Development of an otitis media strategy in the Pacific: key informant perspectives

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ABSTRACT

**AIM:** Ear and hearing health services are scarce within Pacific Island countries. Where available, they remain under-resourced, despite there being a high estimated prevalence of otitis media and otitis media-related hearing loss. This study examines the potential for improving ear and hearing health strategies by examining key factors, opportunities and challenges, working with Fiji as a case study.

**METHOD:** A series of semi-structured interviews were conducted with professionals who had experience in otitis media programme implementation and/or professionals with working experience within the Pacific region and the Fiji health system. Interviews were audio-recorded, transcribed verbatim and analysed using thematic analysis methods.

**RESULTS:** The three main themes, Identification, Integration, Sustain, highlight the importance of a Pacific-based, locally-driven strategy that builds on existing infrastructure. Three operational themes, Advocacy, Funding and Long-Term Vision, were pivotal to the viability of the main themes.

**CONCLUSION:** Despite significant challenges, there is potential to develop sustainable otitis media identification, treatment and prevention strategies in Fiji. The sustainability of such a strategy is contingent on a number of key factors, which includes a long-term commitment by stakeholders, be culturally appropriate and responsive to local need, develop close linkages across health, social and educational sectors, and ensure it is embedded within a broader public health framework.

Otitis media (OM) is a complex infectious and inflammatory condition affecting the middle ear. Acute OM (AOM) is one of the most common acute childhood infectious diseases.1–3 Chronic OM (COM), such as OM with effusion (OME) and chronic suppurative OM (CSOM), are responsible for a significant burden of disease and preventable hearing loss in paediatric populations, particularly within disadvantaged communities in high and low- to middle-income countries.4–5

Population-level data on OM extrapolated from Asia-Pacific region-based studies and international estimates, reveal a likely high prevalence of OM and OM-related hearing loss in children within the region.5–7 Estimates suggest that Pacific populations are 3–5 times more likely to have COM than children in Australasian countries,8 with the prevalence of OME estimated to be around 25% in Pacific infants and toddlers.9 Both CSOM and OME are major global causes of hearing loss which have serious long-term consequences on a range of outcomes such as language acquisition, literacy, cognitive development, educational attainment and social inclusion.10–12 Hearing loss is now the fourth leading cause worldwide of years lived with a disability.13 It is a major contributor to economic and social disadvantage as 90% of people with hearing loss live in low- to middle-income countries, populations who also face the greatest barriers to accessing well-resourced and timely ear and hearing health services.14–16

In Pacific Island Countries and Territories (PICTs), health infrastructure support for OM and associated hearing loss is of relatively low priority,5,17 despite a high estimated prevalence of the condition. PICT’s health systems typically experience chronic health worker shortages (capacity) due to the high emigration rates, often to New Zealand and Australia.18 Professional development to increase capacity
and capabilities within the health workforce is a regional priority, with various measures being a key agenda item at the recent Pacific Health Ministers meeting. One crucial way in which PICTs can stem this shortage of human resources to build health workforce capacity and capabilities is to provide comprehensive workforce support and ensure the professional recognition of worker skills. Within the domain of ear and hearing health, The Strengthening Specialist Clinical Services in the Pacific programme (which has recently been replaced by the Pacific Regional Clinical Services and Workforce Improvement Programme) has recognised the importance of developing specialist services in Ear, Nose and Throat and Audiology in PICTs in order to strengthen the prevention, early recognition and treatment services for OM.

Although PICTs have limited country-based strategies to identify and manage OM, they remain largely reliant on NGOs or other organisations to provide ear and hearing health services. This approach often precludes the involvement of Ministry of Health systems and tend to be uncoordinated and inadequately resourced. The challenge therefore is to ensure that OM, as a preventable and treatable condition that adversely affects child health and development, is recognised. Compounding the lack of services and infrastructure is a dearth of information on what elements constitute an effective strategy and where best to focus initial efforts in a resource-limited setting to reduce the impact of this condition.

Meaningful engagement and consultation with Pacific Island communities is critical to understand the key elements of an effective strategy. By focusing on Fiji, a populous Pacific Island country, this paper ascertains the key elements of an effective ear and hearing health strategy in order to build towards a framework that is relevant and responsive to the needs of PICTs. The aim of this study was to assess key informants’ views on the relative priority, process and potential benefits and challenges of establishing a dedicated OM and hearing health strategy or service within the Pacific region.

Method

A series of semi-structured interviews were conducted with key informants based in the Pacific region. A qualitative approach is a useful method to examine a relatively under-researched area that is affected by individual, social and cultural interactions. The use of qualitative interviews is a valid methodology as there is limited knowledge of what constitutes an effective OM programme within a Pacific setting and it gives value to the subjective, lived experiences of the research participants as a source of knowledge.

Key informants were identified via various informal and formal networks as holding expertise in OM, Pacific clinical service development, or Pacific health development. Participants were recruited through a thorough online search of journals, websites and conference proceedings, as well as established networks at The University of Auckland.

Invitations to participate in the study were extended to 17 eligible individuals. Inclusion criteria were potential stakeholders in Fiji and the Pacific and health or medical professionals with regional or non-regional specific experience of public health programme implementation. As many of the key informants were located across different parts of the Pacific region, interviews were conducted either face to face or via Skype (synchronous) or online (asynchronous). Interviews were conducted using a semi-structured format whereby a series of open-ended questions were presented and discussed. This method allowed participants’ views to be accurately captured, generating in-depth responses and viewpoints and resulting in the collection of information-rich data.

Twelve interviews were conducted due to availability of interviewees to participate. Interview type included face-to-face (n=6) and synchronous (n=3) and asynchronous (n=3) online interviews. Participants included senior Fijian health clinicians (n=4), Fiji-based senior managers (n=2), a senior Fiji health systems specialist, New Zealand Ministry of Health.
Zealand-based senior clinicians with Pacific region experience (n=2) and three senior managers working in Pacific-based non-governmental organisations. To ensure the questions were appropriate to the participants' area of expertise, opening questions gained information on their professional background. Once professional expertise was established, participants were asked to consider the potential value of a dedicated OM intervention or strategy and comment on the details regarding strategy development.

Interviews were audio-recorded and then transcribed verbatim before an inductive analysis was conducted using an open coding process. Thematic analysis as described by Braun and Clarke\textsuperscript{25} was utilised to identify key descriptive themes within each interview and subsequently merged with themes from all interviews to generate a coherent explanation of the dominant perspectives on this issue. Coding was conducted by the authors to strengthen the validity and reliability of the coding process.

Results

A strategy targeting OM, a common child health condition in PICTs, was seen as an excellent starting point in order to prevent a myriad of adverse medical consequences and limit the long-term impact that hearing loss can have on social inclusion and economic prosperity.

Figure 1 shows all of the main themes, sub-themes and integral themes suggested as being critical for programme viability.

Participants expressed the view that improved initiatives would be welcome by the Fijian community (n=3) and four informants recognised that there was a need for more comprehensive interventions in the area of ear and hearing health services. Health and medical service provision can thus be enhanced in two key ways; Forge partnerships with players outside of the public health system such as with community groups and non-governmental organisations, and link private and public enterprise to ensure sustainability in
funding and resources. A hearing-screening strategy could only be viable if it were to be embedded within a broader programme that supports the treatment and rehabilitation of that individual. Advocacy and awareness raising, and dispelling common myths around ear conditions and hearing loss need to be done along the entire community chain, from the grassroots and community level to the political level.

The majority of the informants (n=8) emphasised it was critical to collate reliable and accurate ear and hearing health data in order to determine the extent of the problem and to track programme efficacy. However, challenges were noted, these included: inconsistent use of standardised definitions across the health system records, ear and hearing data not being captured within the national health database, and laboratory testing not being available. This makes accurate diagnosis and appropriate treatment regimens difficult to implement. Technical support and ongoing research was seen as a crucial part to ensure programme sustainability.

Scarcity of funding and resources is a major challenge for any potential OM strategy, with many health programmes in Fiji depending on external donors for support. While a funding model that involves external organisations has proved critical for providing sustainable, Pacific-based services, this can have serious consequences for long-term sustainability for a strategy if support is withdrawn and then re-directed to fund other priorities. Many informants emphasised that the provision of reliable funding must allow for a long-term vision of service and workforce development.

Any strategy could benefit from health worker development from primary to tertiary care. Depending on local need, this may also include expanding clinical scope of practice and the development of specialist clinical skills. Building a base of community workers who are well trained to provide a triaging service of health education and basic procedures was identified by many participants as a potentially cost-effective model of service delivery. This will allow early identification of ear disease, health promotion, and improve access to services for rural communities. Awareness-raising should not only be done within the community, but also among health practitioners and MoH policy-makers on the importance of ear and hearing health. While the nursing profession was seen as a critical component of any potential service, workers across the healthcare continuum should be able to provide key services, including health education, the initiation of medical management and teaching simple management for parents such as ear wicking and instilling eardrops. Ear nurses could offer huge benefits on the proviso that the numbers of trained specialists must be appropriate for country need as to not divert nurses away from the general pool of resources. Adequate recognition of such skills, through appropriate remuneration, ongoing training and appropriate clinical support was deemed to be important if Fiji were to retain such skilled professionals in-country.

A locally-driven strategy supported by country and regional stakeholders will enhance the sustainability of an OM intervention. Such a model can be seen with the Strengthening Specialised Clinical Services in the Pacific programme and the development of the first Ear, Nose and Throat (ENT) and Audiology Strategy for the Pacific Region. An aspirational document, the Strategy was presented and adopted by all Pacific Heads of Health in Suva, Fiji, in April 2016 and provides a cohesive Pacific-led vision for strengthening ENT and Audiology in the Pacific. Through its Mission Statement, the Strategy identifies the importance of prevention and treatment of ENT and Audiological conditions:

“To prevent, identify and treat ear, nose and throat and hearing conditions in Pacific communities to maximise individual development, learning and contribution to society.”

The area of OM and prevention of hearing loss is identified both within the Strategy and by key informants within this work as an important initial focus for Pacific Island nations. Furthermore, it identified the importance of developing public health strategies based around prevention and increasing public awareness.
Discussion

Based on the views of informants in this study, who come from a range of disciplines, a dedicated OM strategy in Fiji is both feasible and preferable in order to address the suspected high burden of OM. This study reflects the collective opinion that if an OM strategy were to be developed, it is vital that it is embedded within a public health framework: population based, cost-effective, prevention oriented and involving early detection and clinical support. Such a framework is also advocated by the World Health Organization (WHO). With 50% of global hearing loss potentially preventable, the WHO promotes a public health approach with a particular emphasis on implementing cost-effective primary prevention strategies, such as improvements in hygiene, nutrition, breastfeeding awareness and better management of upper respiratory tract infections. Secondary prevention such as early detection, and tertiary strategies such as hearing aids, cochlear implants and hearing rehabilitation can also be developed. As the cost of such services is often prohibitive in many low-to middle-income countries, this places a greater emphasis on the importance of more affordable primary prevention strategies to be implemented. This level of development requires greater multiple-level contribution, including commitment from medical and educational professionals, government officials, civil society and members of the community.

The key informants emphasised that rather than functioning as a separate entity, an ear and hearing health strategy should be developed to be embedded within the existing health and education infrastructure to maximise synergies across the health system and established health programmes. While selective, disease-specific programmes can allow a rapid scaling-up of service delivery, working across various sectors has shown to be critical to prevent the undermining of established health programmes and maintain health worker retention, people who may be attracted to work in more well-resourced sectors. Key informants emphasised it must also ensure that this level of intervention is appropriate so as not to over-burden the already resource-limited health system and not to cause a re-direction of technical and human resources away from already established health programmes. Regional literature indicates that professional growth and support, service development and professional recognition can enhance professional satisfaction and with the potential to stem turnover of staff and limit the high emigration of health sector workers.

This study has shown that accurate ear and hearing health data, such as knowing the prevalence of hearing loss across the population, and OM within the paediatric population, is critical for determining both the burden of the issue as well as tracking strategy effectiveness. In Fiji, the reporting and collation of accurate disease data was reported to be challenged by difficulties in obtaining accurate diagnoses, limited information being recorded by health facilities and weak service infrastructure. While reliable, country-based data on OM and hearing loss in children are critical to an evidence-based approach to policy and planning, limited or localised data should not be considered a deterrent to strategy development if it is considered valuable by the community.

Gaining an understanding of attitudes towards ear and hearing health from community members such as parents, teachers for example, is important to the design and delivery of appropriate, relevant services. Similarly, canvassing community views of hearing health, perceptions of hearing loss and paediatric ear disease, barriers to accessing health services and level of health literacy within different communities will assist the development of a responsive and culturally-appropriate programme.

The Ear, Nose and Throat (ENT) and Audiology Strategy for the Pacific Region provides the platform to guide broader strategic development in ear and hearing health programmes for the Pacific Region. It provides much-needed high-level strategic direction in order to support policy development for individual Pacific Island nations. Alongside improving political priorities, the study identified the importance of dedicated resourcing for the long-term viability of an ear and hearing health strategy, including the value of locally-trained and mentored health workforce. Due to resource constraints within the Fiji Ministry of Health external sources will be necessary contribute to the establishment of
a bespoke, local programme. As the impact of hearing loss gains greater awareness at a global level, this has significant potential to mobilise greater international investment, such as the development of cheaper and more accessible hearing technologies.15

Several challenges to the generalisability of this work need acknowledging. First, although some interviews were conducted in person in Fiji, others were conducted via email and Skype. As Pacific health research is founded on active participation and meaningful engagement, it is important to understand people in-context.16 With in-person dialogue a preferred method of communication in the Pacific, online interviewing therefore may not be the ideal method to facilitate open dialogue between interviewer and participant. Despite strong representation of participants with in-country knowledge, the majority of the key informants were medical professionals or were NGO based. Having more participants with experience in the education sector or within grass-roots organisations may have provided further richness and perspectives to the data.

Decision makers face a perennial problem of how to achieve a reasonable balance in priorities in the face of competing demands and limited resources.15 The consideration of a strategy or initiative to address the estimated high burden of OM and hearing loss in Pacific Island populations is no exception. By taking lessons from Pacific experts, this study highlights the powerful opportunities and key lessons that can be used to harness energy towards the development of a sustainable and culturally appropriate intervention led by Pacific communities. With 90% of disabling hearing loss being experienced by communities in low- to middle- income countries,36 a targeted initiative may be seen as an intervention of health equity. Critically, any strategy designed and implemented for this purpose in Pacific Island nations should be developed in respect to the chronic technical, financial and human resource limitations. The findings of this study can be employed within initial processes of programme planning in order to build momentum towards improving ear and hearing health for children of the Pacific region.

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