

Broken Hill & District Hearing Resource Centre Inc.



# Listening In

## 2009

This report was prepared by  
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Screening Technician/Administration Officer

September 2010

# Acknowledgments

The Broken Hill & District Hearing Resource Centre wishes to acknowledge the following organisations for their financial/In Kind support to the “Listening In” Project 2009.



Deafness Foundation of Victoria



FACE “Friends of Ace”



We would also like to acknowledge the following people for their support;

- Sacred Heart Parish Primary School - Mr. Trevor Rynne (Principal) and staff
- Railway town Public School – Mr. Brett Cumming (Principal) and staff
- Broken Hill Public School – Mrs. Judy Henry (Relieving Principal) and staff
- Alma Public School – Mr. Larry Micevski (Principal) and staff
- Morgan Street Public School – Mr. Chris Dougherty (Principal) and staff
- Broken Hill North Public School – Mrs. Marg Murray (Principal) and staff
- Burke Ward Public School – Mr. Paul Clarke (Principal) and staff
- Gabrielle Gilby-Wheeler B/H Hearing Resource Centre Inc. Assistant Gabrielle had the arduous task of collecting and entering data
- Leone Bolt – Itinerant Support Teacher-Hearing(DET) Broken Hill

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# Introduction

## About The Hearing Centre:

Broken Hill is situated 1,160 Km west of Sydney, NSW. We are an isolated community of approximately 19,360, with the nearest capital city being Adelaide, capital of South Australia, approximately 500 kilometres to the southwest.

Cath Bonnes AM founded the Hearing Centre in 1986 as a small support group under the banner of Better Hearing. In 1990 the Centre was founded as it is today. The Centre was incorporated in October 1995.

The Hearing Centre fills the gap between the Government Providers and private health professionals, our services are complementary to other allied health services within the Broken Hill and District area. Our services are available free of charge to Deaf, hearing impaired people, people who suffer from associated disorders of the ear, e.g.: Tinnitus/Meniere's, their families and carers, to help provide a reduction in isolation/depression caused by hearing loss or associated disorders of the ear.

The B/ H & District Hearing Resource Centre is a voluntary based not-for-profit organisation governed by a Committee who support Deaf, Hearing Impaired people and people with an associated disorder of the ear in Broken Hill and surrounding Districts. We act as an advocate, clean and do minor repairs to hearing aids, visit nursing homes and house bound individuals, distribute batteries supplied by Australian Hearing who use our rooms one week in every month, supply transport for Deaf and hearing impaired people, their families and carers to attend the centre for whatever reason they may have. The Centre also provides counseling for Tinnitus and Meniere's sufferers. We demonstrate and loan out assistive/alternative Listening Devices. We provide Screening (hearing) and reviewing of school children 5 to 13 years of age within the child's school, referring of children onto Australian Hearing (AH) or a General Practitioner (GP) as required.

## Mission Statement:

The Hearing Resource Centre is dedicated to helping people who are Deaf, hearing impaired or have an associated disorder of the ear, to make an informed choice of their hearing loss management in order to maintain their chosen lifestyle.

# Executive Summary

The beneficiary/target group of the “Listening In” 2009 project were;

- Primary school children, 5yrs-13yrs within Broken Hill
- local GP
- Audiologists
- Speech pathologists/Paediatric registrars
- Parents and care givers
- Teachers and school liaison officer/education assistants

Hearing is the base, the foundation of human communication and social interaction. Through hearing, we learn to speak. By hearing and speech the knowledge of words, language, of culture will develop. It is essential for a child’s natural growing ability and early development process that a hearing impairment is detected as early as possible.

The Universal Newborn Hearing Screening Program - SWISH program (NSW) was introduced in NSW in 2002. Our local Child & Family Health Service provides a screening (hearing) service to children, 1 - 4 years old, but only by referral. Even with these services available, many children are slipping through the system and often are not picked up until reaching school, sometimes showing behavioural and or speech problems.

The number of requests and referrals from parents/schools and our local GP’s and hospital Pediatric Registrars had increased by 90% in the previous last two years. Usually when a child is sent on to a specialist with development problems, a hearing test is the normal first course of action.

In 2008/09 the Royal Institute for Deaf & Blind Children of NSW in conjunction with the Department of Education have implemented a program to screen the hearing of indigenous children. Unfortunately there is no funding available for non-indigenous children to be included within their programs. Approximately 80% of children that were referred to Australian Hearing by our Centre prior to the start of the “Listening In” project were non indigenous.

Referrals from the Broken Hill Hospital’s Pediatric Registrar, ENT, local school councilors and parents with concerns for their child’s hearing led to consultation with Australian Hearing regarding screening of primary school age children. This then led to consultation with the Department of Education and local school Principals. We believed there was a great need within the community for our project.

Screening was conducted at individual schools thus allowing the greatest ease of access to all children and parents/carers.

# Aims and Objectives

## Objectives

- To detect hearing problems in children within their first year of schooling
- To provide access to early intervention program

## Aims

- embedding a plan for prevention and early intervention and providing a fair and accessible service
- Improving access and equity

## Strategies

- Continue and develop early intervention program within local schools
- Create effective partnerships with key stakeholders

These objectives, aims and strategies address our local area population needs and circumstances within our service area.

# Methodology

## Project timeline:

- June 2008-Seek support from Department of Education & Training (DET), local schools and Australian Hearing.
- Device Plan: gain estimates on equipment required, estimate administration/wages costs.
- Secure partners: apply for funding to help with Administration costs (wages) and equipment
- Purchase of equipment: Audiometer, Typanometer and Otoscope.
- March 2009: Commence Project, initiate screening of children within the local schools.
- December 2009: Completion date of Project (Screening and reviewing within schools)
- From February 2010: Follow through on children referred to Australian Hearing
- Liaise with DET, school Itinerant Support Teacher Hearing(IST-H), provide child's Audiometry results

## Stages of Implementation:

Implementation strategies - Meet with Principals of local schools to instigate the in school screening plan, provided information pack, individual schools provided with consent forms to distribute

- Commence in schools screening plan;  
Screening assessment:
  1. Otoscopy: visual examination of the outer ear- examination of the ear canal and tympanic membrane (ear drum)
  2. Tympanometry: test of middle ear function
  3. Audiometry: measurement of hearing, 4000Hz (50-20dB) 1000Hz (50-25dB)Each process was explained to the child before commencement. All children were rewarded with stickers on completion of testing.
- On conclusion of initial screening a Hearing Health Program Summary report was given to the Principal. A review date was discussed and set.
- Phone contact was made with parents for children needing to be referred without delay to;
  1. Their local GP, for eg; ear infection, dry perforation
  2. Australian Hearing, if the child has difficulty completing Audiometry due a developmental disability
- Letters were then sent to parents of children who had not passed the initial screening, informing them of review date (within the school). Parents were encouraged to phone the Centre to discuss their child's results.
- Approximately six to eight weeks after initial screening - review of children commenced
- On conclusion of review, another Hearing Health Summary report was provided and discussed with the Principal. This outlined and identified each child and action to be taken.
- Letters were then sent to parents of students who did not pass the review assessment. Parent was asked to contact myself (Anne Woods) at the Centre to discuss their child's report.
- With parent consent, children were then referred onto AH and/ or their local GP
- Screening of children and reviewing completed-December 2009
- Screening program data collated and analyzed

- Report prepared for other allied health services, DET, Australian Hearing, School Principals and other interested parties
- Itinerant Support Teacher - Hearing provided with child's Audiometry results
- Any child absent on day of initial screening was picked up in the review process. All procedures carried out during the screening process were as per Australian Hearing Health Indigenous Program guidelines

## Evaluation

### Total Students Screened 2009 (n=1153)

| All Screened | 5yrs | 6yrs | 7yrs | 8yrs | 9yrs | 10yrs | 11yrs | 12yrs | 13yrs | 14yrs | TOTAL |
|--------------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| Male         | 26   | 92   | 78   | 91   | 63   | 77    | 83    | 53    | 4     | 0     | 567   |
| Female       | 40   | 94   | 87   | 87   | 78   | 78    | 69    | 51    | 1     | 1     | 586   |
| TOTAL        |      |      |      |      |      |       |       |       |       |       | 1153  |

#### GP or AH Referral without review

|        |   |   |   |   |   |   |   |   |   |   |    |
|--------|---|---|---|---|---|---|---|---|---|---|----|
| Male   | 1 | 1 | 3 | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 10 |
| Female | 0 | 2 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 6  |
| TOTAL  |   |   |   |   |   |   |   |   |   |   | 16 |

#### Reviewed

|        |    |    |    |    |    |    |    |    |   |   |     |
|--------|----|----|----|----|----|----|----|----|---|---|-----|
| Male   | 9  | 25 | 26 | 29 | 18 | 9  | 18 | 11 | 0 | 0 | 145 |
| Female | 15 | 31 | 22 | 21 | 14 | 20 | 9  | 10 | 1 | 0 | 143 |
| TOTAL  |    |    |    |    |    |    |    |    |   |   | 288 |

#### GP Referral provided

|        |   |    |   |    |   |   |   |   |   |   |    |
|--------|---|----|---|----|---|---|---|---|---|---|----|
| Male   | 4 | 5  | 5 | 10 | 7 | 3 | 4 | 4 | 0 | 0 | 42 |
| Female | 5 | 13 | 7 | 6  | 3 | 7 | 3 | 5 | 0 | 0 | 49 |
| TOTAL  |   |    |   |    |   |   |   |   |   |   | 91 |

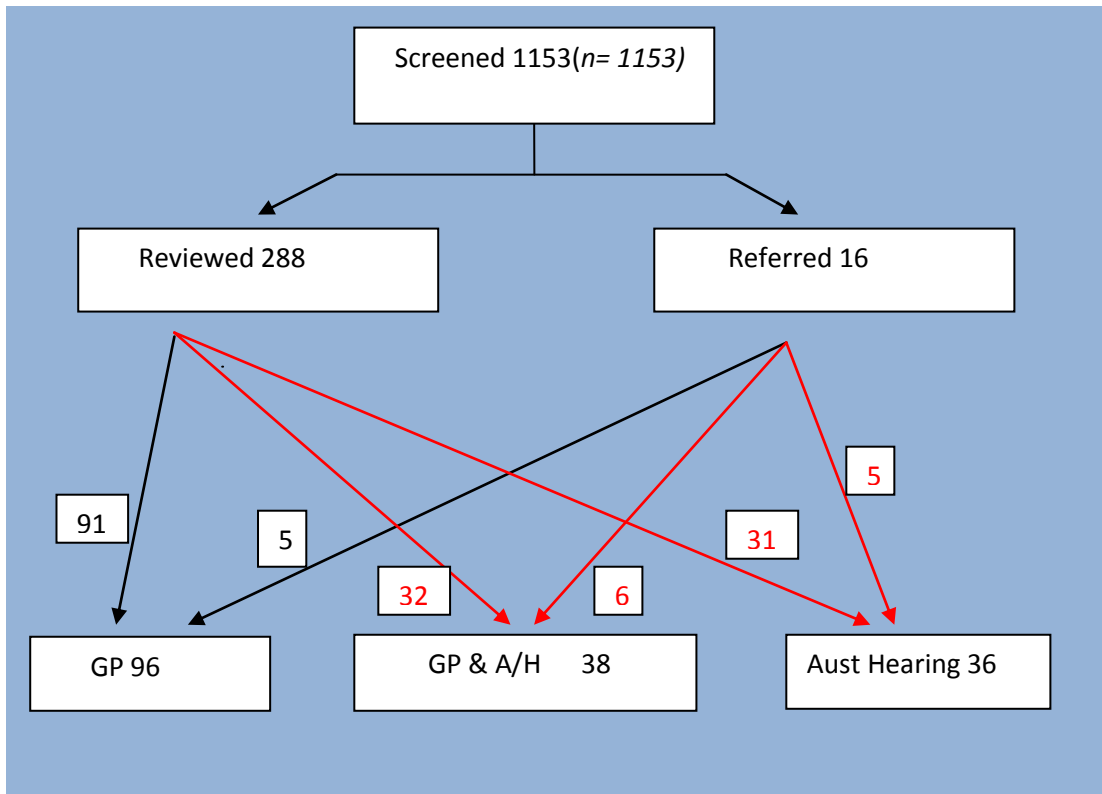
#### Australian Hearing (AH) Referral provided

|        |   |   |   |   |   |   |   |   |   |   |    |
|--------|---|---|---|---|---|---|---|---|---|---|----|
| Male   | 2 | 1 | 1 | 4 | 0 | 1 | 0 | 2 | 0 | 0 | 11 |
| Female | 2 | 1 | 3 | 3 | 2 | 5 | 3 | 1 | 0 | 0 | 20 |
| TOTAL  |   |   |   |   |   |   |   |   |   |   | 31 |

#### GP + AH Referral

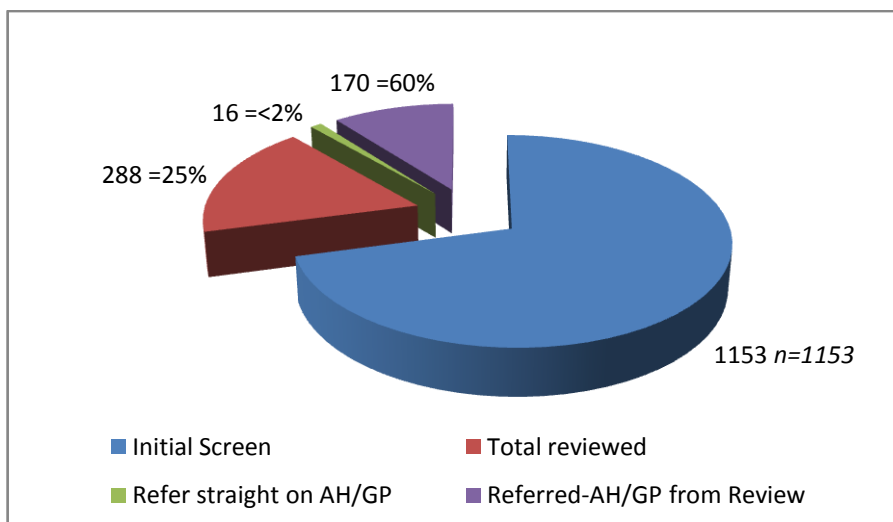
|        |   |   |   |   |   |   |   |   |   |   |    |
|--------|---|---|---|---|---|---|---|---|---|---|----|
| Male   | 0 | 5 | 4 | 1 | 2 | 0 | 1 | 2 | 0 | 0 | 15 |
| Female | 1 | 3 | 3 | 2 | 3 | 2 | 1 | 2 | 0 | 0 | 17 |
| TOTAL  |   |   |   |   |   |   |   |   |   |   | 32 |





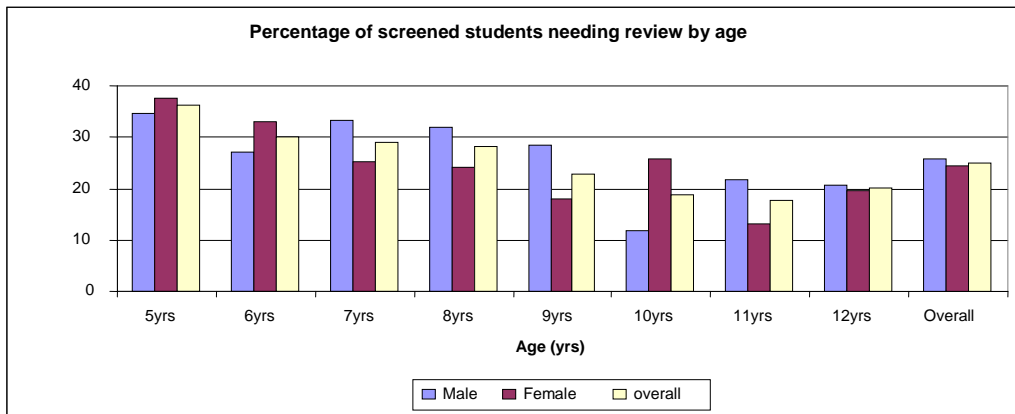
**Figure 1 Flowchart: Assessment Outcomes**

- The Broken Hill Department of Education and Training (DET) indicated that approximately 1,758 children attended Kindergarten to year 6 in 2009 (six primary schools in total). One private primary school enrolled approximately 135 children.
- In total 1,893 children attended school within Broken Hill in 2009
- 60% of all children were screened



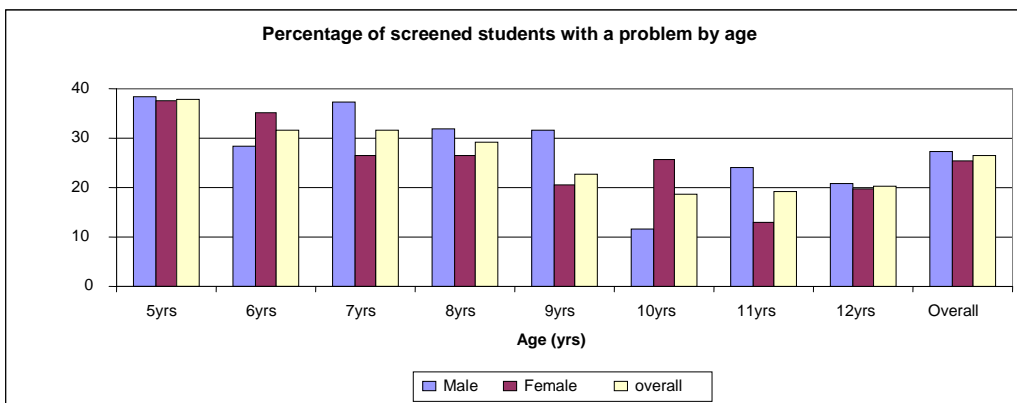
**Figure 2 Proportion of children reviewed and referred**

- 6.5% of **total children screened** were referred onto A/H or GP



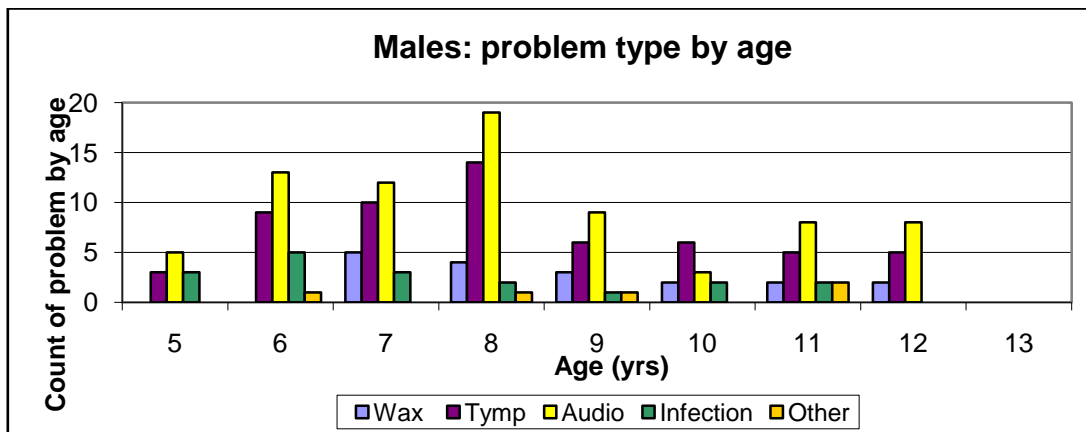
**Figure 3 Proportion of students by age that went onto review**

The youngest children were most frequently in need of a review



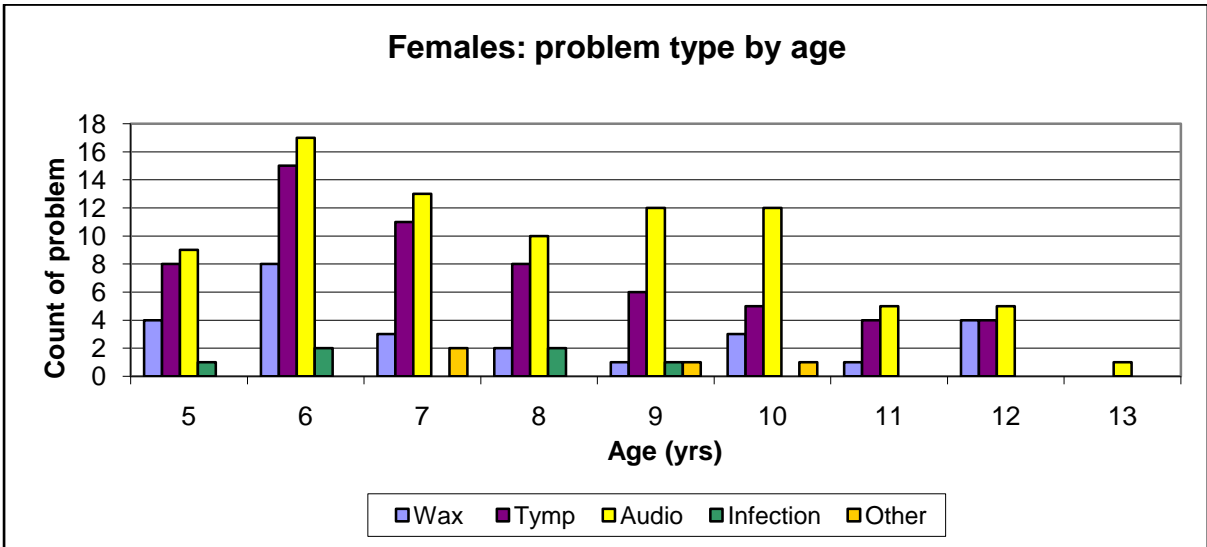
**Figure 4 Percentage screened students with a problem by age**

Figure 4 shows all reviewed students found to have a problem by age and those not reviewed but sent straight for referral

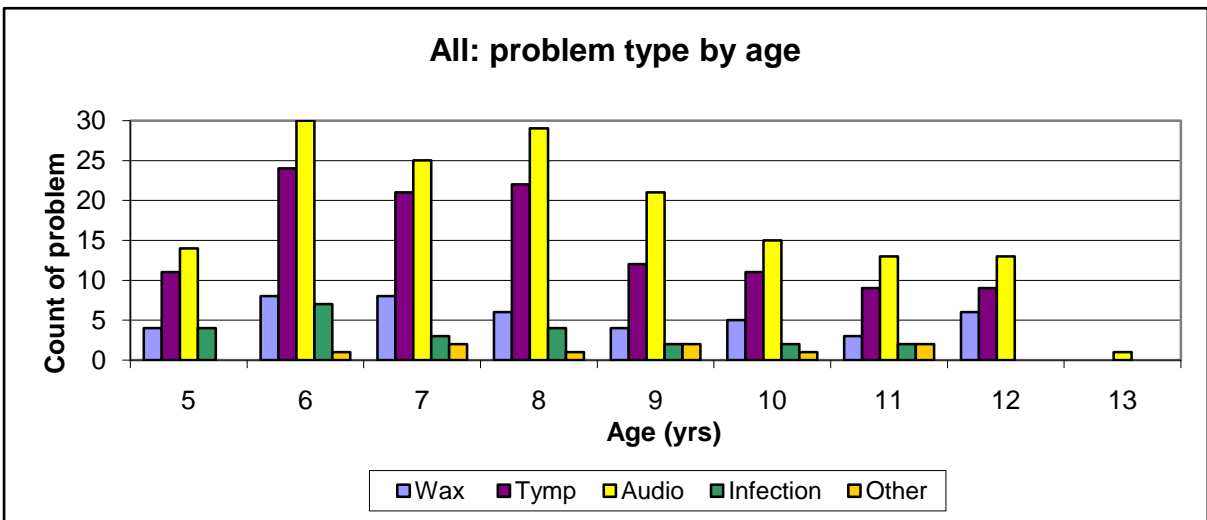


**Figure 5 - Males by problem type and age identified at initial screening**

Figure 5 shows that 8yr old males had the highest incidence – Audio and Tympanometry



**Figure 6 Females by problem type and age identified at initial screening**  
 6yr old females had the highest incidence of problems-Audio and Tympanometry



**Figure 7 Overall totals of problem type and age identified at initial screening**  
 Figure 7 shows us that in all age groups Audiometry proved to be the main problem, followed by Tympanometry

Definition of problems;

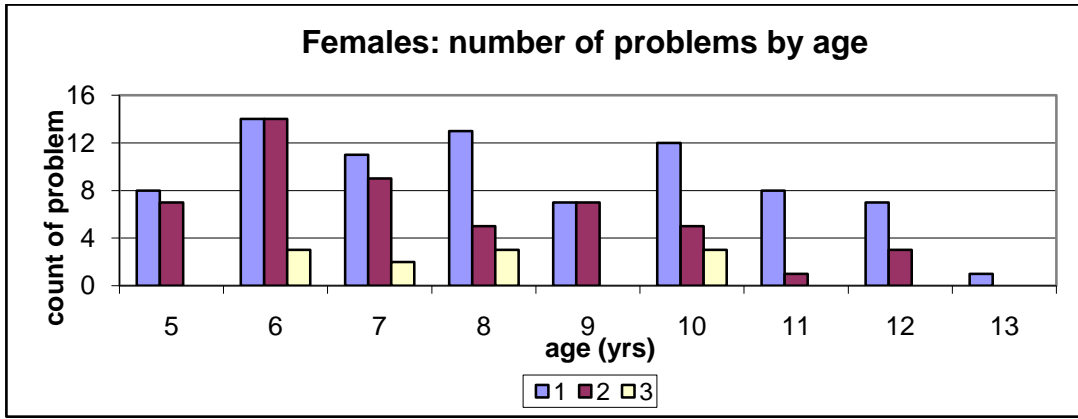
Wax - blockage of ear canal

Tympanic - Tympanogram consistent with middle ear dysfunction/ Eustachian tube blockage

Audio - Hearing loss identified (tested <than 20 dB Hz)

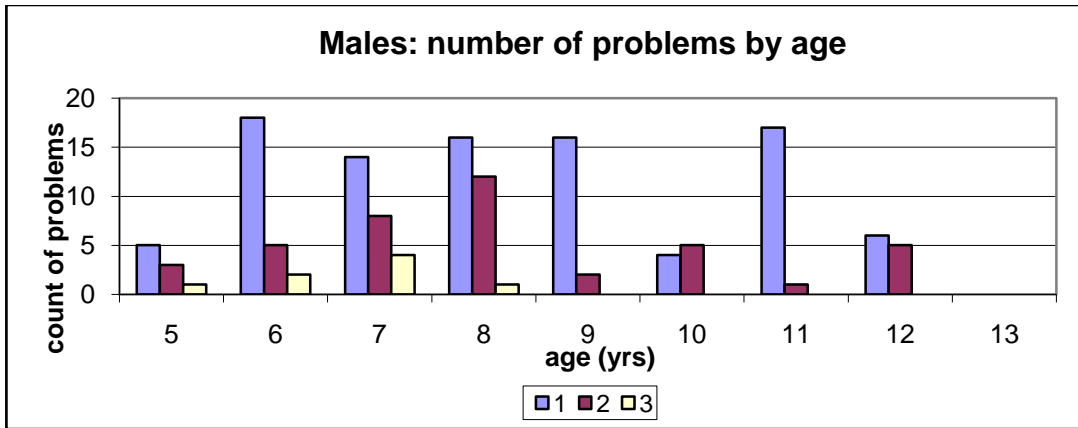
Other;

- Foreign object in canal
- Dry perforation
- Presence of fresh blood -Tympanic membrane
- Unidentified markings on eardrum
- damage to ear canal
- Tinnitus
- Grommets – misplaced



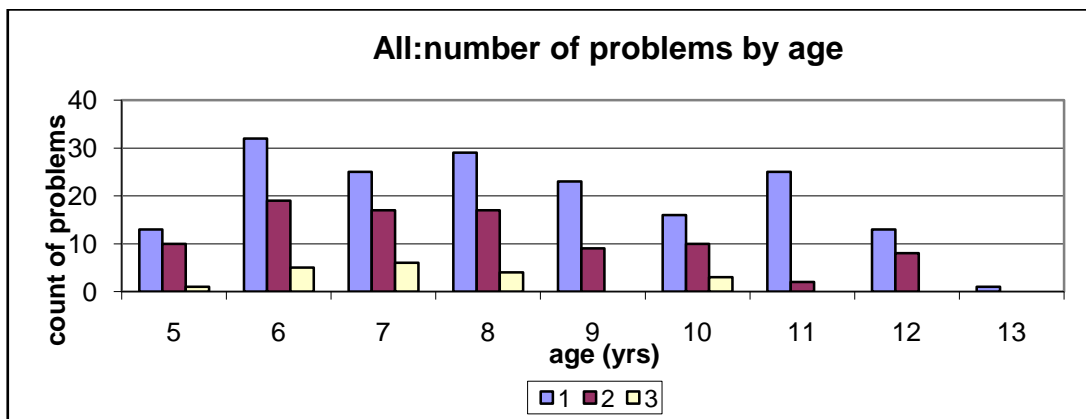
**Figure 8 Females by number of problems by age**

Shows that 6yr old females had the highest incidence of problems



**Figure 9 Males by number of problems by age**

Shows that 8yr old males had the highest incidence of problems



**Figure 10 Total number of students by problems and age**

Figure 10 shows the highest percentage of all children presented with one problem in all age

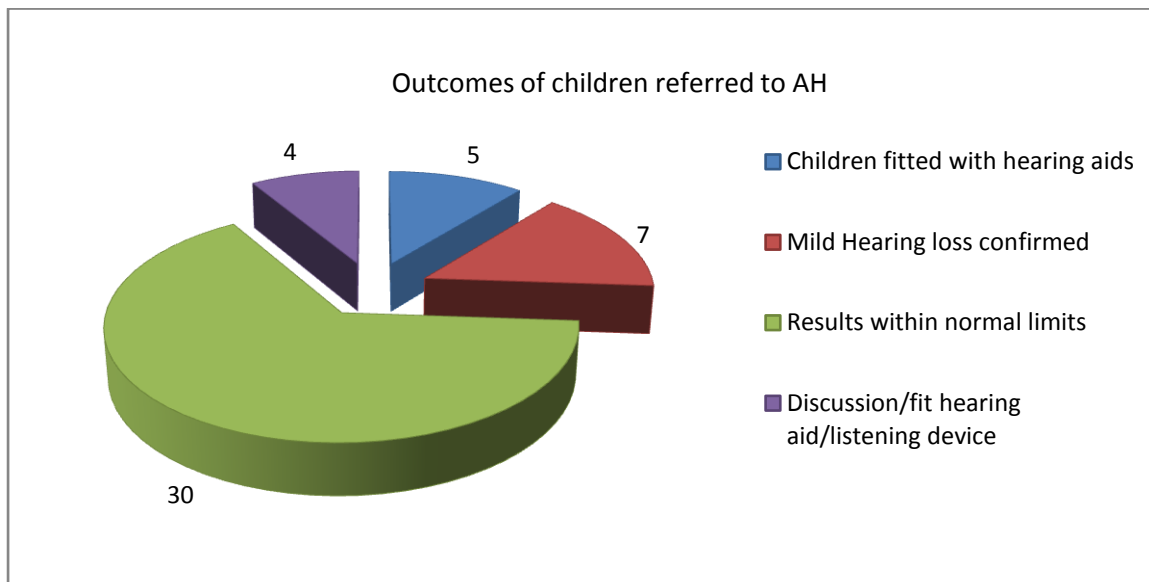


Figure 11 Outcomes of children referred to Australian Hearing

Of the 74 children referred onto AH, 46 children have received a full hearing assessment. Leone Bolt (IST-H) DET has followed up on the children who have shown a mild hearing loss, those fitted with hearing aids and those under discussion for fit. Information has been given to Principals and class teachers on strategies to use in the class room

## Limitations

- Children attending Menindee, Wilcannia and School of the Air were not included in the project. Due to funding restrictions, my normal duties as Administration Officer at the Hearing Resource Centre still had to be carried out throughout the year. We were aware of the RIDBC program in conjunction with the Department of Education to screen indigenous children within the Broken Hill area but were unaware at the time that Menindee and Wilcannia Schools were not part of their program.
- As Screening was conducted within the child's school, this may have affected Audiometry results. All schools provided satisfactory amenities for screening, unfortunately it was not always as quiet as we would have liked, sometimes causing distraction of the child while testing, had we been able to reduce the background noise slightly in some cases, I feel review numbers and referrals onto AH would have been less. However to date, comparison of AH audiograms to the child's Screening results have shown only a slight to no variance.
- 74 children were screened and referred onto AH for further testing. We currently have 23 children on the wait list for a full hearing assessment another five did not attend their scheduled appointment. Two clinicians from AH visit Broken Hill for a full week every month. AH sees several different client types as part of their community service obligation funding and prioritizes children according to specialized clinical pathways. This means there is a capped amount of appointment time each month for children.

## Conclusions

Figures from the “Listening In” project show us that many children are slipping through the system, not only with hearing loss but with problems associated with the ear: ear infections, dry perforations of the ear drum and problems associated with grommets, which could lead to further complications if not treated. We believe the project has been successful and worthwhile for our local community, not only for the child who is diagnosed with a hearing loss but for the parents, carers and teachers within the schools. With the follow up from the DET these children will now receive extra support throughout their education.

School principals, were extremely interested in having the “Listening In” project continue on an annual basis, to cover all kindergarten children and new enrolments. The “Listening In” project has continued throughout 2010. We have extended the program this year to include Menindee and Wilcannia Public Schools with funding through the Sisters of Charity Foundation. Principals have asked the Centre to extend further in order to cover their pre-school children.

In 2009 the Centre submitted an application to the NSW Health Department for recurrent funding - Listening In Project. To date we have not been successful.

I would like to commend the children who participated in the project not only for their behaviour but enthusiasm during testing. It was a pleasure to be able to work with them.

Further statistics are available on request.

## Post Comment

A note of interest- In May 2010, The Senate Community Affairs Reference Committee tabled a report – Hear Us: Inquiry into Hearing Health in Australia.

One of the recommendations to come out of the report was as follows;

### **Recommendation 8 (chapter five)**

“The committee recommends that the Council of Australian Governments extends its commitment for universal newborn hearing screening to include a hearing screening of all children on commencement of their first year of compulsory schooling. Given the crisis in ear health among Indigenous Australians, the committee believes urgent priority should be given to hearing screenings and follow up for all Indigenous children from remote communities on commencement of school.”

# Abbreviations

|       |   |
|-------|---|
| AH    | Australian Hearing                          |
| GP    | General Practitioner                        |
| HZ    | Hertz                                       |
| OM    | Otitis Media                                |
| DET   | Department of Education Training            |
| IST-H | Itinerant Support Teacher Hearing           |
| ENT   | Ear, Nose and Throat                        |
| RIDBC | Royal Institute for Deaf and Blind Children |