

Aboriginal Students with Disabilities:
Otitis Media and Conductive Hearing Loss

OVERVIEW



Government
of South Australia

The full report and summary are available on the Ministerial Advisory Committee:

Students with Disabilities' website at <www.macswd.sa.gov.au>.

Please note:

- The term "parents" denotes all caregivers of children.
- The term "Aboriginal" denotes all Indigenous people in South Australia.
- In this study the specific term "conductive hearing loss" refers to the fluctuating hearing loss associated with otitis media, and the general term "hearing loss" refers to any hearing loss, which can be conductive or sensorineural.
- On 1 July, 2006, the Women's and Children's Hospital and Child and Youth Health were brought together to form the Children, Youth and Women's Health Service.

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Students with Disabilities
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Foreword

The Ministerial Advisory Committee: Students with Disabilities reported on the education of Aboriginal children and students with disabilities in 2003. This report was widely distributed and was the impetus for two subsequent projects in 2005 and 2006, focusing on Aboriginal children and students with otitis media and conductive hearing loss.

Project groups were formed to oversee the two projects; participants included representatives of government and non-government education sectors and organisations, Aboriginal health representatives, university personnel, as well as members with knowledge of hearing impairment and Aboriginal education. We would like to express our thanks to all members for their participation. The diverse experience and expertise was important in developing the aims of the project and in guiding and finalising the report.

We would also like to thank all the case study participants and others working in the fields of health, education and disability who volunteered their time to participate in interviews. Case study participants discussed programs dedicated to improving ear and hearing health of Aboriginal children in South Australia, community models for service delivery and collaborative practice.

Participants also raised issues of concern and ways of raising awareness about otitis media and conductive hearing loss affecting Aboriginal children. They provided invaluable information and insight into the needs of Aboriginal children with otitis media and conductive hearing loss and the people who support their health, education and wellbeing.

Findings of the projects are presented in three volumes. Volume 1 includes the executive summary, recommendations, case study summaries and discussion. Volume 2 features the detailed case studies, and Volume 3 contains the information strategies. Each volume caters for a different audience: Volume 1 provides an overview of issues and accompanying analysis for anyone with an interest in the topic, Volume 2 contains detailed information for the communities that were studied, and Volume 3 offers educative strategies for families and health and education practitioners. This *Overview* was compiled to provide a summary of the main points made in the three volume report.

Finally, we acknowledge the Secretariat staff for their effort and commitment. In particular, we would like to thank Fiona Snodgrass, principal Project Officer, and Christel Butcher, Executive Officer, who managed to distil all the relevant information given to this study by many committed people working in the field of Aboriginal health and education into this final report.

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Contents

| | |
|---|----|
| Report summary | 7 |
| <i>Aim of study</i> | 7 |
| <i>Otitis media and conductive hearing loss</i> | 7 |
| <i>Investigation methods</i> | 9 |
| <i>Overview of findings</i> | 9 |
| <i>Contents of Volumes 1,2 and 3</i> | 13 |
| Key findings | 14 |
| Recommendations | 15 |
| References | 16 |

Aim of study

This study was undertaken at the request of the Minister for Education and Children's Services to provide her with information regarding services available to Aboriginal children in South Australia with or at risk of developing conductive hearing loss after recurrent or chronic otitis media.

Recommendation 2 in the *Aboriginal students with disabilities* report, produced in September 2003 by the Ministerial Advisory Committee: Students with Disabilities, stated that "urgent attention should be given to the high levels of recurrent otitis media with conductive hearing loss (OM/CHL) in Aboriginal children and the effect this has on their learning outcomes". Recommended areas of action included greater inter-agency collaboration, information and training for education personnel and improved implementation of environmental strategies in preschools and schools.

The aim of this study, therefore, was to examine programs or initiatives established in selected metropolitan and regional centres of South Australia to address the high prevalence of otitis media and conductive hearing loss in Aboriginal children. Current and past programs were investigated to highlight:

- models¹ that could inform future program development
- evidence of collaborative practice — particularly between health and education agencies
- issues of concern that affect program implementation and outcomes.

The study also identified appropriate information and approaches for use with families, educators and health workers to raise awareness about the short- and long-term effects of otitis media with conductive hearing loss on child development. This culminated in the production of information strategies (Volume 3) for practitioners, which are an addendum to the original project.

Otitis media and conductive hearing loss

Otitis media

Otitis media is an inflammation of the middle ear, common among children in Australia and known as middle ear infection.

Conditions identified as otitis media include:

- otitis media with effusion—fluid in the middle ear (glue ear)
- acute otitis media—inflammation of the middle ear of recent development or exacerbation, often with pain, fever or feeling unwell, with/without eardrum perforation
- chronic suppurative otitis media—chronic infected discharge from perforated eardrums (runny ear)
- recurring otitis media.

Conductive hearing loss

Conductive hearing loss is defined as a reduction in the efficiency with which external sound reaches the nerve endings of the inner ear due to mechanical impediment in the outer ear (ear canal) or middle ear (the tympanic membrane and ossicles of the eardrum). Conductive hearing loss may reduce hearing acuity slightly, mildly or moderately (as defined below), rarely severely. In addition, a conductive hearing loss may disturb the ability to locate the source of sound, and to attend to speech heard against competing noise. This type of hearing loss may potentially be restored by medical or surgical intervention.

Aboriginal children and the prevalence of otitis media and conductive hearing loss

It is a well established fact that Aboriginal children have a higher prevalence of otitis media and experience longer periods of conductive hearing loss than non-Aboriginal children (Couzos, 2001 & Zubrick et al, 2004). Aboriginal children are more likely to suffer from chronic otitis media (either "glue ear" or "runny ear"). Non-Aboriginal children are also likely to experience episodes of otitis media with effusion (fluid in the middle ear), with many experiencing at least one episode of acute otitis media by age three. It is estimated that Aboriginal children suffer from otitis media ten times more often than their non-Aboriginal peers.

Research suggests that otitis media with effusion begins in the first weeks of life for many Aboriginal infants (Boswell & Neinhuis, 1996; Boswell, 1997; Coates et al, 2002 & Zubrick et al, 2004). The condition often goes undetected and therefore untreated and can result in recurring ear disease. Poverty-related risk factors such as overcrowding, inadequate housing, and large families in close habitation can influence the prevalence and

¹ A documented articulation of an agreed process or system between groups.

degree of ear disease. Rates of otitis media vary between Aboriginal communities, and studies show clearly that more remote areas have higher prevalence of chronic suppurative otitis media. A recent study conducted in the southern study of Adelaide (Sanchez, 2006) highlighted that urban school-aged Aboriginal children screened in this geographic area had relatively good ear health and hearing. A subsequent study in the northern suburbs in 2007 by the same researcher showed that school-aged children's ear health and hearing in this region was poorer than that of their southern peers. This highlights the fact that rates of otitis media vary even in metropolitan Adelaide.

Otitis media causes fluctuating conductive hearing loss that may be either transient or persisting. Children's ability to hear clearly can be reduced by

- fluid, instead of air, behind the tympanic membrane
- discharge from the ear during a current ear infection
- a hole in the eardrum from repeated perforation, or
- scarring, adhesion or destruction of middle ear structures.

The degree and duration of hearing loss is variable, even from day to day. Whereas, for a child with otherwise healthy ears, hearing may recover within a week or two following an acute otitis media episode, for a child with chronic otitis media, the hearing loss may persist for many weeks or months after an acute episode.

A chronic pattern of otitis media — a common experience among Aboriginal children — causes more frequent and longer episodes of hearing loss and can result in persistent deafness. Long periods of deafness can affect children's development, particularly language exposure and acquisition, literacy development and, in turn, social and emotional development. Delay in language and literacy development from ongoing hearing loss can contribute to other schooling/vocational issues. These include absenteeism and challenging behaviour and affect long-term opportunities for study and employment.

The impact of conductive hearing loss, particularly on the acquisition and development of language and literacy, highlights the need for a multi-dimensional collaborative response from education and other service providers.

Impact of conductive hearing loss on language, communication and literacy

Children learn speech and language from listening to other people talk. The first few years of life are especially critical for this development. A child cannot get the full benefit of language learning experiences if hearing loss reduces exposure to language. If a hearing loss of this degree is not detected and early steps are not taken to ameliorate its effects, a child may miss relevant information for speech and language development. These negative effects are likely to be compounded in Aboriginal children, many of whom have to adapt to an educational environment where the language and culture may differ from that of their home environment.

The most common cause for temporary hearing loss in children is fluid in the middle ear space, associated with ear infections. (Children, Youth and Women's Health Service, 2007) The eardrum cannot vibrate freely, resulting in a 15–50 decibel (dB) hearing loss (HL).

A child with a mild hearing loss (15 dB HL–35 dB HL) will not hear when the speaker talks quietly, is at a distance or facing away, and will have difficulties understanding speech when background noise is present. The effect of a mild hearing loss on language development may be influenced by other factors.

Children with a moderate hearing loss (40 dB HL–50 dB HL), in addition to the above, will not hear all the sounds of normal conversational speech, but will require a reinforced, louder level from the speaker. Children with a moderate hearing loss are likely to have significantly reduced exposure to language, and thus experience of its use; they show delayed development of expressive language, may have a limited vocabulary, omit quiet linking words such as "a", "the" and tense markers, and use pronouns, prepositions and other words inappropriately. The frequent misunderstandings that arise in their interaction with others, and the more aggressive attitude that may accompany the louder voice required of their carers have effects on their self-confidence and psychological development.

Researchers agree that children who have had limited or disrupted access to auditory stimulation and spoken language, such as brought about by conductive hearing loss, may have "long-term effects on early communication, language, auditory processing, psychological and cognitive development, and subsequent educational progress" (World Health Organisation, November 1998, p 11).

Students may have difficulties with auditory discrimination, blending of sounds, articulation and hearing unstressed word beginnings and endings. All of these difficulties may lead to problems with understanding what is said and making oneself understood.

Studies have confirmed that the use of soundfield amplification systems in classrooms improves the acoustic environment for children affected by conductive hearing loss, as the amplified sound enables children to better hear and understand the teacher in noisy environments. Unfortunately, a number of factors have impeded widespread implementation, including concerns with cost and use of technology.

Investigation methods

Data for this study were gathered through comparative case studies in Ceduna, Murray Bridge, the northern suburbs of Adelaide and Port Augusta, recording:

- health and education programs
- models used
- evidence of collaboration
- awareness raising activities
- issues of concern.

This project focused on Aboriginal children's and students' experience of otitis media and conductive hearing loss. The project involved Aboriginal families and organisations providing relevant services to them, such as Children, Youth and Women's Health Service and Australian Hearing. All education sectors (state, Catholic and Independent) participated, and a range of participants from care and school settings with significant Aboriginal enrolment in remote, rural, regional and urban locations were interviewed.

Supporting data were sourced from:

- interviewing education, health and disability professionals
- surveying hearing impairment coordinators (and their equivalents in Catholic and Independent school sectors)
- undertaking a literature review.

The study focused on metropolitan and regional areas, where most Aboriginal children and students live, but excluded the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands. It is recognised that Aboriginal children living in remote areas are known to be most affected by chronic otitis media and related conductive hearing loss,

however, at the time of this study, research into hearing and ear health of children on the Lands was already being conducted by another agency.

Overview of findings

Programs

The case studies highlight four health programs that specifically address otitis media and conductive hearing loss in Aboriginal children in South Australia:

1. Indigenous Hearing Health Program in Port Augusta
2. Hearing Health Program in Ceduna
3. Otitis Media Clinical Support Systems Project in Port Augusta
4. Child Health Program at Kurna Plains Early Childhood Centre in the northern suburbs of Adelaide.

These primary health care programs are concerned with the early detection and medical management of otitis media in young Aboriginal children to prevent recurring otitis media and subsequent conductive hearing loss. Three of the four programs listed are implemented by or in collaboration with Aboriginal health services. Health promotion activities to raise awareness of the issues concerning ear and hearing health are an integral part of these programs.

The Children, Youth and Women's Health Service (CYWHS) is South Australia's leading provider of health services for children, young people and women. They work in partnership with their clients, the community, and with other service providers to promote, restore and maintain health. Developmental screening, including hearing and ear health, is undertaken by CYWHS, with appropriate referrals for further assessment or treatment dependent upon the issues identified. This could be within CWYHS, to private practitioners or to Australian Hearing for example.

The Department of Education and Children's Services (DECS) provides an across-the-state service for supporting children and students with hearing loss in state preschools and schools, but has no stated policy focus for Aboriginal children and students with conductive hearing loss. However, the recently published DECS *Disability Support Program, 2007 Eligibility Criteria*, includes criteria for the recognition of conductive hearing loss as a verifiable impairment because of its educational impact. This has not occurred consistently in other states. Support for Aboriginal children and students with conductive hearing loss is

problematic, as many do not acquire the necessary medical evidence confirming hearing loss. Departmental policy for disability support requires two audiograms within 18 months of each other. Without this evidence students cannot receive individual support from DECS hearing impairment coordinators, but schools are provided with general advice to address hearing impairment.

Models

Health programs examined as part of this study all had similar models for supporting Aboriginal children and students with otitis media and conductive hearing loss. The models included:

- early detection and medical management of otitis media by primary health care services
- early detection of hearing loss and audiological management by audiological services
- management of speech and language problems by primary health services or the education sectors.

The model of early detection and intervention was supported by clinical pathways developed as part of the Clinical Management of Otitis Media in Aboriginal and Torres Strait Islander Populations project (Office of Aboriginal and Torres Strait Islander Health, Department of Health and Ageing, 2001).

A primary health care model incorporating outreach services seems successful in detecting and managing ear disease and detecting hearing loss, particularly if these services are embedded in Aboriginal health organisations.

DECS provides services to preschools and schools to assist children and students with hearing impairment to access the curriculum. Components of the service model include:

- the Early Intervention Service — Hearing Impairment — a statewide service for children from birth to school age
- Centres for Hearing Impaired — five primary and three secondary centres, all co-located with mainstream schools
- Coordinators: Hearing Impairment — district-based personnel supporting students with hearing impairment
- Guidance Officer: Hearing Impairment — member of the Statewide Verification and Professional Support Team.

DECS is also a partner in primary health intervention programs, such as the Indigenous Hearing Health Program in Port Augusta.

Collaboration

Examples of successful collaborative practice to improve the ear and hearing health of Aboriginal children and students through early intervention and ongoing management were evident during the study. Local collaboration occurred between Aboriginal health services; Children, Youth and Women's Health Service; Central Northern Area Health Service; Country Health; Australian Hearing; and the Department of Education and Children's Services or local education sites. Successful local collaboration between health and education services could be disrupted when key staff left, as it was often the result of local staff having formed strong relationships over time. Collaboration was more evident among health organisations, with education sites often playing a more reactive role and responding to health programs priorities.

Collaboration at the local level was working, but collaboration at the policy level in organisations was not evident. Of all the programs investigated in this study, the Commonwealth's Indigenous ear and hearing health program appeared to be the only one promoting interagency collaboration at the policy level on this issue.

Awareness

The second part of the project sought to identify information required by families and educators to support Aboriginal children and students with otitis media and conductive hearing loss, and to determine what information was available from health and education sectors. The majority of participants agreed that it is necessary for communities to become more aware of otitis media and conductive hearing loss and their potentially detrimental effects on Aboriginal children's development.

Analysis of the case studies highlighted that information sought by parents and educators is of a practical and immediate nature. They needed information on how to recognise and respond to middle ear disease and/or hearing loss, particularly on how and where to seek timely intervention. Study participants did not raise the availability of information and resources concerning the prevention of conductive hearing loss as a topic. This possibly indicated a general acceptance of the problem

among Aboriginal children and students, or a limited understanding that conductive hearing loss may be the long-term result of untreated recurring otitis media.

The study highlights that there is a need to broaden parents' and educators' understanding of how Aboriginal children and students are affected by otitis media. A recurring pattern of infection starts early in life and episodes can increase in severity if left untreated. Parents and educators would benefit from information explaining the short-, medium- and long-term impacts of recurrent ear disease for this population of children and students.

The study collated the preferred methods of information provision requested by families and educators. Families preferred information presented face-to-face by people who were known to the community and in a forum that fostered the sharing of information. Educators sought practical information that enabled them to recognise hearing loss and resources detailing successful teaching strategies.

Issues of concern

Case study participants raised a number of concerns including the need for follow-up services for families, access issues, workforce issues and information provision. An ongoing issue of concern is referral to and timely provision of ear, nose and throat services for Aboriginal children and students. This may in part be due to long waiting lists for these medical specialist appointments and surgery. Aboriginal health and mainstream health organisations also identified as an issue of concern the need for more trained Aboriginal health workers, particularly in ear and hearing health.

Aboriginal and Torres Strait Islander people are less likely to access health services, in particular primary health care, than other population groups. This may partly be due to their perception that they may not be welcome or that health staff understand their needs. (Southern Health News, 2007, p 5).

Aboriginal families have difficulties with accessing medical services for several reasons which are not limited solely to physical access barriers, such as lack of transport or not knowing where to readily access help. Families who participated in the study listed personal barriers for accessing treatment for their children affected by middle ear disease, such as:

- acceptance of ear disease as normal and generational
- resignation concerning long-standing delays for specialist treatment, often resulting in missed appointments
- a general anxiety with mainstream medical settings and attitudes of mainstream medical practitioners, for reasons such as fear of services, provider attitudes and language barriers
- financial and system design barriers (Australian Medical Association, 2007 p 5).

Summary of Ceduna, Murray Bridge, Northern suburbs and Port Augusta findings

| Strengths of current service provision | Areas identified by participants for strengthening |
|--|--|
| <p>Health</p> <ul style="list-style-type: none"> ● Aboriginal health services and outreach program in three locations and an Aboriginal health team (Community Health) in fourth location ● Access to secondary and tertiary hearing services and visiting specialist services ● Child and maternal health focus for Aboriginal Health Services ● Strong commitment to aims of program by staff ● Commitment to community awareness and education ● A focus on primary health care, prevention and health promotion by Aboriginal health services or teams in community health ● Holistic approach to child health ● Identification of ear disease and hearing loss in Aboriginal children ● A specific Indigenous ear and hearing health program supported by national policy framework and evidence-based practice and protocols in two locations ● Specific project to reduce chronic suppurative otitis media in Aboriginal children to improve literacy outcomes in one location | <p>Health</p> <ul style="list-style-type: none"> ● Improve understanding of families for the need for children to complete medication ● Improve access to specialist intervention and care for Aboriginal children ● Renew focus of Indigenous hearing health programs on Aboriginal infants and young children ● Shorten appointment waiting lists and referrals for specialist or audiological assessment ● Support for Aboriginal health care workers to undertake community awareness and education ● Support for young Aboriginal parents to access primary health services ● Training and retention of qualified health workers |
| <p>Education</p> <ul style="list-style-type: none"> ● Access to hearing impairment services for state preschools and schools ● Home visiting—a communication strategy of childcare services, preschools and schools ● Some implementation of changes to acoustic environment, including sound amplification systems and individual FM units in local preschools and schools ● Partnership with parents, and family empowerment | <p>Education</p> <ul style="list-style-type: none"> ● Increase understanding of families, care personnel and educators, including newly graduated teachers, on the impact of otitis media and conductive hearing loss, particularly on educational outcomes ● Key community people to assist with community awareness ● Individualised support for Aboriginal children and students with conductive hearing loss rather than general support ● Support for the implementation of sound amplification systems ● Training and development to increase awareness and early intervention at preschools |
| <p>Health and Education</p> <ul style="list-style-type: none"> ● Health initiatives in care and early childhood settings ● Examples of effective collaboration across health services and between health and education services | <p>Health and Education</p> <ul style="list-style-type: none"> ● Increase effective collaborative practice between local health service, early childhood site staff and families ● Information for families on the broad range of factors that contribute to ear disease and hearing loss and the impact of hearing loss ● Information for families and care and educational staff to recognise and identify otitis media and conductive hearing loss ● Information provision to families that support cultural forms of communication ● Improve parental consent process for screening services ● Utilise existing home visiting services for more targeted health and education support |

Contents of Volumes 1, 2 and 3

The full report comprises three volumes. Volume 2 and Volume 3 support Volume 1, which contains the project's description, case study summaries and findings. The full report will be available on the Ministerial Advisory Committee: Students with Disabilities' website.

Volume 2 features detailed case studies of the communities that participated in the project and supports the principle of information sharing and giving back knowledge to those Indigenous and non-Indigenous communities.

The major finding recorded in Volumes 1 and 2 is that families and educators have limited awareness of the short- and long-term impact of conductive hearing loss on child development, including language acquisition, schooling outcomes and the social and emotional wellbeing of Aboriginal children.

This finding is addressed in Volume 3—*Information strategies*. Volume 3 provides community, health and education organisations with information on how to raise awareness for families and staff on the impact of conductive hearing loss on Aboriginal children and students in South Australia.

Key Findings

Information

- The study revealed that there is limited understanding among participants that otitis media affects Aboriginal children differently from non-Aboriginal children, and that a pattern of recurrent infection from a very young age has the potential to cause persistent conductive hearing loss and associated issues.
- Families, educators, and care and early childhood personnel are aware of the immediate effects of otitis media, but have less understanding of the impact of conductive hearing loss on child development and learning outcomes of Aboriginal children.
- The hidden nature of hearing loss and rate of disability among Aboriginal children is highlighted by the disparity between studies showing a high prevalence of otitis media and conductive hearing loss in Aboriginal communities and the relatively low identification of hearing loss by health and education professionals and families in this study.
- Interviews with Aboriginal families highlight the prevalence of ear disease and hearing loss among families and over generations.
- There is evidence that preventative and remedial initiatives are implemented by some local care and education teams who participated in this study; initiatives included health promotion activities, classroom strategies and management of the acoustic environment. There was little evidence of the use of specific teaching strategies for children with a history of conductive hearing loss, poor listening skills and poor speech and language.
- The absence of regular and efficient data collection from primary health or screening programs makes it difficult to determine the size and type of ear disease and hearing loss experienced by Aboriginal children in different communities.
- Primary child health programs with a focus on ear and hearing health are working well but follow-up specialised support and services continue to be problematic and ad hoc.

Programs

- The first targeted program with a statewide focus was the Australian Government's national program to address Indigenous ear and hearing health, the Indigenous Hearing Health Program, which commenced in 1996.
- Up until the implementation of the Otitis Media Clinical Support Systems Program (based in Port Augusta), existing ear and hearing health programs for Aboriginal children have evolved services towards junior primary school age children, although the original target group for the national program was from birth to five years of age, as otitis media is common in infants and younger children.
- Of all the programs investigated, only one program—the Otitis Media Clinical Support Systems Program—actively supports and empowers families with young children to make timely decisions about accessing medical assistance.

Barriers

- There are numerous barriers for families accessing services, including physical and personal barriers.

Specific actions

- Pre-natal, infant, maternal and early childhood programs for Aboriginal families need to consider otitis media and conductive hearing loss when working with Aboriginal families and plan appropriate preventative initiatives and interventions.
- Screening programs help to identify ear infection early and initiate appropriate treatment, as well as raising awareness of otitis media and conductive hearing loss among families and educators.
- Home visiting is an effective method of communicating with Aboriginal families and is used by services that engage with them regularly.
- Families and health and education agencies need to work together from before children's birth and need to continue their collaboration throughout infancy, early childhood and the schooling years to prevent or minimise the effects of conductive hearing loss on Aboriginal children's development. As stated in the 2007 Australian Medical Association's Report Card on Aboriginal and Torres Strait Islander Health: "much prevention lies outside the health system in education, housing and economic sectors".

Recommendations

The Ministerial Advisory Committee: Students with Disabilities supports the comprehensive findings of key studies on Aboriginal children and otitis media and hearing loss and recommends them as a reference tool for policy makers, professionals and practitioners.

These studies include:

1. *Recommendations for Clinical Care Guidelines on the Management of Otitis Media (Middle Ear Infection) in Aboriginal and Torres Strait Islander Populations*. Office of Aboriginal and Torres Strait Islander Health, Commonwealth Department of Health and Ageing, 2001.
2. *Learning Lessons – An Independent Review of Indigenous Education in the Northern Territory*. Department of Education, Darwin, 1999.
3. *The Western Australian Aboriginal Child Health Survey*. Curtin University of Technology and Telethon Institute for Child Health Research, Perth, 2005.
4. *Do you hear what I hear? Living and learning with conductive hearing loss/otitis media resource kit*. Department of Education, East Perth, 2002.

In the current study, the Ministerial Advisory Committee: Students with Disabilities recommends the implementation of the information strategies in Volume 3 to address the awareness needs of all groups identified in the report. The information strategies are based on the findings recorded in Volumes 1 and 2. The strategies aim to:

1 Raise awareness of parents and facilitate understanding of the social, emotional and educational impacts of conductive hearing loss, as a first step in a process of building knowledge and commitment to action, through

- developing an information package for families on the long-term impact of otitis media and conductive hearing loss on child development based on evidence from the study and information materials already available
- developing this package in collaboration with Aboriginal families and health services.

2 Support a collaborative early childhood intervention approach by health, early childhood and education services to ameliorate speech and language difficulties, behavioural difficulties and other issues that may arise from otitis media and conductive hearing loss in young Aboriginal children, by

- raising awareness and developing practical information packages targeting general practitioners, home visiting programs, childcare centres, early childhood centres and kindergartens
- developing this early intervention approach in collaboration with student support and disability teams, Aboriginal educators, and relevant statewide services, including mainstream and Aboriginal health services and child health units
- advocating for a whole-of-government policy approach to develop a cooperative health-education framework to address the prevalence of otitis media and conductive hearing loss among Aboriginal children and students in South Australia, supporting the goals of South Australia's updated Strategic Plan (eg T6 18)
- including an assessment of service take-up by Aboriginal families in a possible future evaluation of the Department of Education and Children's Services' new Children's Centres for Early Childhood Development and Parenting.

3 Support the collation and distribution of information for early childhood carers, educators and education support staff to provide support to Aboriginal children and students with or at risk of conductive hearing loss, through

- developing or sourcing a web-based information resource (eg such as Indigenous EarInfoNet) for care, education and disability personnel on strategies and information for teaching Aboriginal children and students with conductive hearing loss. This needs to occur in collaboration with student support and disability teams, relevant statewide services and Aboriginal educators.

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