Asthma and **chronic cough** in **Māori children**

Cough in children is a common presentation in general practice. Upper respiratory tract infections, asthma, smoke exposure and chest infections are frequent causes of cough. Bronchiectasis is a less frequent cause of cough but may be seen more often in population groups such as Māori and Pacific children.

Asthma and bronchiectasis are examples of respiratory conditions where chronic cough or other symptoms can be unnecessarily tolerated. This results in more severe disease and poorer health outcomes.

Asthma in Māori children

Despite a similar prevalence of asthma among all children in New Zealand, Māori children with asthma:[1]

- Have hospital admission rates that are almost two times that of non-Māori
- Have more severe asthma when presenting to health care providers
- Require more days off school due to asthma symptoms

How can health professionals contribute to better outcomes for Māori children with asthma?

Set realistic practice goals

One study found that Māori, were less likely to have a regular general practitioner, or access to regular preventer medication or a peak flow meter or have an asthma action plan than non-Māori. [2]

Realistic practice goals may be:

- Ensure all children with asthma have access to appropriate medication
- Ensure all children with asthma have an asthma management plan
- Record household smoking status for all children with asthma
- Identify the family member who usually supervises the child's asthma inhaler use

Build a trusting therapeutic relationship with Māori children and their whānau

Tu Kotahi Māori Asthma Trust provides some key points to consider when working with Māori children and their whānau:

- Find out what whānau already know about asthma and their expectations regarding your role

- Discuss how the child fits within the whānau. Are there other family members with asthma? Sharing of medication and spacers is a common occurrence in the community
- Ask about housing conditions; Is the house smoke free? Is the family living in damp housing conditions?

Engage patients in their health issues

A consultation may present an opportunity to ask how asthma is affecting the patient's life and to enquire about other family members with asthma. Often healthcare advice provided to one family member may be utilised by siblings, parents and grandparents to improve health outcomes for the whānau.

Best practice tip: Ask patients with asthma attending a consultation if they have their "rescue" inhaler with them. This can generate a conversation about how often they use the "rescue" inhaler, how often they use their "preventer" and therefore their degree of asthma control.

Tu Kotahi Māori Asthma Society as an example of an asthma programme specifically for Māori

Tu Kotahi was established due to a need to reduce the barriers for Māori in receiving quality asthma care.

As well as providing education in homes or in other settings where families feel comfortable, the service enables other social and health issues that may be impacting on a child's asthma to be addressed.

Tu Kotahi suggests that housing, heating, budgeting, transport and the cost of prescriptions are some of the complex factors that should be factored into an overall asthma management plan.

Agree on realistic patient-centred health goals

Ensure a realistic expectation of control. One of the reasons for the high morbidity of asthma in New Zealand is that many people tolerate symptoms of poor control. One study reported that among those who reported symptoms of poor control, almost all (86%) were satisfied with their degree of control, indicating an inappropriate acceptance of their symptoms and/or unrealistic criteria for control.[2]

Educate Māori children with asthma and their whānau about what level of asthma control is normal and how to achieve this. Education that focuses on health benefits and takes into account the patient and their whānau's health beliefs, goals and expectations may be useful. Table 1 shows an example based on te whare tapa wha framework. Other Māori health frameworks could also

Table 1: Managing asthma using te whare tapa wha framework

Wairua (Spiritual)	Hinengaro (Psychological)	Tinana (Physical)	Whānau (Family)
Improved asthma management allows the child to feel a sense of well-being.	Improved asthma management gives confidence to the child and whānau for managing future attacks and relieves anxiety.	Improved asthma management increases the ability of the child to participate in physical activities, i.e. playing with other children.	Improved asthma management results in less distress for the family and can also result in more participation in family activities.

be applied. However it is important to set realistic and measurable patient-centred goals. For example sleeping without waking with cough.

Specific Māori resources have been developed and can be found on the Asthma and Respiratory Foundation of New Zealand website: http://www.asthmanz.co.nz/for_maori.php

Make action plans

Make sure every child with asthma has an action plan. Encourage both the child and their whānau to be involved with the action plan. Action plans may help with understanding symptoms and improve recognition of early signs of an exacerbation. They may also enable increased understanding of the purpose of any medication. Action plans that are symptom based and linked to improved health may be more useful than those based on PEFR readings.

Tu Kotahi recommends the following when providing an asthma management plan:

- Consider a simple pictorial management plan including pictures of inhalers and spacers. This simplifies the instructions for giving medications and can be followed by any family member involved in the care of the child.
- Personalise the plan, including the child's name. This can be provided to all caregivers, and the school.
- Demonstrate how to use the medication with a spacer and provide simple information that reinforces both technique and maintenance of the medication and spacer.
- Consider using a doll or teddy bear as a teaching aide when demonstrating how to use a spacer to younger children and their whānau. Spacers are less likely to be used if the learning experience is traumatic.

Encourage a smoke free environment

Exposure to smoke increases the severity of pre-existing asthma and lower respiratory tract disease in children.

The benefits of a smoke free environment should be explained. Parents and whānau who smoke need encouragement and support to give it up, with their child's health as a potential motivator. A minimal goal is smoke free house and car.

Make it easy for patients and whānau to come back

Involve the child and their whānau in the ongoing process of improving their asthma. Give them a reason to come back, for example suggest a star chart which records how often each inhaler is used and how many times the child is short of breath or wheezy. If appropriate the child can take responsibility for completing this chart. Encourage whānau to bring back the chart and discuss it together.

In patients who are struggling with control of their asthma, consider making follow up appointments for them when medications are due to be renewed, rather than allowing phone prescriptions. However there may be cost implications or other barriers to this.

Form partnerships

Consider referral to Māori providers or other services where available and appropriate.

Referral to specialist asthma services, including asthma educators, paediatricians and organisations such as the Asthma Society of New Zealand may be appropriate in some cases.

Reduced asthma morbidity and improved access to health services has been seen in some rural, community-led asthma self-management programmes where Māori have been actively involved.[3]

Bronchiectasis in Māori children

Vaccination programmes and improved living conditions have resulted in a decrease in the incidence of bronchiectasis in most developed countries but not New Zealand.[1]

In New Zealand 80% of children with bronchiectasis are of Māori or Pacific ethnicity. Higher prevalence has been reported in other indigenous populations including Alaskan natives and Aboriginal children. The estimated prevalence of bronchiectasis in New Zealand children is 1 in 3000 overall but three times higher in Māori children and 12 times higher in Pacific children.[1]

Low socioeconomic status may be a risk factor

40% of New Zealand children affected by bronchiectasis live in the most deprived areas in New Zealand.[4] It is likely that socioeconomic status is linked to bronchiectasis in complex ways, including immunisation rates and access to health care. Improvements in socioeconomic status, housing and education are likely to improve the health of Māori children with respiratory disease.[1]

A delay in access to care and/or delayed treatment of chest infections can increase the risk of developing bronchiectasis. Chest infections at a young age or infections that are severe or recurrent contribute to the incidence of bronchiectasis. High rates of socioeconomic deprivation can result in reduced or delayed access to antibiotics for acute chest infection.[6]

Pneumonia, tuberculosis, and whooping cough are also risk factors for bronchiectasis. In 50% of cases the cause of bronchiectasis is unknown but often assumed to be secondary to lower respiratory tract infections. 20–25% of cases follow severe pneumonia.[1, 4]

Bronchiectasis is defined as irreversible widening of the airways (bronchi) in the lung. It is characterised by inflammation, destruction of bronchial walls, and chronic bacterial infection. Clinically, the condition manifests as chronic cough and chronic overproduction of sputum, which is often purulent.[5] Bronchiectasis is often the result of either severe or recurrent respiratory tract infection such as pneumonia, tuberculosis, or whooping cough.[1]

What can health professionals do to prevent bronchiectasis in Māori children?

Set realistic practice goals

Improve vaccination coverage

Low vaccination rates in Māori may be a significant contributor to the higher incidence of bronchiectasis. Overall New Zealand has a low immunisation rate compared to other developed nations. The rates of immunisation for Māori and Pacific children are even lower. Only 42% of Māori are fully immunised by two years of age. A low rate of immunisation in New Zealand has resulted in higher rates of diseases such as whooping cough.[1]

Studies have shown that vaccination rates are increased by the use of telephone, face to face or letter reminders.[7] Numerous reminders may be required and for Māori, face to face reminders may be best.

Practice goals for improving vaccination coverage could include:

- Automatically generated vaccination recalls for children, which can be actively followed up
- Annual audits to assess practice coverage levels
- Improved education for parents about vaccination

Early treatment of chest infections

Timely use of antibiotics for infants and children with acute chest infections is important to decrease the incidence of bronchiectasis. Pharmhouse data shows that Māori are dispensed considerably less antibacterials compared to non-Māori. Target antibiotic treatment for respiratory infections to children who are at risk.

Early diagnosis of bronchiectasis

Persistent productive cough in children that has lasted for more than six to eight weeks requires further investigation. Although bronchiectasis is rare, this diagnosis should be considered in high risk children.

Engage patients in their healthcare

Prevention is the most important way to reduce morbidity and mortality of bronchiectasis. Infant vaccination and the timely treatment of acute chest infection is crucial in preventing bronchiectasis.

Educating whānau plays a key role in prevention.

- **"Chronic cough is not normal"**. A daily cough for greater than four weeks is not usually normal and may be a sign of chest disease. Children need to be seen by a health provider earlier rather than later.
- Reinforce messages about **smoking cessation** or **smoke free environments**.

Make it easy for patients to come back

A positive experience with health care can increase the likelihood of parents bringing their child back. Although treatment may not always be necessary for every cough, validate the reason for the visit and encourage reattendance.

Form partnerships

To improve immunisation rates referral to immunisation coordination services could be beneficial. Outreach services may be available in some areas.

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