

A community and clinical research approach to understanding Otitis Media with Effusion (OME)

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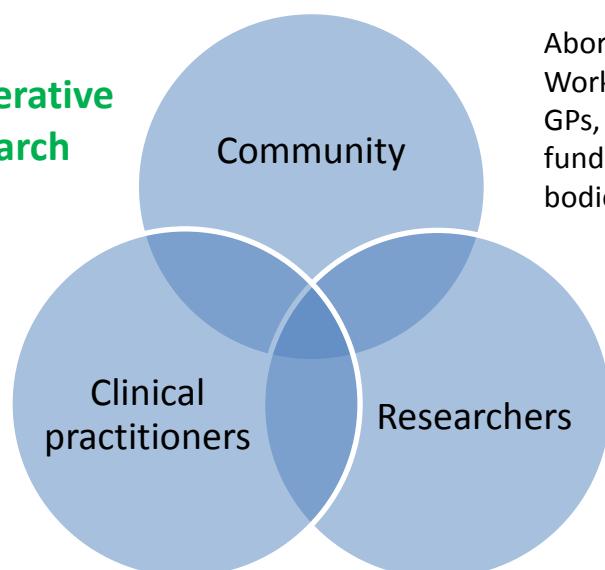
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Background: Persistent middle ear infections can lead to fluctuating hearing loss, speech and language delays and behavioural problems.¹ The causative bacterial infections are not fully understood and need further research. Aboriginal children suffer from high rates of ear disease, regardless of widespread immunisation against common bacterial agents of infection, such as pneumococcus.^{1,2} In previous investigations the Newcastle Ear Research Group has shown that *Alloiococcus otitidis* is commonly detected in the middle ear fluid (glue) of many Aboriginal and non-Aboriginal children in the Hunter, Mid North Coast and New England regions of NSW.³

Aims: This project will study the importance of *Alloiococcus otitidis* and develop advanced DNA studies to detect and characterise the bacterial DNA “fingerprint” of infections in the middle ear of children who are receiving grommets for OME. A **Quality of Life** study will also be undertaken to improve the understanding of how chronic ear disease affects sufferers and their families.

Fig.1: A co-operative model of research

Clinicians, nursing staff, theatre and ward staff, medical records, pathology, Aboriginal health, ethics department



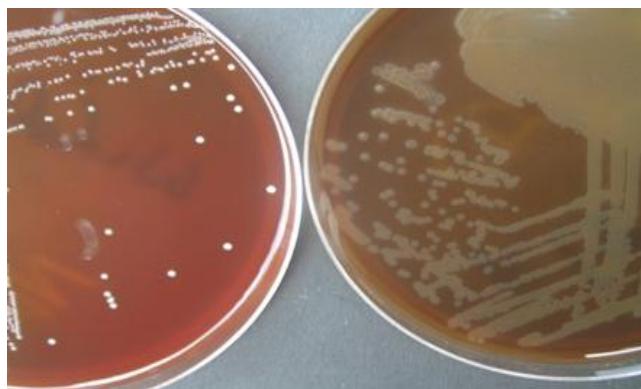
Aboriginal Health Workers, GPs, external funding and ethics bodies

Literature review, data audit, university ethics, safety and institutional governance, internal funding, statisticians

Why *Alloiococcus otitidis* needs further research:

The Newcastle team are specialists in the detection and characterisation of this organism. Two distinct colony types have been identified. It is important to study whether they have the same biological properties and effects. Some strains are resistant to erythromycin, even when co-existing bacterial species are sensitive to the antibiotic.

Fig. 2. Two different strains of *A.otitidis*



A Co-operative Model of Community Based Research

The otitis media Co-ordinator at the Awabakal Aboriginal Medical Service has highly developed skills to assess clients prior to ENT consultation.

- Specialist ENT services are delivered in a culturally safe environment at **Awabakal AMS**
- **Hunter New England Health Aboriginal Health Unit** provides ongoing guidance for research discussions with Aboriginal community representatives
- The clinical research project works in co-operation with the patient journey from community clinic to hospital surgery

Day of consultation. Doctor/patient appointment in AMS. If surgery is required for OM, patient joins waiting list.

The researcher is authorised by the ENT surgeon to contact patients on the waiting list. The information sheet is provided to the family for consideration prior to the day of operation for grommets.

Day of surgery. Prior to procedure, the researcher answers questions for informed consent. Tissue and blood specimens are collected during surgery.

Specimens are sent to the laboratory for high-level pathology and research testing.

Outcomes and Sustainability

This project is a model of research that demonstrates long-standing successful collaborations between Aboriginal health workers, clinical practitioners and researchers, utilising cutting edge technology to deliver new medical evidence for the understanding of ear disease.

We acknowledge the vital contribution of Indigenous and non-Indigenous families and staff at Maitland Hospital

1. Gunasekera, H. *et al.*, 2009. *MJA*, 191, (9), pp.55-59
2. Kong, K. and Coates, H. 2009. *MJA*, 191, (9), pp. 39-43
3. Ashhurst-Smith, C. *et al.*, 2007. *FEMS Immunology and Medical Microbiology*. 51, (1), pp.163-170

In partnership with our community