Earlier detection and appropriate management of ear disease is needed, as well as enrichment in the following areas:

- Improvement in access to appropriate care by:
  - Ensuring adequate medical and paramedical resources are available.
  - Providing ENT surgical services.
  - Provision of quality and culturally appropriate, community-based ENT services.
  - Providing Aboriginal and Torres Strait Islander communities with information on how best to access ENT services (using a multidisciplinary approach).

Research is needed to answer the following questions:

- Does adenoidectomy reduce the incidence of subsequent ear disease in remote populations as it does in urban centres, considering the exceedingly high burden of ear disease and the great extent of bacterial colonisation of the nasopharyngeal cavity in remote communities?
- What is the effectiveness of grommets for hearing loss in Aboriginal and Torres Strait Islander populations? (prospective study)
- Can myringotomy and adenoidectomy be effective substitutes for grommets in regions of Australia where grommets are prone to discharge, such as the tropics?
- Why are there large geographic variations in the practice of pharyngeal surgery, and why are Indigenous children living in metropolitan areas less likely than the non-Indigenous children to undergo additional pharyngeal surgery, despite the higher rates of OME reported in young Aboriginal and Torres Strait Islander children?
- What is the best way to achieve community engagement (through local education) prior to surgery, and to provide culturally appropriate, community-based post-operative follow-up?

In addition to this, basic, outcomes-based research into OM is needed, as is rigorous evaluation of existing programs and initiatives.

Otitis Media (OM) is a major cause of morbidity among children in Australia and around the world. Otitis Media in Aboriginal and Torres Strait Islander children is more common, has an earlier age of onset, lasts longer, is more severe, is more likely to be recurrent and is more likely to result in Tympanic Membrane Perforation when compared to non-Indigenous Australian children.

Aboriginal and Torres Strait Islander children have the highest prevalence of Chronic Suppurative Otitis Media (CSOM) in the world, reaching 70% in some remote communities. This is a massive public health problem requiring urgent attention. When Recurrent Acute Otitis Media (RAOM), Otitis Media with Effusion (OME) and Chronic Suppurative Otitis Media (CSOM) are not treated adequately, significant hearing loss can result, which can lead to speech and language delay, learning problems, social problems, truancy, early school-leaving and difficulties gaining employment.
**What do we know?**

### Outcomes among non-Indigenous Australians

**Grommets**
- The evidence around the use of grommets is conflicting.
- One review found that the insertion of grommets for OME did not lead to long-term improvement in hearing, or improvements in speech and language development.
- Another review found that grommets for AOM and RAOM maintained a ‘disease free’ state in the first six months after insertion; however, the effect after six months is unknown.

**Adenoidectomy**
- Adenoidectomy can be beneficial in the resolution of effusion in OME, however, the benefit to hearing is small and the effects on changes in the tympanic membrane are unknown.
- If the risks of operating are weighed against these potential benefits, routine adenoidectomy for AOM is not warranted.

**Non-surgical Management**
- Watchful waiting or antibiotics are used in the non-surgical management of OM.
- In the general population, persistence is uncommon (<30%) even with no treatment.

### Outcomes among Aboriginal and Torres Strait Islander peoples

**Grommets**
- There is little evidence on the outcomes of grommet surgery in Indigenous populations.
- One study found no significant difference in infection rates following insertion of grommets between Aboriginal and non-Aboriginal children. The study reported infection rates, not outcomes such as hearing loss.

**Adenoidectomy**
- There is limited evidence on outcomes of adenoidectomy in Indigenous populations.
- Research suggests that despite higher rates of OM, children from Indigenous populations are less likely to undergo pharyngeal surgery at the first, but not second grommet surgery.
- In remote populations where OM is chronic and recurrent, many ear, nose and throat (ENT) surgeons choose adenoidectomy for the initial surgical procedure, together with either grommet insertion or myringotomy. However, it is still to be determined whether adenoidectomy reduces the incidence of subsequent ear disease in remote populations as it does in urban settings.

**Non-surgical Management**
- Non-surgical management of OM and the associated hearing loss in ATSI children include antibiotics, ear-syringing, and hearing and communication aides.
- Due to the persistent, high-density, multiple strains of bacterial pathogens that Indigenous children experience, different vaccination strategies are being investigated as a means of preventing OM.

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**Implementation Considerations...**

Barriers to ENT services for Aboriginal and Torres Strait Islander people include:
- Availability of services and need for completeness of surgical care, including post-operative follow-up.
- Lack of co-ordination of services and need for multi-disciplinary care, e.g. ENT surgeon, audiologists, speech pathologists, educator, primary health care etc.
- Geographical remoteness.
- Difficult access to mainstream services.
- Lack of transport.
- Poverty.
- Cultural appropriateness of services.

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**What don’t we know?**

- The optimal model for the delivery of ENT services to Indigenous populations.
- There is a lack of knowledge about why disparities in service provision and outcomes exist (i.e. rural and remote children have less access to specialist ear health services and longer waiting times, and there are large geographic variations in the practice of pharyngeal surgery). Resultantly, we do not know the optimal prevention and treatment strategies for OM.
- Universal definitions vary for the different types of OM, and a high degree of diagnostic uncertainty, making it difficult to determine incidence, prevalence and costs of OM in both the Aboriginal and Torres Strait Islander and non-Indigenous Australian populations.

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Grommets are inserted into the ear drum to improve ventilation and pressure regulation in the middle ear, in order to restore normal hearing.

Adenoidectomy is performed to remove a nasopharyngeal reservoir of potential respiratory pathogens in the nasal airways, in order to improve middle ear function.