

**National Aboriginal Community Controlled Health Organisation  
October 2009**

**SUBMISSION TO SENATE INQUIRY INTO HEARING HEALTH IN  
AUSTRALIA WITH REFERENCE TO THE ABORIGINAL AND TORRES  
STRAIT ISLANDER POPULATION**

This submission is made to the Senate Inquiry in order to inform on issues that are relevant with regard to the provision of hearing support services to Aboriginal peoples. Accompanying this submission is research which has recently examined access to hearing services, which was endorsed by the National Aboriginal Community Controlled Health Organisation.

**Background**

The National Aboriginal Community Controlled Health Organisation (NACCHO) is Australia's national peak body representing the health interests of Aboriginal peoples. NACCHO was established over 30 years ago by Aboriginal peoples as their own representative health structure and is the only national body in Australia with the legitimacy to speak on behalf of their constituency on health matters. It represents over 140 Aboriginal community-controlled health services (ACCHSs) around Australia which provide comprehensive primary health care services to the vast bulk of Aboriginal peoples. NACCHO's major activities include:

- \_ improving the effectiveness and cultural validity of national policies, programs and initiatives affecting Aboriginal peoples health
- \_ promoting, developing, and expanding the provision of culturally appropriate primary health care through local ACCHSs

To do that, NACCHO liaises with governments, departments, and organisations within both the Aboriginal and non-Aboriginal communities on matters relating to the well-being of Aboriginal communities. NACCHO is managed by a Board of elected Aboriginal representatives from every State and Territory across Australia and has offices in Canberra.

The Australian Federal Government provides funding for the Commonwealth Hearing Services Program (CHSP) administered by the Office of Hearing Services, which is the main source of funding for hearing services including for the Aboriginal and Torres Strait Islander population. The Office of Hearing Services administers the 'Workplan for future actions in ear and hearing health' (2003)<sup>1</sup> jointly with the Office of Aboriginal and Torres Strait Islander Health.

The Commonwealth Hearing Services Program (\$215 million annually, 2004/05) provides free hearing assessment, rehabilitation, supply, and fitting of hearing aids for all children under 21 years of age and adults. Australian Hearing have a service level agreement with the Office Of Hearing Services to deliver the Australian Hearing

Specialist Program for Indigenous Australians (AHSPIA) as part of the Australian Governments Community Services Obligation (CSO).

The AHSPIA objectives are:

- • To improve access to tertiary hearing health care for eligible Aboriginal and Torres Strait Islander adults; and
- • Prevention, community awareness and education of hearing loss.

AHSPIA focuses on providing tertiary level hearing and related services in community settings and in conjunction with Aboriginal communities and local Aboriginal health services. The government provider, Australian Hearing, has developed outreach programs where services to Indigenous people are delivered away from mainstream hearing centres.

The AHSPIA program is a valuable program that provides much needed audiology services to Aboriginal peoples and ACCHSs across Australia including NACCHO are very supportive of this program. The main issues we wish to raise in this submission relate to the quantum of services provided under this program (to meet community need) and public accountability.

***Table 1. Commonwealth Hearing Services Program 2001***

The objective of the community service obligation of the program is to provide access to appropriate hearing services for special needs groups (for example children, eligible Aboriginal and Torres Strait Islander people, and people living in rural and remote communities) by:

- Purchasing high quality, cost-effective hearing services.
- Providing consumer choice and supplier competition through a voucher system for hearing services.
- Enhancing consumer service outcomes through the development of appropriate consumer service and quality assurance processes.
- Providing appropriate arrangements for eligible special needs groups.

Performance indicator: *The proportion of eligible Aboriginal and Torres Strait Islander clients receiving hearing assistance under the program in relation to the total volume of program clients.*

## **Deficiencies in service provision to Aboriginal peoples**

### **1. Inadequate allocation of funding commensurate with need**

An Australian Government review of the AHSPIA and CHSP found an inequitable distribution of funds with evidence that hearing health needs of Aboriginal children were not being met.<sup>2 3 4</sup> The 2002 Report on Commonwealth Funded Hearing Services to

Aboriginal and Torres Strait Islander people found ‘Significant ongoing deficiencies in ear health and hearing services relating to

- lack of access to specialist services including ....audiologists, and
- integration of ear health services within routine comprehensive primary health care services and effective detection and early intervention particularly in the 0 – 3 year age group’.

Many Aboriginal and Torres Strait Islander adults with poor hearing as a legacy of childhood infections also had poor access with only 100 adults ever having applied for CHSP Vouchers in 2000, compared with 130,000 (non-Indigenous) adults accessing the program overall.<sup>5</sup> Statistics supplied by OHS showed that between 1 July 2003 and 30 September 2003 out of 45,222 vouchers issued, only 25 were to Indigenous clients, a proportion which is worse than the 2000 figures.

The 2005 Federal Budget changed eligibility criteria for the Voucher scheme (an outcome most probably related to extensive lobbying by NACCHO in the preceding years). In the first 7 months of the revised criteria, 500 new Aboriginal clients accessed hearing services.<sup>6</sup> Despite a federal allocation of an extra \$10 million, there is continuing evidence of poor access by Aboriginal peoples.<sup>7</sup> Australian Hearing is a major provider of hearing services under the Voucher scheme.

In particular, a public hearing of the Senate Community Affairs Legislation Committee in 2004 reported that the outreach program (Australian Hearing Specialist Program for Indigenous Australians), funded out of the Commonwealth Hearing Services Program, provided services to only 1,269 Indigenous peoples. Only \$800,000 was allocated in 2004-05 to meet Indigenous Australians’ rehabilitative hearing needs through outreach out of a Community Service Obligation (CSO) budget of \$32 million. The Senate committee spokesperson remarked that “most people who look at the figures ought to be horrified at that.”<sup>8</sup>

Discussions with the OHS has revealed that the contractual obligations between the OHS and Australian Hearing do not permit the OHS to intervene in the allocation of resources by Australian Hearing for programs like AHSPIA. The allocation of \$800,000 as remarked by the Senator is a quantum of funds that are determined by Australian Hearing only. As such, the OHS is constrained, as are community representative bodies like NACCHO in influencing this allocation. The mechanisms used by Australian Hearing to allocate resources to their programs are not able to be publically scrutinised and there is little capacity to influence that allocation.

It appears that some improvements have been made. For example, a recent report (2006-07) from the Secretaries Group on Indigenous Affairs<sup>1</sup> cites AHSPIA expenditure over this period as \$4.6 million. Services were provided at 171 sites compared with 129 sites over the preceding year and 2,671 clients were seen. However, the recent Office of Audit and Evaluation Performance Audit of Australian Hearing Specialist Program for Indigenous Australians (December 2008) found that over 2006-07, 3,764 Aboriginal or

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<sup>1</sup> Secretaries Group on Indigenous Affairs, Commonwealth of Australia, 2008

Torres Strait Islander clients were 'serviced'. Why these two figures vary, despite representing the same period of service provision is unclear. Importantly, whether this degree of service provision meets community need is not clear, nor is it clear whether the frequency and/or number of visits per service are appropriate to ensure appropriate follow-up.

Australian Hearing do not have formal agreements with Aboriginal representative bodies like NACCHO, to help determine their program priorities. For example, the OEA found that:

“Australian Hearing does not use rates of hearing loss data to establish the extent to which AHSPIA Outreach Sites are impacting on the number of Indigenous Australians with hearing loss....Australian Hearing’s current planning involves consideration by Regional Managers of the relative priorities for AHSPIA Outreach Sites after national funding allocations have been made to the Regional Offices. This is based on allocations made *according to the need to sustain existing service locations* as well as geographic distribution of Indigenous Australians nationally, *rather than considering the prevalence of hearing loss*. As a result, Australian Hearing is not in a position to determine whether the program is providing the greatest impact in reducing the impact of hearing loss amongst Indigenous Australians through the provision of tertiary hearing services.”

## **2. Inadequate Accountability**

The CSO Agreement with Australian Hearing is used to monitor the provision of services to Aboriginal peoples.<sup>9</sup> There are a number of concerns with how this program is audited and evaluated and its accountability to Aboriginal peoples in Australia.

We are only aware of one performance indicator (Table 1). This indicator is insufficient to monitor the delivery of this program and to influence program improvements. For example, the denominator is unclear- 'total volume of program clients' may not relate to the burden of need in Aboriginal communities. If there are other indicators, we are not aware of public reporting with respect to those indicators.

Moreover, reporting on these (or other indicators) are not incorporated into federal Aboriginal health related performance indicators. For example, the *Aboriginal and Torres Strait Islander Health Performance Framework* (HPF), agreed to by the Australian Health Ministers Advisory Council to streamline federal reporting and support the implementation of the NSFATSIH, does not utilise Office of Hearing Services expenditure and Australian Hearing program audits. The HPF only measures the burden of 'childrens hearing loss' not the health systems responsiveness to this problem.<sup>10</sup>

There is also little public reporting of hearing health expenditure from the AHSPIA program towards Indigenous Australians and this needs to be corrected. Data regarding the AHSPIA program are hard to find.

The recent Office of Audit and Evaluation Performance Audit of Australian Hearing Specialist Program for Indigenous Australians (December 2008) concurred with the above concerns. It concluded that:

“..it [is] difficult to independently assess the level of expenditure on services to Indigenous clients and in particular whether expenditure on AHSPIA services (relative to other funding categories) matches expectations according to the funding methodology. In other words it is currently not possible to determine....whether Indigenous people who received services was in accordance with funding levels...OEA found that the information did not provide for a comprehensive analysis of service delivery against funding levels”.

It also found that:

“..the levels of service provision for Indigenous clients, both children and adults, involved less time that those for non-Indigenous CSO clients”.

### **3. NACCHO Recommendations:**

- We are not aware if the OHSs Workplan has been updated. If it has, this has not occurred in consultation with NACCHO. NACCHO thus questions if the Workplan is consistent with the priorities of the Aboriginal primary health care services sector.
- The proportionate expenditure on service provision to Aboriginal and Torres Strait Islander children and adults under the AHSPIA must be assessed to determine if it adequately meets their hearing service needs.
- Mechanisms to determine funding outlays must be made more transparent with key stakeholders. This may require revision of contractual obligations between the Office of Hearing Services and Australian Hearing or use of other levers to ensure that a substantial proportion of the total Federal Budget allocation for the CHSP (approx \$180 million in 2003-4) is shifted towards meeting Aboriginal peoples hearing needs.
- Although comprising 3% of the Australian population, Aboriginal and Torres Strait Islanders have 3 or more times the rate of hearing loss. The proportionate hearing service expenditure should reflect the population burden of need as well as rurality indices.
- Australian Hearing must be required to introduce explicit public reporting of CHSP expenditure on Aboriginal and Torres Strait Islander peoples.
- Outreach programs (or others) delivered by Australian Hearing under the Community Service Obligations contract with the Commonwealth Government, must increase the frequency of audiologists visits to rural and remote locations to meet needs and improve the quality of service delivery to Aboriginal and Torres Strait Islander people.
- Contractual arrangements between the Office of Hearing Services and Australian Hearing should specify the standards of service delivery and the outcomes to be achieved to Aboriginal and Torres Strait Islander children under 21 years of age.

- The performance information required to be collected in the evaluation of the CHSP must be improved to include reporting on the satisfaction with the program of Aboriginal and Torres Strait Islander stakeholders as well as a requirement to report on program outcomes to stakeholders such as Aboriginal and Torres Strait Islander representative organisations.
- Australian Hearing must utilise existing Aboriginal Community Controlled Health Services and their networks to deliver hearing services in urban, rural and remote locations. The frequency of service provision must be equitable and commensurate with need.
- Australian Hearing should be required to establish formal agreements with Aboriginal representative bodies like NACCHO at the national level, and with State/Territory Affiliates of NACCHO. Local level workplans with Aboriginal Community Controlled Health services will also be necessary and performance measures should include the degree to which development of these workplans took place. This would be consistent with the requirements of other service providers. (An example is the requirement for workplans under the 'Section 100 support allowance' for community pharmacists in the provision of medicines to ACCHSs, which is managed by the Department of Health and Ageing under the 4<sup>th</sup> Community Pharmacy Agreement with the Pharmacy Guild of Australia).
- As we move to supporting more comprehensive primary health care (National Health and Hospitals Reform Commission, NHHRC, Final Report 2009), silo or 'body part' approaches to hearing services provision must be reformed to be incorporated within holistic service provision. This is more likely to address needs. The Senate Inquiry is encouraged to consider how hearing services provision may be incorporated into service delivery funding under the proposed National Aboriginal and Torres Strait Islander Health Authority (a NHHRC recommendation).

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<sup>1</sup> Commonwealth Department of Health and Ageing. Workplan for future actions in ear and hearing health. Commonwealth of Australia, 2003.

<sup>2</sup> OATSIH & Office of Hearing Services. Report on Commonwealth Funded Hearing Services to Aboriginal and Torres Strait Islander Peoples. Strategies for Future Action, October 2002. Canberra: Commonwealth of Australia, 2002.

<sup>3</sup> Coates HL, Morris PS, Leach AJ, Couzos S. 'Otitis media in Aboriginal children—tackling a major health problem.' [Editorial] *Med J Aust* 2002;177:177–8..

<sup>4</sup> NACCHO. Summary of the 'Report on the Delivery of Hearing Services to Aboriginal and TSI Peoples.' Member of the Advisory Group for the Review of Hearing Services delivered by the Commonwealth to Aboriginal and Torres Strait Islander People. 16 August 2001, Canberra. <<http://www.naccho.org.au>> [Accessed 22 July 2002].

<sup>5</sup> OATSIH & Office of Hearing Services. Report on Commonwealth Funded Hearing Services to Aboriginal and Torres Strait Islander Peoples. Op. cit.

<sup>6</sup> Australian Hearing. Annual Report 2006. page 24. <http://www.hearing.com.au> [accessed Jan 2007]

<sup>7</sup> Australian Government. Annual Report 2005-06. Department of Health and Ageing, Canberra, 2006. page 106.

<sup>8</sup> Public Hearing of the Senate Community Affairs Legislation Committee 2004 June 3. *Health and Ageing Portfolio*. Official Hansard transcripts of Senate committee hearings, CA 115-116. Canberra (ACT): Parliament of Australia; 2004 [cited 2004 June 10]. Available from: URL: <http://www.aph.gov.au/hansard>.

<sup>9</sup> Australian Government. Annual Report 2005-06. Department of Health and Ageing, Canberra, 2006. page 107.

<sup>10</sup> Australian Health Ministers' Advisory Council, 2006, Aboriginal and Torres Strait Islander Health Performance Framework 2005, AHMAC, Canberra.



## ORIGINAL ARTICLE

## Otitis media in Aboriginal children: The discordance between burden of illness and access to services in rural/remote and urban Australia

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**Objective:** To compare the burden of otitis media (OM) managed by Aboriginal Medical Service (AMS) practitioners and the availability of specialist ear health services in rural/remote versus urban Australian settings.

**Design, Setting and Participants:** We mailed questionnaires to all Australian AMS medical practitioners managing children in December 2006. Questions addressed the frequency of childhood OM cases seen, and the availability and waiting times for audiology; ear, nose and throat (ENT); and hearing-aid services. We compared rural/remote and urban practitioner's responses using the  $\chi^2$  test with clustering adjustments.

**Results:** Questionnaires were returned by 63/87 (72%) AMSs and by 131/238 (55%) eligible practitioners. Rural/Remote practitioners reported managing a greater number of children with OM per week than urban practitioners (1 df,  $P = 0.02$ ) and a larger proportion of the children they managed having OM (1 df,  $P = 0.009$ ). More rural/remote than urban practitioners reported relevant services were not available locally: audiology (11.1 vs. 0%,  $P = 0.038$ ), ENT (33.3 vs. 3.9%,  $P = 0.0004$ ) and hearing-aid provision (37.7 vs. 1.9%,  $P < 0.0001$ ). More rural/remote practitioners reported audiology waiting times longer than the recommended 3 months (18.3 vs. 1.9%,  $P = 0.007$ ). Equal proportions reported ENT waiting times longer than the recommended 6 months (13.9 vs. 11.3%,  $P = 0.7$ ).

**Conclusions:** Rural/Remote AMS practitioners manage a greater OM burden than urban AMS practitioners, but affected children have less access to specialist ear health services and longer waiting times. One in five rural/remote Aboriginal children wait longer than recommended for audiology testing, and one in eight Aboriginal children nationwide wait longer than recommended for ENT services.

**Key words:** Aboriginal; health inequalities; otitis media; paediatrics; workforce.

Aboriginal children experience earlier, more frequent and more severe otitis media (OM) than other children in Australia.<sup>1-4</sup> Limited access to specialist ear health services, such as audiology; ear, nose and throat (ENT) surgeons; and hearing aids may contribute to the continued poor outcomes for Aboriginal children with OM. Delayed audiology testing can result in longer

periods of hearing impairment before diagnosis, specialist review and appropriate interventions are put in place. The Australian guidelines for the management of OM in Aboriginal and Torres Strait Islander populations recommend best practice time frames for audiology and ENT specialist assessments.<sup>5</sup> These guidelines state that for effective management following referral, a hearing test should be conducted within 3 months, and review by an ENT surgeon be conducted within 6 months. However, it is unknown whether clinicians have the required level of access to these services to meet these time frame recommendations, particularly in rural and remote Australia.

Australia has more primary care clinicians per capita in its major cities than in its remote centres (105 vs. 86 per 100 000 persons),<sup>6</sup> and this discrepancy is even greater for specialist clinicians. There are six times as many specialists per capita in major cities than remote locations (114 vs. 19 per 100 000 persons).<sup>6</sup> Given that, Aboriginal Australians are twice as likely to live outside major cities as non-Aboriginal Australians (68 vs. 34%)<sup>7,8</sup> they are disproportionately affected by this urban-regional workforce disparity.

In this study, we surveyed primary health-care clinicians managing children in Australian Aboriginal Medical Services (AMSs) to determine the burden of OM in this setting, the

### Key Points

- 1 Medical practitioners working in rural and remote Aboriginal Medical Services manage a greater burden of otitis media than practitioners in urban settings.
- 2 Rural and remote practitioners' paediatric patients have poorer access to the specialist ear health services needed to manage severe otitis media.
- 3 More than one in eight Australian Aboriginal children experience waiting times longer than the recommended 3 months for hearing tests, and 6 months for ENT services.

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availability and waiting times for audiology, ENT and hearing-aid provision services and whether there is a mismatch between the frequency with which OM is encountered in rural/remote settings versus urban settings and the availability of relevant services.

## Methods

### Target population

Medical practitioners were eligible if they consulted with children and worked in an AMS anywhere in Australia in December 2006, whether full-time or part-time. To identify the names and total number of eligible practitioners, we called every AMS on the Office for Aboriginal and Torres Strait Islander Health database<sup>9</sup> in November 2006. Questionnaires were mailed to all these practitioners in December with a return envelope and a personalised covering letter. We re-contacted each AMS in early 2007 to confirm the number of practitioners that had worked in December, and re-sent questionnaires by mail, fax or email to non-responders.

**Questionnaire (available at [http://archive.healthinonet.ecu.edu.au/html/html\\_community/ear\\_health\\_community/programs\\_projects/ot\\_survey.pdf](http://archive.healthinonet.ecu.edu.au/html/html_community/ear_health_community/programs_projects/ot_survey.pdf))**

Our questionnaire was pilot tested with 15 general practitioners and general paediatricians to ensure face and content validity. Each questionnaire was coded to determine response rates. Questions addressed the practitioner's demographics; frequency of managing children with OM; management practices; and the availability and waiting times for audiology, ENT services and hearing-aid provision. The access question was 'What is your level of access to these services?', and the waiting time question was 'What is your typical waiting time for these services?' The study methodology, ethics approvals and results for management practices have been described in detail previously.<sup>10</sup>

### Data entry and analysis

Responses were entered by two independent researchers, and discrepancies were resolved by consensus. Data were analysed as proportions of respondents giving the stated response over the total number of valid responses for that question. For simplification, we combined practitioners reporting a 'rural' and 'remote' location into one category, and similarly we combined 'capital city' and 'other metropolitan areas' into the category 'urban'. For responses to the service access question, we combined 'need to travel out of town' and 'this service is not available' into the category 'unavailable'. We checked for the level of agreement between different practitioners working in the same AMS as waiting times for a given region would be expected to be consistent between practitioners. Responses by practitioners from rural/remote and urban centres were compared by  $\chi^2$  tests at 5% significance levels using Intercooled Stata version 10 for Windows (College Station, TX). The potential lack of independence between practitioners within AMSs was allowed for using the linearization method to adjust variance estimates accord-

ingly. While this potentially inflates variances leading to larger *P* values, in practice it had little impact as the design effects were close to 1.0.

## Results

### Respondents

There were 239 eligible practitioners, of whom 131 (55%) returned the questionnaire. These practitioners came from 63/87 (72%) AMSs from every state and territory in Australia: NSW (*n* = 45), Qld (*n* = 19), WA (*n* = 18), Vic (*n* = 17), SA (*n* = 16), NT (*n* = 9), Tas (*n* = 2) and ACT (*n* = 1). Practitioners from rural (*n* = 52) or remote (*n* = 20) settings had similar characteristics when compared with practitioners from capital cities (*n* = 33) or other metropolitan areas (*n* = 22) (see Table 1). The rural/remote AMSs were located in towns with populations ranging from <1000 to >80 000.<sup>11</sup> Most practitioners answered all questions (mean 96%, range 92–98%). After completion of this study, we found that 4 of the 87 services on our sampling list were not AMSs (all were South Australian). Three were general practices (four respondents), and a fourth was a paediatric outreach service (two respondents). Inclusion of these services in the department's database may be explained by special arrangements to provide primary health-care services to local Aboriginal communities. Exclusion of these six practitioners did not alter the results, and their data were included.

### OM burden (Fig. 1)

Most practitioners (96%) reported seeing at least one child with OM every week. Rural/Remote practitioners saw more children with OM than urban practitioners (1 df, *P* = 0.02). More rural/remote practitioners than urban practitioners reported seeing five or more children with OM every week, but this did not reach statistical significance (32.4 vs. 14.6%, *P* = 0.074). Rural/Remote practitioners also reported a higher proportion of children who presented to them had OM using linear by linear association (1 df, *P* = 0.009). More rural/remote practitioners than urban practitioners reported that at least 40% of the children they saw had OM (21.1 vs. 7.3%, *P* = 0.026).

### Service availability (Fig. 2)

More rural/remote than urban practitioners reported that audiology services were not available in their town (11.1 vs. 0%, *P* = 0.038). Similarly, more rural/remote than urban practitioners reported that ENT services were not available in their town (33.3 vs. 3.9%, *P* = 0.0004), and that hearing-aid provision was not available in their town (37.7 vs. 1.9%, *P* < 0.0001). All the general practitioners who participated in the pilot phase (all from Sydney) responded that audiology, ENT and hearing-aid provision were available.

### Service waiting times (Fig. 3)

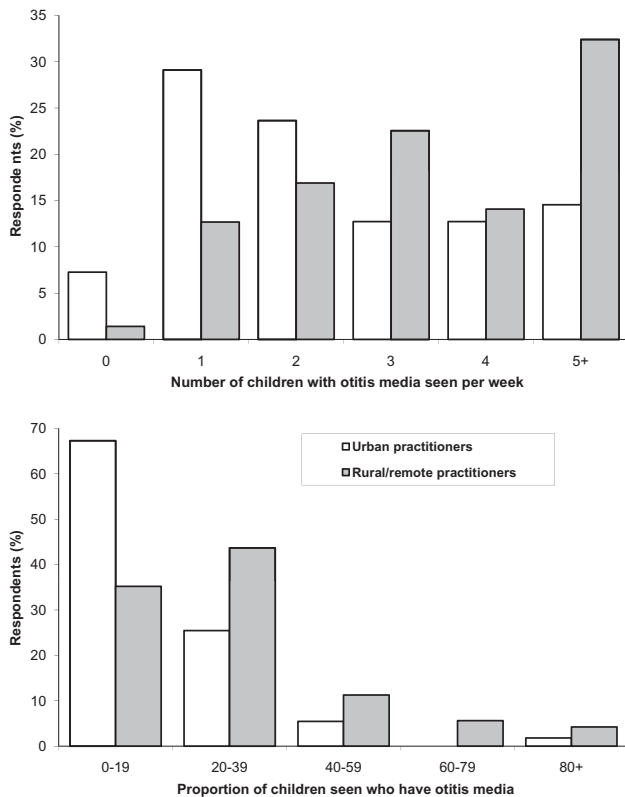
More rural/remote practitioners than urban practitioners reported audiology waiting times longer than 3 months (18.3 vs. 1.9%, *P* = 0.0066). ENT waiting times longer than 6 months



**Table 1** Aboriginal Medical Service practitioners' characteristics by location (N = 131)

Characteristic		Urban		Rural/Remote		P§
		n†	%	n†	%	
Gender	Male	24	43.6	37	52.1	0.35
	Female	31	56.4	34	47.9	
Age (years)	20–29	0	–	3	4.2	0.33
	30–39	19	34.6	23	31.9	
	40–49	22	40.0	22	30.6	
	50–59	11	20.0	21	29.2	
	60+	3	5.4	3	4.2	
Duration of clinical practice (years)	<10	16	29.1	17	23.6	0.39
	10–19	14	25.4	26	36.1	
	20+	25	45.5	29	40.3	
Duration of Aboriginal clinical practice (years)	<1	6	10.9	10	13.9	0.41
	1–2	11	20.0	11	15.3	
	3–5	12	21.8	16	22.2	
	6–9	7	12.7	18	25.0	
	≥10	19	34.6	17	23.6	
Country of graduation	Australia‡	44	80.0	52	72.2	0.31
	Overseas	11	20.0	20	27.8	

Urban includes respondents from capital cities and other metropolitan areas. †Denominators may vary because of missing data. ‡Includes one 'Australia and overseas'. §Pearson  $\chi^2$  linear by linear association between urban and rural/remote practitioners.



**Fig. 1** Burden of otitis media in Aboriginal Medical Services.

were reported by 13.9% of rural/remote practitioners, and 11.3% of urban practitioners ( $P = 0.74$ ). Hearing aid waiting times longer than 3 months were reported by 50.0% rural/remote practitioners, and 35.6% urban practitioners ( $P = 0.12$ ). All the general practitioners who participated in the pilot phase responded that the waiting time for audiology was <1 month, and the waiting time for both ENT and hearing-aid services was 3 months or less.

**Agreement**

Some AMSs had more than one practitioner respond to our survey. As a check on inter-rater reliability, we compared responses from these practitioners. We found 92/93 (98.9%) agreed with their AMS colleague(s) as to whether audiology was available or unavailable in their town, and 93.4% agreed on the ENT availability question. For the waiting time question, 94.6% of these practitioners agreed as to whether the audiology waiting time was longer than 3 months, and 91.2% agreed as to whether the ENT waiting time was longer than 6 months.

**Discussion**

There is a significant discordance between the burden of OM in Aboriginal children in AMSs and the access to specialist ear health services across Australia. Rural and remote practitioners managed significantly more children with OM than urban practitioners, both in terms of the absolute numbers of children with OM seen every week and the proportion of their practice population with OM. We found that audiology services were less likely to be available within the national guideline

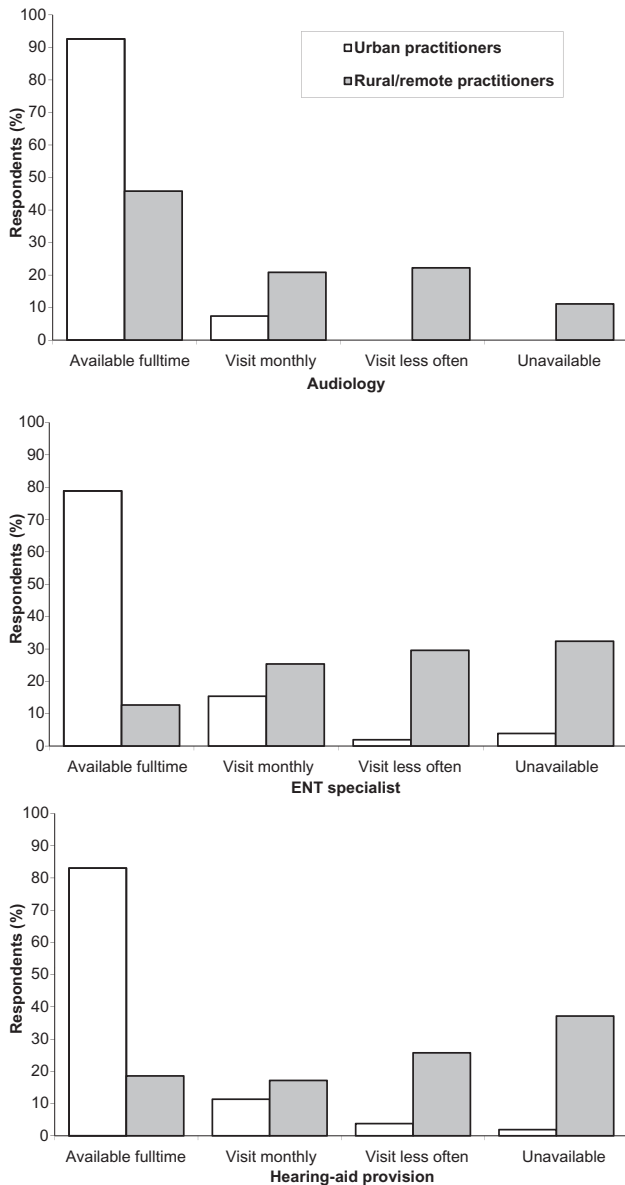


Fig. 2 Availability of specialist ear health services.

recommendation of 3 months in rural and remote AMSs than in urban AMSs.<sup>5</sup> However, the problem of lack of access was not restricted to rural/remote practices alone. One in seven rural and remote practitioners, and one in nine urban practitioners, reported delays for ENT review longer than the national guideline recommendations of 6 months.<sup>5</sup> These delays are likely to compound the adverse effects of OM. Given the significant burden of middle ear disease experienced by Australia's Aboriginal and Torres Strait Islander children,<sup>1-4</sup> this access block needs to be addressed, particularly in rural and remote Australia.

The greater burden of OM in rural/remote AMSs than urban AMSs does not reflect a low rate of OM in urban AMSs. Urban AMSs see more OM than other primary health-care services in Australia.<sup>12</sup> Our findings also cannot be explained by the rural/

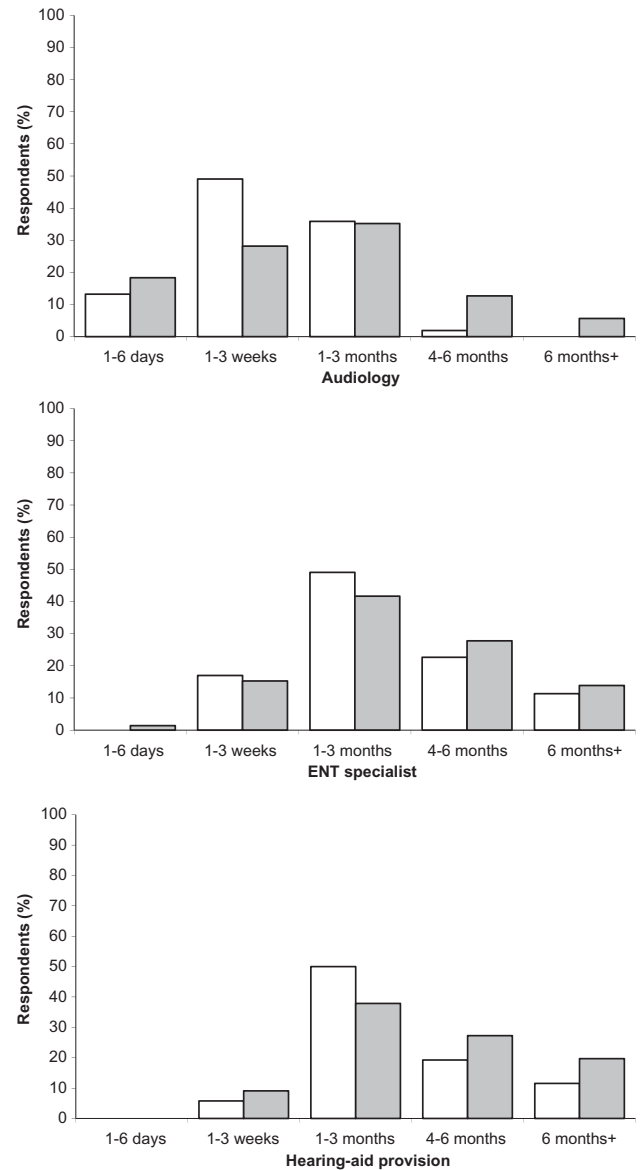


Fig. 3 Waiting times for specialist ear health services.

remote AMSs being located in very small sparsely populated settings as they were in towns with populations from 1000 to >80 000. Our finding of poor access to specialist services cannot be explained by low referral thresholds. In Australia, general practitioner ENT referral rates for indigenous and non-indigenous children for the last 8 years were not statistically significantly different,<sup>3</sup> and were comparable to published referral rates in the United States and the United Kingdom.<sup>13</sup>

We believe our respondents are representative of AMS medical practitioners nationwide, as we had responses from nearly three quarters of Australia's AMSs and a majority (55%) of all practitioners known to be working in AMSs. Practitioners may have been either more or less likely to return the survey based on their OM burden or level of access to services, and this potentially may have biased our results in either direction.

Actual levels of access to visiting specialist ear health services and the waiting times may have been worse than reported here, given the difficulties patients may face getting into town to access them, cost barriers and the limited flexibility of appointment dates for visiting services. We did not independently verify reported waiting times, and it is possible that they were exaggerated. However, it is unlikely that any measurement error would be differential between urban and rural/remote settings, and the reliability of our data is further supported by the greater than 91% level of agreement between practitioners within the same AMS. Although we were not able to compare responses with a cohort of non-AMS practitioners, all the local Sydney general practitioners who participated in the pilot phase reported all three specialist services were available with waiting times quicker than 3 months. We used the Australian national guideline recommendations of audiology testing within 3 months, and ENT assessment within 6 months. These are arbitrary cut-off points, but they are consistent with international guidelines<sup>14</sup> and have face validity for clinicians.

The Australian Government Hearing Services Program provides free hearing assessment, rehabilitation, supply and fitting of hearing aids for all children younger than 21 years. Australian Hearing has a service level agreement with the Office of Hearing Services to deliver the Australian Hearing Specialist Program for Indigenous Australians (AHSPIA). AHSPIA focuses on providing tertiary level hearing and related services in community settings, and in conjunction with Aboriginal communities and local Aboriginal health services. However, a review of AHSPIA found an inequitable distribution of funds with evidence that the hearing health needs of Aboriginal children were not being met.<sup>15</sup> There were 'significant ongoing deficiencies in ear health and hearing services relating to lack of access to specialist services including . . . audiologists, and lack of integration of ear health services within routine comprehensive primary health care services'.<sup>16</sup>

AHSPIA expenditure over 2006–2007 was \$4.6 million. Services were provided at 171 sites compared with 129 sites over the preceding year, and 2671 clients were seen.<sup>17</sup> It is unclear if this degree of service provision meets community need as service obligations are not linked with benchmarks or health targets. The Aboriginal and Torres Strait Islander Health Performance Framework (HPF) asks if the health system is failing to address the serious hearing problems of Aboriginal and Torres Strait Islander children. The HPF only measures the burden of 'children's hearing loss', not the health system responsiveness to this problem, so it is unlikely this question will be answered, especially when there is no reporting on hearing services expenditure relative to need.<sup>18</sup>

Long waiting times are used by AMWAC as an indicator of workforce shortages.<sup>19</sup> There are six times as many specialists per capita in urban settings than in remote settings in Australia.<sup>6</sup> A similar shortage of ENTs in non-urban settings and comparable waiting times have been reported in Canada, the United Kingdom and in non-AMS settings in South Australia.<sup>20–23</sup> The solution to these workforce shortages will include adequately funding visiting services in rural/remote settings and outreach programmes delivered by AHSPIA (or others) increasing the frequency of audiologist visits to rural and remote locations to meet needs and improve the quality of service delivery to

Aboriginal and Torres Strait Islander people. The proportionate hearing service expenditure should reflect the population's need as well as rurality indices. Performance information in the evaluation of Australian Government hearing programmes must be improved to include satisfaction with the programme by Aboriginal and Torres Strait Islander stakeholders.

AMS practitioners working in any setting in Australia manage a greater OM burden than other practitioners.<sup>3,12</sup> However, AMS practitioners in rural/remote settings manage the highest burden with the poorest access to specialist ear health services and longer waiting times. One in five rural/remote Aboriginal children wait longer than recommended for audiology testing, and one in eight Aboriginal children in both rural/remote and urban settings wait longer than recommended for ENT review. Given the fact that Australian Aboriginal children experience earlier, more frequent and more severe OM than other children internationally,<sup>1–4</sup> this discordance between burden of disease and access to services must be addressed.

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