

EARLY CHILDHOOD INTERVENTION AND STUDENT SERVICES 2017 OUTCOMES RESULTS

NO LIMITS FOR CHILDREN WHO ARE DEAF



1 in 300

children are affected by hearing loss by the age of 5 years.

ABOUT THE CORA BARCLAY CENTRE

The Cora Barclay Centre is dedicated to the development of listening and spoken language in children who are deaf or hard of hearing.

The results achieved by organisations like ours, which offer comprehensive Listening and Spoken Language (LSL) services, employing intensive, evidence-based interventions such as Auditory-Verbal Therapy (AVT), clearly demonstrate that the majority of deaf or hard of hearing children can learn to listen and speak.

The Centre provides multi-disciplinary services for children who are deaf or hard of hearing, the majority of whom are fitted with hearing aids, cochlear implants or other listening devices. Early Intervention services are offered to families and their children between the ages of 0-5 years of age. The Student Services Program is designed for students either in primary or high school. Both services include one-on-one therapy, as well as a range of group programs and Allied Health services, including Audiology, Speech Pathology and Child and Family Counselling. The aim of our services is to support the family and develop listening and spoken language, and facilitate the social and emotional wellbeing of their child.

With early diagnosis and continuing advances in hearing technologies and early intervention, most children attending the Cora Barclay Centre (and other First Voice centres*) without additional disabilities, achieve speech and language that is comparable to children of the same age by the time they start school. The majority of children who participate in the Centre's Early Intervention Program enrol in a mainstream school alongside their hearing peers.

* First Voice is the national voice for five centres providing listening and spoken language early intervention for children with hearing loss in Australia and New Zealand. Members are; the Cora Barclay Centre (SA), Hear and Say (QLD), The Shepherd Centre (NSW/ACT), Telethon Speech and Hearing (WA) and the Hearing House (NZ). First Voice champions the right of all deaf people to listen and speak.

92%

of children with permanent hearing loss are born to hearing parents.

Mitchell & Karchmer, 2004

CORA BARCLAY CENTRE ASSESSMENT PROTOCOLS

The Cora Barclay Centre follows standardised assessment protocols. Assessment protocols for children aged nine months to five years are based on the First Voice early childhood intervention outcome measures. School aged children enrolled in the Student Services program are assessed at ages 5, 9 and 12 years. The protocols assess speech, language and vocabulary development and are normed to the general population.

Not all children in the Early Intervention and Student Services programs are formally assessed using standardised assessments, as per the assessment protocols. This may be due to parental choice, the child having additional disabilities, being new to services, unaided, and standardised assessment only being administered in English (not their first language).

The purpose of assessment is:

- 1. To obtain objective measurements** on each child's speech and language development to form their individual therapy plan.
- 2. To enable objective comparisons** between children who are deaf or hard of hearing undertaking the Cora Barclay Centre AVT Program and children from the general population of the same age, in order to determine if their spoken language skills are equivalent to that of the general population.
- 3. To monitor and evaluate** the effectiveness of Cora Barclay Centre therapy programs.

80 children aged between 6 months and 12 years enrolled in either the Early Intervention or Student Services program at the Cora Barclay Centre were assessed using standardised measures from January 2017 to the end of December 2017.

The key assessment tools used by the Cora Barclay Centre were:

Preschool Language Scale Edition 5 (PLS-5)

Clinical Evaluation of Language Fundamentals Preschool Edition (CELF-P2)

Peabody Picture Vocabulary Test Edition 4 (PPVT-4)

Clinical Evaluation of Language Fundamentals Edition 4 (CELF-4)

Goldman Fristoe Test of Articulation (GFTA).

The assessment protocols are as follows:

	6 months post fit	12 months post fit	24 months post fit	3;0	4;0	5;0	9;0	12;0
Language	PLS-5	PLS-5	PLS-5	PLS-5	CELF-P2	CELF-4	CELF-4	CELF-4
Vocabulary				PPVT-4	PPVT-4	PPVT-4		
Articulation				GFTA	GFTA	GFTA	GFTA	GFTA

EARLY CHILDHOOD INTERVENTION

Early intervention is more than fitting a child with a hearing device.

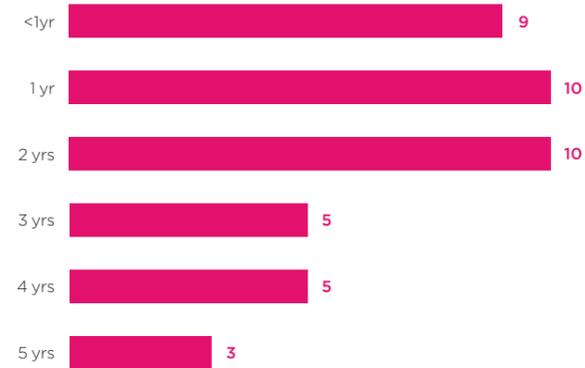
Whilst amplification provides a child with access to sounds, Auditory-Verbal Therapy teaches a child to interpret the sounds they hear as meaningful and, in turn, develop spoken language. Early fitting of amplification devices, combined with enrolment in an early intervention program, provide the best outcomes for children who are deaf or hard of hearing.

In 2017, 66 children between the ages of 0 and 6 years accessed the Early Intervention program. All children received individualised Auditory-Verbal Therapy and many also accessed group programs.

Number of Children Assessed in Early Intervention by Assessment Age

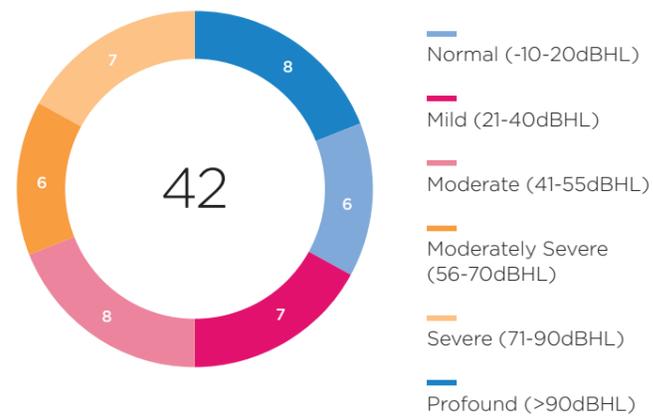
Figure 1: Number of children in the Early Intervention program by assessment age.

A total of 42 children in the Early Intervention program were assessed using standardised assessment measures.



Severity of Hearing Loss in the Better Ear

Figure 2: Degree of hearing loss based on 4 pure tone average in better ear for children assessed in the Early Intervention program.

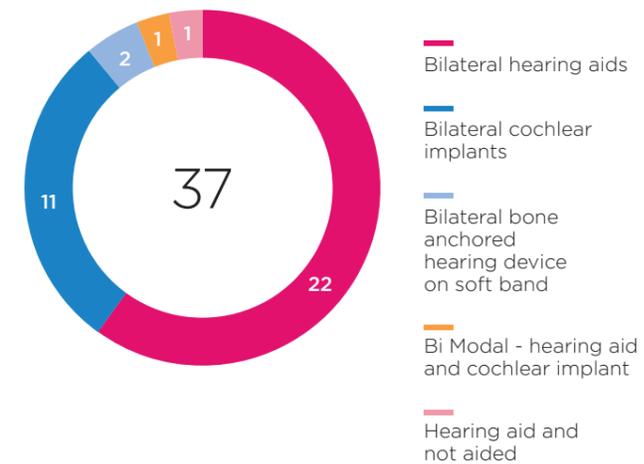


EARLY CHILDHOOD INTERVENTION

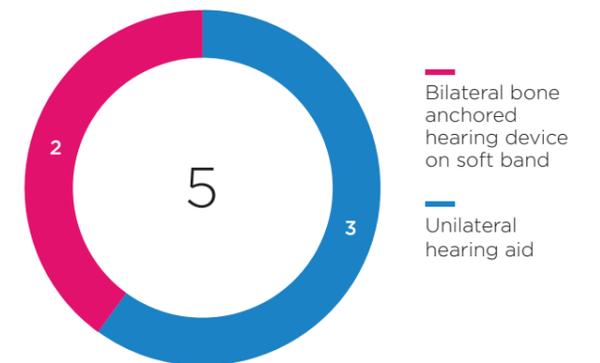
Hearing Devices

Figures 3 and 4: Hearing devices worn by children in the Early Intervention program who were assessed.

Hearing Devices worn by Children with Bilateral Hearing Loss



Hearing Devices worn by Children with Unilateral Hearing Loss



PRESCHOOL LANGUAGE SCALE EDITION 5 (PLS-5)

The PLS-5 is divided into 2 parts:

1
Auditory Comprehension which assesses the understanding of spoken language; and

2
Expressive Communication which assesses the child's verbal language.

Both parts of the assessments are used to calculate the total language score.

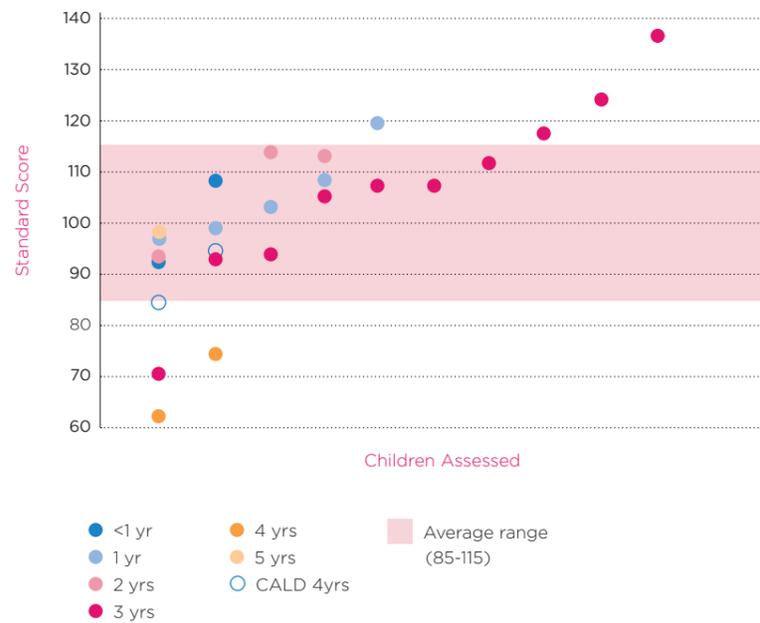
The PLS-5 is a norm-referenced assessment which provides standard scores for children from birth to six years. A standard score between 85 and 115 is considered to be within normal limits. About two thirds of all children with typical language development obtain scores within normal limits.

Figure 5: Total Language Standard Scores for children aged between 6 months and 4 years who were assessed using the PLS-5 in Early Intervention.

Results found:

85% of the children assessed scored within the average range or above.

4 children assessed scored above the normal limits.



85 %
of the children assessed scored within normal limits.

PEABODY PICTURE VOCABULARY TEST EDITION 4 (PPVT-4)

The PPVT-4 tests a child's understanding of words used to name objects and describe actions and attributes. It is a norm-referenced assessment of vocabulary that provides standard scores, from early childhood to adulthood.

The standard score system for the PPVT-4 is like the PLS-5, in that a standard score between 85 and 115 is considered to be an average score.

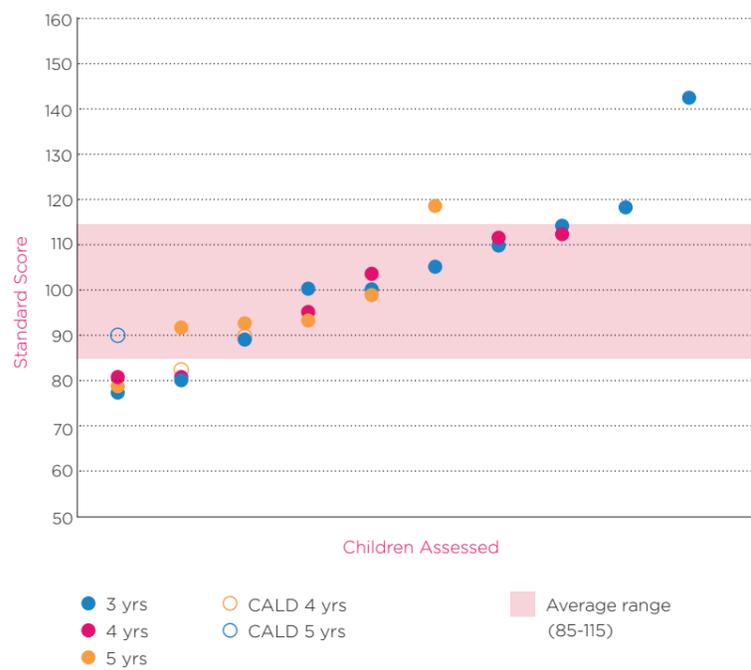
Figure 6: Receptive vocabulary aged 3 to 5 years who were assessed using the PPVT-4 in the Early Intervention program.

Results found:

74% of children scored within the average range or above.

Three of the children demonstrated vocabulary comprehension that was above the average score for children their age.

All four children from a Culturally and Linguistically Diverse (CALD) background speak two languages and scored within the average score or above.



GOLDMAN FRISTOE TEST OF ARTICULATION

The GFTA is a norm-referenced assessment of articulation which provides age-based standard scores and percentile ranks from early childhood to adulthood. The test provides information about a child's articulation ability by sampling both spontaneous and imitative sound production of consonants. The distribution of errors is greatly skewed across ages and does not approach a normal distribution at most ages. Therefore, it may be better to refer to the percentile rather than the standard score when interpreting results for this particular assessment.

A percentile rank is a way of comparing a child's score to scores obtained by other children of the same age. A percentile rank between 16 and 84 indicates abilities that are within the average range. A percentile below 16 represents some developmental delay or impairment. A percentile rank of 2 or below indicates a significant degree of delay or impairment.

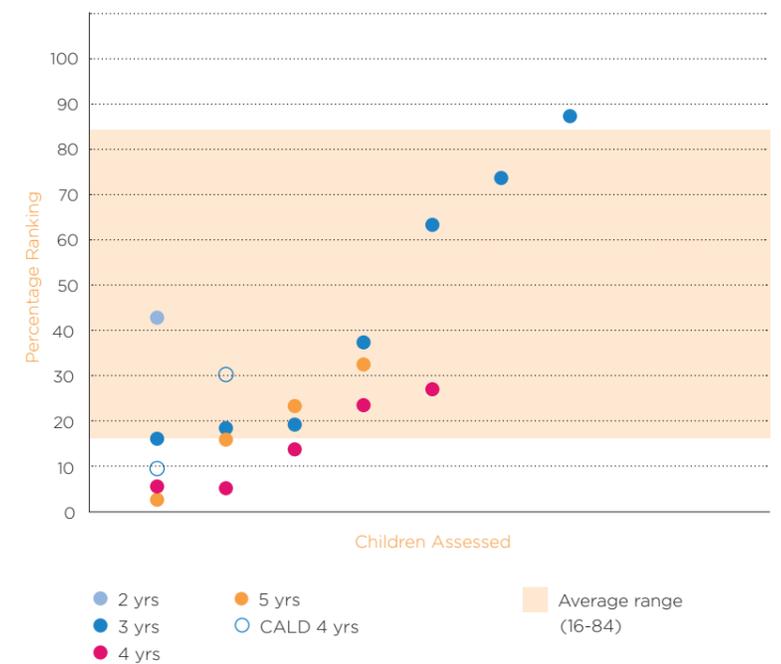
Figure 7: Percentiles for children in the Early Intervention program aged 3 to 5 who were assessed on the GFTA.

37 (47%) children were assessed (ages 3 to 12 years) with the Goldman Fristoe Test of Articulation.

Results found:

74% of children assessed using the Goldman-Fristoe Test of Articulation scored within the average range or above for their speech production.

One of the four children from a Culturally and Linguistically Diverse (CALD) background scored within the average range or above.



STUDENT SERVICES

Ongoing support gives children who are deaf or hard of hearing the listening and spoken language skills and social confidence to participate in mainstream schooling.

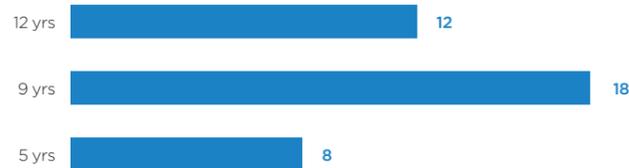
Auditory-Verbal practice promotes and facilitates placement of children in the mainstream classroom with hearing peers.

In 2017, 192 children aged 5 to 18 years were enrolled in the Student Services program. All the children attended mainstream schools. Eighty children received specialised intensive support and 112 were on review.

Number of Children Assessed in Student Services by Assessment Age

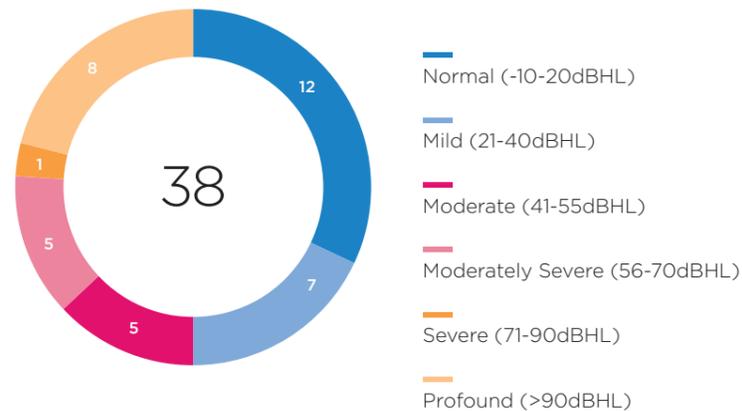
Figure 8: Number of children in Student Services assessed by assessment age.

A total of 38 children aged 5, 9 and 12 years in Student Services were assessed using standardised assessment measures.



Severity of Hearing Loss in the Better Ear

Figure 9: Degree of hearing loss based on 4 pure tone average in better ear for children assessed in Student Services.

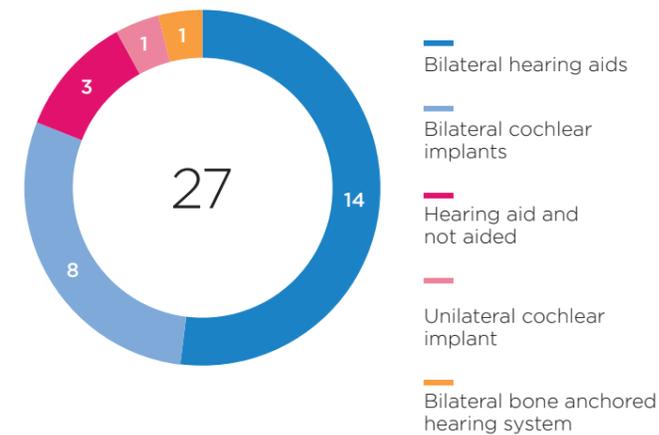


STUDENT SERVICES

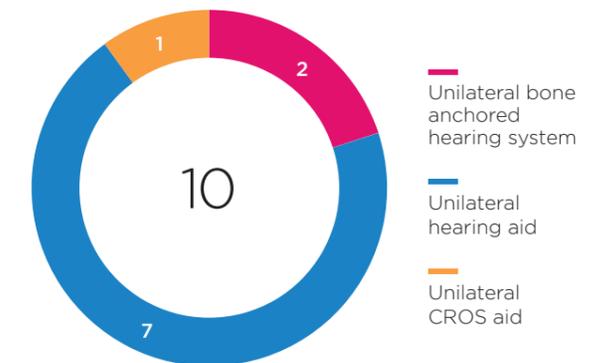
Hearing Devices

Figures 10 and 11: Hearing devices worn by children in Student Services who were assessed.

Hearing Devices worn by Children with Bilateral Hearing Loss



Hearing Devices worn by Children with Unilateral Hearing Loss



CLINICAL EVALUATION OF LANGUAGE FUNDAMENTALS - 4 (CELF-4)

The CELF-4 Australian identifies children with delayed or disordered language from ages 5 to 21 and assists in determining the student's language strengths and weaknesses in:

- Receptive Language
- Expressive Language
- Language Structure
- Language Content
- Language Memory
- Working Memory

The test provides information about a child's understanding and use of spoken language by assessing the components of spoken language such as syntax, semantics, vocabulary, memory and comprehension.

The CELF-4 Australian is a norm-referenced assessment which provides standard scores for children from ages 5 to 21. A standard score of 115 and above

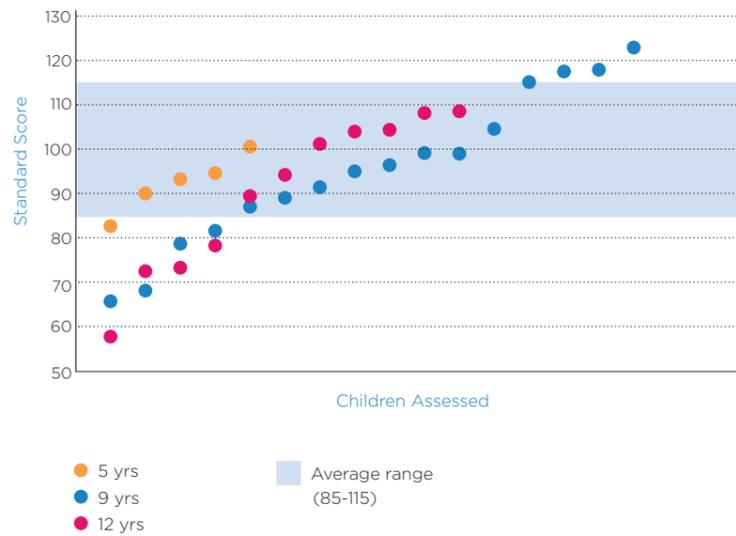
indicates above average skills, 86-114 would indicate the child is performing within the expected and average range. A standard score between 78 and 85 indicates the child is at risk of a language disorder with borderline skills. A standard score between 71 to 77 indicates a moderate language disorder and a standard score of 70 below indicated a severe language disorder.

Figure 12: Core Language Standard Scores for children aged 5, 9 and 12 years who were assessed using the CELF-4 in Student Services.

Results found:

74% of the children assessed using the Clinical Evaluation of Language Fundamentals scored within the average range or above for their general language ability.

Three of the children assessed scored above the average range.



GOLDMAN FRISTOE TEST OF ARTICULATION

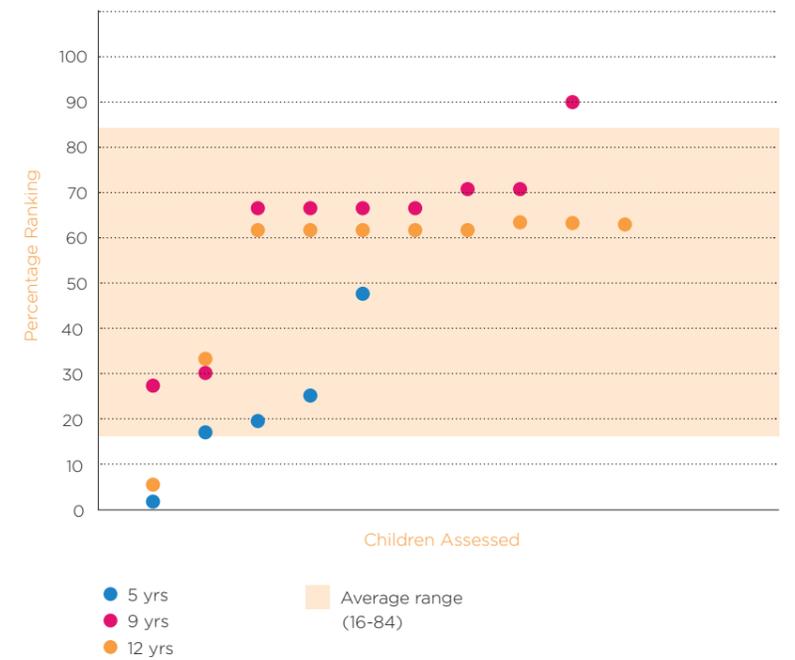
The GFTA is a norm-referenced assessment of articulation which provides age-based standard scores and percentile ranks from early childhood to adulthood. The test provides information about a child's articulation ability by sampling both spontaneous and imitative sound production of consonants. The distribution of errors is greatly skewed across ages and does not approach a normal distribution at most ages. Therefore, it may be better to refer to the percentile rank rather than the standard score when interpreting results for this particular assessment.

A percentile rank is a way of comparing a child's score to scores obtained by other children of the same age. A percentile rank between 16 and 84 indicates abilities that are within the average range. Percentiles below 16 represents some developmental delay or impairment. A percentile rank of 2 or below indicates a significant degree of delay or impairment.

Figure 13: Percentiles for children aged 5, 9 and 12 years who were assessed on the GFTA.

Results found:

74% of children assessed using the Goldman-Fristoe Test of Articulation scored within the average range or above for their speech production.



2017 ASSESSMENT RESULTS

Early Intervention

85% of the children assessed using the
Preschool Language Scale - 5 scored
within the average range or above for their
receptive and expressive language.

74% of children assessed using the
Peabody Picture Vocabulary Test - 4
scored within the average range or above
for their comprehension of vocabulary.

74% of children assessed using the
Goldman-Fristoe Test of Articulation
scored within the average range or above
for their speech production.

4 of the children assessed speak two
languages fluently.

Student Services

74% of the children assessed using the
Clinical Evaluation of Language Fundamentals
- 4 scored within the average range or above
for their general language ability.

74% of children assessed using the
Goldman-Fristoe Test of Articulation scored
within the average range or above for their
speech production.

SUMMARY

Early intervention for children who are deaf and hard of hearing is required to develop listening and spoken language equivalent to their aged peers and has resulted in opportunities for children who are deaf or hard of hearing from Culturally and Linguistically Diverse (CALD) backgrounds to have proficient conversational fluency in multiple languages.

Ongoing support gives children who are deaf or hard of hearing the listening and spoken language skills and social confidence to participate in mainstream schooling.





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NDIS Registered Number 4050000164
ABN 44 598 581 496

185 Melbourne Street
North Adelaide 5006

08 8267 9200

reception@corabarclay.com.au



corabarclay.com.au