Aboriginal, Rural and Remote Audiological Services: Where do we Start? Audiological Practice Guidelines

Jeanette Scott

6th National Rural Health Conference
Canberra, Australian Capital Territory, 4-7 March 2001
Aboriginal, rural and remote audiological services: where do we start? Audiological practice guidelines

Jeanette Scott, Audiological Society of Australia/Territory Health Services

INTRODUCTION

Nothing works. I am so tired, so frustrated; yet I know that this is important work. No one understands. The managers of my department think that I should just keep testing just keep fitting the hearing aids. All they care about is the numbers of people seen. They don’t understand that the outcomes are so poor.

This is the ongoing everyday dilemma for a new audiologist in the bush. Testing, testing and more testing. More and more hearing impaired people. How can we help each other as well as our clients to provide a better service? Are there some ways to deliver services that are better than other ways? How do we share the knowledge of 20 years of experience in rural and remote audiology in Australia? Why has it been one step forward and two steps back? Why is it that seemingly there has been very little change in the burden of hearing loss in Aboriginal, rural and remote communities over the last 20 years?

Hearing loss: the most common disability

Hearing loss is the most prevalent disability in Australia, affecting 22% of the population. The prevalence of severe hearing loss in the rural population is higher than that of the metropolitan population. The prevalence of hearing loss in Aboriginal people is estimated to be at least 10 times that of non-Aboriginal people. In the Northern Territory it is estimated that 1 in 3 of the population have a significant hearing loss. Very high prevalence of chronic ear disease (otitis media) has been documented in children living in conditions of poverty, especially among Indigenous populations. Poor hygiene, malnutrition, and cross-infection (eg from overcrowded housing, etc) are typically cited as contributing factors. Prevalence of ear disease among Indigenous Australian children living in rural and remote communities has been found to range from 40–70%, with younger children experiencing more frequent infectious episodes. Ruptures of the ear drum typically begin within the first three months of life. With repeated infections and eardrum ruptures the eardrums become scarred and thickened. In many cases the ruptures become too large to heal and often require reconstructive surgery to repair.

As a result of otitis media Indigenous Australians have exceptionally high rates of associated conductive hearing loss. This type of hearing loss experienced during critical periods for language development is associated with significant academic, social and economic consequences later in life. In some Aboriginal communities 100% of the babies have a hearing loss by the age of 4 months.
The eternal challenge
There are several factors, which make audiological management of Aboriginal, rural and remote populations difficult.

♦ Hearing loss is not a life-threatening condition and is not easily visible. It is also very common so it is more often regarded by health personnel and clients as a symptom of the general ill health of a child than as a disease or condition which requires diagnosis and treatment in its own right.

♦ The consequences of hearing loss are rarely understood, in particular, the link between hearing loss and educational achievement.

♦ Hearing loss and communication difficulties are inextricably linked. Often clients will not acknowledge a communication disability due to discrimination.

♦ The early onset of otitis media means that the major burden of illness and hearing loss is occurring in pre-school children. These children are both difficult to assess and hard to access for identification and management by visiting health and educational resource people.

Guideline support
Health practitioners are increasingly becoming aware of the value of evidence-based approaches to health care delivery. These approaches focus on procedures, which have been shown to improve health outcomes as well as decreasing practice variation and optimising resource utilisation. The primary aim of guidelines is to deal with uncertainty in clinical decision making. The most important criteria for the selection of topics are clinical uncertainty and evidence of controversy in the delivery of optimal practice.\(^5\)

This paper describes the development of the Audiological Practice Guidelines for Aboriginal, Rural and Remote Populations by the Audiological Society of Australia (ASA). If guidelines are to be accepted by clinicians, they must be based on the best available evidence. However the reality is that a lot of published audiological work that is based in rural and remote areas has limited scientific validity. There are no random controlled trials or systematic reviews related specifically to audiological research. However there are a number of audiologists who have a rich experience in Aboriginal, rural and remote practice.

AIM
To develop practical, transferable guidelines for audiologists working with Aboriginal, rural and remote clients.

METHOD
The ASA has recently developed the ASA Professional Standards of Practice for Audiologists. The Standards document outlines general procedures to be followed in
the application of the various assessments and interventions we use in the course of our clinical practice. There are some specialised areas, however, which are not addressed in the general guidelines document and one of these is the provision of audiological services to Aboriginal, rural and remote Australians.

A workshop was held in Darwin in 1999 funded by the Audiological Society of Australia, Australian Hearing (the employer of 40% of audiologists nationally) and the Territory Health Services. The participants of the workshop included a wide range of health and education professionals, as well as of those most affected by the lack of current guidelines, the health workers in the field and their patients. This workshop recognised the need to develop guidelines that were broader than just clinical practice. The practical considerations of service delivery to Aboriginal, rural and remote populations were considered to be of great importance, and the guidelines needed to be easy to use, realistic and transferable.

The ASA has recognised the importance of Aboriginal, rural and remote issues and has established an Aboriginal, rural and remote portfolio as part of its organisational structure. In addition an Aboriginal, Rural and Remote Interest Group (ARRIG) has been established. This group consists of audiologists working in most states and in a range of roles (diagnosis, rehabilitation and research) as well as a Health Promotion Officer and ear health researcher. This group is developing a supplement to the Standards for use by rural and remote audiologists. The group has been divided into sections with one person co-ordinating each section. The combined group communicates by email and teleconferences.

In 1999 a review of audiological literature produced a bibliography relating to audiological Aboriginal, rural and remote research. The guidelines will refer to this research wherever it is relevant. However, expert opinion is a valuable source of evidence, even though it is subject to bias and limitations and will be the main source of the recommendations.

The guidelines are also being developed using the Draft Recommendations for Clinical Care Guidelines on the Management of Otitis Media in Aboriginal and Torres Strait Islander Populations. These guidelines are the second set of national guidelines developed by the Office of Aboriginal and Torres Strait Islander Health (OATSIH) and are based on the Systematic Review of the existing evidence and primary care guidelines on the management of otitis media in ATSI populations.

The Audiological Guidelines have been divided into 5 Sections: Prevention, Diagnosis, Management, Prognosis and Practical Considerations for Service Delivery. Each Section has strategies and a number of recommendations under each strategy. While the recommendations have been based on the best available evidence, their applicability will also be dependent on local factors. Most important are the personal preferences of the affected individual, and the local resources available to assist in the management of hearing loss. These local factors should always be considered when developing a hearing program and when advising families about their management options. In some cases, strict adherence to the guidelines will not be appropriate. The guidelines will also include some audiological definitions.

Some excerpts from the draft guidelines are shown below.
General principles for service delivery (cont.)

Team approach
A team approach to service delivery is essential as successful audiological management is dependant on educational, medical and community support. No service provider can work effectively alone.

- The first step towards best practice is to identify and develop:
  - prospective members of a local “hearing team”;
  - mechanisms and systems for collaboration between team members;
  - the core knowledge and skills needed by each member of the team;
  - the associated knowledge and skills needed by each member of the team; and
  - working relationships with local Indigenous organisations and agencies.

Resource allocation
Audiological resources in rural and remote areas are scarce.

- The second step towards best practice is to evaluate your current resources and achieve a balance in regard to:
  - community education, staff education and client-focused activities;
  - urban and remote needs and service;
  - the emphases to be placed upon different target age groups; and
  - accessing funding sources for special projects, pilots etc.

- Criteria should be established for:
  - selecting target locations for services;
  - deciding how many visits should be made to target locations, ie a minimum number or frequency of visits; and
  - developing realistic and attainable service goals, ie annual/triennium/decade.

Planning
Planning is essential in order to measure and achieve practical goals. Your potential workload is huge. Take the time to plan.

- The third step to achieving best practice is to plan activities that:
  - have explicit and definable performance indicators;
  - maximise follow-up;
  - achieve efficient individual case management;
  - transfer knowledge and skills to local, Indigenous people;
  - find ways to include/involve the caregivers and family members in client management. (and community members?);
  - share resources and costs across agencies eg travel costs;
  - share student/client/patient information (with the client’s permission);
  - avoid duplication of services; and
  - recruit and retain suitable staff.
Sharing information

Sharing information is fun, empowering, encouraging, exciting and simple (an important distinction!). It is essential in rural and remote practice as isolation stifles growth for all.

♦ The fourth step to achieving best practice is to make sure you:
  – publicise good news stories so that others learn from them;
  – publicise hearing team activities and services;
  – use opportunities for informal communication;
  – use opportunities for formal communication, eg conferences, newsletters;
  – learn about and apply published or otherwise accepted protocols;
  – learn about local, State and federal policy directions and incorporate these into daily practice;
  – learn from agencies and projects outside hearing (and outside health and education); and
  – use incidental opportunities to provide service and training.

Audiological principles for service delivery

♦ In general primary health care personnel such as Aboriginal health workers and community nurses conduct hearing, communication and ear state screening.

♦ Screening should only be performed on asymptomatic populations therefore screening is inappropriate for Aboriginal children with known hearing loss.

♦ A child with a suspected hearing problem should not be screened, but provided with a diagnostic assessment.

♦ No diagnosis of hearing loss can be made on the basis of a screening result.

♦ No prevalence data of hearing loss can be made on the basis of screening results.

♦ Parental or care-giver consent should be obtained prior to any screening, audiological assessment, procedure or referral.

♦ Parents or care-givers should be encouraged to be present at all consultations other than screenings.

♦ For traditional Indigenous clients of any age, prognostic evaluation of feasible courses of action or non-intervention should directly reflect the clients’ goals and expectations. These may be quite different from those of non-Indigenous clients and professionals. Even the assumption that a hearing condition is a “disability” could be challenged.

♦ The management of hearing disabilities should be negotiated, rather than prescribed. Decision making will often be an extended, evolving process that includes all involved family and community support members. Support of the parents can often be assisted through the local health clinic eg battery provision, sending devices for repair etc.

♦ Avoid pressing for an immediate decision when obtaining informed consent or formulating a management plan. Be sure clients and families know that non-consent and non-participation is one of their options. Foster their self-responsibility. Take the role of a valuable resource for the community, and make it explicit that there will be shared responsibility for outcomes.
1. **Section C — diagnosis**
Facilitate early detection of hearing loss to avoid possible adverse effects

## Diagnosis of hearing loss in children under 3 years

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Recommendation</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Surveillance</strong></td>
<td>♦ Ear examination should be performed when the child comes for vaccinations and other well-baby checks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Parents should be periodically questioned about their child’s hearing and speech development.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Distraction tests can be used in communities with quiet testing environments, however they should be carefully evaluated.</td>
<td></td>
</tr>
<tr>
<td><strong>History</strong></td>
<td>♦ Local Clinic staff should be well-informed about the signs and symptoms of ear disease and of hearing loss in young children</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Local Clinic staff should also be well-informed about normal speech and language milestones</td>
<td></td>
</tr>
<tr>
<td><strong>Otoscopy</strong></td>
<td>♦ Otoscopy should be performed routinely for surveillance and whenever a sick child presents to the clinic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Otoscopy is not a good indicator of hearing loss but is essential to the diagnosis of middle ear disease</td>
<td></td>
</tr>
<tr>
<td><strong>Tympanometry</strong></td>
<td>♦ Tympanometry is not a good indicator of hearing loss and as such is not a good screening tool.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Tympanometry is an essential tool as part of a diagnostic test battery</td>
<td></td>
</tr>
<tr>
<td><strong>Objective Hearing Assessments</strong></td>
<td>♦ Evoked Otoacoustic Emissions Testing is suitable for screening in the neonatal period but not suitable thereafter for the ATSI population.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Evoked Response Audiometry is a suitable screening tool in the neonatal period and may form part of a diagnostic test battery</td>
<td></td>
</tr>
<tr>
<td><strong>Speech</strong></td>
<td>♦ Speech listening tests in English or community languages may be useful screening tools. ★★</td>
<td></td>
</tr>
<tr>
<td><strong>Behavioural Hearing Assessments</strong></td>
<td>♦ A behavioural assessment in the community should be used to prioritise referrals to Regional Hearing Centres.</td>
<td></td>
</tr>
</tbody>
</table>
### Diagnosis of hearing loss in preschool and school age

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Recommendation</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveillance</td>
<td>The following recommendations for HOW screening should be performed apply IF the local team agrees that school-aged children are to be screened.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Pure tone play audiometry is the recommended screening tool.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Word identification tests in English (such as the Kendall Toy Test and Co-operative test) can be used, however they should be carefully evaluated when used with children whose second language is English.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Speech listening tests in community languages may be useful screening tools.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Tympanometry is not a recommended hearing screening tool with Aboriginal children due to the low sensitivity ie false positives; high number of Type B tympanograms with normal hearing.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Minimum screening frequencies are 1 KHz and 4 KHz. Pass thresholds are 25 dB in both ears (two responses). Other responses should be recorded, if measured.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Children should be screened at school entry or as soon as possible after this time.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Children who have passed a screening test should not be rescreened.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Audiologists should encourage AHWs and nurses to perform screening as part of their duties.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ All personnel performing screening must be validated or supervised by an audiologist.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ No more than two screening tests should be performed prior to full audiological assessment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ A full audiological assessment should be performed within 3 months of the failed screening test.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ All screening should be performed with the assistance of local community and school personnel.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Screening pass/fail data should be fed back to the school. The school should not be informed that a child has a hearing loss on the basis of a screening test.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ Audiometry should not be performed on children with external ear discharge or external ear sores.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ A full audiological assessment should be performed whenever there is concern about a child’s hearing or where a history of hearing loss is known.</td>
<td></td>
</tr>
<tr>
<td>History</td>
<td>♦ No management should be recommended without discussing the results with the parent and obtaining relevant history.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ An interpreter should be present if English is the second language and communication with the parent is difficult.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>♦ All past audiological and medical records should be kept in the child’s individual school and clinic files</td>
<td></td>
</tr>
<tr>
<td>Strategy</td>
<td>Recommendation</td>
<td>Reference</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
</tbody>
</table>
| Otoscopy      | ♦ Otoscopy should be performed at each assessment (screening or full audiological assessment).  
♦ Pneumatic otoscopy is preferred.  
♦ Videotoscopy is recommended as a training tool, or as a visual record however confidentiality issues should be considered.  
♦ Care should be taken when providing medical information to children.  
♦ All otoscope tips should be disinfected according to infection control procedures.  
♦ Wax should not be removed if the child’s hearing is normal and there are no symptoms of ear disease.  
♦ Wax should be removed by syringing with tepid soapy water when the eardrum is intact.  
♦ Training should be obtained prior to performing syringing. Clinic staff only should remove all foreign bodies.  
♦ All personnel performing otoscopy should receive regular training and validation from an ENT specialist or doctor with specialist skills in otoscopy. This is particularly so when assessing Aboriginal people. |           |
| Tympanometry  | ♦ Tympanometry should be performed at every audiological assessment as part of the diagnostic battery.  
♦ Tympanometry results should be correlated with the otoscopy results.  
♦ Tympanometry should not be performed on discharging ears.  
♦ Care should be taken with the model of tympanometer used with the Aboriginal population. Some portable hand held tympanometers do not clearly define the difference between a flat Type B tympanogram and an As.  
♦ A plot of the tympanogram should be attached to the report when an unusual shape is obtained. |           |
| Hearing Assessment | ♦ Pure tone audiometry is the recommended diagnostic test.  
♦ Otoacoustic emissions should be performed on children who are difficult to test and who have normal Tympanometry.  
♦ Hearing assessments should ideally be performed in sound-treated conditions.  
♦ In large communities where no soundproof booth is available the community should be encouraged to sound treat a room for testing.  
♦ Where hearing assessments are performed in non-sound treated conditions the ambient noise levels should be recorded and this noted on the audiogram.  
♦ Hearing assessments should include 6 and 8 kHZ if possible due to the high prevalence of high frequency hearing loss in children with chronic OM.  
♦ Bone conduction with insert masking should be performed where possible. |           |
| Speech        | ♦ Speech audiometry is usually difficult with children who have English as the second language.  
♦ Speech listening tests in community languages should be used, where available, eg Yolngu, Tiwi, Warlpiri |           |
## 2. Section C — diagnosis
Facilitate early detection of hearing loss to avoid possible adverse effects

### Diagnosis of hearing loss in children under 3 years

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Recommendation</th>
<th>Reference</th>
</tr>
</thead>
</table>
| Surveillance              | ♦ Ear examination should be performed when the child comes for vaccinations and other well-baby checks.  
♦ Parents should be periodically questioned about their child’s hearing and speech development.  
♦ Distraction tests can be used in communities with quiet testing environments, however they should be carefully evaluated. |           |
| History                   | ♦ Local Clinic staff should be well-informed about the signs and symptoms of ear disease and of hearing loss in young children  
♦ Local Clinic staff should also be well-informed about normal speech and language milestones |           |
| Otoscopy                  | ♦ Otoscopy should be performed routinely for surveillance and whenever a sick child presents to the clinic  
♦ Otoscopy is not a good indicator of hearing loss but is essential to the diagnosis of middle ear disease |           |
| Tympanometry              | ♦ Tympanometry is not a good indicator of hearing loss and as such is not a good screening tool.  
♦ Tympanometry is an essential tool as part of a diagnostic test battery |           |
| Objective Hearing Assessments | ♦ Evoked Otoacoustic Emissions Testing is suitable for screening in the neonatal period but not suitable thereafter for the ATSI population.  
♦ Evoked Response Audiometry is a suitable screening tool in the neonatal period and may form part of a diagnostic test battery |           |
| Speech                    | ♦ Speech listening tests in English or community languages may be useful screening tools. *** |           |
| Behavioural Hearing Assessments | ♦ A behavioural assessment in the community should be used to prioritise referrals to Regional Hearing Centres. |           |
### Diagnosis of hearing loss in preschool and school age

#### Strategy | Recommendation
--- | ---
**Surveillance** | The following recommendations for HOW screening should be performed apply IF the local team agrees that school-aged children are to be screened.
- Pure tone play audiometry is the recommended screening tool.
- Word identification tests in English (such as the Kendall Toy Test and Co-operative test) can be used, however they should be carefully evaluated when used with children whose second language is English.
- Speech listening tests in community languages may be useful screening tools.
- Tympanometry is not a recommended hearing screening tool with Aboriginal children due to the low sensitivity ie false positives; high number of Type B tympanograms with normal hearing.
- Minimum screening frequencies are 1 KHz and 4 KHz. Pass thresholds are 25 dB in both ears (two responses). Other responses should be recorded, if measured.
- Children should be screened at school entry or as soon as possible after this time.
- Children who have passed a screening test should not be rescreened.
- Audiologists should encourage AHWs and nurses to perform screening as part of their duties.
- All personnel performing screening must be validated or supervised by an audiologist.
- No more than two screening tests should be performed prior to full audiological assessment.
- A full audiological assessment should be performed within 3 months of the failed screening test.
- All screening should be performed with the assistance of local community and school personnel.
- Screening pass/fail data should be fed back to the school. The school should not be informed that a child has a hearing loss on the basis of a screening test.
- Audiometry should not be performed on children with external ear discharge or external ear sores.
- A full audiological assessment should be performed whenever there is concern about a child’s hearing or where a history of hearing loss is known.

#### History
- No management should be recommended without discussing the results with the parent and obtaining relevant history.
- An interpreter should be present if English is the second language and communication with the parent is difficult.
- All past audiological and medical records should be kept in the child’s individual school and clinic files.
<table>
<thead>
<tr>
<th>Strategy</th>
<th>Recommendation</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otoscopy</td>
<td>♦ Otoscopy should be performed at each assessment (screening or full audiological assessment).&lt;br&gt;♦ Pneumatic otoscopy is preferred.&lt;br&gt;♦ Videotscopy is recommended as a training tool, or as a visual record however confidentiality issues should be considered.&lt;br&gt;♦ Care should be taken when providing medical information to children.&lt;br&gt;♦ All otoscope tips should be disinfected according to infection control procedures.&lt;br&gt;♦ Wax should not be removed if the child’s hearing is normal and there are no symptoms of ear disease.&lt;br&gt;♦ Wax should be removed by syringing with tepid soapy water when the eardrum is intact.&lt;br&gt;♦ Training should be obtained prior to performing syringing. Clinic staff only should remove all foreign bodies.&lt;br&gt;♦ All personnel performing otoscopy should receive regular training and validation from an ENT specialist or doctor with specialist skills in otoscopy. This is particularly so when assessing Aboriginal people.</td>
<td></td>
</tr>
<tr>
<td>Tympanometry</td>
<td>♦ Tympanometry should be performed at every audiological assessment as part of the diagnostic battery.&lt;br&gt;♦ Tympanometry results should be correlated with the otoscopy results.&lt;br&gt;♦ Tympanometry should not be performed on discharging ears.&lt;br&gt;♦ Care should be taken with the model of tympanometer used with the Aboriginal population. Some portable hand held tympanometers do not clearly define the difference between a flat Type B tympanogram and an As.&lt;br&gt;♦ A plot of the tympanogram should be attached to the report when an unusual shape is obtained.</td>
<td></td>
</tr>
<tr>
<td>Hearing Assessment</td>
<td>♦ Pure tone audiometry is the recommended diagnostic test.&lt;br&gt;♦ Otoacoustic emissions should be performed on children who are difficult to test and who have normal Tympanometry.&lt;br&gt;♦ Hearing assessments should ideally be performed in sound-treated conditions.&lt;br&gt;♦ In large communities where no soundproof booth is available the community should be encouraged to sound treat a room for testing.&lt;br&gt;♦ Where hearing assessments are performed in non-sound treated conditions the ambient noise levels should be recorded and this noted on the audiogram.&lt;br&gt;♦ Hearing assessments should include 6 and 8 kHZ if possible due to the high prevalence of high frequency hearing loss in children with chronic OM.&lt;br&gt;♦ Bone conduction with insert masking should be performed where possible.</td>
<td></td>
</tr>
<tr>
<td>Speech</td>
<td>♦ Speech audiometry is usually difficult with children who have English as the second language.&lt;br&gt;♦ Speech listening tests in community languages should be used, where available, eg Yolngu, Tiwi, Warlpiri</td>
<td></td>
</tr>
<tr>
<td>Strategy</td>
<td>Recommendation</td>
<td>Reference</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
</tbody>
</table>
| History           | ♦ Parents or caregivers should be encouraged to be present at full audiological assessments.  
♦ No management should be recommended without discussing the results with the parent and obtaining relevant history.  
♦ An interpreter should be present if English is the second language and communication with the parent is difficult.  
♦ All past audiological and medical records should be kept in the child’s individual file. |           |
| Otoscopy          | ♦ Otoscopy should be performed at each assessment (screening or full audiological assessment).  
♦ Pneumatic otoscopy is preferred.  
♦ Videotoscopy is recommended as a training tool, or as a visual record however confidentiality issues should be considered.  
♦ Care should be taken when providing medical information to children.  
♦ All otoscope tips should be disinfected according to infection control procedures.  
♦ Wax should not be removed if the child’s hearing is normal and there are no symptoms of ear disease.  
♦ Wax should be removed by syringing with tepid soapy water. Training should be obtained prior to performing syringing.  
♦ Only Clinic staff should remove foreign bodies.  
♦ All personnel performing otoscopy should receive regular training from an ENT specialist or doctor with specialist skills in otoscopy. This is particularly so when assessing Aboriginal people. |           |
| Tympanometry      | ♦ Tympanometry should be performed at every audiological assessment as part of the diagnostic battery.  
♦ Tympanometry results should be correlated with the otoscopy results.  
♦ Tympanometry should not be performed on discharging ears.  
♦ Care should be taken with the model of tympanometer used with the Aboriginal population. Some portable hand held tympanometers do not clearly define the difference between a flat Type B tympanogram and an As.  
♦ A plot of the tympanogram should be attached to the report when an unusual shape is obtained. |           |
| Hearing Assessment | ♦ Pure tone audiometry is the recommended diagnostic test.  
♦ Otoacoustic emissions should be performed on children who are difficult to test and who have normal Tympanometry.  
♦ Hearing assessments should ideally be performed in soundproof conditions.  
♦ In large communities where no soundproof booth is available the community should be encouraged to sound treat a room for testing.  
♦ Where hearing assessments are performed in non-sound proof conditions the ambient noise levels should be recorded and this noted on the audiogram.  
♦ Hearing assessments should include 6 and 8 kHz if possible due to the high prevalence of high frequency hearing loss in children with chronic OM.  
♦ Bone conduction with insert masking should be performed where possible. |           |
| Speech            | ♦ Speech audiometry is usually difficult with children who have English as the second language. |           |
RESULTS

It is expected that the guidelines will result in:

- **A co-ordinated and uniform approach to the management of hearing loss in Aboriginal, rural and remote populations**

  A diagnosis of hearing loss seldom prompts the chain of referral and intervention we might expect to see with other disabilities, in part because of the lack of established protocols for whom to manage and when to refer. Health service delivery organisations need to have clinical care guidelines and management protocols, which will assist them to focus resources on this problem. This should include hearing testing for infants and children, delivered in a feasible and achievable fashion for remote areas. These tools need to be developed in a consensus framework involving all available expertise.

  Hence, one of the reasons for developing the national guidelines through the peak national audiological professional association (ASA) is to highlight the importance of an organised, informed and national approach to the challenge of hearing loss in Aboriginal, rural and remote populations.

- **An increase in the profile of hearing loss and its affect on the community along with recognised effective strategies for its management**

  In the last 10 years there have been many Federal, State and Territory policy statements regarding the health of Aboriginal Australians, and in most cases the management of hearing loss and ear disease are identified as particularly high priority needs. Unfortunately the absence of recommended audiological procedures and guidelines for Aboriginal clients severely limits the implementation of policy recommendations. The result of this is that audiologists in rural and remote areas have limited success stories, which in turn limits future funding allocations.

- **Improved multi-disciplinary care of clients with hearing loss**

  Audiological assessment and intervention procedures are inextricably linked to medical practices in the field of otitis media. Middle ear and hearing measures contribute to the diagnosis of ear disease and its effects and can assist in monitoring the progress of the condition and the effects of interventions. Hence, developing audiological guidelines in parallel with the development of medical treatment protocols will enhance the success of these proposed interventions. Moreover, audiological and behavioural interventions will continue to be necessary for the many patients who have been unable to obtain suitable treatment in the past or for whom treatment has been unsuccessful.

  This links in with the Federal Government’s *More Allied Health Services (MAHS) Program* as a very positive step towards improving access to multi-disciplinary care for people in regional Australia building on the initiatives of the Enhanced Primary Care Package announced in 1999.
Improved recruitment and retention of rural and remote audiologists

Lack of access to a range of allied health professionals in rural and remote communities is now being recognised as a major inhibiting factor to the development of a truly multi-disciplinary approach to primary care in rural and remote areas. Access to allied health professionals in rural and remote communities contributes to the sustainability of health services generally in these communities and to the sustainability of GP services more specifically. It is easier to attract a GP to a rural community with access to a range of allied health services.

Anecdotal information indicates critical shortages across all allied health professions. Many of the issues impacting on the recruitment and retention of GPs to rural and remote communities impact similarly on allied health professionals. These include professional, social and cultural isolation. Lack of training and professional support, shortages of locums/back-filling of positions, lack of educational and employment opportunities for their children and partners, levels of income and personal safety. Guidelines are the framework required to ensure that all of these factors are addressed.

CONCLUSION

Aboriginal, rural and remote practice guidelines are a primary and essential step towards improving outcomes for all health professionals working with Aboriginal and rural and remote clients. Many of these guidelines will be generic and not specific to any one discipline, however they need to be incorporated in an easy to access document. Professional Associations must recognise the need for such guidelines if services are to be consistent and applicable nationally.

ACKNOWLEDGMENTS

♦ The Audiological Society of Australia

♦ The members of the ASA Aboriginal, Rural and Remote Interest Group

REFERENCES


AUTHOR

Jeanette Scott is Principal Audiologist and Manager of NT Hearing Services, Territory Health Services (THS). She has worked for THS for 11 years and lived in Darwin for all of this time. She has been a community health audiologist for 24 years. She is also the Audiological Society of Australia’s Federal Executive Representative for Aboriginal, Rural and Remote Issues and is presently chairing the working party to develop the Audiological Practice Guidelines for Aboriginal Rural and Remote Populations.