

An Aboriginal Ear Health Framework for South Australia



Government
of South Australia

SA Health

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Acknowledgement to Country

We acknowledge the Traditional Custodians of Country throughout Australia and their spiritual relationship to land.

We pay respect to the Traditional Owners of ancestral lands, their cultural knowledge and authority, and their Elders both past and present.

We celebrate Aboriginal People's ongoing cultures, their contributions to society and their continuing connection to land, sea and community.

Intention of this Framework

The Framework is intended for use in health service **planning, partnerships** and **coordination** for Aboriginal children. Ear and hearing health is important for all age groups. However, Aboriginal children are a priority group for activities in ear health, which is recognised in this initial Framework.

The Framework will provide guidance on use of available funding and applications for funding.

Many interested individuals and agencies have contributed to the development of this Framework. Input was sought from government and non-government organisations, including the health and education sectors. This has occurred under the guidance of the South Australian Aboriginal Ear Health Reference Group (SAAEHRG), a group formed in 2012, in order to foster a shared approach to ear health care.

This group aims to ensure that ear and hearing programs for Aboriginal children in South Australia are:

- > coordinated
- > aimed at improving health and educational outcomes for children
- > culturally appropriate
- > accessible to the children and families most in need.

SAAEHRG recognised that there was a need to ensure a coordinated and collaborative approach to the delivery of ear health services.

This Framework outlines the existing services in South Australia and sets out an approach to coordinate future activities. New programs may be best aligned with these principles and will be implemented by engagement with primary health care (in particular Aboriginal Community Controlled Organisations).

A reference group (such as the current SAAEHRG) will enable dialogue and collaboration between health service providers, as well as offering a mechanism for engagement with education staff and Aboriginal communities.

This Framework builds upon initiatives such as the 2011 drafting of a 'Strategy to improve ear health and hearing in Aboriginal children in Western metropolitan Adelaide', and current successful programs and collaborations. In acknowledging these successful strategies and programs, consideration can be given to replicating them in similar regions. A clear awareness of referral pathways will lead to a shared approach to care for families and health professionals.

This document uses the term 'Aboriginal' to refer to Aboriginal and Torres Strait Islander people residing in South Australia, although some sources referenced adopt the general term 'Indigenous' which is reproduced here. This terminology is used in recognition that 'Aboriginal' is the preferred term and identity.

Authorship: This framework was jointly written by members of the South Australian Aboriginal Ear Health Reference Group (see Appendix 1 for membership of this group).

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Abbreviations and glossary

ACCHS – Aboriginal Community Controlled Health Service

AHCSA – Aboriginal Health Council of South Australia

AH – Australian Hearing

AHW – Aboriginal Health Worker

AOM – Acute Otitis Media

AOMwiP - Acute Otitis Media with perforation

AOMwoP – Acute Otitis Media without perforation

APY – Anangu Pitjantjatjara Yankunytjatjara

ASOHS - Australian Society for Otolaryngology Head and Neck Surgery

ATSI – Aboriginal and Torres Strait Islander

Audiometry – standard method of testing hearing using pure tones across the speech frequency range

CaFHS – Child and Family Health Service

CBC – Cora Barclay Centre

CHL – Conductive hearing loss

CHSA – Country Health South Australia Local Health Network

COAG – Council of Australian Governments

CSOM – Chronic Suppurative Otitis Media

CTG – Closing the Gap

CYH – Child and Youth Health (Women’s and Children’s Health Network)

DECD – Department for Education and Child Development (South Australia)

DECD SERU- Department for Education and Child Development (South Australia) Special Education Resource Unit

DHA – Department for Health and Ageing

ENT – Ear, Nose and Throat

FMC – Flinders Medical Centre

IAS – Indigenous Advancement Strategy

Listening and spoken language specialist (LSLS) – professional in audiology, speech pathology or education who has completed further study to become a LSLS Certified Auditory-Verbal Therapist. Works with children with hearing loss to develop spoken language through listening.

NACCHO – National Aboriginal Community Controlled Health Organisation

NALHN – Northern Adelaide Local Health Network

OAE- otoacoustic emissions testing (used as a hearing screen; detects sound emissions from inner ear)

OM – Otitis Media

OME – Otitis Media with Effusion

Otoscopy – examination of the ear with a bright light to identify disease of the outer or middle ear

PHN – Primary Health Network

PHPB – Public Health Partnerships Branch (DHA)

RDWA – Rural Doctors Workforce Agency

SAAEHRG – South Australian Aboriginal Ear Health Reference Group (SAAEHRG)

SALHN – Southern Adelaide Local Health Network

Speech Pathologist – professional who diagnoses and treats speech, language, communication and swallowing disorders

Teacher of the deaf – teacher with postgraduate qualifications to teach hearing impaired students and support their families and classroom teachers

TM – Tympanic membrane

Tympanometry – an electro-acoustic measurement of eardrum mobility, testing middle ear health and function

WCH – Women’s and Children’s Hospital

WCHN – Women’s and Children’s Health Network

Background

Aboriginal children's ear and hearing health

Ear and hearing health is an important part of overall child health and development. Children learn to speak by hearing other people talking, and learn to engage with their world through hearing and telling stories. For these reasons, it is very important that ear health is promoted in the very early years of life, while crucial brain pathways are developing.

Hearing loss can be sensorineural (caused by problems with the hearing organs in the inner ear, or in the auditory nerve that transmits information) or conductive. Conductive hearing loss occurs when sound cannot be transmitted through the outer and/or the middle ear to the inner ear. It can be a short term or long term problem.

For Aboriginal children, the most significant problems are caused by middle ear disease (otitis media) that results in conductive hearing loss (CHL). Between ages 2 and 20 years, Indigenous people could be expected to have 32 months of otitis media, as compared to only 3 months in the non-Indigenous population (Couzos and Murray 2003, cited in Australian Institute of Health and Welfare (2011)). This condition also occurs at younger ages in the Aboriginal population, even within weeks of birth. Although the specific pattern of disease can vary by geographic region, all types of otitis media can have consequences for children's wellbeing with the single most important being hearing loss.

In addition to the short term consequences of illness, distress and school absence, middle ear disease can lead to long periods of fluctuating hearing loss. Therefore, this Framework places a particular emphasis on tackling the causes and consequences of middle ear disease.

Management of ear disease and hearing loss can make a significant positive difference, not only to children's health outcomes, but in education, employment and social relationships. Aboriginal communities have many demonstrated strengths, including extended family networks and community controlled organisations (Brough et al., 2004) that will play a crucial role in supporting these outcomes. Research has shown that parents and carers are concerned about the potential impacts of hearing loss (CIRCA, 2010), and it is important that health professionals support community awareness of how these impacts can be minimised by tackling ear disease and its risk factors.

Middle Ear Disease (Otitis Media)

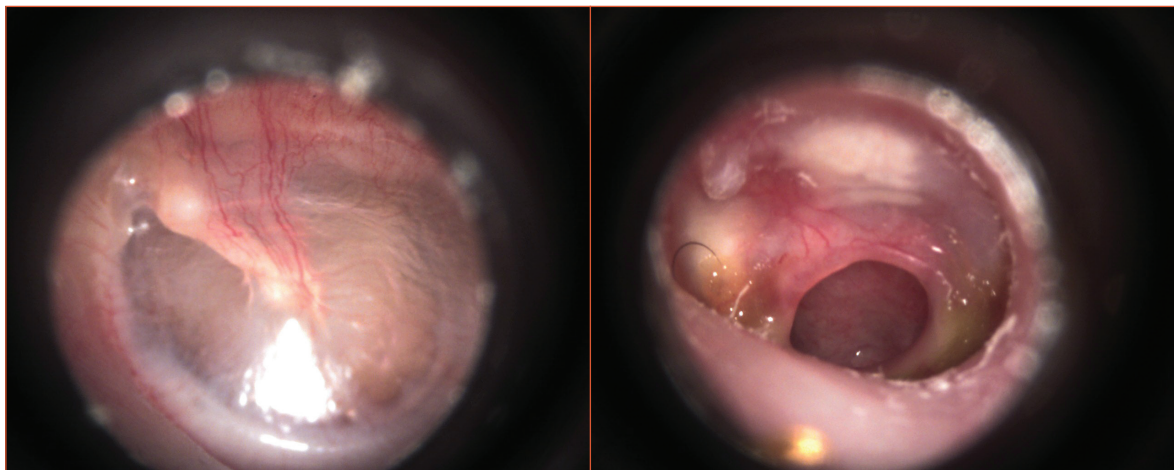
Otitis media will often occur in the context of an infection of the nose and throat. The eustachian tube between the throat and the middle ear can become blocked, with inflammatory fluid accumulating in the middle ear. An acute infection develops, causing the child to become unwell. After the infection resolves, fluid can remain in the space. However, some forms of otitis media can develop without acute symptoms being noticed by the child or the family.

Classification of ear disease is important, as it guides the choice of appropriate treatment. For children at high risk of developing chronic ear disease and its complications, such as Aboriginal children, antibiotic therapy is required for acute otitis media.

Further information is available from the resources listed in Appendix 4.

Table 1. Types of middle ear disease (adapted from Commonwealth of Australia (2011b))

Middle Ear Disease	Definition
Otitis Media (OM)	Refers to all types of inflammation and infection in the middle ear. This will nearly always be accompanied by fluid in the middle ear space.
Acute Otitis Media (AOM)	In this condition, there will be fluid in the middle ear, and signs of infection such as bulging eardrum, red eardrum, fever, ear pain or irritability.
> With perforation (AOMwiP)	Acute otitis media when pressure has caused a hole to develop in the eardrum
> Without perforation (AOMwoP)	Acute otitis media when the eardrum remains intact
Otitis Media with Effusion (OME)	Fluid is visible behind the eardrum, but other symptoms are absent. This can be episodic or persistent, and is associated with reduced movement of the eardrum.
Chronic Suppurative Otitis Media (CSOM)	Persistent ear discharge through a visible perforation (hole) in the eardrum. The duration has variously been defined from at least 2 weeks to 12 weeks, but generally at least 6 weeks of discharge is required for diagnosis.



Normal left ear

Chronic Suppurative Otitis Media left ear

Determinants of Middle Ear Disease/Otitis Media

Individual characteristics, as well as factors in a child's family, environment and broader community, can influence the risk of ear disease. A model that considers these multiple levels of influence is known as an 'ecological' model (Figure 1 on the next page).

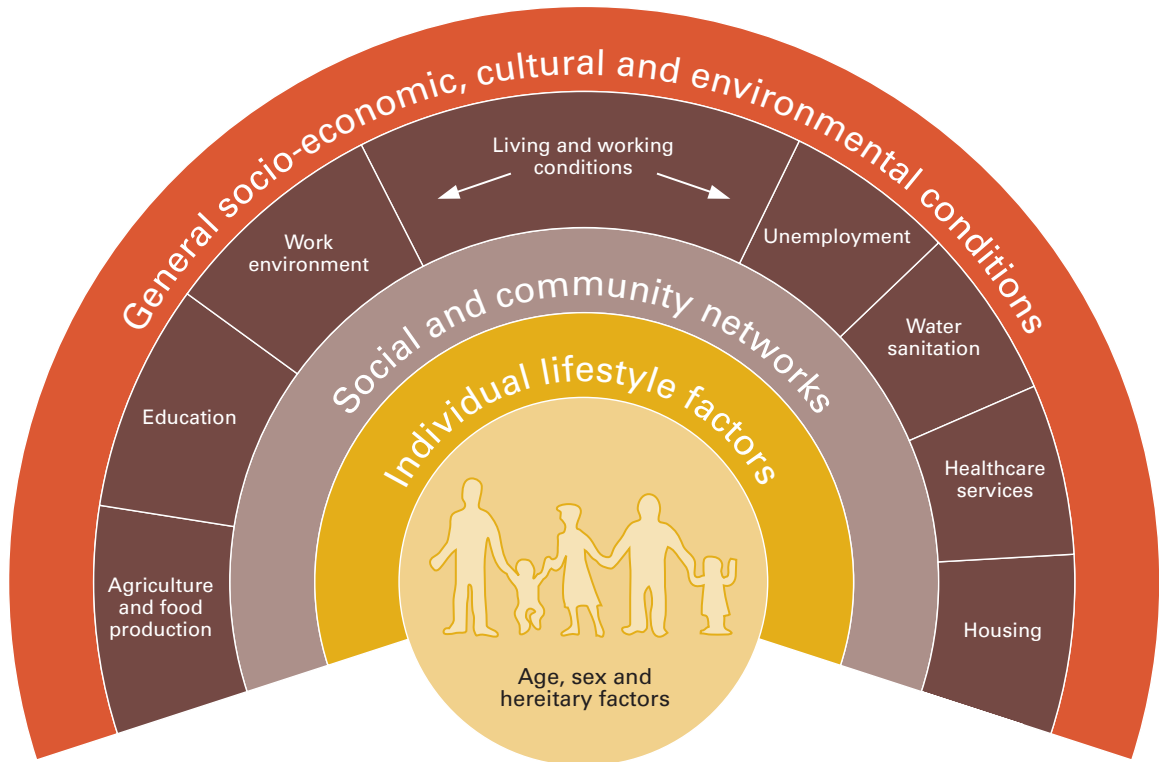
Some individual factors associated with increased risk of ear disease include age, overall health and being born premature. However, a child's health status is affected by aspects of family life and immediate environment. For example, breastfeeding is known to protect against infection and is associated with better ear health. Access to healthy food promotes good nutritional status and a healthy immune system to fight infection. Exposure to tobacco smoke increases the risk of airway irritation and infections. Children will more often develop upper respiratory tract infections when in close contact with other children; this can be seen in children attending childcare or living in crowded housing situations.

At the next level, government policies and community characteristics can influence immediate risk factors. For example, policy can support access to culturally-appropriate health care. In turn, this means that families can receive adequate care for acute ear infections, as well as access to protective interventions such as immunizations, smoking cessation advice and breastfeeding support. Housing policy can address factors such as availability of appropriate dwellings with well-functioning hardware.

When childhood ear disease is seen in this context, it becomes clear that improving the socio-economic determinants of health will assist in tackling ear disease. The effects of persistent ear and hearing problems can cause a cycle of disadvantage for families. Therefore, a health promoting environment is needed to break this cycle. This also includes access to early childhood education and literacy support.

The ecological model can be used to promote the strength of families and communities that protects against ear disease. It shows the importance of acting at multiple levels, in order to make sustained improvements in ear health.

Figure 1. A social and ecological model of middle ear disease



Adapted from: Dahlgren G, Whitehead M. Policies and strategies to promote social equity in health. Institute of Futures Studies, Stockholm, 1991

As noted above, risk of otitis media is related to particular social and environmental factors (see Kong and Coates (2009)):

- > overcrowding
- > cigarette smoke exposure
- > insufficient access to medical care
- > poverty
- > poor nutrition
- > inadequate hygiene infrastructure
- > childcare attendance (transmission of respiratory tract infections)
- > bottle feeding rather than breast feeding.

The ecological model of ear disease suggests that many of these risk factors are influenced by 'upstream' determinants of health.

An equity-based approach to otitis media requires interventions at the policy and community levels, and awareness of how a history of discrimination and inequity can influence health, wellbeing and access to services.

Consequences of ear disease

Short term consequences of acute middle ear infections include the associated physical symptoms of infection (vomiting, loss of appetite, irritability), as well as serious (but rare) infective complications. Children may also experience fatigue and the behavioural impact of unsettled sleep, although some may experience no symptoms at all.

For many Aboriginal children, middle ear disease becomes a recurrent or chronic condition. There may be otitis media with effusion or chronic suppurative otitis media, the latter being a particular issue for children living in remote areas. Episodes of otitis media are associated with fluctuating conductive hearing loss. This can result in difficulty following classroom instructions and conversation. Consequences may include speech and language delays, and later auditory processing problems due to periods of hearing loss in the crucial developmental time of early childhood. Children may also develop long-term hearing loss as a result of chronic middle ear disease.

For some Aboriginal children, these difficulties are compounded by a classroom environment that is not tailored to their first language. Speech and language difficulties can lead to misunderstandings in communication, and to the psychological consequences of difficult interactions with peers and teachers. If strategies are not applied early to prevent these consequences, then educational outcomes and employment will suffer. Further information on the consequences of ear disease for education and communication can be found in the review 'Intercultural Communications and Conductive Hearing Loss' (Howard, 2007).

Burden of ear disease in Australia

The direct costs of Indigenous ear disease in 2008 were estimated at between \$8-\$16 million (Burns and Thomson, 2013). However, there are significant associated costs related to productivity losses for carers, as well as the costs of reduced employment and need for income support in some adults with a permanent hearing loss.

A review focusing on otitis media in Australian Indigenous children, largely with reference to remote areas (Jervis-Bardy et al., 2014), found prevalence of the following conditions amongst these children:

- > 7.1-12.8 per cent for acute otitis media
- > 10.5-30.3 per cent for active chronic otitis media
- > 31-50 per cent for tympanic membrane perforation.

In the health care setting, Rothstein and colleagues found a prevalence of CSOM of 24.6 per cent in Indigenous children, and under five percent in non-Indigenous (cited in Jervis-Bardy et al. (2014)).

These figures suggest that otitis media places an enormous burden on Aboriginal children, families and communities. The WHO considers a prevalence of CSOM over 4 per cent as "a massive public health problem" (WHO, 2004).

The situation in South Australia

At the 2011 Census, Aboriginal and Torres Strait Islander people represented 1.9 percent of the South Australian population, with a median age of 22 compared to the median age of 39 for the State overall (Australian Bureau of Statistics, 2013a). The younger population profile is of particular relevance, given that otitis media incidence peaks at 6-24 months and 4-5 years of age (Kong and Coates, 2009). This count included 3 379 ATSI children aged 0-4 years, and 6 971 aged 5-14 years. The total Aboriginal population of South Australia was 30 430, while in the Greater Adelaide region, the Aboriginal population was 15 595 (ABS); that is, around 50 percent of Aboriginal people in South Australia live in regional and remote areas (Australian Bureau of Statistics, 2013b).

Ear disease in South Australia

School screening

Data is available from screening that has been conducted by Flinders University in conjunction with DECD. This long-standing, collaborative program has performed hearing screening as well as measures of ear health via otoscopy and tympanometry (Sanchez et al., 2010). Children in Anangu communities who did not pass a four frequency audiometric screen at 20 dBHL received further testing to enable health and education follow-up.

Children in remote areas were much less likely to pass audiometric screening (Table 2). Although pass rates improved with age, for the 11-12 year olds the pass rate in remote SA was less than half the pass rate for the metropolitan area.

Table 2. Proportion of Indigenous children passing audiometric screening by geographical location in SA

Adapted from Sanchez et al. (2010)

Age in years	Metropolitan (Adelaide)	Remote (APY lands)
	Pass bilaterally: no freq. >25 dBHL (%)	Pass bilaterally: no freq. >25 dBHL (%)
5-6	77.0	33.7
7-8	82.7	43.9
9-10	84.8	44.4
11-12	86.1	39.2

The larger South Australian study, 'An evaluation of the benefits of swimming pools for the hearing and ear health status of young Indigenous Australians: a whole-of-population study across multiple remote Indigenous communities,' (Sanchez et al., 2012) found high rates of middle ear pathology, similar to that noted in the earlier work. Tympanic membrane perforation was observed in 32.3-40.2 percent of children. Of concern were the secondary students who had ear disease that had remained untreated, with disabling consequences for hearing.

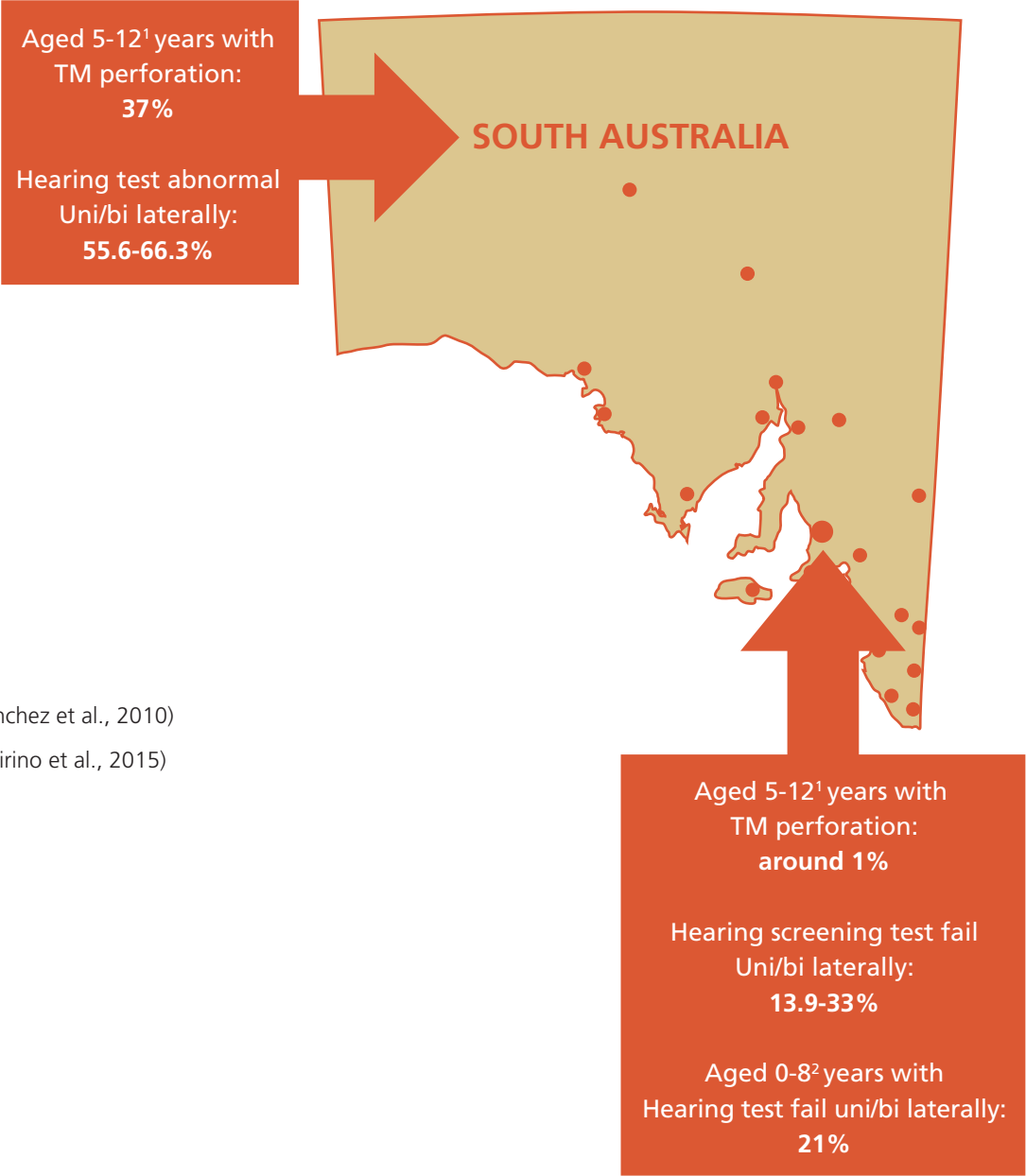
Early childhood screening

The 'Under Fives' metropolitan screening program, conducted through Watto Purrinna (SA Health) in conjunction with the Public Health Partnerships Branch and CaFHS, screened Aboriginal children aged 0-8 years. This included otoscopy, tympanometry and otoacoustic emissions testing. Results from screening conducted from May 2013-May 2015 showed (Quirino et al., 2015):

- > abnormal appearance of one or both tympanic membranes in 45 per cent of children screened, with scarring the most common abnormality
- > twenty-four percent of 678 children had a Type B tympanogram (in one or both ears), suggestive of middle ear pathology
- > twenty-one per cent of 627 children with available data did not pass a hearing screening (otoacoustic emission) test (in one or both ears).

These screening programs findings indicate that many Aboriginal children in South Australia have ear and hearing health problems.

Aboriginal children's ear and hearing health by geographical location in South Australia



¹(Sanchez et al., 2010)

²(Quirino et al., 2015)

Principles of this Framework

Aboriginal governance and community involvement

- > Support for strong Aboriginal governance, leadership and participation; regardless of where care is provided.
- > Community involvement, which will necessarily include the primary health care sector, Aboriginal Community Controlled Health Organisations and the wider primary health care sector.
- > Family engagement and enabling family responsibility for ear health through education and assistance in navigating services.
- > Community-based programs, tailored to local needs and strengths, and utilising existing relationships.

Prevention focus

- > Recognition of the importance of preventive health and health promotion activities.
- > A need to address the socio-economic determinants of ear health, to prevent the consequences of ear disease and hearing loss.

Advocacy

- > Ear health is prioritised and promoted, including through linkage to broader health and community outcomes.

Early and effective intervention

- > Emphasis is placed on early detection (by screening and surveillance) and intervention, with a particular focus on early childhood (0-5 years of age) and primary health care involvement.
- > Screening/surveillance and diagnosis must be accompanied by follow-up care (this principle may require consideration of specific enabling mechanisms).

Statewide care

- > Adoption of a standardised, consistent, guideline-based approach.
- > An equity-based approach, with programs guided by need.
- > Good communication and appropriate information-sharing.
- > A systematic approach that recognises available local services and referral pathways.

Evaluation

- > Aim for sustainability of programs and services.
- > Programs must be auditable, with information owned by the community.

Overview of Framework

Whilst current ear health initiatives are making a positive difference to children's health, an overarching framework is required to address service gaps. The section "Framework Details" given below sets out key actions required in primary, secondary and tertiary prevention. Appendix 2 provides a snapshot of current activities in South Australia addressing Aboriginal ear health and hearing.

Ear disease can be prevented. However, due to the often chronic nature of middle ear disease and the effects of hearing loss on educational attainment, a planned and integrated response from many organisations and sectors is required. This encompasses the spectrum of care from health promotion and prevention to early intervention, treatment and rehabilitation. An inter-sectoral response will address both the causes, effects and consequences of ear disease.

This framework recommends a focus on young children (0-5 years of age). The incidence of middle ear disease peaks in young children, making this group key in prevention and early detection. Early childhood is a crucial time for language development, and hearing loss must be identified as early as possible to ensure the best outcomes.

Current gaps in care

Many current successful services are documented in Appendix 2 of this Framework, however a coordinated approach will enable these to be used to have maximal effect.

At the level of primary prevention, increased advocacy is required to address continuing social inequities in housing, education and employment. There is a need for health promotion activities to be integrated into early childhood curricula, and into other health sector activities.

Secondary prevention aims to identify and manage middle ear disease in a timely way, to modify disease course and prevent long term impairments. National guidelines for otitis media in Aboriginal and Torres Strait Islander populations promote a surveillance approach, in which ear examination (ie otoscopy and tympanometry) is a regular part of clinical examination of children (Commonwealth of Australia, 2011b) and information about children's ear health status is readily available. Advantages of surveillance in primary health care include access to young children and ability to follow up the treatment received, which are more difficult when there is a reliance on screening programs (ARTD Consultants, 2008). When screening occurs, there must be clear pathways for follow-up.

Identification of ear disease in primary care can be hindered when staff are not aware of the need to regularly examine children's ears, and are not confident in ear health care skills such as performing otoscopy. In addition, ear disease may not be seen as an important health problem (particularly in the case of 'silent' otitis media with effusion) by staff or community members. Other specific issues include lack of awareness of care guidelines and variability in access to diagnostic audiology and specialist medical services (ENT).

For children with significant hearing impairment or ear disease, tertiary prevention aims to minimise associated complications and disability. Identified gaps in the patient journey include timely access to early intervention services and assistance to attend specialist appointments. In some circumstances, a lack of clear referral pathways hinders use of guideline-based care algorithms. Current data collections are insufficient to determine the extent to which follow up and specialist care have occurred.

Framework priorities at each level of care

Primary prevention activities work to prevent the onset of disease by understanding the risk factors for disease and directly addressing these. Priorities in this area include addressing the socio-economic determinants of health, working with communities to provide health promotion and embedding health promotion within health service activities. Upstream determinants need to be urgently addressed. These include housing, access to nutritious diets and ensuring high vaccination rates for Aboriginal children. In addition, parents, carers and education and health staff can support health promoting behaviours.

Secondary prevention activities include identification and timely management of ear disease within primary health care, such as at ACCHSs, private general practice and SA Health primary health care sites. Priorities include staff training and support to adopt a surveillance approach. This Framework prioritises local coordination of care and advocates for this to be well-resourced. Keys to successful care include Continuous Quality Improvement activities and strengthening local referral pathways.

Tertiary prevention activities, such as education support, along with specialist care can reduce the negative impacts of ear disease. Particular priorities include the widespread development of clear referral pathways for ENT and rehabilitative audiology, as well as support for patient journeys. Improved data collection and appropriate information sharing will facilitate evaluation of patient outcomes. This Framework also promotes strengthening the partnerships between health providers and DECD that support children with ear disease and hearing loss.

Investing in children's ear health

Funding for ear and hearing health activities may be program-based or part of a service's core business.

It is helpful to consider the broad sources of funding, as well as what future considerations are needed for implementation of this Framework.

Discrete ear health funding

Funding for activities in Aboriginal ear health may come from a number of sources, the specifics of which are likely to change over time but may include:

- > Commonwealth Government (this funding will generally be time-limited, with attached reporting requirements, and tends to support 'vertical' programs that tackle a particular issue)
- > State-based government funding (eg Closing the Gap) (also with associated requirements)
- > private sector and not-for-profit providers.

Examples of specific programs under which relevant funding has been available to date include:

- > Closing the Gap funding provided by the South Australian Government through SA Health currently supports improved detection and management of middle ear disease in urban areas (the Under 5's Ear Health Program)
- > The National Disability Insurance Scheme (NDIS), which provides individualised support for people with disability
- > Commonwealth-funded 'Healthy Ears - Better Hearing, Better Listening' program (administered by Rural Doctors Workforce Agency in SA)
- > The Indigenous Advancement Strategy (IAS) – particularly the available funding related to education, early childhood development and addressing remote social disadvantage.

Core health service activity

Health services may integrate ear health activity into their core budget. For example, ENT surgical services are an essential part of ongoing service provision at the major metropolitan tertiary hospitals. At a service level, the particular needs of Aboriginal children are addressed by allocating them a high clinical priority.

In primary health care services, ear health surveillance during routine consultations is an example of this integrated approach. This is an efficient model of care that services must be adequately resourced to deliver.

Future funding

This Framework establishes priority uses for additional funding in primary, secondary and tertiary prevention, when and if this becomes available.

SAAEHRG will seek to engage with emerging providers and fund-holders to advocate for the Framework principles to be adopted.

Advocacy for Aboriginal children's ear health may include:

- > identification of new Commonwealth, State and private sector funding (including service club partnerships)
- > promoting funding of innovative care, such as tele-otology, under the Medicare Benefits Schedule
- > working in partnerships with relevant organisations

This Framework also recognises that services should be effectively remunerated for their core activities. This might include use of available Medicare Benefits Schedule items, such as health checks (item 715) and chronic disease management plans if possible.

A systematic approach to care

Aboriginal children's ear health requires a consistent, evidence-based approach to care, which can be adopted by all relevant sectors including health and education. All components of care provision will work together to promote ear and hearing health. The WHO Health Systems Framework incorporates the aspects of the systems approach needed for improved health, responsiveness and efficiency (World Health Organization, 2007).

WHO Health Systems Components

- > Service Delivery
- > Workforce
- > Health Information Systems
- > Access to essential medicines/technologies
- > Leadership & Governance

Framework details section 1

Primary prevention

Aboriginal children may experience otitis media within weeks of birth. Primary prevention activities may involve individuals or whole communities, and work to prevent the onset of disease and therefore reduce the incidence of otitis media. These activities include risk factor reduction as well as health promotion. Environmental factors include adequate housing, access to hygiene infrastructure and clean water, and minimised exposure to environmental tobacco smoke.

Primary prevention includes recognition and modification of the social determinants of health, utilising intersectoral activity (for example education, housing and employment), as well as health promotion activities relating to immunisation, breastfeeding promotion and tobacco control. Comprehensive primary health care has a central role to play in a holistic, family-oriented view of health promotion and prevention. However, health promotion needs to occur across multiple settings, and in multiple sectors. Advocacy for equitable access to housing, health care and quality early childhood education is a priority in primary prevention.

Primary prevention strategies and services

Action in primary prevention will involve identification and support for use of current evidence-based strategies, as well as advocacy for coordinated use of current resources. Strategies will need to acknowledge the multiple competing demands on families and communities, and the importance of family engagement and choice. Ear health should be embedded in all relevant policies.



Table 3. A Framework for proposed action in primary prevention

Strategy area	Action	Agency	Performance indicator
Service Delivery	Embed ear health messages in tackling smoking programs.	AHCSA ACCHSs	Increased proportion of children and adults aware of link between smoking and ear disease.
	Support existing programs, which screen for ear disease in Aboriginal children, to provide health promotion messages.	AHCSA Ear Health Project Officer	Increase in proportion of screening programs that incorporate health promotion material or information on how to access.
	Promote the positive impact of breastfeeding and infant nutrition on rates of ear disease promoted to health care workers and consumers.	SA Health CAFHS AFBP ACHSA ACCHSs	Increased proportion of Aboriginal mothers aware of benefits of breastfeeding. Healthcare workers aware of relationship between breastfeeding and ear health. Increased rates of initiation and continuation of breastfeeding.
	Ensure health promotion resources including <i>Care for Kids Ears</i> are accessible to all community networks involved in care of young children, including those children currently in alternative care.	AHCSA ACCHSs DECD	Service providers and carers aware of health promotion resources and able to access in printed or online format. Increased proportion of caregivers receive specific information about Aboriginal children's ear health.
	Review and promotion of online CYH resources including 'ear health - pina pati, pina palya?'	SA Health CYH	Online ear health consumer resources reviewed. Increased proportion of service providers aware of online resources.
Workforce	Expand use of ear health training package for early childhood workers. > Identify and train new facilitators. > Promote training to services and adapt to meet training needs.	SA Health Public Health Partnerships Branch	Increased uptake of SA Health training in early childhood settings. > Offered to additional services. > Greater number of participants.
Health Information Systems	Monitor data and indicators relevant to primary prevention of ear disease, for example Aboriginal maternal health, smoking and immunisation figures.	SAAEHRG	SAAEHRG members aware of relevant data sets and survey results for advocacy purposes.
Access to essential medicines/ technologies	Promote awareness of National Immunisation Program including via use of existing resources depicting Aboriginal community members, 'Help me stay strong' campaign. Promote ear health surveillance and protective immunisations using relevant sections of the child health record ('Blue Book'). Consider feasibility of ear health stickers or page insert for Aboriginal children.	SA Health Private general practice ACCHSs Local government	Increased immunisation rates maintained for Aboriginal children Health workers and carers aware of relevance of 'Blue Book' for Aboriginal children's ear health, in particular the Hearing, Immunisation and My Health and Development sections.
Leadership & Governance	Advocacy for ear health inclusion in relevant SA Health policies such as tobacco control, environmental health and nutrition.	SAAEHRG SA Health	The social and medical determinants of ear and hearing health are considered in policy affecting Aboriginal children.
	Establish links between SAAEHRG and maternal and child health providers.	SAAEHRG CaFHS	

Framework details section 2

Secondary prevention

Secondary prevention aims to detect early disease, including through screening, and to provide appropriate early intervention. Early diagnosis and timely referral can modify disease course and prevent long-term impairments associated with chronic ear disease.

National guidelines advocate a surveillance approach, in which children's ears are checked routinely when they present to primary care services. The relevant evidence-based guidelines used are the 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)' (Commonwealth of Australia, 2011b). These guidelines provide information on the continuum of care from prevention, diagnosis and management to referrals and audiological management including sound field amplification. They set out a step-wise approach to care in this population at increased risk of middle ear disease, for whom treatment recommendations differ from current mainstream care. Aboriginal Community-Controlled Health Services often base medical treatment on the CARPA Manual (Central Australian Rural Practitioners Association, 2014), which is substantively similar to the above guidelines. Further guidance in clinical practice can be accessed via the Royal Australian College of General Practitioners' *'National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people, Second edition'* (NACCHO/RACGP, 2012).

Current programs include mainstream services and programs specifically intended for Aboriginal children, such as the Under Fives program conducted through Watto Purrinna.

Primary health care will be involved in screening, surveillance, diagnosis, treatment and referral generation. Strengthening this will be the cornerstone of successful care. Therefore, the priority in secondary prevention is resourcing and supporting local coordination of ear health care.

Table 4. A Framework for proposed action in secondary prevention

Strategy area	Action	Agency	Performance indicator
Service Delivery	Increase access to annual ATSI health check incorporating ear health, with a particular emphasis on 0-4 year old children.	ACCHSs SA Health sites Private general practice	Rate of Aboriginal and Torres Strait Islander children 0–4 years who have at least one health check in a year increased to 69% by 2023, per Commonwealth of Australia (2015a).
	Advocacy for systematic approach to screening and follow-up. Provide ACCHS with technical assistance in development of local ear health service plan.	AHCSA – Ear Health Project Officer	Each ACCHS in South Australia has Ear Health plan incorporating systematic approach to care of children with OM.
	Improve access to diagnostic audiology services including via: <ul style="list-style-type: none"> > advocacy for co-location of screening and diagnostic services, particularly within primary care > support for families to attend services through notifications and transport > use of OM register within ACCHSs (if available) to proactively identify clients requiring diagnostic audiology > external provider responsiveness to changing client demand in regional health services. Promotion of Sound Scouts tablet-based hearing test game to facilitate appropriate referrals while awaiting diagnostic audiology.	Watto Purrinna Under Fives Program WCHN (previously CaFHS) Hearing Assessment Service - part of Children's Audiology Service ACCHSs SA Health sites Private general practice AHCSA Ear Health Project Officer RDWA	Increased proportion of Aboriginal children referred to HAS from Aboriginal ear health projects attending diagnostic audiology follow-up. Time between referral and assessment for Aboriginal children is uniform across the metropolitan area. Increased proportion of children requiring diagnostic audiology who receive this within 3 months of the time it is indicated (Commonwealth of Australia, 2011b). Note that diagnostic audiology assessment is not generally indicated at the time of acute initial middle ear pathology. Children suspected of having a permanent hearing loss receive diagnostic audiology within one month of referral.

	Promotion of Aboriginal Ear Health care as a priority area for clients within the justice sector, including via liaison with Prison Health and Cavan Training Centre.	SAAEHRG	Clear evidence-based recommendations about screening available for use within justice sector. Information about available services and training provided to Prison Health.
	Explore mechanisms for improved follow up from Flinders University school screening for Aboriginal students, including engagement of families.	SAAEHRG Flinders University SA Health sites WCHN (previously CaFHS) Newborn and Childrens Hearing Assessment Service DECD	
	Ongoing 'Healthy Ears - Better Hearing, Better Listening' outreach services take a collaborative and capacity-building approach to work with ACCHSs and communities. Support practical measures such as timetabling to ensure that services can utilise external service providers to best effect.	Rural Doctors Workforce Agency AHCSA Ear Health Project Officer ACCHSs	New ear health outreach activities are integrated into a surveillance model of care. Outreach activities continue to support local capacity development.
Workforce	Explore and develop capacity for a local case coordination role to support management of ear health.	ACCHSs RDWA AHCSA	Increase in proportion of children with ear disease who receive care coordination. Increasing evidence of completed patient journeys from diagnosis and referral to resolution.
	Provide Aboriginal Health Workers with continued training and guidance to adopt a systematic approach to ear health. Explore accredited child screening modules and develop unit/short course relevant to Aboriginal children.	AHCSA - Ear Health Project Officer ACHSA -Registered Training Organisation	Increased ability to deliver systematic ear health care. Unit/short course available to Aboriginal Health Workers.
	Health service staff trained in use of ear equipment (otoscope, tympanometer, audiometer), with particular emphasis on otoscopy and tympanometry in young children. Refresher training of health staff in use of tympanometry.	SA Health sites AHCSA ACCHSs AH	An increased proportion of health staff, including SALHN Aboriginal Family Clinic and NALHN Watto Purrinna sites, have accessed training in ear health equipment. Health staff are competent and confident in use of tympanometry.
	General Practice training and awareness in 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)' and systematic approach (with exploration of barriers to uptake per McDonald (2013)). Engage with GP training providers.	SAAEHRG ACCHSs SA Health sites General Practices	Training sessions conducted. General Practitioners and practice staff involved in systematic approach to ear health, with knowledge of appropriate referrals and use of recalls.

	Promotion of 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)' via Country SA and Adelaide PHNs (Primary Health Networks).	SAAEHRG PHNs	General practitioners aware of guidelines.
	Promote health professional and community awareness of hearing health services and rehabilitative options for hearing loss.	AH	Primary health care staff and community members advocate for use of hearing health services.
	Review ear health training available at State/Territory and National levels for primary health care staff. Identify collaboration opportunities with training providers. Identify mechanisms for maintaining and evaluating competencies.	SAAEHRG	SAAEHRG aware of National training environment. Health staff in all sectors are supported to maintain ear health competencies.
Health Information Systems	Develop protocols for information-sharing between service providers.	All service providers	Services able to identify which individuals and agencies need to be informed of results. Parent consent forms state who will receive ear health information (early childhood centre, GP, other health professionals).
	Development of state-wide referral pathways for Aboriginal ear and hearing health.	SAAEHRG AHCSA AH	Clear referral pathways available for adaptation in local context.
	Development of minimum indicator set for data collection in ear and hearing health (0-14 years of age) in the Community-Controlled sector. Development of data extraction protocol for use with Communicare patient information management system.	ACCHSs AHCSA	Indicator set trialled. ACCHSs able to access reliable information on clinical activities and local prevalence of ear disease. Prevalence of middle ear conditions shows reduction over time in both urban and remote South Australia.
	Facilitate a research and evaluation focus, with new projects to consider allocating funding for a formative evaluation component. Develop partnerships between ear health providers and research institutions. Collaboration between these organisations to optimise collection and use of ear health data.	SAAEHRG AHCSA ACCHSs SA Health sites South Australian universities SAHMRI	Ear health project proposals include a plan for evaluation. SA Aboriginal ear health services represented at state and national forums related to Ear Health. SAAEHRG aware of current research in ear health. Appropriate ear health data available for research, evaluation and quality improvement purposes.
	Promote ear health as a focus for Continuous Quality Improvement (CQI) activities in ACCHSs, consistent with the recent Commonwealth funding of CQI in the Aboriginal Community Controlled sector.	AHCSA – Ear Health Project Officer AHCSA – CQI unit ACCHSs	Systems for management of ear disease used as a basis for CQI projects within ACCHSs, with the aim of improving processes and outcomes.

Access to essential medicines/ technologies	<p>Ensure access to otoscope, tympanometer and audiometer in all services providing child health checks.</p> <p>Advocacy for increased availability of screening equipment (eg for Otoacoustic Emissions (OAE) screening, portable hearing booths).</p>	<p>AHCSA Ear Health Project Officer</p> <p>ACCHSs</p> <p>General Practice</p> <p>SA Health sites</p>	<p>All services have reliable access to three essential pieces of equipment.</p> <p>Additional needs are identified and resourced.</p>
	<p>Promote use of video-otoscopy for:</p> <ul style="list-style-type: none"> > patient education > treatment adherence > monitoring and possible specialist ENT review. 	<p>AHCSA – Ear Health Project Officer</p> <p>ACCHSs</p> <p>General Practice</p> <p>SA Health sites</p>	<p>Increased use of video-otoscopy by health services.</p>
	<p>Emerging, automated hearing assessment technologies that improve access to hearing screening and diagnosis are evaluated for application in the sector and trialled as appropriate.</p>	<p>AH</p>	<p>Pathways to ENT and hearing rehabilitation services are strengthened through improved access to hearing screening and diagnosis.</p>
Leadership & Governance	<p>Advocacy for ear health inclusion in relevant SA Health policies</p>	<p>SAAEHRG</p> <p>SA Health</p>	<p>Ear and hearing health considered as a distinct issue in policy affecting Aboriginal children.</p>
	<p>SAAEHRG to monitor progress against SA Aboriginal Ear Health Framework.</p>	<p>SAAEHRG</p>	<p>Framework progress a regular agenda item.</p>
	<p>Support for establishment of multidisciplinary local reference groups (including general practitioners) for guideline-based service planning.</p>	<p>SAAEHRG</p> <p>AHCSA</p> <p>ACCHSs</p> <p>RDWA</p> <p>SA Health sites</p> <p>AH</p>	<p>Local ear health planning sessions.</p> <p>Regional ear health reference groups established where there is local capacity.</p>

Framework details section 3

Tertiary prevention and care

Tertiary prevention aims to avert the complications and disability associated with ear disease and hearing loss. This includes rehabilitative audiology and use of hearing aids. Children and young people must be supported to participate fully in education and employment opportunities. Rehabilitative strategies appropriately occur in conjunction with specialist care, for example Ear, Nose and Throat surgical referral and care. Referral to specialist care will be as per the 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)' (Commonwealth of Australia, 2011b).

Tertiary prevention strategies include clinical allied health services, early childhood interventions to promote school readiness and the use of listening strategies and acoustic modifications in the learning environment. The metropolitan Inclusive Preschool Program, for Aboriginal children with a hearing impairment, incorporates staff capacity building and speech pathology support.

Aboriginal young people interacting with the justice sector, including those in detention, need special consideration with regard to the implications of ear disease and hearing loss.

Development and use of effective referral pathways, with consideration of support for the patient journey, is the priority for improving tertiary prevention and care.

Table 5. A Framework for proposed action in tertiary prevention and specialist care

Strategy Area	Action	Agency	Performance Indicator
Service Delivery	<p>Support full engagement in education for Aboriginal children with ear disease, through early identification of ear disease and provision of appropriate support in educational setting.</p> <p>Replicate successful partnerships between health and education providers in early childhood and school settings.</p> <p>Examples of successful linkages include</p> <ul style="list-style-type: none"> > inclusive Preschool Program at Kalaya informed by 'Under Fives' screening results > assessments by Flinders University in remote SA that provided the audiometric assessment needed to access DECD support. <p>Provision of support per this Framework and 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)'.</p>	<p>SAAEHRG</p> <p>DECD</p> <p>SA Health</p> <p>ACCHSs</p> <p>Flinders University</p> <p>Private providers such as CBC and AH</p>	<p>Diagnosis is linked to educational support.</p> <p>Increased proportion of Aboriginal students meeting national literacy and numeracy benchmarks (see Closing The Gap outcomes) - halve the gap in reading, writing and numeracy achievement by 2018.</p> <p>Attendance and retention measures:</p> <ul style="list-style-type: none"> > attendance rates equivalent to non-Aboriginal students > higher retention rates > halve the gap in year twelve or equivalent attainment by 2020 > see DECD <i>Aboriginal Strategy 2013-2016</i>.
	<p>Recognition of the chronic nature of ear disease in primary health care management, including via care planning.</p>	<p>ACCHSs</p> <p>Private providers</p> <p>SA Health sites</p>	<p>Increased use of GP Chronic Disease Management Plans.</p> <p>Increase in allied health services accessed under a GPMP in 0-14 age group.</p>

	<p>Consideration of 'Doing time, time for doing' recommendations regarding Indigenous youth in the criminal justice system (Commonwealth of Australia, 2011a), including:</p> <ul style="list-style-type: none"> > Commonwealth support for universal pre-school entry hearing test and follow up support for Indigenous children > Commonwealth allocation for sound amplification systems in high Indigenous enrolment schools > police training in response to individuals with hearing loss > ensuring Indigenous youth in justice system can access holistic intervention programs including support for hearing loss. 	<p>SAAEHRG Prison Health DECD SA Health ACCHSs AH</p>	<p>Recommendations reviewed by SAAEHRG.</p>
	<p>Increase ENT service access by:</p> <ul style="list-style-type: none"> > promoting ENT outreach opportunities to medical practitioners > supporting clinic attendance through resource allocation for liaison and transport > utilising available resources, for example the current Eye and Ear Surgical Support Services program, to achieve positive patient surgical journeys. 	<p>SAAEHRG RDWA ACCHSs CHSA</p>	<p>An increase in the proportion of referred children who have attended an ENT appointment.</p> <p>Patients and families who travel for specialist care receive targeted support</p>
	<p>Review protocols for ENT referral and Australian Hearing referral and develop pathways for streamlined referral.</p>	<p>SA Health sites WCHN (previously CaFHS) Hearing Assessment Service - part of Children's Audiology Service ACCHSs AH</p>	<p>ENT and Australian Hearing referral criteria and process formalised.</p> <p>All agencies aware of referral pathways and criteria.</p>
Workforce	<p>Continued awareness raising and training in classroom accommodations and teaching strategies.</p>	<p>DECD AH Private providers such as CBC</p>	<p>More children with hearing loss have access to tailored strategies and technology to improve learning outcomes</p>
Health Information Systems	<p>Support for improvement in evidence base for ENT care via:</p> <ul style="list-style-type: none"> > representation at ASOHNS ATSI Ear Health Meeting > collaboration with research that builds local capacity > inclusion of research as a standing item on SAAEHRG agenda. 	<p>SAAEHRG All services</p>	<p>SA ear health activities presented at ASOHNS.</p> <p>Services including ACCHSs offered the opportunity to participate in research.</p>

	> development of formal local pathways describing collaboration between primary health care and external specialist service providers.	ACCHSs SA Health sites RDWA AH	Local referral pathways developed for ear health care and management of hearing loss.
	Mechanism for regular audit and review of programs in ear and hearing health, particularly access to ENT care.	All services	Audit of referrals to public ENT services conducted. Factors supporting attendance identified.
Access to essential medicines/ technologies	Support ongoing Soundfield installation and maintenance in schools and early childhood services with a high proportion of Aboriginal students.	SAAEHRG DECD CBC	Alternative models for funding and provision of Soundfield maintenance and training reviewed.
	Promote strategies to improve access to hearing rehabilitation services, including amplification, for children with persistent or permanent hearing loss.	AH	Children with persistent or permanent hearing loss have prompt access to hearing aids and services that help them hear well. The gap in age of first fitting between Aboriginal and non-Aboriginal children is reduced.
Leadership & Governance	Expand SAAEHRG membership. Ensure representation from Community-Controlled sector, government and non-government agencies, including maternal and child health and education.	SAAEHRG	SAAEHRG Terms of Reference reviewed. Membership from relevant organisations invited. Six weekly meetings held.
	Ensure SAAEHRG minutes distributed to relevant bodies including DECD, remote primary health care.	SAAEHRG	Distribution list updated.
	Advocacy for inclusion of ear health in policy relating to education, justice and employment.		
	Develop links between SAAEHRG and professional bodies in related areas including ENT surgery, audiology and speech pathology.		

Accessible and systematic care

In order for children to have timely access to the needed care in the right setting, it will be important that services adopt a systematic approach to care.

1 - Guideline based management

Children must be able to access standardised, guideline based treatment and follow up for middle ear disease. This will utilise up-to-date national guidelines for the management of otitis media in high-risk populations. 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)'(Commonwealth of Australia, 2011b) are currently in use.

2 - Referral pathways

Clear referral pathways, guided by evidence and tailored to locally-available specialist services, will indicate the care needed in particular clinical situations. They provide an important basis for shared understanding and coordinated activities.

These defined pathways should include the responsible agency and the time frame in which a referral should be actioned. They ideally visually depict the process of care and act as a decision making aid. The 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)'(Commonwealth of Australia, 2011b) provide a series of eight treatment and referral algorithms for particular middle ear conditions. These charts can be adapted to local circumstances.

Referral pathways should ideally be developed in conjunction with health care staff, local service providers, outreach services and specialists. As they are customised to reflect what is possible in the local situation, they will differ between urban and remote settings. Important considerations such as transportation, availability of liaison workers and standardised referral forms can be incorporated into referral pathways.

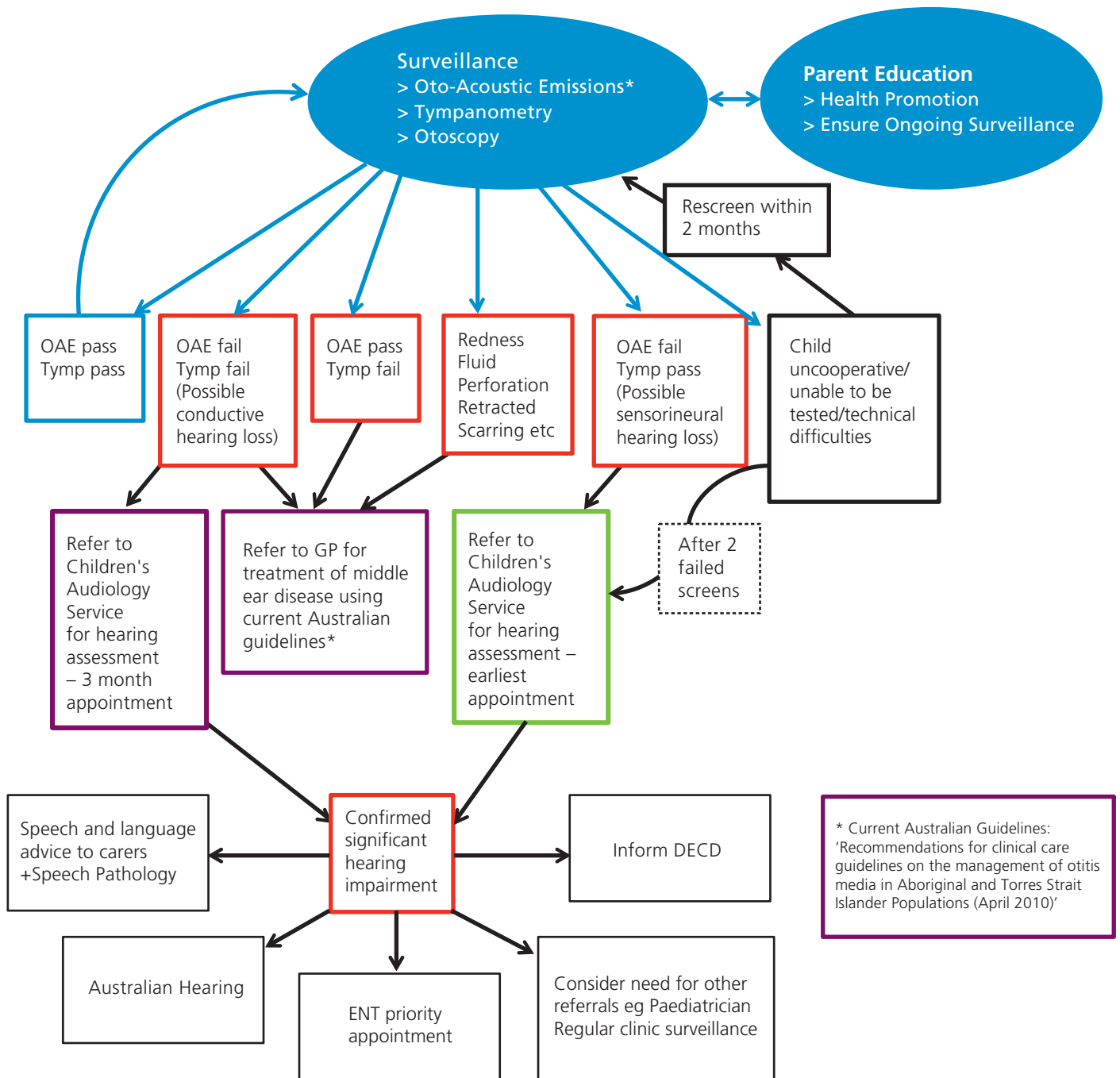
Examples of referral pathways for ear and hearing health surveillance (Figure 2.) and speech and language surveillance (Figure 3.) are provided below. Thanks go to the Watto Purrinna 'Under Fives' screening program for allowing their referral pathways to be adapted for this purpose.

3 - Patient journey and cultural compliance

Referral pathways describe the intended patient journey, however clients and their families require appropriate support to ensure that care is accessible. Families may need assistance to negotiate complex transitions between providers and agencies across the spectrum of care. Health care staff should be aware of the resources available to facilitate travel for children and their support people.

In order to provide accessible and culturally responsive services, care providers must be compliant with cultural advice and seek continuing guidance and direction. This process includes reflection on attitudes and practices, as well as gaining respect for the diversity of Aboriginal cultures and traditions. Programs should acknowledge community strengths and recognise the important role of Aboriginal staff members in cultural liaison and interpreting.

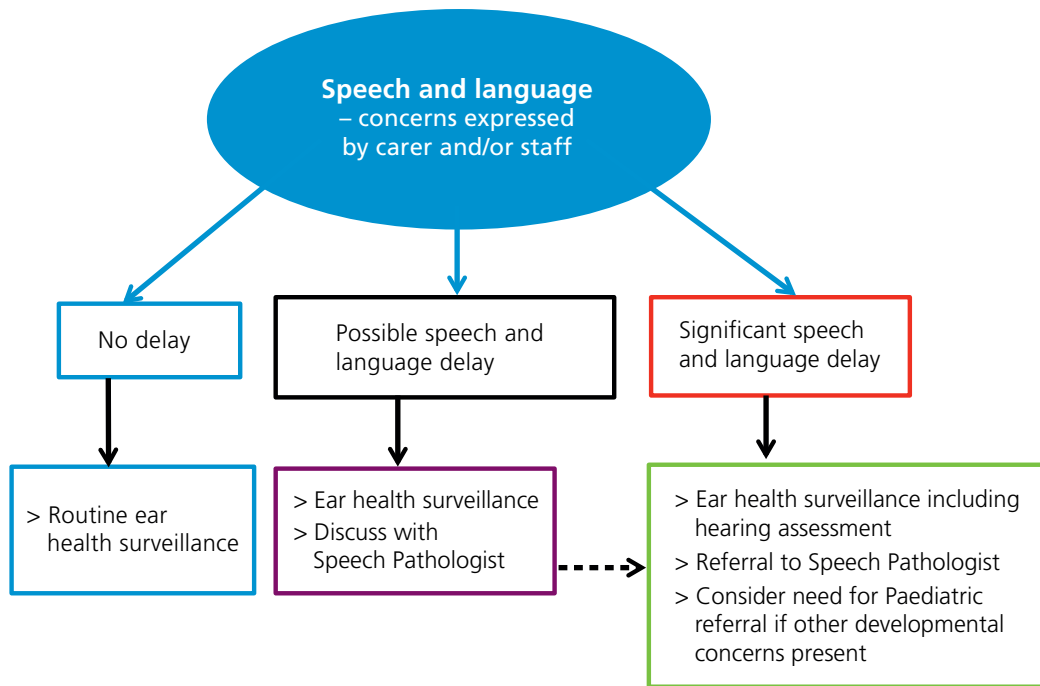
Figure 2. Example of referral pathways for ear and hearing health surveillance



* Current Australian Guidelines: 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)'

*Oto-Acoustic Emissions testing (OAE) is used as a hearing screen. It detects sound emissions from the inner ear and is useful when screening young children

Figure 3. Example referral pathways for speech and language surveillance



Implementation of ear and hearing referral pathways

A plan for implementing care pathways should be a priority, as it has been identified that the ear health treatment pathway is prone to collapse at various levels. Australian research in Indigenous ear health (CIRCA, 2010) has shown where this breakdown frequently occurs.

In some cases, initial clinic visits for ear disease may not occur, or there are barriers to medication administration. In most cases, carers perceived medical care and treatment as a one-off event, rather than appreciating a need for follow-up (ie surveillance). Research indicates significant breakdown at the level of accessing specialist care and hearing services. Therefore, referral pathways need to incorporate strategies to increase service capacity and accessibility.

A further finding in this research was that there was limited interaction between prevention activities and other medical care, meaning that a child could receive considerable treatment without carers developing an awareness of primary prevention strategies.

Figure 4 (below) provides a model to consider how ‘enabling’ factors can improve the transition between levels of care. Examples are provided, some of which have been successful in South Australian programs. However, each service will need to identify local enablers and barriers with the aim of strengthening referral pathways.

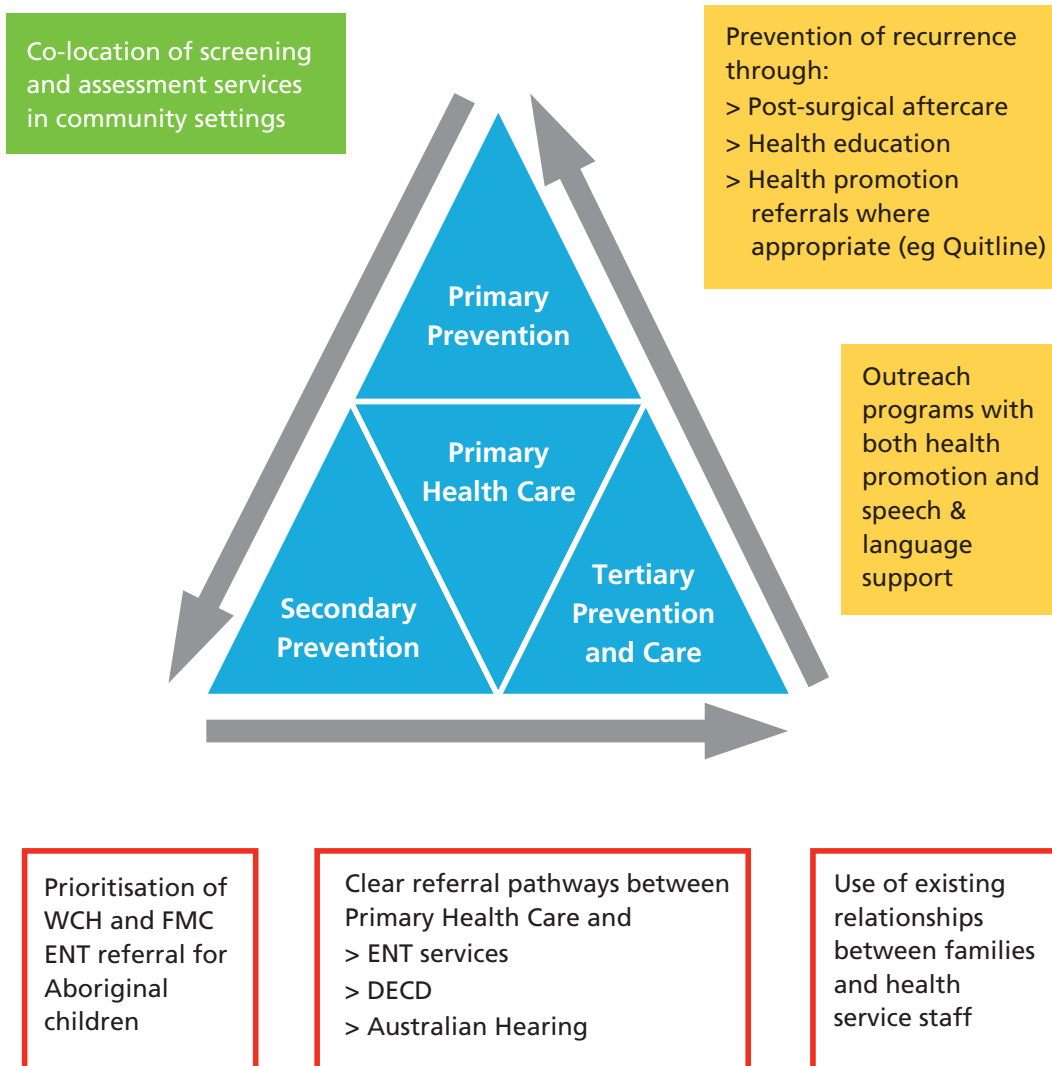
Evaluation and quality improvement

During the development and implementation of referral pathways, methods of evaluating the process of care should be considered. Evaluation of program outcomes will identify whether changes need to be made to the pathways or to the implementation process.

Evaluation of referral pathways may include:

- > Monitoring waiting times to access diagnostic testing
- > Case note audit to determine attendance at specialist appointments
- > Seeking child and family experiences of care
- > Documentation of medical outcomes with review of data to examine reasons for differences

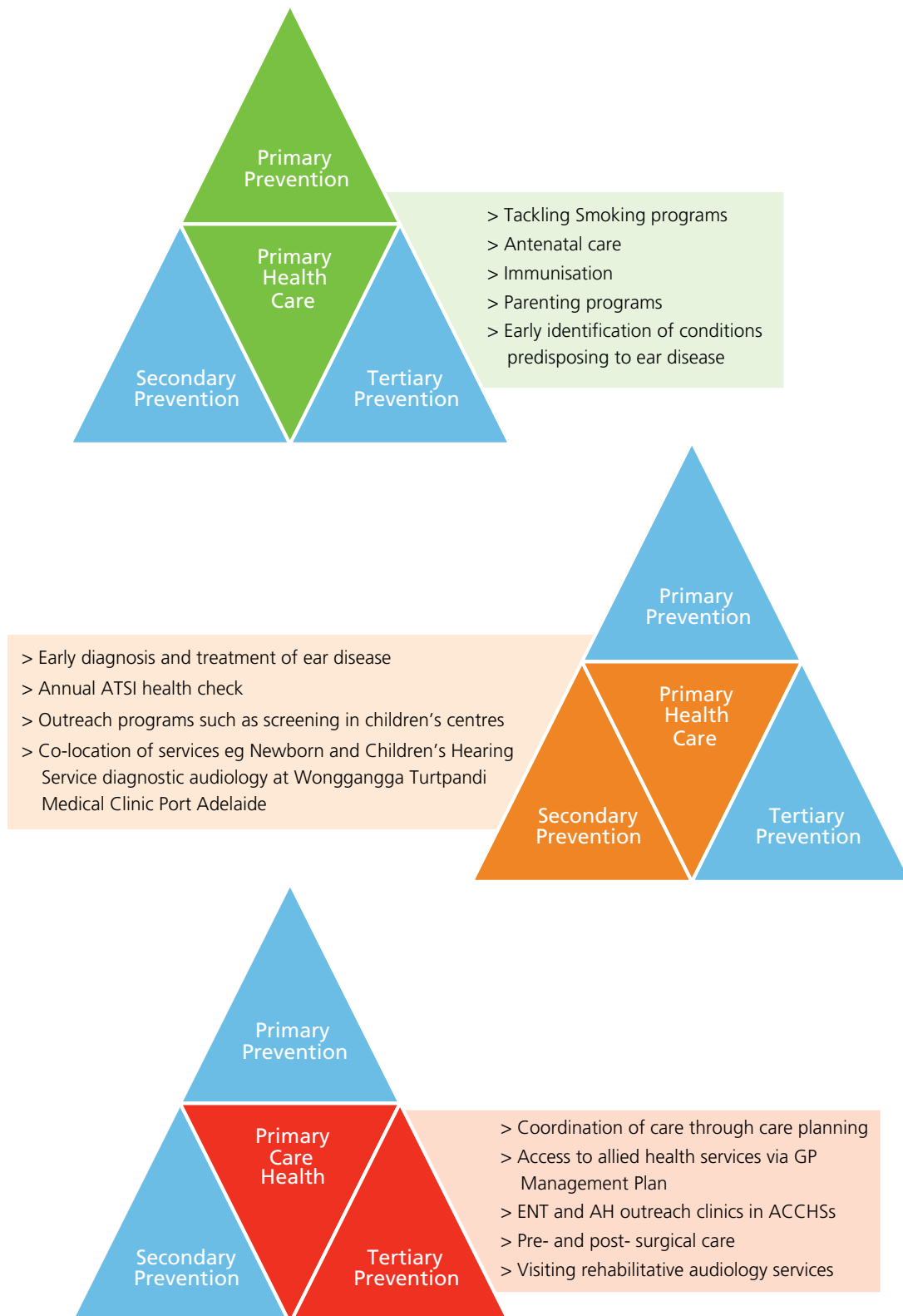
Figure 4. Promotion of care pathways – Enablers in ear health



Levels of prevention in comprehensive primary health care

The following figure illustrates the key role that primary care services have in each level of prevention. Recognition of these activities will be essential to the development of sustainable and effective pathways for care.

Figure 5. Primary, Secondary and Tertiary Prevention activities that occur within a comprehensive primary health care service



Appendix 1 List of stakeholders involved in framework development and role of agencies in care

Australian Hearing

Department for Education and Child Development (DECD)

Flinders University South Australia – Audiology Department

Rural Doctors Workforce Agency

SA Health – Country Health SA LHN

SA Health – Public Health Partnerships Branch (PHPB)

SA Health – WCHN Children’s Audiology Service

SA Health – Watto Purrinna (includes Under Fives program) (NALHN)

SA Health - Aboriginal Health Services (SALHN)

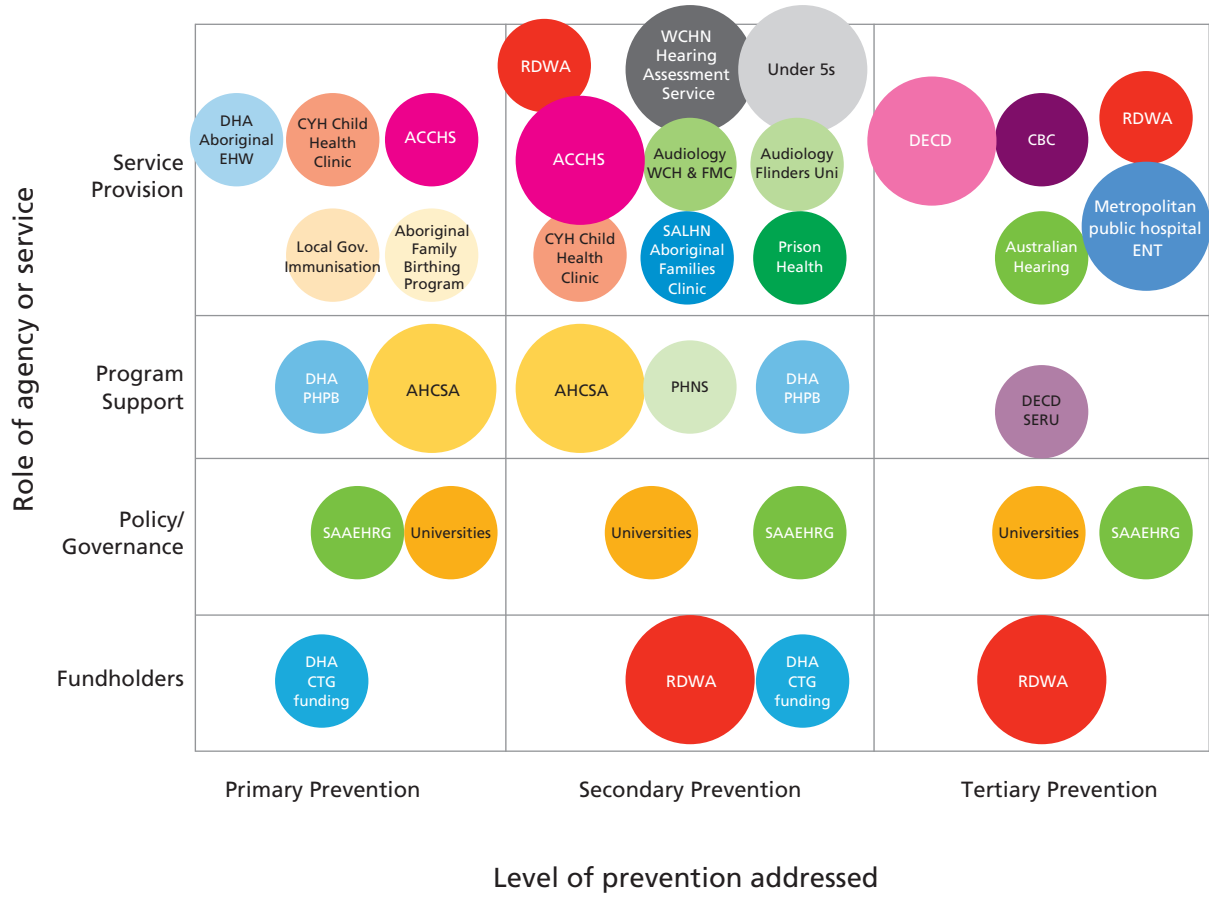
South Australian Aboriginal Ear Health Reference Group (SAAEHRG)

The Cora Barclay Centre (CBC)

The Aboriginal Health Council of South Australia (AHCSA) and member South Australian Aboriginal Community Controlled Health Services (ACCHSs)

Figure 6 depicts the roles that selected organisations have in Aboriginal children’s ear health care.

Figure 6. Contribution of selected South Australian agencies to Aboriginal children’s ear and hearing health
 Point size indicates relative magnitude of roles across the spectrum of care



Appendix 2 Current activities in ear and hearing health

Current ear and hearing health services in primary prevention

Strategy area	Current programs and services	Agency/organisation	Evidence base or evaluation
Service Delivery	Environmental Health Workers, including regional Aboriginal environmental health worker program activities: <ul style="list-style-type: none"> > home hardware maintenance, dust control > water supply and testing > promotion of the 'No Germs on Me' campaign. 	SA Health	
	Healthy Ears – Better Hearing, Better Listening Outreach Health promotion by allied health professionals	Rural Doctors Workforce Agency Under <i>Closing the Gap - Improving Eye and Ear Health Services for Indigenous Australians</i>	
	Culturally responsive antenatal care incorporating risk factor assessment, with follow-up of mother and baby.	SA Health ACCHSs Aboriginal Family Birthing Program/ Aboriginal Maternal and Infant Care Workers	Aboriginal Families Study reported increased positive experiences of care, greater support with social health issues in AFBP (Brown et al., 2015).
	Tackling smoking/healthy lifestyles team.	AHCSA	
	Ear health promotion materials - Care for Kids Ears.	Australian Government	Evaluated June 2013 Materials based upon <i>Developmental Research to inform Indigenous Social Marketing Campaigns - Final Report</i> (CIRCA, 2010).
	MBS item 715 annual ATSI health check incorporating ear and hearing health check. Annual assessment of housing (overcrowding, functionality) in children at high risk of hearing impairment.	ACCHSs SA Health sites Private general practice	See Chapter 7 of 'National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people, Second edition' (NACCHO/RACGP, 2012).
	Get the Drum on Ear Disease	Radio Adelaide	Research has indicated preference for audiovisual over text-based resources (CIRCA, 2010).
	Nutrition and hygiene health promotion roadshow in remote South Australia - "clean faces" and Trachoma control focus.	Country Health SA Local Health Network	
	Aboriginal Midwife and Infant Care workers in Ceduna, Port Augusta, Gawler, Whyalla and Murray Bridge provide ear health education to clients.	Country Health SA Local Health Network	

Workforce	Ear health training package for workers in the early childhood sector.	SA Health - Public Health Partnerships Branch	Training reviewed
Health Information Systems	Australian Indigenous EarInfoNet online resource.	Edith Cowan University	Australian Indigenous EarInfoNet section of HealthInfoNet <i>(Edith Cowan University).</i>
Access to essential medicines/ technologies	Universal childhood immunisation schedule. Includes additional vaccines for ATSI children.	SA Health Private general practice ACCHSs Local government	<i>H.influenzae</i> type B and potentially pneumococcal vaccination can help reduce OM (Closing the Gap Clearinghouse (AIHW & AIFS), 2014).
	Annual seasonal influenza vaccination Available free under National Immunisation Program for Aboriginal and Torres Strait Islander people: > aged 6 months to less than five years (as at March 2017) > aged 15 years and over.	SA Health Private general practice ACCHSs	
Leadership & Governance	Policy and Commonwealth programs relevant to primary prevention including: > Closing the Gap Framework (Council of Australian Governments, 2008) > Implementation Plan for the National Aboriginal and Torres Strait Islander Health Plan 2013–2023 -aims to increase prevention and early intervention strategies, including in ear health.	Commonwealth Government Government of South Australia	
	National Tackling Indigenous Smoking (TIS) Program	Commonwealth Government AHCSA	Review of Tackling Indigenous Smoking in 2014 informed future program direction. Future planned work includes areas of high need such as pregnant women (Commonwealth of Australia, 2015b).

Current Ear and Hearing Health Services in Secondary Prevention

Strategy area	Current programs and services	Agency/organisation	Evidence base or evaluation
Service Delivery	Universal newborn hearing screening program.	CaFHS follow up of missed screens	KPI: 97 % of eligible babies complete screening by age 30 days.
	Developmental screening. Four year old preschool check including pure-tone audiometry. Referrals made to GP and WCHN Hearing Assessment Service.	Child and Family Health Services	
	Diagnostic audiological assessment by Universal Neonatal Hearing Screening program (0-6 months) or Hearing Assessment Service (6 months to 18 years). This includes services across the State as well as within the Audiology outpatient department at the Women's and Children's Hospital. Aboriginal children aged 0-18 years of age are Priority 1 for this service. Outreach provided at a variety of sites including GP Plus clinics and children's centres. Referrals provided to ENT/ Australian Hearing/Paediatrics.	WCHN (formerly CaFHS) Children's Audiology Service AH	KPI: >97% of babies referred for diagnostic audiology through the Universal Neonatal Hearing Screening Program have this completed by 3 months corrected age. Referrals seen within 10 working days
	Southern area diagnostic audiology assessment with referral to public ENT service (children generally seen from around 4-6 months of age).	Flinders Medical Centre Audiology Department (referral by GP or SALHN staff)	
	Regional visiting diagnostic audiology services - excludes Anangu Pitjantjatjara Yankunytjatjara (APY) Lands.	WCHN (previously CaFHS) Children's Audiology Service	
	Metropolitan school screening for Aboriginal students.	Flinders University Audiology Department	
	Diagnostic Audiology	Partnership between WCHN and RDWA 'Healthy Ears – Better Hearing Better Listening' program	
	Ear health screening of regional school students.	Individual SA ACCHSs Country Health SA Local Health Network	

	Ear health surveillance, including opportunistic checks on each presentation.	Aboriginal Community Controlled Health Services SA Health sites Private general practice	'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)' (Commonwealth of Australia, 2011b).
	MBS item 715 annual ATSI health check incorporating ear and hearing health check.	ACCHSs SA Health sites Private general practice	
	'Healthy Ears – Better Hearing Better Listening' outreach.	Rural Doctors Workforce Agency – under <i>Closing the Gap - Improving Eye and Ear Health Services for Indigenous Australians</i>	
	Under Fives Metropolitan Hearing Screening – includes 'Lift the Lip' and immunisation check.	SA Health - Watto Purrinna Aboriginal Health Service	Evaluated 2015- accessible and culturally safe program. Basis for care is 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)' (Commonwealth of Australia, 2011b).
Workforce	Training for DECD staff relating to patterns of hearing loss and related speech and language issues.	AH	
	Aboriginal Health Worker training and upskilling in equipment use.	AHCSA – Ear Health Project Officer	
Health Information Systems	Use of AHCSA 'Ear Health Comprehensive Communicare Guide' to facilitate a systematic approach to care, via the patient information management system.	AHCSA SA ACCHSs	
	Presentation of Ear Health activities at SA Population Health Conference.	Watto Purrinna Under Fives Ear Health Program	
Access to essential medicines/technologies	Screening Equipment – distribution program in 2011 by OATSIH (Burns and Thomson, 2013).	Australian Government	
Leadership & Governance	Advocacy for increased access to ear health assessment. Maintain cross-sectoral awareness of current secondary prevention activities.	South Australian Aboriginal Ear Health Reference Group	

Current ear and hearing health services in tertiary prevention and specialist care

Strategy area	Current programs and services	Agency/organisation	Evidence base or evaluation
Service Delivery	Special Educator (Hearing), based at Special Education Resource Unit (SERU). Referral from Special Educator district office. Includes teaching strategies and modifications, curriculum review.	Department for Education and Child Development (DECD)	
	Inclusive Preschool Program for Aboriginal Children with Hearing Impairment – Kalaya preschool and satellite programs.	DECD Informed by Watto Purrinna 'Under Fives' Screening	Evaluation 2015 with support for continuation of program
	Metropolitan Early Intervention Service	DECD	
	Support for children with an identified permanent hearing impairment at any time from birth. Supports access to early intervention.	DECD (via Office of Non Government Schools and Services (ONGSS)) Correct as at September 2016	
	Use of Soundfield technology in selected classrooms. Loan Soundfield equipment for trial period.	DECD Cora Barclay Centre SERU	
	Classroom acoustic modification and assessment by Special Educator (Hearing).	DECD	
	Hearing impairment resources including local 'Can't hear can't learn' resource.	DECD	
	ENT surgical care for Aboriginal children is prioritised.	Women's and Children's Hospital (in collaboration with Nganampa Health) All SA Health metropolitan hospitals	
	Healthy Ears program > Audiology > ENT Eye and Ear Surgical Support Services Program (until 30 June 2017).	Rural Doctors Workforce Agency	See 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)'(Commonwealth of Australia, 2011b).
	Regional ENT surgical services.	Country Health SA	
	Rehabilitative audiology, with provision of personal amplification – includes APY Lands.	Australian Hearing	
	Rehabilitative audiology Service available to existing clients during a period of incarceration (Aged < 26 or >50 years).	Australian Hearing	

	Speech Pathology/Therapy. Public provision dependent on age of child and enrolment in education.	SA Health DECD Private providers – can access through GP Chronic Disease Management Plan	See 'Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)'(Commonwealth of Australia, 2011b).
	Educational support including planned pilot teleconferencing program supporting local staff to deliver therapy- <i>Hear to Listen</i> .	Cora Barclay Centre	
Workforce	Voluntary participation in teacher training offered by Hearing Coordinators.	DECD	
	In-service education offered to local staff during outreach visits.	Rural Doctors Workforce Agency	
Health Information Systems			
Access to essential medicines/ technologies	Supplier of PhonicEar sound field amplification equipment, with experience in maintenance and training.	Cora Barclay Centre	
Leadership & Governance	Policy for Aboriginal learners including DECD <i>Aboriginal Strategy 2013-2016</i> .	DECD	

Appendix 3 Policy context

SA Health Aboriginal Health Care Plan 2010-2016

Acknowledges social determinants of health, and views strengthening primary health care as a priority.

Aims include clear care pathways and provision of care close to home as much as possible, with a commitment to supporting ACCHSs.

A healthy start in life is noted as a priority area for action, with support for tackling maternal smoking and promoting healthy diet.

Ear health is noted as a specific issue, with concerns that preventive opportunities are missed. Under-fives are a priority group. It was planned to support an increase in the number of Medicare child health checks performed, with complementary ear health screening.

There is recognition for the need for improved data collection, as well as for consideration of access options such as tele-otology.

Government of South Australia Department for Education and Child Development Aboriginal Strategy 2013-2016

Key strategies include:

- > *resourcing of preschool access*
- > *interagency and regional office collaboration in assessment and early intervention for children with hearing, speech or language difficulties*
- > *school entry assessment for all Aboriginal children, alongside implementation of appropriate early intervention.*

Education Council National Aboriginal and Torres Strait Islander Education Strategy

Endorsed 18 September 2015

Priority areas of relevance to ear and hearing health include:

- > *Transition points – in particular early childhood transitions, as per the COAG priority of streamlined transition from early learning to school. Specific measures to improve early childhood education engagement will be considered. Reducing developmental vulnerabilities is a related area for intervention.*
- > *School and child readiness – as promoted by high-quality early childhood education services that work in association with communities.*
- > *Literacy and numeracy - this requires proven methodologies, with consideration of personalised approaches such as instruction in English as an additional language.*

Closing the Gap Framework(Council of Australian Governments, 2008)

Set national priorities for improvements in Aboriginal health and wellbeing, including life expectancy and outcomes in education and employment.

Closing the Gap - Improving Eye and Ear Health Services for Indigenous Australians

Past initiatives under this agreement have included health worker training, funding for clinical equipment, additional surgery and health promotion.

Commonwealth National Partnership on Universal Access to Early Childhood Education

National Aboriginal and Torres Strait Islander Health Plan 2013-23 (Commonwealth of Australia, 2013)

- > *Notes the importance of strategies that address environmental, economic and social inequalities.*
- > *Highlights the importance of maternal and infant health, and the need to target risk factors at key life stages.*
- > *A need is noted for focus on areas of great disparity affecting quality of life, including ear, eye and oral health.*
- > *One key maternal and infant strategy is to 'promote awareness of the National Immunisation Program to increase the uptake amongst Aboriginal and Torres Strait Islander families' (p.31).*
- > *The idea of providing an organising framework for conditions that need activities across primary care, specialist and non-health services is noted (with ear health being one of these conditions).*

Appendix 4 Guidelines for management of otitis media and conductive hearing loss

NACCHO/RACGP (2012) National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people, 2nd edition

Audiology Australia (2012).Chronic otitis media and hearing loss practice (COMHeLP) A manual for audiological practice with Aboriginal and Torres Strait Islander Australians

Commonwealth of Australia (2011) Recommendations for clinical care guidelines on the management of otitis media in Aboriginal and Torres Strait Islander Populations (April 2010)

Appendix 5 Interstate programs and services

Queensland

Deadly Ears, Deadly Kids, Deadly Communities 2009-2013

Deadly Kids, Deadly Futures: Queensland's Aboriginal and Torres Strait Islander Child Ear and Hearing Health Framework 2016-2026.

New South Wales

Ministry of Health NSW, *NSW Aboriginal Ear Health Program Guidelines 2011-2015*

Northern Territory

Hearing Health Program

This includes outreach audiology, child hearing health coordinators in a case management role, and use of tele-otology for management of routine ear conditions (separate from a Medicare funded ENT service).

Western Australia

WA Department of Health, Otitis Media Model of Care Working Group January 2013, *Otitis Media Model of Care Ear Bus services*

The Earbus Foundation of WA (Otitis Media Group, 2013) aims to work with Indigenous and at-risk children. The Earbus program includes a mobile children's clinic, screening and follow-up services, including a GP service. There are also follow up ENT services under the program.

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Many dedicated individuals have worked tirelessly towards better ear health for Aboriginal children, and this Framework recognises those achievements.

Implementation of this Framework will require continued collaboration between staff, agencies, families and communities. Thank you; this will be central to the success of a coordinated approach.

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