmates.
- Hearing testing of inmates not tested in this project should be carried out and medical follow up of all inmates found through this testing to have a hearing loss be undertaken.

- The medical induction questions asked of inmates be reviewed and changed to better detect self-reported hearing impairment and tinnitus as well as the implementation of routine hearing tests for all inmates on induction be introduced to identify hearing impairment and make appropriate medical referrals if needed.
- A tinnitus management program be developed for inmates.
- Depending on the outcomes of the trial of amplification devices being conducted within the Darwin Correctional facility that amplification devices be used widely when communicating with inmates in situations where there is a high risk of communication breakdown, or there are demonstrated benefits to their use.
- This report be disseminated throughout the Department of Justice to inform both policy and operational management.
- That more formal research be undertaken to identify and address the impact of widespread hearing loss on Indigenous inmates.

Implementing these recommendations will assist the Corrections Department fulfil its human rights responsibilities to Indigenous inmates with hearing loss that were

REDACTED
PP



16. Conclusion

There is a significant overrepresentation of Indigenous inmates, 32% of the Northern Territory's population are estimated to be of Indigenous origin¹⁸. Indigenous inmates make up 82% of the total prison population¹. There was an unprecedented level of hearing loss (>25dB) found among inmates within the Northern Territory Correctional Services among inmates whose hearing was tested in this project. The results also support that hearing impairment is a significant disability in a custodial environment. As also reported by others¹⁹

the results from this project indicate that breakdown in communication can impact detrimentally on daily interactions with prison officers and most likely also with other inmates.

This project has been among the first to examine this important issue and its implications of corrections environments. A common response of corrections agencies over the last 30 years is that hearing loss is a 'health problem' and not their concern⁴. However, despite considerable efforts in medical research there has been no 'medical magic bullet' found and the origins of widespread Indigenous hearing loss is so entangled in general Indigenous disadvantage that a health-only solution is unlikely to emerge.

The scale, impact and implications of hearing loss among NT inmates demonstrated by these findings indicate that it is time for Corrections agencies around Australia to meaningfully address the issues around widespread hearing loss among Indigenous people involved in the criminal justice system. In the Corrections setting this is a matter of both duty of care to inmates and corrections staff, as well to grasp potential opportunities in improved rehabilitation outcomes.

Addressing communication issues around hearing loss is a shared responsibility.

"Hearing loss affects both the individual who has it and those with whom he or she interacts. Speakers, as well as listeners who are hard of hearing, share responsibility for preventing or reducing communication problems related to hearing loss... (listeners) cannot prevent or resolve communication problems by themselves; they often need the co-operation of those with whom they communicate."²⁰

This project has identified that some experienced corrections officers have developed communication skills that help inmates with hearing loss in a corrections environment, as well as that the use of amplification devices can assist to improve communication for hearing impaired inmates. These early results indicate there are potential benefits of investigating and addressing widespread hearing loss among NT Indigenous inmates. These benefits are likely to include better inmate management and improved wellbeing among inmates, as well as enhanced rehabilitation outcomes and lower levels of recidivism.

For more information contact

Troy.Vanderpoll@nt.gov.au or
Damien@phoenixconsulting.com.au

Appendix A: (1) History Questionnaire

History Questionnaire

Name: _____ **IJIS:** _____ **Age:** _____

Date: _____ **Location:** _____

1. Do you have trouble hearing / understanding what people say?

No ↑ Yes ↑ Sometimes ↑ A lot ↑

a) Do you have trouble hearing other prisoners? Yes / No

b) Do you have trouble hearing in visits? Yes / No

c) Do you have trouble hearing officers? Yes / No

2. Do you have any ear problems / troubles?

a) Which ear(s)? Right | Left | Both |

b) Do prison medical know about this problem? Yes / No

3. Do you hear and noises / ringing in your ears / head ?

a) Which ear(s)? Right | Left | Both |

b) Sometimes ↑ A lot | All the time |

4. When did you notice you had a hearing injury / problems with your ears ?

Adult | Child |

Comments:

Appendix A: (2) Audiometer Screen Test

Audiometer Screen Test

Name: _____ **IJIS:** _____ **Age:** _____

Date: _____ **Location:** _____

R = Right L = Left

dB HL	250	500	1000	2000	4000	8000
0						
10						
20						
25						
30						
40						
50						
60						
70						
80						
90						

References

1. Jones, T., Munro, B., Rowbottom, G. and Creighton, W. (2010). Indigenous specific programs. *Australasian Journal of Correctional Staff Development*. Accessed 27 April 2011, http://www.bfcsa.nsw.gov.au/__data/assets/pdf_file/0020/223760/Indigenous-Specific-Programs.pdf
2. House of Representatives Standing Committee on Aboriginal and Torres Strait Islander Affairs. (2011). *Doing time – time for doing: Indigenous youth in the criminal justice system*. Canberra: Commonwealth of Australia.
3. Howard, D., Quinn, S., Blokland, J. and Flynn, M. (1993). Aboriginal hearing loss and the criminal justice system. *Aboriginal Law Bulletin*, 3(65).
4. Senate Community Affairs Committee Secretariat. (2010). *Hear us: inquiry into hearing health in Australia*. Canberra: Commonwealth of Australia. Accessed 30 June 2011, http://www.aph.gov.au/senate/committee/clac_ctte/hearing_health/report/report.pdf
5. Couzos, S., Metcalf, S. and Murray, R. (2001). *Systematic review of existing evidence and primary care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander populations*. Canberra: Office of Aboriginal and Torres Strait Islander Health.
6. World Health Organisation. (2004). *Chronic suppurative otitis media: burden of illness and management options*. Geneva: World Health Organisation. Accessed 30 June 2011, http://www.who.int/pbd/deafness/activities/hearing_care/otitis_media.pdf
7. Yonovitz, A. (2004). *Hearing loss and communication disability within the criminal justice system*. Poster presented at the Australasian Audiology Conference, Brisbane, 2004, cited in D Howard, *Communication, listening and criminal justice*, presentation to NT Magistrates, Darwin and Alice Springs, March 2006.
8. Access Economics. (2006). *Listen hear! the economic impact and cost of hearing loss in Australia*. Accessed 30 June 2011, <http://www.audiology.asn.au/pdf/ListenHearFinal.pdf>
9. McRandle, CC. and Goldstein, R. (1986). Hearing loss in two prison populations. *Journal of Correctional Education*, 37(4), 147-155.
10. Belenchia, TA. and Crowe, TA. (1983). Prevalence of speech and hearing disorders in a state penitentiary population. *Journal of Communication Disorders*, 16(4), 279-285.
11. Howard, D. (2007). *Mild hearing loss and occupational functioning of remote Aboriginal workers*. Unpublished report. Darwin, NT: Phoenix Consulting.
12. Rebgetz, P. (1984). Otitis media – Bathurst and Melville Island. Unpublished manuscript.
13. Lay, K. (1990). *Hearing loss in an adult Aboriginal population*. Unpublished thesis, Brisbane, University of Queensland.

14. Senate Select Committee on Regional and Remote Indigenous Communities. (2010). *Indigenous Australians, Incarceration and the Criminal Justice System*, discussion paper. Canberra: Commonwealth of Australia. Accessed 29 June 2011
http://www.aph.gov.au/senate/committee/indig_ctte/Final_RRIC.pdf
15. Howard, D. (2011). *Listening, learning and work: Improving outcomes in Indigenous training and employment*. Darwin: Phoenix Consulting.
16. Burrow, S., Galloway, A. and Weissosfner, N. (2009). *Review of educational and other approaches to hearing loss among Indigenous people*. Accessed 29 June 2011
<http://www.healthinfonet.ecu.edu.au/other-health-conditions/ear/reviews/our-review-education>
17. Howard, D. (2003). *The Ear Troubles Kit*. A resource for family and teachers of children with conductive hearing loss. Darwin, NT: Phoenix Consulting.
18. Australian Bureau of Statistics. (2006). Population Distribution, Aboriginal and Torres Strait Islander Australians. Accessed 19 April 2011
<http://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/4705.0>
19. Quinn, S. and Rance, D. (2006). *Investigation into hearing impairment amongst Indigenous prisoners in the Victorian Correctional System*. School of Audiology: University of Melbourne. Accessed 29 June 2011
http://www.justice.vic.gov.au/wps/wcm/connect/justlib/DOJ+Internet/resources/1/9/198b4a00404a9eeb943efff5f2791d4a/Investigation_hearing_impairment_Indigenous_prisoners.pdf
20. Trychin, S. and Boone, M. (1987). *Mental Health Practioners' Guide*. Gaulladet: International Federation of Hard of Hearing People. Accessed 1 July 2011
<http://www.ifhoh.org/papers/trychin2.htm>

ⁱ These finding have not been well reported and it is not clear what level of hearing loss was being described. Other studies have sometimes considered lower levels of hearing loss. For example, Lay¹³ describe 50% and Howard¹¹ 60% of participants in their studies as having hearing loss when slight hearing loss was included. Any level of hearing loss among Indigenous people as a result of early childhood ear disease is likely to have functional listening consequences, if only in some situations. The functional difficulties experienced by people with an early onset hearing loss are likely to be greater than those experienced by someone with a similar level of late onset hearing loss¹¹. The early onset hearing loss resulting from ear disease impacts on the development of auditory processing skills and language development, especially communication with those speaking English as a second or subsequent language.

SOUND-FIELD AMPLIFICATION: ENHANCING *the* CLASSROOM LISTENING ENVIRONMENT *for* ABORIGINAL *and* TORRES STRAIT ISLANDER CHILDREN

ROBYN MASSIE¹,
DEBORAH THEODOROS²,
BRADLEY MCPHERSON³
& JOSEPH SMALDINO⁴

1 National Acoustic Laboratories, Australian Hearing,
PO Box 237, Brisbane, Queensland, 4001, Australia

2 Division of Speech Pathology, School of Health and
Rehabilitation Sciences, University of Queensland,
Brisbane, Queensland, 4072, Australia

3 Division of Speech and Hearing Sciences,
University of Hong Kong, Prince Philip Dental
Hospital, 5F, 34 Hospital Road, Hong Kong, China

4 Department of Communicative Disorders,
Northern Illinois University, DeKalb, IL 60115,
United States of America

■ Abstract

Sound-field amplification is an educational tool that allows control of the acoustic environment in a classroom. Teachers wear small microphones that transmit sound to a receiver system attached to loudspeakers around the classroom. The goal of sound-field amplification is to amplify the teacher's voice by a few decibels, and to provide uniform amplification throughout the classroom without making speech too loud for normal hearing children. This report discusses the major findings of a study which investigated the effects of sound-field amplification intervention on the communication naturally occurring in the classrooms of Aboriginal and Torres Strait Islander children. The audiological findings of the sample population of children are presented, as well as details of the classroom acoustic environment. Sixty-seven percent of the children began the field trials with a slight hearing loss. The results confirmed the extremely noisy and reverberant conditions in which teachers and children are operating on a daily basis. The findings indicated that sound-field amplification intervention encouraged the children to interact with teachers and peers in a proactive way. Teachers identified voice-related factors to be a major personal benefit of the systems.

■ Introduction

The classroom serves as a communication channel for listening and learning. Unfortunately, the typical classroom can provide a hostile listening and learning environment for both teachers and students. Sound-field amplification is an educational tool that allows control of the acoustic environment in a classroom. This paper discusses the major findings of a study which investigated the effects of sound-field amplification intervention on the communication naturally occurring in the classrooms of Aboriginal and Torres Strait Islander children in Cherbourg and Yarrabah, Queensland.

■ Background: Barriers to effective communication in the classroom

The goal of classroom instruction is comprehension. However, for speech to be comprehended, the child must be able to hear well enough to discriminate the word-sound distinctions of individual phonemes. Normal hearing for children is now considered to be 15 decibels hearing level (dB HL) or better at all frequencies, and with normal middle ear function (Northern & Downs, 2002). A slight hearing loss extends from 16 to 25 dB HL. Studies have indicated there are significant numbers of children with this degree of unidentified hearing loss in every school, many as a result of middle ear problems (Flexer, 1992). Unfortunately, the term "slight hearing loss" erroneously implies that the loss has little consequence. This is not the case. The high prevalence of early onset, long-term middle ear disease and consequent hearing loss amongst Aboriginal and Torres Strait Islander children has been well documented (McPherson, 1990; Nienhuys et al., 1994). Australian studies have indicated that 50% to 80% of Aboriginal and Torres Strait Islander school children have sufficient middle-ear related hearing loss to adversely affect classroom performance (Nienhuys, 1994).

In addition to hearing problems, the combination of excessive noise and reverberant classrooms contributes to the difficulties faced by all school children in understanding the teacher's verbal instruction. The teacher's voice may be so poor at the child's ear that the speech is masked by the noise, a term known as the

“signal-to-noise” ratio (S/N ratio). Flexer (2002) referred to the recently adopted United States national acoustical standards (American National Standards Institute, 2002) which calls for unoccupied classroom noise levels to be less than 35 dB, and reverberation time (RT) (the amount of “echo” in the room) to be less than 0.6 seconds for medium size rooms. The recommended S/N ratio in a classroom for young learners is +15 dB (American Speech-Language-Hearing Association, 1995). Teachers working in noisy classrooms must constantly raise their voices in response to varying levels of background noise to achieve this S/N ratio, thus producing vocal strain. Gotaas and Starr (1993) found that 80% of teachers reported vocal fatigue compared to 5% of the general population.

According to the literature, classroom communication for the Aboriginal and Torres Strait Islander child is a complex interaction of cultural influences, language mismatch and different learning preferences. Non-Indigenous teachers bring different expectations and interpretations to the classroom which may lead to misunderstandings (Kearins, 1985). Language differences can be a major barrier to effective classroom participation (Lowell, 1993). As formal Western education is traditionally heavily dependent on verbal language, any mismatch will mean the Aboriginal and Torres Strait Islander child will have difficulty predicting or filling in the language gaps, particularly when hearing under adverse listening conditions and with a hearing impairment (Burnip, 1994). This can affect the child’s emotional world, and lead to feelings of inadequacy and failure (Sherwood & McConville, 1994). Additionally, Aboriginal and Torres Strait Islander children’s learning preferences are informal and less reliant on verbal interaction as the predominant medium of learning (Lowell, 1993; West, 1994). Peer interaction is an important source of communication and learning, and children naturally learn through observing their peers and being helped by peers (Howard, 1994). Such behaviours contrast with the Western educational approach of paying attention to the teacher.

■ What is sound-field amplification?

Sound-field amplification has also been termed “classroom amplification” and, more recently, “sound-field distribution systems” (Flexer, 2002). Teachers wear small microphones that transmit sound to a receiver system attached to loudspeakers around the classroom. The goal of sound-field amplification is to amplify the teacher’s voice by approximately 8 to 10 dB, and to provide uniform amplification throughout the classroom without making speech too loud for normal hearing children (Crandell, 1998).

Originally designed as an assistive technology for children with mild hearing loss, research in the United States over the past 20 years has shown that sound-field amplification benefits all children. The benefits have included improved academic

achievement, speech recognition, attending skills, and learning behaviours (Rosenberg & Blake-Rahter, 1995). Benefits identified for teachers include reduced vocal strain and vocal fatigue, increased ease of teaching, increased versatility of instructional techniques, and increased teacher mobility (Rosenberg et al., 1999).

In the early 1990s, the National Acoustic Laboratories (NAL), the research arm of Australian Hearing, developed a dual-channel sound-field amplification system with the needs of Aboriginal and Torres Strait Islander children living in both remote Australian communities and urban areas in mind (Page, 1995). The first of these systems was installed in four schools in North Queensland in 1992. Two of the systems were installed at schools in Aboriginal and Torres Strait Islander communities in the Gulf of Carpentaria. The other two systems were installed at a school north of Cairns which had a high proportion of Indigenous students. Page et al. (1995) outlined the following benefits based on teacher comments:

- the children were less distracted;
- it was easier to gain the children’s attention;
- there was lack of shame associated with using the system for the whole class compared with devices for individuals; and,
- children with normal hearing appeared to benefit.

The teachers also reported significantly less voice strain and feeling less tired at the end of the day. Loades (1993), reporting on a trial of classroom amplification at two Aboriginal schools in western South Australia, found there was not as much variation of “time on task” behaviours compared with individual FM amplification systems. In a trial performed at a school with a high proportion of Aboriginal kindergarten children in New South Wales, Dowell (1995) reported improvements in listening behaviour during the six month period. While anecdotal evidence and the findings from these few Australian investigations suggest benefits, the present research programme was the first quantitative investigation on the efficacy of sound-field intervention in the classrooms of Aboriginal and Torres Strait Islander children.

■ Research questions

This study aimed to examine the following questions:

- What was the hearing status of a sample population of Indigenous school children?
- What were the acoustic characteristics of the classrooms and what levels of amplification were produced in the field?
- What were the effects of sound-field amplification intervention on the communication occurring between the teachers and the children?

■ Procedure

An eight-week field trial of sound-field amplification was carried out in four classrooms, two in each of the rural Queensland communities of Cherbourg and Yarrabah. These communities were chosen for their accessibility and diversity of lifestyle. Cherbourg is the closest rural Indigenous community to Brisbane, the capital city of Queensland. Located a few kilometres from the large town of Murgon, the people lead modern lifestyles. Yarrabah is a North Queensland coastal Aboriginal community with some Torres Strait Islanders within the community. It is located within driving distance from Cairns, a major urban centre. This research programme adhered to the ethical research guidelines issued by the National Health and Medical Research Council issued in 1992 and published in 1993. Ethical clearance for this project was obtained from the ethics committee at the University of Queensland. Of the 64 children participating in the study, 48% were males and 52% were females. The ages of the 64 subjects ranges from 6 years 1 month to 10 years 3 months ($M=8$ years 2 months). One Year 2 class, two Year 3 classes, and one Year 5 class participated in the study. Of the two female teachers at Cherbourg State School who volunteered to participate in the study, one was a new graduate who had lived in Cherbourg community all her life and was of Aboriginal and Torres Strait Islander descent. The other teacher was non-Indigenous with over 13 years teaching experience with Indigenous children, eight of which had been at Cherbourg State School. At Yarrabah State School, both classes had non-Indigenous teachers. One volunteer teacher, a female, had one and a half years teaching experience. The fourth teacher was a male with three years teaching experience, all of which had been with Indigenous children.

The listening environments of the four classrooms were alternated between unamplified "OFF" and amplified "ON" conditions at two-weekly intervals over the eight week period. Hearing tests were performed on the 64 children. Acoustic measurements, including ambient noise levels, reverberation times (RT) and S/N ratios, were obtained for each classroom. Structured classroom observation was used to record the communicative interactions occurring spontaneously between the children, teachers and peers. A modified Environmental Communication Profile, originally developed by Calvert and Murray (1985), was used by

trained observers to record the communicative interactions occurring between the child, teacher and peers simultaneously.

Two self-report instruments were used in the study. These were the Screening Identification for Targeting Educational Risk (S.I.F.T.E.R.) rating scale (Anderson, 1989) and a teacher questionnaire devised for the study. The former is the most widely used protocol to measure the efficacy of sound-field amplification (Crandell, 1998) and focuses on the teacher's observation of classroom performance in relation to listening skills. The teachers were asked to rate each child before and after the sound-field amplification trials in the performance subtests of academic performance, attention, communication, class participation and school behaviour. Each teacher was asked to complete the teacher questionnaire at the end of the field trials.

■ Results

Audiological results

The mean pure tone average hearing level for this population of children was 20 dB pre-trials, and 19 dB post-trials. These levels fall into the category of slight hearing loss, as defined by Clark (1981). Twenty percent of the children began the trials with normal hearing levels, and 67% of the children began the trials with slight hearing loss levels in the 16 to 25 dB range. Eight percent of children had mild hearing loss (between 26 and 40 dB) and 5% of children had moderate hearing loss (between 41 and 55 dB).

Classroom acoustic measurements

Each of the classrooms demonstrated extremely noisy listening conditions. Classroom noise levels and reverberation times were very high relative to recommended levels (Table 1). All the mean S/N ratios were in the negative range under normal listening conditions (see above), indicating the teacher's voice was softer than the noise levels usually found inside and outside the classrooms.

Classroom communication

The observational data were combined and compared to determine whether the effects of the amplification

Table 1. Results of acoustic measurements for each classroom (dB=decibels).

Classroom	Noise levels (occupied)	Mean RT (unoccupied)	Mean S/N (unamplified)	Mean S/N (amplified)
Classroom 1	62 dB	1.8 seconds	-3 dB	+3 dB
Classroom 2	67 dB	1.3 seconds	-2 dB	+2 dB
Classroom 3	72 dB	1.7 seconds	-9 dB	+1 dB
Classroom 4	75 dB	1.8 seconds	-9 dB	-4 dB

intervention occurred immediately (over a two-week time span), in the short-term (over a four-week time span), or whether the effects were cumulative (at the end of the field trials). The results showed there were no significant changes in the dynamics of communication occurring in Class 1, the classroom with the Aboriginal teacher. Conversely in Classes 2, 3 and 4 with non-Indigenous teachers, common significant changes in communicative interactions were demonstrated for each of the temporal comparisons during the field trials.

The results of the immediate comparisons for Classes 2, 3 and 4 indicated:

- an increase in the total number of communicative interactions;
- an increase in child, teacher and peer verbal communication;
- an increase in the number of interactions initiated by the children;
- the children initiated more communication without being directly prompted (Figure 1); and,
- there were trends for the children to initiate more interactions to the teacher, and to respond to communication directed to the entire class.

The results of the short-term comparisons for Classes 2, 3 and 4 indicated:

- an increase in the total number of communicative interactions occurring between the children, teacher and peers;
- an increase in verbal communication between the children, teacher and peers; and,
- an increase in the number of times the children initiated communication.

Comparison of data recorded at the beginning and at the end of the field trials for Classes 2, 3 and 4 indicated:

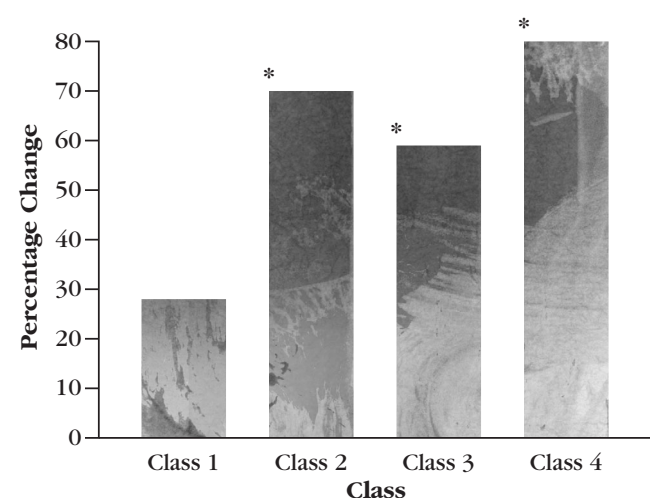


Figure 1. Immediate comparisons per class: Percentage change in the number of communicative interactions initiated by children without prompting (*= $p < 0.05$).

- an increase in the total number of communicative interactions occurring in each of the classrooms;
- an increase in child and peer verbal communication and total verbal communication (Figure 2); and,
- an increase in the number of times the children initiated communication.

Self-report measures

The results of the S.I.F.T.E.R. rating scale for the four classes indicated the teachers observed improvement in attention and increased class participation following the use of sound-field amplification (Table 2). The former performance subtest relates to the child's distractibility and attention span compared with peers, as well as the child's ability to respond to oral directions. The latter performance subtest refers to how often the child volunteers information to class discussion or in answers to questions, and the amount of difficulty the child has in starting to work after instruction. In addition, a significant improvement in total scores for the five performance subtests was demonstrated pre- and post-trial for all the classes, indicating the teachers considered there had been overall improvement in the areas of academics, attention, communication, class participation and school behaviour (Table 2). Teachers identified voice related factors to be a major personal benefit of the systems.

Significance of findings

The results of this study confirmed the extremely noisy and reverberant listening environments in which both teachers and children are operating on a daily basis, and emphasised the very urgent need for classroom acoustics treatment in conjunction with sound-field amplification installation. The very poor S/N ratios evident in each of the classrooms would have resulted in considerable

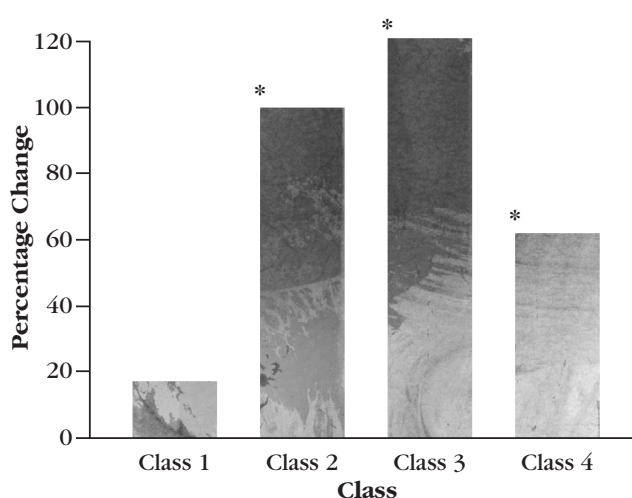


Figure 2. Percentage change in "total verbal communication variable" (child, teacher and peer) for each class from beginning to end of field trials (*= $p < 0.012$).

Table 2. Results of S.I.F.T.E.R. comparisons for the four classes (*= $p < 0.05$).

Performance subtest	Mean (pre-trial)	Standard deviation	Mean (post-trial)	Standard deviation	p*
Academics	9.60	3.94	9.67	4.20	0.742
Attention	8.17	3.57	9.27	3.78	0.001**
Communication	9.70	3.43	9.87	3.79	0.516
Class participation	9.60	3.38	10.40	3.83	0.004**
School behaviour	10.87	3.72	11.32	3.92	0.169
Total score	47.95	15.52	50.52	17.55	0.007**

reduction in speech recognition for all the children. In addition, given that Western education is heavily dependent upon verbal language, the fact that only 20% of the children began the trials with normal hearing levels, and 67% of the children began the trials with slight hearing loss in the 16 to 25 dB HL range would have exacerbated their speech perception difficulties.

The results indicated that improving the classroom listening environments had positive effects on the communication occurring between the teachers and the children. However, few changes in the dynamics of classroom communication were evident for Class 1 during the field trials. It was concluded that, because the Indigenous teacher in Class 1 provided a culturally responsive learning environment, the communication breakdowns reported in the literature to occur in cross-cultural educational settings did not occur in this classroom. The teacher naturally adopted a teaching approach which was less reliant on verbal strategies and teacher-centred learning. Therefore, compared with Classes 2, 3 and 4 which had Western-style teachers, the improved S/N ratio provided by the amplification system had less measurable impact on the communication naturally occurring in the classroom.

For Classes 2, 3 and 4, the results generally showed there was significantly more communication occurring between the teacher, children and peers during the course of the trials, and that the effects were cumulative. The findings suggested the children in these three classes used more verbal language and were playing a more proactive role in classroom communication as the trials progressed. It was concluded that even short and intermittent exposure to an enhanced listening environment fostered the children's confidence and subsequent involvement in classroom interactions, a notion supported in the literature (Grauf, 1994). The results of the S.I.F.T.E.R. rating scale highlighted areas which were also identified as significant in the observational data, these being improvements in the areas of attention and class participation. Another important finding was that teachers indicated they had less vocal strain and felt less fatigued at the end of the day after using the systems. In view of the noisy classroom acoustic conditions under which the teachers taught, this was not

surprising, and is congruent with other teacher surveys on sound-field amplification (Anderson, 2001). One of the recurring themes throughout the study was the important role the peer group played in the children's natural communication network. The results of this study confirmed the increase in peer related activities in facilitating the overall increase in responsiveness from the children, and an increase in verbal communication between the children and their peers over time. Given these findings, the question must be asked whether, in the long-term, the improved S/N ratio provided by the sound-field systems would affect learning outcomes of Indigenous Australian children.

■ Conclusion

Sound-field amplification intervention reduced the deleterious effects of reduced speech perception and encouraged the school children to interact with teachers and peers in a proactive way. At present in Australia, however, there are no clear or enforceable standards for classroom acoustics. Moreover, given that structural acoustic modifications can prove costly per classroom, sound-field amplification may provide a rapid, cost-effective part of the solution to improving the classroom listening environment for all Aboriginal and Torres Strait Islander children.

■ Acknowledgements

The authors would like to thank the teachers and children on the Aboriginal and Torres Strait Islander communities of Cherbourg and Yarrabah, Queensland, for their enthusiastic support and participation in this project. The research was also assisted by a project grant from the National Health and Medical Research Council.

■ References

- American National Standards Institute. (2002). *Acoustical performance criteria, design requirements and guidelines for schools*. ANSI S 12.60.
- American Speech-Language-Hearing Association. (1995). Position statement and guidelines for acoustics in educational settings. *American Speech-*

- Language-Hearing Association, 37(Supplement 14), 15.
- Anderson, K. (1989). *Screening instrument for targeting educational risk (S.I.F.T.E.R.)*. Austin, TX: PRO-ED.
- Anderson, K. (2001). Voicing concern about noisy classrooms. *Educational Leadership*, April, 77-79.
- Burnip, L. (1994). Hearing impairment, phonological awareness, and the acoustic environment of the classroom. *Australian Journal of Remedial Education*, 26(1), 4-10.
- Calvert, M. B., & Murray, S. L. (1985). Environmental communication profile: An assessment procedure. In C. S. Simon (Ed.), *Communication skills and classroom success: Assessment of language-learning disabled students* (pp. 135-159). London: Taylor & Francis.
- Clark, J. G. (1981). Uses and abuses of hearing loss classification. *American Speech-Language-Hearing Association*, 23, 493-500.
- Crandell, C. (1998). Using sound-field FM amplification in the educational setting. *The Hearing Journal*, 5(5), 10-19.
- Dowell, J. (1995). Trial of sound-field amplification system. *Proceedings of the Otitis Media NSW Conference 1995 – Its implications for Aboriginal and Torres Strait Islander people*. Sydney: New South Wales Department of Health, New South Wales Department of School Education, New South Wales Board of Studies.
- Flexer, C. (1992). FM classroom public address systems. In M. Ross (Ed.), *FM auditory training systems: Characteristics, selection and use* (pp. 189-206). Timonium, MD: York Press.
- Flexer, C. (2002). Rationale and use of sound field systems: An update. *The Hearing Journal*, 55(8), 10-18.
- Gotaas, C., & Starr, C. (1993). Vocal fatigue among teachers. *Folia Phoniatrica et Logopaedica (Basel)*, 45, 120-129.
- Grauf, N. (1994). *Report on whole class amplification systems installed in Cape and Gulf schools*. Cairns, QLD: Torres Strait, Cape and Gulf School Support Centre.
- Howard, D. (1994). Culturally responsive classrooms: A way to assist Aboriginal students with hearing loss in urban schools. In S. Harris & M. Malin (Eds.), *Aboriginal kids in urban classrooms* (pp. 37-51). Darwin: Social Science Press.
- Kearins, J. (1985). Cross-cultural misunderstandings in education. In J. B. Pride (Ed.), *Cross-cultural encounters: Communication and miscommunication* (pp. 65-79). Melbourne: River Seine Publications.
- Loades, C. (1993). Western Australia centre for hearing impaired children, Aboriginal hearing program. In *Otitis media in childhood: Issues, consequences and management: Proceedings of the Western Australian Otitis Media Group conference* (pp. 253-268). Perth, WA: Western Australia Otitis Media Group Inc.
- Lowell, A. (1993). Otitis media and classroom communication. *Australian Communication Quarterly*, 11-13.
- McPherson, B. (1990). Hearing loss in Australian Aborigines: A critical evaluation. *The Australian Journal of Audiology*, 12, 67-78.
- Nienhuys, T. (1994). Aboriginal conductive hearing loss for life. *Australian Language Matters*, 2(1), 8-9.
- Nienhuys, T. G., Boswell, J. B., & McConnell, F. B. (1994). Middle ear measures as predictors of hearing loss in Australian Aboriginal children. *International Journal of Pediatric Otorhinolaryngology*, 30, 15-27.
- Northern, J. L., & Downs, M. P. (2002). *Hearing in children* (54th ed.). Baltimore: Lippincott Williams and Wilkins.
- Page, S. (1995). *Dual FM sound field amplification: A flexible integrated classroom amplification system for mild to moderate conductive hearing loss*. Unpublished manuscript.
- Page, S., Hatfield, A., & Wallington, J. (1995). Sound-field amplification: Alternative technology for minimal hearing loss. In *Otitis media in childhood: Issues, consequences and management: Proceedings of the Western Australian Otitis Media Group conference* (pp. 338-334). Perth, WA: Western Australia Otitis Media Group Inc.
- Rosenberg, G., & Blake-Rahter, P. (1995). Sound-field amplification: A review of the literature. *Sound-field FM amplification: Theory and practical applications* (pp. 107-123). San Diego, CA: Singular Publishing Group Inc.
- Rosenberg, G., Blake-Rahter, P., Heavner, J., Allen, L., Redmond, B., Phillips, J., et al. (1999). Improving classroom acoustics (ICA): A three year FM sound-field classroom amplification study. *Journal of Educational Audiology*, 7, 8-28.
- Sherwood, J., & McConville, T. K. (1994). *Otitis media and Aboriginal children: A handbook for teachers and communities*. North Sydney: NSW Board of Studies.
- West, L. (1994). Cultural behaviour, conflict and resolution. In S. Harris & M. Malin (Eds.), *Aboriginal kids in urban classrooms* (pp. 7-19). Darwin: Social Science Press.

■ About the authors

Robyn Massie is a Research Scientist at the National Acoustic Laboratories, the research division of Australian Hearing, in Brisbane. With a clinical background in paediatric audiology, Robyn's recent research interests include the management of children with hearing impairment in the educational setting, and the evaluation of alternative stimuli for the assessment of young children.

Deborah Theodoros is an Associate Professor and Head of the Division of Speech Pathology in the School of Health and Rehabilitation Sciences at the University of Queensland. Her research interests include perceptual and physiological assessment and treatment of motor speech disorders in adults following CVA, traumatic head injury, multiple sclerosis, Parkinson's Disease, Friedreich's Ataxia; voice disorders; telehealth applications in speech pathology; Lee Silverman voice treatment.

Bradley McPherson is an Associate Professor in the Division of Speech and Hearing Services in the Faculty of Education at the University of Hong Kong, China. He has worked as an audiologist in Australia, England, West Africa, South Africa and in the Middle East. From 1989 to 1996 he was a lecturer in audiology at the University of Queensland. His teaching and research interests include: childhood hearing loss in developing countries, paediatric hearing screening techniques and hearing aids for children in developing countries.

Joseph Smaldino is a Visiting Professor in Audiology in the Department of Communicative Disorders at Northern Illinois University, DeKalb, Illinois. Joseph received his bachelor's degree in biological sciences from Union College, his MS degree in hearing science from the University of Connecticut and his PhD in audiology from the University of Florida. He has been the national president of the Academy of Rehabilitative Audiology and the Educational Audiology Association. He is a Fellow of the American Speech-Language-Hearing Association, received the 2001-2002 University of Northern Iowa Distinguished Scholar Award and has been a Fulbright research fellow. For over 20 years, he has researched the effects of hearing loss on speech perception and has studied the effects of various electroacoustic parameters of hearing aids on improving perception. Recent research interest has focused on the effects of classroom acoustics on speech perception.

Classroom Case Study: Cross Cultural Obstacles to the Referral of Aboriginal Children for Hearing Tests

DAMIEN HOWARD

Phoenix Consulting, Darwin, Australia

Hearing loss is endemic among Aboriginal children because of persistent middle ear disease. If compensating communication strategies and support programs are to be engaged, a child's hearing loss needs to be identified. Teacher recommendations are an important source of referrals for hearing tests, with school screening programs now being infrequent or nonexistent. However, cultural differences in Aboriginal children's attentional styles, together with some children with hearing loss using more face-watching as a compensatory strategy, can confuse non-Aboriginal teachers as to who may need referral for hearing testing. This article describes a classroom case study that found culturally different attentional styles and compensatory face-watching, similar to that described in a remote school, among some urban Aboriginal children. The attentiveness of one child with hearing loss confused teachers. The implication for the identification of Aboriginal children's hearing loss is discussed.

There is increasing evidence of the adverse social and educational effects of Conductive Hearing Loss (CHL), especially among Aboriginal children who experience endemic levels of the condition. CHL amongst Aboriginal children has been found to be associated with diminished social and emotional wellbeing (Zubrick et al., 2004), antisocial behaviour at school (Howard, 1990; 2004), lower levels of achievement at school (Yonovitz & Yonovitz, 2000; Howard, 2004) and greater levels of absenteeism (Couzou et al., 2003). It is estimated that, on

average, Aboriginal children spend two and a half years during childhood with CHL, compared to three months for non-Aboriginal children in Australia (OATSIH, 2001).

Identification of children's hearing loss is necessary if compensatory strategies and support programs can be engaged. Referral for audiological assessment is necessary to identify current CHL. Identification of CHL generally results from primary screening programs. Individual referrals, on the other hand, take place when parents, teachers or others suspect a hearing loss.

McPherson (1995) reported that the states with large Aboriginal populations (Queensland, Northern Territory and Western Australia) mainly had screening programs for non-urban areas. There were fewer screening programs for Aboriginal children in urban areas, despite the fact that 67% of Aboriginal children live in urban areas (Australia Bureau Statistics, 1993).

McPherson (1995) suggested that the absence of screening in urban areas is related to (a) the fact that mass screening is easier and more cost effective when a population group is in close geographical proximity. In urban areas, Aboriginal children are scattered throughout the mainstream population, as opposed to their peers in rural settlements; (b) The relative 'visibility' of hearing loss where health services only service Aboriginal clients.

However, hearing screening programs are resource intensive and, even in remote areas, are becoming less frequent, if they take place at all. In some areas, hearing screening is not carried out as it is thought to be unethical where later referral for full audiological assessment and appropriate intervention is not an option

In urban areas, identification of hearing loss has been mostly reliant on the referral of individual Aboriginal children for hearing tests. Often, non-Aboriginal professionals, mostly teachers, make these referrals on the basis of a child's attentiveness. *However, this may not be a reliable indicator of hearing loss for Aboriginal children.*

Cultural Differences in Attentiveness

Many Aboriginal people make less eye contact than westerners (Eades, 1992; Harris, 1976) and misunderstandings often arise because of crosscultural misinterpretation of what this signifies. Many non-Aboriginal people are offended when first addressing Aboriginal community meetings, where people often wander around and making little eye contact with the speaker. This response is commonly interpreted by non-Aboriginal people as indicating disrespect or disinterest. In the criminal justice system, judiciary and jurors are warned about making judgments as to guilt or honesty on the basis of demeanor such as eye contact (Eades, 1992). Conversely, many Aboriginal people find the intense gaze of a polite non-Aboriginal audience highly disconcerting.

This was illustrated in the opening of an art exhibition in Darwin observed by the author. The Tiwi island artists were placed facing the audience during the opening. There was noticeable discomfort among the artists at the polite, unrelenting gaze of the audience. Gradually, and as a group, the Tiwi artists turned around so, by the end of the official opening, they had their backs turned to the audience. Speaking with some of the artists later they confirmed that the intense watching by the audience had upset them.

Attachment 4

Maintaining less eye contact during social interaction with their teachers is also evident among many — but not all — Aboriginal schoolchildren. Lowell (1994) described different attentional styles among Aboriginal students in a remote bilingual school. She found many Aboriginal children paid attention to their teachers, despite behaving in ways that non-Aboriginal teachers associate with lack of attention (i.e., students made little eye contact and moved around the class, but were nonetheless paying attention). Some children, meanwhile, made more eye contact with their teachers — some children with CHL. These children were using face-watching and lip-reading to compensate for limited auditory input. Lowell (1994) described that face-watching was most evident among the children who experienced most persistent conductive hearing loss.

The variety of eye contact patterns demonstrated by Aboriginal children may be quite confusing for non-Aboriginal teachers. Given their experience with non-Aboriginal children, teachers would expect greater eye contact to signify good attention and no hearing loss; while inattentiveness, as measured by less eye contact, would signify possible hearing problems. However, hearing tests may reveal that the reverse of these teacher assumptions is true. Some Aboriginal children who face-watch to compensate for hearing loss appear 'attentive', while other Aboriginal children with no hearing loss, but with a different attentional style, appear 'inattentive' to non-Aboriginal teachers. Lowell (1994) observed these type of responses among Aboriginal children who lived in a remote community and attended a school where they were mostly taught by Aboriginal teachers who were aware of cultural differences in attentional styles. In this context, crosscultural misunderstanding is unlikely. However, Aboriginal children in Australia are mostly taught by non-Aboriginal teachers. It may be that crosscultural misunderstanding is either more probable in this crosscultural context or less likely because of the greater familiarity of

urban Aboriginal children with western sociocultural etiquette. The following classroom case study sought to identify, first, if cultural differences in attentiveness (as measured by the amount of eye contact) was evident between Aboriginal and non-Aboriginal children in an urban school during one-to-one conversation with their non-Aboriginal teacher. Second, it sought to examine if the attentiveness style of urban Aboriginal children with a current CHL differed to that of urban Aboriginal children with no hearing loss.

METHOD

To consider this issue further a case study of the structured one-to-one social interaction between a teacher and a number of her students, whose current hearing status was known, was arranged. The focus of the case study was the amount of time children made eye contact while talking one-to-one with their teacher, who was asked to discuss recent school project work with students. The teacher and students (9) were video recorded conversing, sitting on chairs set up one metre apart outside the classroom, in a relatively (for schools) quiet environment (between 60 dB SPL–70 dB SPL). The amount of time

each student spent watching the face of the teacher during the conversations was then timed with a stopwatch. Since CHL fluctuates — making knowledge of children's current hearing status crucial — there was limited time to organise this project soon after hearing screenings took place at the school. This meant only a small group of similar aged children from one classroom was able to be involved. The nine students involved were three Aboriginal students with current bilateral hearing loss, three Aboriginal students and three non-Aboriginal students without current hearing loss. These children were chosen as Aboriginal and non-Aboriginal students who had passed their hearing screenings and were closest in age to the Aboriginal students with a bilateral hearing loss. Children's hearing status was identified on the basis of all children in the class having their hearing assessed by pure tone audiometry (at 0.5, 1, 2 and 4 kHz) carried out in a soundproof booth, as well as simple otoscopy and tympanometry. Children who failed the screening (> 25 dB HL) were given a full hearing assessment.

The percentage of time each student spent watching the face of the teacher during the conversations is presented in Figure 1.

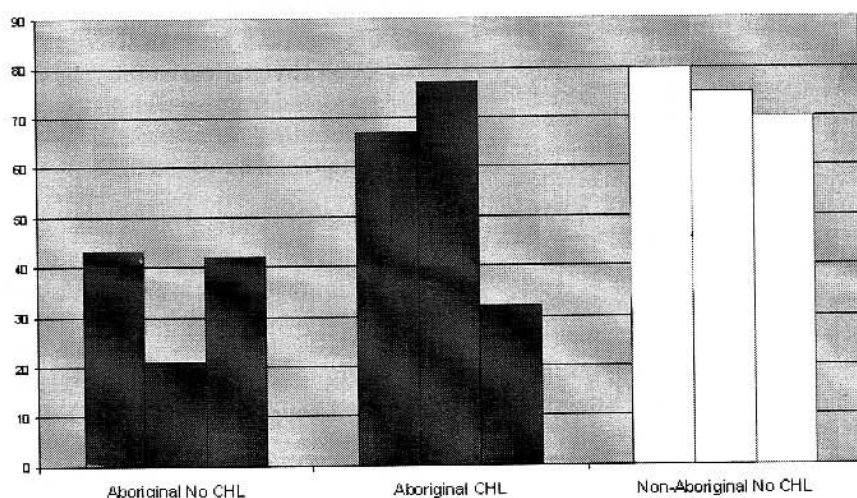


FIGURE 1

Percentage of time each subject spent watching face of the teacher.

The three Aboriginal students with no current hearing loss spent approximately half as much time face-watching as the three non-Aboriginal students with no hearing loss. This different pattern of visual attention among these urban Aboriginal students with no hearing loss is similar to that described by Lowell (1994) amongst traditionally oriented Aboriginal students in a remote community.

However, two of the three urban Aboriginal students with current hearing loss maintained eye contact more than the three Aboriginal students with no current hearing loss, probably as compensatory visual communication strategy — face-watching. This meant they resembled the non-Aboriginal children with no hearing loss in their visual attentiveness during one-to-one conversation with their teacher. Since Lowell (1994) described this type of face-watching as most evident among children with more persistent conductive hearing loss, it is likely that the other Aboriginal student with current hearing loss, who maintained eye contact only 30% of the time, may not have experienced persistent conductive hearing loss.

Overall, the results of this case study suggest that the type of culturally shaped differences identified by Lowell (1994) among some Aboriginal students in remote communities is also evident among some urban Aboriginal students. Further, the responses of some children with current hearing loss in making eye contact is likely to be confusing for teachers who use visual attention as an indicator of good hearing. This was supported by interviews with teachers.

The teachers of one of the Aboriginal students (Kirsty) who worked in the same classroom team teaching were surprised to discover she had a hearing loss, seeing her as one of 'the attentive good listeners'.

T 1: Well, you watch her there on the floor and she really does pay attention, but Kirsty doesn't produce does she?

T 2: No, she always listens very hard, but her work doesn't show that. You look over at the table and she's always busy doing something. She's not wandering and

wondering what to do next. She knows what to do.

T 1: I hadn't thought of her as having problems [with hearing] because she always paid attention. She said to me 'my mum said I must be a bit deaf' and I said, 'why's that?' and she said 'because I don't always hear what she says'. So I said, 'Oh do you hear what I say during class?' and she sort of looked a bit sheepish and said 'no, not always'. And I was really, really surprised. She was one of my best listeners.

T 2: She usually sits in the same place, near the front, she never puts herself at the back or at the side. She doesn't mess around, she watches. She doesn't fiddle with her dress or shoelaces or anything like that. She gives the impression that she's brighter than she is really.

T 1: Kirsty is always sitting in the right place looking at the right person. She wants to do it nicely. She tries so hard. I had no idea that she was having any difficulty.

Kirsty's apparent attention had led her teachers to assume she had no hearing problems and they were quite surprised to find that she did. Kirsty's attempts to visually compensate for hearing loss matched her teachers' culturally-based expectations of good attention, signifying good hearing. Her teachers had resolved the inconsistency between her apparent attentiveness and poor performance by concluding, 'she gives the impression she's brighter than she really is'.

DISCUSSION

These results suggest that the cultural differences in attentional style found by Lowell (1994) in a remote school are also evident among some urban Aboriginal students. The culturally shaped visual attentiveness style among Aboriginal students with no hearing loss, together with the compensatory face-watching among some Aboriginal students with current hearing loss means there may be systematic errors when non-Aboriginal adults use visual attentiveness to determine which

Aboriginal children may need to be referred to have their hearing tested. Many Aboriginal children with current hearing loss may not be referred for hearing tests, while Aboriginal children with good hearing may be referred because their apparent poor attentiveness is mistakenly thought to be related to hearing loss.

Crosscultural misunderstanding of attentional behaviour may help to explain some apparently paradoxical research results where data was based on non-Aboriginal teachers' perceptions of Aboriginal students' attention. Lewis (1976), in an often reported study, described that Aboriginal children with hearing loss demonstrated greater 'linguistic incompetence'. He also found a paradoxical negative correlation between Aboriginal children's teacher-identified attention and their reading ability: The students identified by teachers to demonstrate the best 'attention' in class were poorer readers than those who seemed to pay little attention in class.

The otherwise inexplicable association between attentiveness in class and limited reading skills makes sense if considered on the basis of crosscultural misinterpretation of visual attentional styles. This would suggest what was being measured is an association between Aboriginal students' limited reading ability and the use of face-watching as a visual compensation strategies by students with persistent hearing loss. This is a more plausible explanation of the results and is consistent with findings of an association between CHL and limited literacy among Aboriginal children (Walker & Wigglesworth, 2001; Yonovitz & Yonovitz, 2000).

It is also worth noting how the teachers interviewed explained Kristy's poor school performance, despite her attentiveness at school. The discrepancy between her classroom attentiveness, and poor performance was resolved by a judgment about her ability — 'she's not as bright as she appears'. It is well established that teachers' beliefs about student's ability influence students' actual performance — the Pygmalion effect (Rosenthal & Jacobson, 1968). Work in Aboriginal education indicates that

Aboriginal students' educational opportunities are especially influenced by non-Aboriginal teacher's attitudes towards them (Malin, 1990). Such teacher judgments about children with hearing loss may compound the direct educational disadvantage of hearing related communication problems. This highlights the importance of teacher awareness of which children have hearing loss so they can both implement compensatory communication strategies, as well as avoid inaccurate judgments about their educational capacity.

This study supports the importance of regular school hearing screening for Aboriginal children. Without formal screening, crosscultural misunderstanding is likely to inhibit appropriate teacher referrals of Aboriginal children for hearing tests. It also indicates the need to make teachers aware of possible behavioural indicators of Aboriginal children's hearing loss. McPherson (1995) found the best behavioural indicator of hearing loss among urban Aboriginal students was having social problems with peers. Excessive teasing was also found to be associated with a current hearing loss among students in remote schools (Howard, 2004). Teacher-directed speech reception games (Howard, 1993) have also been found to help overcome the crosscultural masking of Aboriginal children's hearing loss. There are also implications for the pre- and postservice training of teachers to include, firstly, information on cultural differences in attentional styles and secondly, that care should be taken not to judge students' abilities on the basis of discrepancies between attentiveness and poor performance.

AUTHOR NOTE

Damien Howard is a psychologist and educator interested in the social outcomes of conductive hearing loss and auditory processing problems. He can be contacted at damien@eartroubles.com

ACKNOWLEDGMENTS

The author would like to thank Ian Henderson, Al Yonovitz and Marianne Howard for their helpful comments on this article.

REFERENCES

- Eades, D. (1992). *Aboriginal English and the law: Communicating with Aboriginal English speaking clients — A Handbook for Legal Practitioners*. Brisbane, Australia: Queensland Law.
- Harris, S. (1987). *Aboriginal learning styles and formal schooling*. In M. Christie, S. Harris & D. McClay (Eds.), *Teaching Aboriginal children: Milngimbi and beyond* (pp. 41–57). Mt Lawley, WA: Institute of Applied Aboriginal Studies, Western Australian College of Advanced Education.
- Howard, D. (2004, June). Why we need more Aboriginal adults working with Aboriginal students. *Australian Journal of Teacher Education*, 29(1), 14–21.
- Howard, D. (1993). Knowing who has a hearing loss. *The Aboriginal Child at School*, 21(1), 27–33.
- Lewis, N. (1976). Otitis media and linguistic incompetence. *Archives of Otolaryngology*, 102(7), 387–390.
- Lowell, A. (1994). *Communication and learning in an Aboriginal school: The influence of CHL*. Unpublished doctoral dissertation, University of Sydney, NSW, Australia.
- Malin, M. (1990). The visibility and invisibility of Aboriginal students in an urban classroom. *Australian Journal of Education*, 34(3), 312–329.
- McPherson, D. B. (1995). *Identification of hearing loss in urban Indigenous school children*. Unpublished doctoral dissertation, University of Queensland, Australia.
- OATSIH Report (2001). *Recommendations for clinical guidelines in treating Otitis Media*. Retrieved June 6, 2005, from <http://www.health.gov.au/oatsih/pubs/omp.htm>
- Walker, N., & Wigglesworth, G. (2001). The effect of CHL on phonological awareness, reading and spelling of urban Aboriginal Students. *Australian Journal of Audiology*, 23(1), 37–51.
- Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the classroom*. New York: Rinehart and Winston.
- Yonovitz, L., & Yonovitz, A. (2000). PA-EFL: A phonological awareness program for Indigenous EFL students with hearing disabilities. *TESL: EJ Teaching English as a Second or Foreign Language*, 4, 4.

Attachment 4

Unpublished doctoral dissertation, University of Sydney, NSW, Australia.

Malin, M. (1990). The visibility and invisibility of Aboriginal students in an urban classroom. *Australian Journal of Education*, 34(3), 312–329.

McPherson, D. B. (1995). *Identification of hearing loss in urban Indigenous school children*. Unpublished doctoral dissertation, University of Queensland, Australia.

OATSIH Report (2001). *Recommendations for clinical guidelines in treating Otitis Media*. Retrieved June 6, 2005, from <http://www.health.gov.au/oatsih/pubs/omp.htm>

Walker, N., & Wigglesworth, G. (2001). The effect of CHL on phonological awareness, reading and spelling of urban Aboriginal Students. *Australian Journal of Audiology*, 23(1), 37–51.

Rosenthal, R., & Jacobson, L. (1968). *Pygmalion in the classroom*. New York: Rinehart and Winston.

Yonovitz, L., & Yonovitz, A. (2000). PA-EFL: A phonological awareness program for Indigenous EFL students with hearing disabilities. *TESL: EJ Teaching English as a Second or Foreign Language*, 4, 4.