

Study protocol:

The management of children with otitis media: a survey of Australian Aboriginal Medical Services.

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Research question:

How do medical practitioners working in Australian Aboriginal Medical Services manage children (younger than 18 years) with otitis media?

Objectives:

1.0 Burden of disease:

1.1 To determine the proportion of children seen in Australian Aboriginal Medical Services who have a diagnosis of otitis media.

1.2 To determine how medical practitioners working in Australian Aboriginal Medical Services examine children for otitis media.

2.0 Management of acute otitis media:

2.1 To determine the proportion of medical practitioners in Australian Aboriginal Medical Services who use oral antibiotics for acute otitis media at the initial consultation.

2.2 To determine which oral antibiotics are used for acute otitis media and the duration of therapy.

3.0 Management of otitis media with effusion:

3.1 To determine the proportion of medical practitioners working in Australian Aboriginal Medical Services who use oral antibiotics for otitis media with effusion at the initial consultation.

3.2 To determine which oral antibiotics are used for otitis media with effusion and the duration of therapy.

4.0 Management of chronic suppurative otitis media:

4.1 To determine the proportion of medical practitioners working in Australian Aboriginal Medical Services who use oral antibiotics for chronic suppurative otitis media.

4.2 To determine the proportion of medical practitioners working in Australian Aboriginal Medical Services who use topical otic antibiotics for chronic suppurative otitis media.

4.3 To determine the proportion of medical practitioners working in Australian Aboriginal Medical Services who use betadine syringing or dry mopping for chronic suppurative otitis media.

4.4 To determine the proportion of medical practitioners working in Australian Aboriginal Medical Services who would refer children with chronic suppurative otitis media for a hearing test.

5.0 Indigenous status

5.1 To determine whether Indigenous and Non-Indigenous children with otitis media are managed differently.

Abbreviations:

AMS	Aboriginal Medical Services
AOM	Acute otitis media
OME	Otitis media with effusion
CSOM	Chronic suppurative otitis media

Background:

Otitis media remains one of the most common reasons for a child to present to a primary care physician (1). Indigenous children, such as Australian Aborigines, New Zealand Maoris and Arctic Circle Inuit children, experience more otitis media and more severe forms of otitis media than any other groups worldwide (2). Many good epidemiological studies have been undertaken in Australia Aboriginal populations over the last fifty years, mostly in remote areas in the Northern Territory and Western Australia (3). However, few studies have sought to determine how otitis media is actually managed by health care professionals.

There is considerable variation in the management of the many different forms of otitis media. Even for a particular type of otitis media, such as acute otitis media (AOM), different practitioners within the same country will manage the condition differently. There are also different approaches to management between nations. Antibiotics are routinely prescribed for acute otitis media at the initial consultation in the United States (4) and Canada whereas a “watchful waiting” approach is the most common practice in the Netherlands. Practitioners in Israel routinely perform tympanocentesis to identify the causative middle ear pathogen to direct treatment whereas this is less common in the United States and rarely done in the United Kingdom, Canada (5) or Australia. National differences are also affected by national guidelines or consensus statements. The national guidelines recommend antibiotics for acute otitis media only for specific risk groups in the Netherlands, Norway, Sweden and many other countries (6). In Australia specific guidelines for the management of Indigenous children with otitis media were published in 2001 (7).

In Australia there has been a decline in acute otitis media management by general practitioners from 9.4% to 7.7% of all encounters in the last decade (8). This corresponds to a significant drop in total antibiotic prescriptions in Australia from 34% to 25% encounters between 1991 to 2001. A large time trend analysis from the United Kingdom (9) showed a 50% decline in total antibiotic prescription rates in a comparable period (1993 to 2003). There was a concurrent slight increase in admissions and surgery for mastoiditis in the UK population over this period, however, more than 2500 antibiotic courses would be required to prevent one case of mastoiditis (9).

There has been no previous national survey of medical practitioners working in Aboriginal Medical Services around Australia, to ascertain how they manage otitis media. In this national questionnaire survey we sought to determine how medical practitioners working in Australian Aboriginal Medical Services manage children with otitis media.

Methods:

Who should complete the questionnaire?

We sought to survey all medical practitioners working in Aboriginal Medical Services (AMS) throughout Australia. As there are many different types of services, and they can have differing organisational and funding structures we decided to use a standard national list. We used the Office of Aboriginal and Torres Strait Islander Health (OATSIH) list of Australian AMSs, available on their webpage (10) to identify the AMS.

The director of medical services or equivalent was contacted by phone by one of two research assistant in October 2006. We asked whether the AMS saw children with otitis media. This was to ensure that the questionnaire was only sent to medical services in which children with health problems were assessed and managed. As the AMS medical workforce can be transient we asked for the names of each medical practitioner who would be expected to be working next month (November 2006). Part-time as well as full-time practitioners were included. With this information we were able to address the covering letter to each doctor personally. If the names could not be provided we asked for the total number of medical practitioners who would be working in November 2006 and sent the questionnaires addressed as "Dear doctor".

Questionnaire instrument:

A 5 page questionnaire has been designed specifically for this study. The questionnaire comprised a covering letter, one page of demographic information questions, two pages of clinical vignettes, a page of questions addressing the factors affecting management decisions and a final page of questions concerning access to specialist services.

Justification for each question:

Q1. Demographics

In order to ensure confidentiality and to minimise the intrusiveness of the questionnaire we have only included broad categories of demographic details. We have asked gender and age ranges (rather than exact ages). To compare practitioners with more or less experience we asked how many years of clinical practice the responder had worked and the past experience delivering health care to Aboriginal patients.

Q2. Aboriginal Medical Service

Only very minimal information about each AMS was sought. These questions were to compare management practices between states and territories, and between services in metropolitan and other areas. We asked practitioners to estimate how many children with otitis media they would see in a typical week to estimate the burden of this disease in their clinical practice.

Q3. Examination

There are many different ways to examine a child's ear. Some of these require specific instruments and training, such as acoustic reflex testing. Other examination techniques, such as standard otoscopic examination, would be familiar to most medical practitioners. This question covered which techniques the practitioner was familiar with and which techniques were routinely used to examine a child's ears.

Q4. & Q8 Clinical vignettes

There were two clinical vignettes in which two 12 month old girls with fever (38.7°C) are presented. Clinical vignette questionnaires have been shown to be a valid method for measuring the quality of health care that directly focuses on the process of care in potentially real clinical situations (11). Practitioners were asked to make a diagnosis based on the available information.

Q5 & Q9 Antibiotics: whether?

Practitioners were asked whether they would start oral antibiotics if they saw a child as presented in the vignettes. We used the term “start” here rather than “prescribe” to capture the situation where the antibiotics were provided over the counter, or samples were provided. We have provided a series of options, including the “watchful waiting” approach, immediate antibiotics or not using antibiotics at all. As there are many different options we allowed an “other” category for practitioners to include their own practice, if this differed from all the available options.

Q6 & Q10 Antibiotics: which?

Practitioners who indicated that they may use antibiotics were asked which antibiotic they would use, assuming the child had no allergies.

Q7 & Q11 Antibiotics: how long?

Practitioners who indicated that they may use antibiotics were asked for the planned duration of that antibiotic course.

Q12. Influences on management decisions

There are a number of factors which contribute to a clinician’s decision as to how they will manage a given clinical situation. It is not possible for a survey instrument to capture this enormous variability. We selected fourteen clinical factors and asked how the presence of each of these factors would influence the clinician’s decision whether or not to use oral antibiotics. We used a five point Likert scale to enable graded responses between “less likely to use antibiotics” and “more likely to use antibiotics” for each of the fourteen factors. Again, there was an “other” section for those respondents who felt there was an important factor which was missing from the list provided.

Q13. Influences on selection of antibiotic

To correlate with the antibiotic choices described in Q6 and Q10 we asked practitioners to describe how important each of four factors were in making their decisions. These four factors were selected as being some of the reasons why a clinician may chose an antibiotic. Again, there was an “other” section so that practitioners could insert their own reasons.

Q14. Guidelines

There are a number of clinical guideline documents in Australia, and in each state and territory. We sought to determine whether practitioners were familiar with the different guidelines and whether they used these guidelines to formulate their management decisions.

Q15. Chronic Suppurative Otitis Media

Chronic suppurative otitis media or CSOM is one of the most severe forms of middle ear disease. CSOM is a particularly large problem in Aboriginal children and can lead to long term sequelae, such as hearing impairment. We sought to determine whether antibiotics were used for this condition, which antibiotics, how they were administered (oral or topical). We also sought to determine whether practitioners used a form of “ear toilet” such as syringing or dry mopping as practitioners in different states and territories have different practices.

Q16. & Q17. Access to specialist services

The final questions addressed the level of access to specialist services. Ear, Nose and Throat surgeons (ENT)

Response rates

The questionnaire will be mailed out in November 2006. After 4 weeks all non-responders will be sent a further questionnaire with a further reply-paid envelope. After a further 2 weeks remaining non-responders will be contacted by phone to remind practitioners about the questionnaire and address any concerns which may have prevented respondents from completing the questionnaire.

Physician response rates to questionnaires can be as low as 9% for published studies and averages 54% (12). General practitioner response rates are generally lower than specialist response rates (13). Mailed surveys have generally resulted in higher response rates than telephone surveys and are preferred by primary care physicians (14). Low response rates are a considerable concern given non-response sampling bias and we designed the study to maximise response rates based on available evidence (15).

To maximise the response rate for this survey of general practitioners we adopted several of the recommendations from the ‘Total Design Approach’ which have been recently analysed (14). These measures included designing a respondent-friendly questionnaire, priming the Aboriginal Medical Service with a phone call prior to the first mail-out, enclosure of a return envelope and personalisation of the covering letter. Lengthy questionnaires result in lower response rates (16) but shorter questionnaires result in less data available for analysis. The ideal length of a questionnaire has not been determined. We have decided that our questionnaire instrument should be 5 pages.

Data extraction

If the front page covering letter with identifying information is returned with the survey, it will be removed before data is extracted. A unique code on each questionnaire will be used to differentiate responders from non-responders. Non-responders will then be mailed the questionnaire again with another return envelope. Data extraction will be done by HG without determination of the responder’s identification. There will therefore be no mechanism to correlate any specific response to any individual responder.

Data analysis

A response rate will be determined by dividing the total number of surveys returned (whether completed, partially completed or returned incomplete) by the total number of surveys mailed in initial round. This will be expressed as a percentage.

Data will be entered into an excel spreadsheet. The data will be presented in tables addressing the specific objectives outlined earlier. Only grouped data will be presented and no identifying information will be reported. We will analyse all responses from our survey for differences based on responder characteristics (age, years of practice, nature of clinical practice) and on case characteristics (diagnosis, Indigenous status).

Ethics approval

Ethics approval was sought and granted by the University of Sydney and the Children's Hospital at Westmead. We also have approval for this survey from the Board of the National Aboriginal Community Controlled Health Organisation (NACCHO). In accordance with the wishes of the NACCHO Board we contacted each state and territory ethics committee or the relevant equivalent body. At this stage we have approval to proceed with the study from NSW, ACT, Victoria, Queensland, the Northern Territory and Western Australia. The Aboriginal Health Council of South Australia is currently considering the application but no decision has been made.

Existing approvals for this study:

- The University of Sydney
- The Children's Hospital at Westmead
- Board of NACCHO (National Aboriginal Community Controlled Health Organisation)
- NSW/ACT: HREC The Aboriginal Health & Medical Research Council (AH&MRC)
- VIC: Victorian Aboriginal Community Controlled Health Organisation (VACCHO)
- Qld: Queensland Aboriginal and Islander Health Council (QAIHC)
- NT: HREC of NT Dept Health & Community Services and Menzies School of Health Research as well as Central Australian HREC
- WA: West Australian Aboriginal Health Information and Ethics Committee (WAAHIEC)

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