Update: Age of first hearing aid fitting for Aboriginal and Torres Strait Islander children compared to non-Indigenous Australian children.

Sam Harkus, Australian Hearing
Alison King, Australian Hearing
Mark Seeto, Research Statistician, National Acoustic Laboratories
1. Recap of the issue
2. Update since the last ANHSC conference
3. How we are responding?
In the 12 months to end June 2016 we saw:

- **4,300** Aboriginal & Torres Strait Islander adults, half of whom were seen in Hearing Centres, half in their communities through our Outreach program.

- **4,720** Aboriginal & Torres Strait Islander children, 29% of whom are aided. 65% were seen in communities.
Demographic Details
Of young Australians aged less than 26 years with a hearing loss, who have been fitted with a hearing aid or cochlear implant at 31 December 2016

Australian Hearing’s annual Demographic Details report: on our website.

Reports against all current, active aided and implanted clients younger than 26 years.

Reports at national and state/territory level.

Reports against Aboriginal and Torres Strait Islander children and non-Indigenous Australian children.

Includes data on children who were first fitted with hearing aids in that year: a useful indicator of how well referral pathways and processes are working.
In 2008, data relating specifically to Aboriginal & Torres Strait Islander children appeared for the first time in the Demographic Details report.

Included age of first fitting for all children fitted in 2008, for:

- The whole aided child cohort
- Aboriginal and Torres Strait Islander aided children.

310 Aboriginal & Torres Strait Islander children were fitted for the first time that year.
Showed two things:

1. A peak in first fittings for **all children** under the age of one year, and a secondary peak at the age of 6 years.

2. A very large peak in first fittings for **Aboriginal children** focused around 6 years of age, and no peak under the age of one year.

*Partly* this can be accounted for when we consider the **drivers of hearing loss** for Aboriginal & Torres Strait Islander children.
What are the drivers for hearing loss in Aboriginal & Torres Strait Islander children?

**Congenital hearing loss**
- Appears to be as prevalent for Aboriginal & Torres Strait Islander babies as it is for non-Indigenous Australian children, based on available information about pass/refer rates.
- Neonatal hearing screening rates also appear comparable for Aboriginal babies.
What are the drivers for hearing loss in Aboriginal & Torres Strait Islander children?

**Ear disease**
- **Ear disease** is the main driver for hearing loss.
- Often starts within the first year of life, escapes detection and becomes chronic.
- 25% of the 10,000 NT children who had child health checks as part of the NT Emergency Response had hearing loss.
- 10% of 1,500 Aboriginal children in an urban/regional longitudinal study had hearing loss.
- Responsible for the over-representation of Aboriginal & Torres Strait Islander children in the aided client base:
  - 4% of Australian children are Aboriginal
  - 9.5% of aided Australian children are Aboriginal
So, this graph made us think two things:

1. Why aren’t we seeing a higher proportion of fittings for <1 year olds, relating to newborn hearing screening?

2. If ear disease starts in the first year and is chronic by the age of 2-3 years, why are most hearing aid fittings not happening until the age of 6-8 years?
Recognising that something was wrong, we started talking about it.

At the Audiology Australia conference 2010

The proportional under-representation of aided Indigenous children aged under three years relative to the general population.
Sam Harkus
Aboriginal and Torres Strait Islander Services

Latest data on Australian Hearing’s Aboriginal and Torres Strait Islander child clients, implications and some potential ways forward.

Alison King,
Principal Audiologist Paediatric Services

- How many aided child clients do we have?
- How old were these children when they were fitted with hearing aids for the first time?
- How does Newborn Hearing Screening continue to impact on age at first fitting?
- What differences are there for Aboriginal and Torres Strait Islander children?
How does age of first hearing aid fitting for Aboriginal and Torres Strait Islander children compare with non-Indigenous Australian children?

Samantha Harkus, Alison King, Wendy Pearce, Mark Seeto (NAL)

And at the Australasian Neonatal Hearing Screening conference in 2015
By 2015, the data didn’t seem to be changing much.

If we wanted to *explore more closely* what was happening for children going through UNHS, we needed to:

1. Remove as many as possible of the large number of children with *later onset conductive hearing* loss from the data
2. Aggregate the data to account for *small client numbers*.
So that is what we did.

Found that:

a. The proportion of Aboriginal & Torres Strait Islander babies fitted before the age of 1 year increased from 2% to 5%

b. The proportion of non-Indigenous babies fitted before the age of 1 year increased from 12% to 24%
Can we control for differences in size and profiles of the populations?

Aboriginal and Torres Strait Islander population = 669,000

Non-Indigenous Australian population = 22,340,000

What happens if we relate first fitting data to the birth rate (the ‘fitting rate’) of each population? This allows comparisons to be made across populations.

However, we also needed to account for the **different birth rates**.
When we related numbers of babies fitted by the age of 6 and 12 months to the birth rate for each population, we found:

1. **Good news**: a steady increase in fitting rates for both groups over the period 1997 to 2014.

2. **Not so good news**: a significant and persisting gap in the fitting rate for Aboriginal babies.

**What can we see?**

1. A steady increase in Under 6 month and Under 12 month fitting rates for both cohorts over the time period 1997 to 2014.

2. A persisting gap between proportion of Aboriginal and non-Indigenous Australian children fitted under the age of 12 mths.
Two years later: what’s happening now?

Aboriginal and Torres Strait Islander children were aided for the first time in 2016.

The data appears to show a slight improvement for the < 1 year age group.

To see whether this is **real and significant**, we asked Mark Seeto once again for help with analysis.
First, he separated out data for Aboriginal & Torres Strait Islander and non-Indigenous children.
Excluded data for children with conductive hearing loss.
Aggregated to offset small client numbers.
And referenced data to the birth rate for each population.

We see what appears to be a continuing improvement for both populations.

To make it easier to see the trend...
Mark aggregated the birth years into groups for the children fitted before the age of six months.

Since the rollout of UNHS, the fitting rate continues to increase for both groups, but is increasing less quickly for Aboriginal and Torres Strait Islander under 6 month olds.

Appears to be an 8-10 year gap for Aboriginal babies.

What we want to see is that gap closing.
What’s being done?

The continuing late age of first hearing aid fitting for children with both congenital and conductive hearing loss is a matter of great concern.

NAL’s LOCHI study shows:
- Delay in aid fitting,
- Low maternal education levels and
- Low socio-economic status
are all associated with poorer global language outcomes: these factors often arise for Aboriginal children.
What’s being done?

We are working on a range of measures aimed at the 0-5 age group, designed to reduce the age of first hearing aid fitting.

These actions come together under our Dragonfly Project.
What’s being done?

Commenced a piece of social research into what Aboriginal & Torres Strait Islander parents and carers know and think about hearing loss and hearing aids in children aged five years and under.

Eight locations around Australia: 3 urban, 3 regional and 2 remote.

In-depth interviews and focus group discussions, led by Aboriginal researchers.

Includes congenital hearing loss.

The findings will influence next steps: ways of working, how we frame messaging to communities, etc.
What’s being done?

Looking at our own ways of working in Outreach.

Are we connecting with the staff and services in communities through whom we can reach younger children in the community?
What's being done?

Providing more explicit guidance to Aboriginal and Torres Strait Islander primary health services on who, when and how to refer to Australian Hearing.

Includes a reminder to follow up on neonatal hearing screening.
What’s being done?

Adapting, validating and norming a Listening Behaviour checklist (the PLUM).

Aim is to support Child Health Nurses and other Primary Health staff to identify ‘important’ hearing problems in 0-5 year old Aboriginal children earlier.

Currently in the ethics application process.
What’s being done?

In relation to **numbers** of children first fitted between the ages of 0-5 years, significant growth over the nine years since 2008.

**2008:** 56 children aged 0-5 years aided for the first time.

**2016:** 133 children aged 0-5 years aided for the first time.

Now a matter of ensuring that the **proportions** of children at the **younger end** of the 0-5 range increase.

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**Graph:**

Age at first fitting for Aboriginal & Torres Strait children, by calendar year 2008-2016

- **<1 year**
- **1 year**
- **2 years**
- **3 years**
- **4 years**
- **5 years**

- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
Thank you.

Sam Harkus
0412 799 387
samantha.harkus@hearing.com.au