Kimberley Aboriginal Health Planning Forum

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# Protocol Review Evidence Used and Rationale

**Protocol name:** Ear Problems in Children & Hearing Health

**Working Group:**

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**Rationale:**

Otitis media (OM) is a significant problem for Aboriginal children, with the prevalence of its most severe form, Chronic Suppurative Otitis Media (CSOM), being one of the highest in the world (1-3). All forms of OM can cause hearing loss, with acute episodes often resulting in temporary hearing loss. Chronic OM results in permanent hearing loss, which can have impacts upon education, employment and psychosocial development (4).

Hearing well, especially in the early years of life, is crucial for the development of important brain pathways and the development of language and communication skills (4). Aboriginal children tend to experience OM and resulting hearing loss earlier, more persistently and more seriously and on average have 32 months of OM, compared to only 3 months in the non-Aboriginal population (5). Management of ear disease and hearing loss can make a significant positive difference to a child immediately, and into their adult life (4).

**Methods:**

A Kimberley-based multi-disciplinary working group was formed in 2019 to review the latest evidence for the prevention, early detection and management of OM in Aboriginal and Torres Strait Islander children in the primary healthcare setting. The recently updated Otitis Media Guidelines for Aboriginal and Torres Strait Islander Children (6) prepared by the Menzies School of Health Research form the basis of these protocol recommendations. Literature reviewed to complete these protocols included Australian-based government policy documents, health organisation reports, relevant journal articles and Cochrane reviews. The COVID-19 pandemic response in 2020 delayed the process of protocol endorsement, and new evidence was reviewed prior to the protocol being published on the KAHPF website.

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**Key Definitions in Ear Health:**

Primary prevention: addresses risk factors for disease.

Secondary prevention: focuses on early identification and timely management of ear disease within primary health care.

Tertiary prevention: education, support and specialist care to reduce the negative impacts of ear disease.

**Protocol Structure:**

The previous Ear Problems in Children protocol was reviewed in 2016, and was accompanied by an appendix document titled "Preventing Ear Infections and Appendix A & B". The Appendix document included prevention recommendations, hearing questionnaires and advice for families/friends of children with hearing loss.

The working group decided to re-structure these protocols for ease of use (see Figure 1). "Ear Problems in Children" now chiefly addresses primary and secondary prevention of OM and hearing loss, while a new protocol titled "Hearing Health" addresses tertiary prevention, including hearing developmental red flags, hearing questionnaires to identify hearing loss and advice to support children with hearing loss.

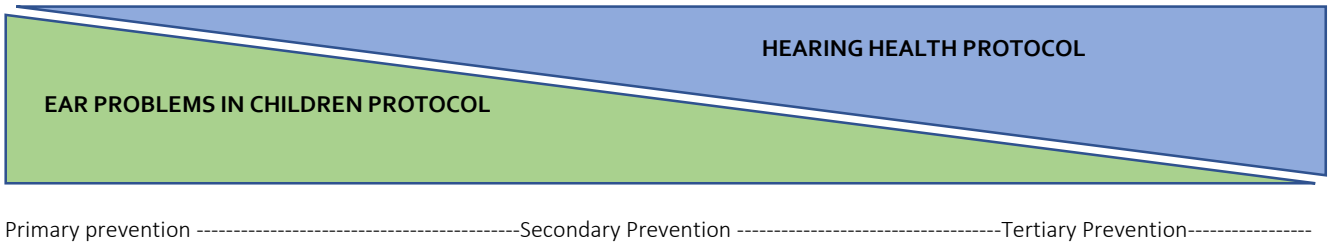


**Figure 1. KAHPF Ear Health Protocols and Levels of Care Addressed**

**Key Discussion Points:**

Re-framing of OM as a chronic disease

A key objective for the update of these protocols was to re-frame the management of OM in Aboriginal communities as a chronic disease requiring active management and vigilant follow up, rather than an acute or episodic illness, as is the case in most urban Australian settings. It is important for primary care clinicians working in the Kimberley to understand that for many children in the region, OM is chronic and can have life-long impacts if not managed effectively.

A surveillance approach to ear and hearing problems

Screening & surveillance aim to achieve early identification of ear and hearing problems so that these conditions can be managed appropriately to prevent long-term effects. Hearing surveillance is a continuous process done by primary health staff with the child and their carers. Checks can be done at immunisation visits, well-baby and child health checks and opportunistically during other visits. Routine and opportunistic ear and hearing checks by primary health staff can include otoscopy, tympanometry and audiometry. Screening occurs when data is collected at a single point in time, and includes checks done at school. There must be clear pathways for follow-up when ear problems are found through screening programs. Our protocol encourages a surveillance approach to secondary prevention in keeping with The Otitis Media Guidelines (6). This is why we advise that ear & hearing checks should be done for all children every time they come to clinic. Otoscopy should always be performed, and tympanometry when available. Hearing questionnaires should be used to ask parents/caregivers about the child's hearing. Children who have recurrent, persistent and chronic OM should be followed-up using recall systems. Although our advice is for these checks to be done on all children, we highlight that this is particularly important for young children under 5 years of

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age, as this is the time when their language and communication skills are developing. It is important for young children to be able to hear well so that they have the best opportunities to gain important lifelong skills.

Therapeutic Protocols

Key issues discussed by the working group are listed below. For issues where the evidence base is lacking, specialist ENT advice was sought to guide recommendations.

- *Topical antibiotic drops with steroids:* the use of Ciprofloxacin with hydrocortisone (Ciprofloxacin HC) was discussed. There is no strong evidence to suggest that topical antibiotic drops with steroids affects the resolution of ear discharge in CSOM when compared to topical antibiotics alone (7). There is also no strong evidence to suggest a benefit over topical antibiotics alone in tympanostomy tube otorrhoea (TTO) (6). Ciprofloxacin HC is not on the Pharmaceutical Benefits Scheme (PBS) or the Kimberley Standard Drug List (KSDL) and costs approximately $35 per bottle. Its routine use is therefore not recommended in our protocol. There may be some situations where specialist ENT surgeons may suggest its use (e.g. polyps).
- *Long-term oral antibiotics for persistent OM with effusion (OME):* a 2016 Cochrane review found that there is evidence for an increased chance of complete resolution of OME at various time points with antibiotic use (8). However, antibiotic use is associated with side effects such as diarrhea, vomiting and skin rash (8). There was no data available on the impact of antibiotics on important outcomes such as speech, language, cognitive development and quality of life (8). In keeping with The Otitis Media Guidelines, our protocol recommends a single course of amoxicillin 25mg/kg twice daily for 2-4 weeks as a reasonable approach to persistent OME (6). Discussion with the regional ENT lead emphasized that this course should not be repeated if it is not successful, and we need to be wary of children that present at multiple services.
- *Long-term prophylactic antibiotics for recurrent acute OM (rAOM):* a 2006 Cochrane review found that long term antibiotics for rAOM does reduce episodes of AOM but this must be balanced against possible side effects, resistance and difficulty administrating (9). The effect is seen while the child is taking the antibiotics, but the effect beyond this time is unclear (9). The Otitis Media Guidelines recommends a 6 month course of daily amoxicillin (25-50mg/kg/day in two divided doses) should be considered for high risk children under 2 years of age (6). On advice of the regional ENT lead, our protocol suggests consideration of long term prophylactic antibiotics for high risk children under 2 years of age on discussion with the regional paediatrician team. It is important that the family of the child understand the risks and possible benefits and are agreeable to a long course of antibiotics.
- *Chronic Suppurative Otitis Media (CSOM):* the management approach in this protocol is largely unchanged from the last review. We have highlighted the responsibility of the primary care clinic to actively manage and follow up CSOM, even if patient is referred to ENT services. The Otitis Media Guidelines suggests referral of all children with CSOM at diagnosis. After discussion within the working group, other local health professionals and the regional ENT lead it was agreed that children with a persistently discharging ear should be seen within 1-3 months if the discharge has continues for more than 1-3 months. Therefore a pragmatic approach was taken suggesting referral to ENT after 2 months of ear discharge that has not resolved with appropriate treatment. These referrals would be triaged as category 2 (to be seen within 1-3 months). This advice is unchanged from the last protocol review.
- *Dry perforation:* on discussion with the regional ENT lead it was decided to advise referral to audiology and ENT after 3 months of dry perforation.
- *Otitis externa:* the working group agreed to provide a new table to assist clinicians to determine which topical ear treatment is best to use depending on clinical circumstances. Fungal otitis externa with tympanic membrane perforation was discussed at length as it presents a management dilemma regarding ear drop and aural hygiene choice. The previous protocol suggested betadine syringe as management for these patients. On discussion with ENT specialist including the regional ENT lead, the agreed approach for this protocol is to use tissue spears and

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half strength (5%) betadine solution (3 drops twice daily for 1-2 weeks) or where available clotrimazole (Canestan) solution (3 drops twice daily for 1-2 weeks).

Swimming

A new section for advice regarding swimming was included as swimming is a common activity in the Kimberley and the need for specific advice was deemed necessary. Recommendations are based on advice from the regional ENT lead.

Appendices

The use of the Otoclear Spraywash Kit was discussed by the working group. Currently this kit is available in most Aboriginal Community Controlled Health Services but is not used in WA Country Health Service clinics. If not available, clinics can follow advice regarding use of cut off butterfly giving set.

**Protocol Review Timeline:**

1st working group meeting: October 31st 2019

2nd working group meeting: November 18th 2019

3rd working group meeting: January 20th 2020

Discussion at Ear Health Panel Workshop: February 6th 2020

Presented to KAHPF Maternal, Child, Youth & Family Subcommittee: September 16th 2020

**References:**

1. World Health Organization. Chronic suppurative otitis media - burden of illness and management options [Internet] Geneva, (Switzerland): WHO; 2004 [cited 2020 Sep 8]. Available from: https://www.who.int/pbd/publications/Chronicsuppurativeotitis_media.pdf.

2. Kong K, Coates H. Natural history, definitions, risk factors and burden of otitis media. MJA [Internet] [Internet]. 2009 Nov [cited 2020 Sep 8]; 191(9):[S39 p.].

3. National Aboriginal Community Controlled Health Organisation and The Royal Australian College of General Practitioners. National guide to a preventive health assessment for Aboriginal and Torres Strait Islander people. 3rd edn [Internet]. East Melbourne, Vic: RACGP, 2018 [cited 2020 Sep 8]. Available from: https://www.racgp.org.au/FSDEDEV/media/documents/Clinical%20Resources/Resources/National-guide-3rd-ed-Sept-2018-web.pdf.

4. Group SAAEHR. An Aboriginal Ear Health Framwork for South Australia [Internet]. Adelaide (SA): Government of South Australia SA Health; 2017 [cited 2020 Sep 8]. Available from: https://www.sahealth.sa.gov.au/wps/wcm/connect/f693fc0041035081a801fb1afc50ebfc/An+Aboriginal+Ear+Health+Framework+for+South+Australia.pdf?MOD=AJPERES&CACHEID=ROOTWORKSPACE-f693fc0041035081a801fb1afc50ebfc-niR8g.B.

5. Australian Medical Association. 2017 AMA Report Card on Indigenous Health - A National Strategic Approach to Ending Chronic Otitis Media and its Life Long Impacts in Indigenous Communities [Internet] Canberra, ACT: AMA; 2017 [cited 2020 Sep 8]. Available from: https://ama.com.au/article/2017-ama-report-card-indigenous-health-national-strategic-approach-ending-chronic-otitis.

6. Menzies School of Health Research. Otitis Media Guidelines for Aboriginal and Torrest Strait Islander Children [Internet]. Darwin (NT): Menzies; 2017 [cited 2020 Sep 8]. Available from: http://www.otitismediaguidelines.com/ and via App store "Otitis Media Guidelines]

7. Brennan-Jones C, Chong L, Head K, Burton M, Schilder A, Bhutta M. Topical antibiotics with steroids for chronic suppurative otitis media (Review). Cochrane Database of Systematic Reviews [Internet] 2020 [cited 2020 Oct

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16]; (8). Art. No.:CD013054. DOI: 10.1002/14651858.CD013054.pub2. Available from: https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD013054.pub2/full.

8. Venekamp R, Burton M, Dongen Tv, Heijeden Gvd, Zon Av, Achilder A. Antibiotics for otitis media with effusion in children. Cochrane Database of Systematic Reviews [Internet]. 2016 [cited 2020 Sep 8]; 6. Art. No.:CD009163. Available from: https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD009163.pub3/full.

9. Leach A, Morris P. Antibiotics for the prevention of acute and chronic suppurative otitis media in children. Cochrane Database of Systematic Reviews [Internet]. 2006 [cited 2020 Sep 8]; 4. Art. No.:CD004401. Available from: https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD004401.pub2/full#:~:text=Antibiotics%20to%20prevent%20acute%20ear%20infections%20in%20children&text=Antibiotics%20given%20once%20or%20twice%20daily%20may%20reduce%20episodes%20of,the%20risk%20of%20further%20infections.

10. Darwin Otitis Guidelines Group. Recommendations for clinical care guidelines on the management of Otitis Media in Aboriginal and Torres Strait Islander Populations [Internet]. Canberra (ACT): Commonwealth of Australia; 2015 [cited 2020 Sep 8]. Available from: https://www1.health.gov.au/internet/main/publishing.nsf/Content/indigenous-otitismedia-clinical-care-guidelines

11. group WCEHSw. WA Child Ear Health Strategy 2017-2021 [Internet]. Perth (WA) 2016 [cited 2020 Sep 8], Available from: https://www.ruralhealthwest.com.au/about-us/publications/wa-child-ear-health-strategy.

12. Committee HHS. Roadmap for Hearing Health [Internet]. Canberra (ACT): Australian Government Department of Health; 2019 [cited 2020 Sep 8]. Available from: https://www1.health.gov.au/internet/main/publishing.nsf/Content/roadmap-for-hearing-health.

13. Kimberley Aboriginal Health Planning Forum. Kimberley Regional Ear Health Strategic Plan 2016-2018 [Internet] Broome, WA: KAHPF; 2017 [cited 2020 October 16]. Available from: https://kahpf.org.au/reports-documents.

**Other Resources (10-13)**

**Other Notes:**

Several Cochrane reviews were published in 2020 regarding otitis media management. Reviews regarding the use of topical antiseptics, aural toilet for CSOM, topical antibiotics for CSOM, and topical antibiotics with steroids for CSOM did not yield any evidence to suggest changes to current practices as outlined in these protocols. These can be accessed from https://ent.cochrane.org/our-reviews (under subtopic “Ear”).

Guidance in these protocols are good faith recommendations to clinicians practicing in the Kimberley based on information available at the time of preparation and expert advice. Authors do not accept liability for advice or recommendations.