A hand holding a magnifying glass over a human lung. The lung is shown in a cross-section, with a green airway highlighted. The background is a blue patterned surface. The text "Asthma education in primary care" is overlaid on the image.

# Asthma education

in primary care

A focus on improving outcomes  
for Māori and Pacific peoples

*Māori and Pacific peoples in New Zealand are disproportionately affected by asthma, but the level of care they receive does not match this morbidity. Education helps to reduce disparities and needs to be an ongoing component of asthma care. To be effective, asthma education needs to be matched to the stage of asthma health literacy of the patient and their whānau. Patients with asthma who are supported by a collaborative primary care team do experience better health outcomes. Regular follow-up of all patients with asthma ensures that Māori and Pacific patients are receiving appropriate treatment and that any gaps in care can be rapidly redressed.*

### Key practice points:

- Develop a collaborative approach to asthma care in your practice so that consistent messages are delivered to patients and each team member knows who is doing what
- Focus on expanding one aspect of the patient's or whānau understanding of asthma at every consultation – asthma education is an ongoing process
- Ensure that information about asthma is delivered in a way that is matched to the stage of health literacy of the patient and their whānau. Always check that the key points have been understood as intended.
- Regularly review asthma symptom control and try to make time for patients and families to discuss asthma and create shared goals of care

## The burden of asthma in New Zealand

Asthma places a heavy burden on New Zealand communities. One in seven New Zealand children and one in nine people in New Zealand aged over 15 years are prescribed some form of asthma medicine.<sup>1</sup> From July, 2012 to June, 2013, more than 4200 people aged under 20 years were admitted to hospital for asthma.<sup>2</sup> Asthma mortality rates in New Zealand are still higher than in other high-income countries in North America, Australasia or Europe;<sup>3</sup> on average more than one person in New Zealand dies each week due to asthma.<sup>4</sup>

### Māori and Pacific peoples and those living in low socioeconomic areas are most affected

Māori and Pacific peoples are more severely affected by asthma. Asthma is 1.5 times more common among Māori than non-Māori, with one in six Māori surveyed in New Zealand taking some form of asthma medicine.<sup>1</sup> Māori are almost

three times, and Pacific peoples over 3.5 times, more likely to be hospitalised due to asthma than people of other ethnicities in New Zealand.<sup>4</sup> During the period 2006 - 2011, the mortality rates due to asthma per 100,000 people in New Zealand were 5.4 for Māori and 6.5 for Pacific peoples, compared to 1.1 for people of non-Māori, non-Pacific or non-Asian ethnicity.<sup>4</sup>

People living in the most deprived areas of New Zealand are more severely affected by asthma. In these areas, one in seven adults surveyed reported taking a medicine for asthma; a rate 1.6 times higher than adults living in the least deprived areas once age, sex and ethnic differences are accounted for.<sup>1</sup> Asthma mortality rates are over three times higher in the most deprived areas of New Zealand compared to the least deprived.<sup>4</sup> The reasons for this increased severity of asthma in lower socioeconomic areas are likely to be multi-factorial but contributing factors may include: dampness and mould in the home,<sup>5</sup> inadequate home heating, and an increased rate of maternal smoking in deprived communities. The DHB areas with the highest rates of hospitalisation due to asthma are Auckland, Counties Manukau, Bay of Plenty, Hutt and Whanganui.<sup>4</sup>

### There is a gap in asthma care

The level of care Māori and Pacific peoples with asthma in New Zealand receive does not match their burden of disease. Despite having a higher prevalence and severity of asthma Māori and Pacific children are less likely to have their treatment escalated, and are more likely to use oral steroids to control asthma exacerbations; suggesting less frequent use of primary care services until symptoms become severe.<sup>6</sup> He Māramatanga Huangō: asthma health literacy for Māori children in New Zealand, is a report that found that caregivers of Māori and Pacific children are less likely to receive information that allows them to make appropriate health decisions to manage asthma than caregivers of non-Māori and non-Pacific children (see: "Key findings of He Māramatanga Huangō", Page 21).<sup>7</sup>

## Poor asthma literacy affects the perception of asthma control

Health literacy is not a measure of intelligence nor is it the same as literacy. Health literacy means the degree to which individuals have the capacity to obtain, process and understand basic health information and services in order to make informed and appropriate health decisions.<sup>7</sup>

Many people in New Zealand are limited in their ability to make informed health decisions due to difficulties receiving, processing and understanding the required information.<sup>8</sup> Amongst Māori, 75 – 80% of adults are reported to have poor health literacy.<sup>7</sup> Poor asthma literacy is likely to contribute to asthma disparities in New Zealand as it is associated with reduced self-efficacy and reduced use of asthma medicines.<sup>7</sup>

It is the responsibility of health professionals to ensure that health information is delivered to patients and families in a form that is understandable. This requires an appropriate degree of cultural competency. Culturally appropriate models of asthma care improve patient outcomes.<sup>9</sup> However, when people or families do not understand what good asthma management is, not only do they not receive quality care, but they are more likely to accept poor asthma control as normal. The Patient Outcomes Management Survey (POMS) of 445 primary care patients in New Zealand with asthma found that people with asthma often accept sub-optimal asthma control; 71% of adults had asthma that was not well-controlled according to asthma guidelines, although 76% thought their asthma was well-controlled and 80% were satisfied with their level of control.<sup>10</sup> It was also found that 40% of children with asthma had missed school in the previous 12 months due to asthma.<sup>10</sup>

## Making asthma education a priority at your practice

Asthma self-management requires a good understanding of the condition and how it is managed. Improving this understanding through education is one of the most important things primary care clinicians can do to support patients with asthma and improve outcomes. A Cochrane review found that programmes that focus on improving asthma self-management in adult patients result in reduced hospitalisations, emergency department visits, unscheduled doctor's visits and nocturnal symptoms, and an improved quality of life.<sup>11</sup>

Asthma education involves increasing the patient's knowledge in a stepwise approach at every point of contact.<sup>7</sup> To do this

effectively health professionals need to base the progression of learning on existing knowledge while taking into account the severity of the patient's asthma, current treatments, age and maturity, e.g. is the patient an adult or a child with caregivers present? The initial consultation could focus on "things to do", e.g. how to correctly use a metered dose inhaler (MDI) with a spacer. Once this has been established the focus can shift to recognising worsening asthma and implementing individualised action plans.

## Making time for asthma education

If patient education is not prioritised general practitioners often only see patients with asthma when they are experiencing troublesome symptoms. If possible, time should also be scheduled to allow patients to talk about asthma. Cost may be a barrier for some families, but this time is important as it allows health professionals to target their delivery of asthma education to gaps in the patient's knowledge. The need to ensure that asthma education is not a one-off experience was identified as the most critical element in asthma education by almost 700 health professionals in New Zealand involved in asthma care.<sup>7</sup>

## Forming a collaborative team

Many general practitioners in New Zealand rely on either practice nurses or pharmacists to demonstrate the use of spacers, although most nurses and pharmacists think that this is being performed by general practitioners.<sup>7</sup> Furthermore, patients often experience asthma exacerbations outside of normal hours and are treated by after-hours care providers, which can reduce continuity of care. It is a good idea to document in the patient's notes what has and has not been discussed with the patient. The person who is responsible for reviewing asthma care, e.g. the asthma champion (see below), can then easily identify any gaps in patient education that need to be addressed.

### An asthma champion can co-ordinate asthma care

Consider nominating a staff member as "asthma champion", e.g. a practice nurse, to take responsibility for the uptake and implementation of asthma best practice. An asthma champion may also be responsible for checking that each patient with asthma is receiving regular follow-up (see: "Regular review is recommended, Page 25) as well as identifying patients with asthma with the greatest unmet need who will benefit the most from more intensive support.

### Community pharmacists can support asthma education

Community pharmacists are well placed to support and

## Key findings of He Māramatanga Huangō

The He Māramatanga Huangō (Understanding Asthma) research project was commissioned by the Ministry of Health and the Asthma Foundation of New Zealand.<sup>7</sup> The project examined the health literacy demands on both whānau affected by asthma and health providers involved with asthma management. It also identified barriers to improve asthma literacy and made recommendations to improve health literacy and asthma outcomes. A panel of 14 asthma experts was involved in the project and a national online survey was completed by 800 health professionals with a role in asthma management. In-depth interviews were also held with a range of health professionals and whānau with a child with asthma. Sixteen points were identified that would help primary care improve asthma outcomes for children and young people in New Zealand. These were divided into four realms:<sup>7</sup>

### Mātauranga (Knowledge):

1. Maintain a high level of competency in current best practice for the management of childhood asthma
2. Ensure all children have access to individualised, understandable asthma action plans
3. Follow a step-wise education plan when providing asthma support to Māori patients
4. Provide updated electronic access to asthma plans for whānau, community health workers and schools
5. Routinely utilise specialist (medical and/or nursing) respiratory and paediatric expertise to effectively manage those whānau with complex health-care needs

### Whakaako (Teaching Strategies):

6. Ensure all consultations are seen as opportunities to build health literacy, promote patient activation and support asthma self-management
7. Undertake specific training in the use of health literacy-based education techniques
8. Regularly incorporate a variety of learning media (e.g. interactive/tactile/audio-visual asthma resources) to support asthma education
9. Continue to develop cultural competency skills for engaging with Māori children and whānau

### Whakawhanake (Workforce Development):

10. Maintain continuous high-quality relationships to build long-term trust relationships with patients
11. Routinely explore the manageability of asthma management plans and utilise relevant support services to address identified barriers
12. Develop collaborative partnerships with Māori health providers, Whānau Ora providers and other community-based organisations in support of asthma care for Māori children

### Te Anga (Model of Care):

13. Routinely incorporate chronic care management approaches into asthma consultations, including proactive strategies to provide preventive advice when patients are well
14. Ensure follow-up visits are provided subsequent to acute presentations/hospitalisation
15. Provide access to asthma self-management support after-hours via the internet or telephone
16. Ensure all children with asthma are offered support packages when eligible (e.g. Care Plus, Disability Allowance, Whānau Ora services)



This research report can be obtained from the asthma foundation website. See: [www.asthmafoundation.org.nz/wp-content/uploads/2015/07/Asthma-Health-Literacy-Report.pdf](http://www.asthmafoundation.org.nz/wp-content/uploads/2015/07/Asthma-Health-Literacy-Report.pdf)


deliver asthma education as they often see patients more frequently than general practitioners. Repetition of the key asthma messages in different ways, from multiple sources is recommended to improve asthma education.

## Asthma education begins at diagnosis

Children who are likely to have asthma are usually identified at a relatively young age but not formally diagnosed with asthma until later because transient wheeze is often associated with upper respiratory tract infections (URTI).<sup>12</sup> Children aged under five years can be expected to have six to eight URIs a year.<sup>12</sup> In young children diagnosing asthma is also complicated by the difficulty of assessing airflow limitations. Where there is diagnostic uncertainty health professionals need to be clear with families about the diagnostic methods being used to define the condition. It may be appropriate to discuss any of the following with a patient and their whānau where a diagnosis of asthma is suspected:

- The need to establish a pattern of recurrent wheeze to confirm a diagnosis
- The reasons for trialling a short-acting beta-agonist (SABA), i.e. to demonstrate reversibility and to relieve wheeze
- The role whānau can play by monitoring symptoms and/or recording peak flow recordings

Clear communication with whānau throughout the diagnostic process prevents families from falling into a “diagnostic limbo” because they have not been categorically told that their child has asthma. A lack of diagnostic certainty among whānau was identified as a common problem in the He Māramatanga Huangō report.<sup>7</sup>

 For further information on asthma in children, see: “Diagnosing and managing asthma in children”, BPJ 42 (Feb, 2012).



### Asthma diagnosis and management recommendations are being revised

New Zealand asthma guidelines are currently being revised. An update on the pharmacological management of asthma will be published in BPJ once new guidelines have been released.

## Assessing the patient’s knowledge of asthma

Some patients or whānau may feel too embarrassed (whakamā) to ask questions or to admit they do not understand certain

concepts during a consultation. Therefore, having a good understanding of the patient’s level of knowledge of asthma is critical before discussing the diagnosis. A good way of doing this is to ask: “Has anyone talked to you about what asthma is?” If the answer is yes, then ask the patient or whānau to tell you what they have been told, so that time is not spent repeating information they already know. This allows for existing information to be acknowledged, and reinforced, and is likely to uncover any misconceptions. Incorrect beliefs should be addressed because patients may not accept new information if it does not fit with what they already know.

Once the level of knowledge and health literacy has been assessed subsequent discussions can be delivered appropriately. Asthma education should always be supportive and should never be interpreted by the patient or whānau as being a test.

## Using language that is appropriate for the patient

Health professionals who communicate well with patients avoid the use of jargon and use terms that are familiar. For example, it may be appropriate to use words such as puffer or pump rather than inhaler (Table 1) and to avoid abbreviations such as MDI. Using terms that the patient or whānau have used themselves demonstrates attentiveness and builds a common language.

## Techniques to improve patient comprehension

There are several techniques that can be used to improve understanding of information during discussions with patients, including:<sup>12</sup>

- Limiting information to three or four points and making the most important points first; if more points need to be discussed then arrange another consultation
- Using illustrative analogies, e.g. “*Taking your preventer medicines regularly is like watering a garden. If you wait until the plants are wilted it’s too late: just like plants need water every day, you need medicine every day.*”
- Presenting a scenario and asking why the situation might be occurring and what they might do about it, e.g. the patient notices their chest tightening after flowers have been brought into the house
- If whānau are present then it is important to include them in the planning and discuss with them how they can support the implementation of the plan
- Communication techniques, e.g. teach back, are essential to confirm comprehension, e.g. “*I’ve given you a lot of information today and I just want to be sure I haven’t missed anything. Perhaps you could tell me how often you will be using the orange inhaler when you get home.*”

**Table 1:** Glossary of selected medical terms and patient-centred alternatives frequently used in asthma care

Medical term	Patient-centred term
Airway hyper-responsiveness	Narrowed breathing tubes/airways
Alveoli	Tiny breathing sacs deep in the lungs
Bronchi	Breathing tubes/airways
Chronic or long-term	Present everyday
Exacerbation	Flare up or attack
Inhaled corticosteroid (ICS), steroid/long-acting beta-agonist (LABA) inhaler	Preventer, controller
Inflammation of airways	Breathing tubes becomes swollen, puffy and narrow
MDI inhaler	Puffer, pump
Reversibility	Return to normal
Short-acting beta-agonist (SABA)	Reliever, quick relief medicine, rescuer, blue puffer
Triggers	Things that make asthma worse or cause an attack
Wheeze	Heaving, whistling, tight chest

### Explain what will happen next

Once one aspect of asthma education has been covered explain to the patient what will happen next, e.g. *“Today we talked about taking your preventer puffer every day. Next time you come in I want to make a plan with you about what to do when you find yourself getting wheezy.”* This avoids confusion and allows patients to plan for and participate in the next stage of asthma management.

### Discussing asthma treatment

The clinical goals of asthma management are to provide all patients with:<sup>12</sup>

1. Good symptom control without any adverse effects from treatment
2. Minimal exacerbations and airway limitations

The patient’s personal goals should also be addressed whenever asthma management is discussed and included as shared goals of care, e.g. being able to play sport or not to be woken by wheeze during the night.<sup>12</sup>

### Control-based management of asthma

A control-based model of asthma management is recommended as this is associated with improved outcomes for patients.<sup>12</sup> This involves a cycle of ongoing assessment, treatment and review.<sup>12</sup> As part of this process the patient’s likelihood of experiencing an asthma exacerbation should be regularly assessed as well as any avoidance strategies the whānau has in place (Table 2, over page).

### Explain the “why” as well as the “how”

Whānau providing care for a child who has asthma often have a good understanding about how to perform tasks, e.g. using a peak flow meter, but this does not necessarily equate to an understanding as to why a task is being performed.<sup>7</sup> In He Māramatanga Huangō it was found that whānau are confident in their understanding of the use of reliever medicines, but their understanding of preventer medicines is less certain.<sup>7</sup> Only 10% of families with a child who had asthma “mostly” or “completely” understood the role of preventer medicines in asthma management.<sup>7</sup> Misunderstanding the role of preventer medicines is a barrier to good asthma control

**Table 2:** Risk factors for asthma exacerbations and asthma trigger avoidance strategies<sup>12,13,14</sup>

**Risk factors for asthma exacerbations:**

- Uncontrolled asthma symptoms
- A history of  $\geq 1$  exacerbations in the previous year
- Poor adherence to treatment
- Incorrect inhaler technique
- Cigarette smoking or exposure to second-hand smoke
- Viral respiratory infections
- High use of SABA – there is an increased risk of death if the patient is using more than one 200-dose SABA inhaler a month
- Failure to escalate treatment according to guidelines
- Significant psychosocial problems, e.g. psychosis, alcohol/drug misuse, financial or employment problems and learning difficulties
- Allergen exposure for patients who are sensitised
- Co-morbidities, e.g. obesity, rhinosinusitis, confirmed food allergy
- Pregnancy, particularly during the second trimester
- Sputum or blood eosinophilia

**Lifestyle measures to avoid asthma triggers:**

- Making the home and vehicle smoke-free
- Adequate home-heating and insulation, while avoiding the use of open fires or gas heaters that are not externally vented
- Annual influenza vaccinations and pneumococcal vaccinations for children at high risk of pneumonia, e.g. children whose asthma is treated with high-dose corticosteroids
- Keeping windows closed when pollen counts are high
- Staying indoors in smoggy weather
- Regular vacuuming to reduce dust mites, although this may be best performed when the patient with asthma is out of the house as allergens can become aerosolised
- Avoiding freshly cut grass
- Avoiding having pets, or at least keeping bedrooms pet-free and if possible bathing pets frequently

that it is important to overcome.<sup>7</sup> Among over 700 health professionals involved in the treatment of asthma, the correct use of asthma medicines and devices was identified as a high priority in asthma education.<sup>7</sup>

The importance of education about asthma preventer medicines emphasises the need to be clear within the primary care team who is delivering what information and when, to ensure patient education does not slip through the cracks.

### Regular review is recommended: could this be a role for the asthma champion?

Ideally patients should be followed-up one to three months after starting treatment for asthma and every three to 12 months thereafter.<sup>12</sup> Asthma reviews should be scheduled during periods when the patient's symptoms are well controlled. Asthma reviews are particularly important in Māori and Pacific children who are less likely than other children to have their treatment escalated.<sup>6</sup> A follow-up should be arranged within one week of a patient experiencing an exacerbation.<sup>12</sup>

Scheduling an asthma review provides patients and whānau with a chance to discuss any aspect of asthma. This is also an opportunity for practices to confirm that consistent messages are being delivered to patients. The discussion can be initiated by an open-ended question such as: *"How are you feeling about your asthma at the moment?"* The specifics of the patient's symptoms can then be discussed, e.g. night-time waking or exercise limitations.

### Patients need to be prepared for exacerbations

Asthma action plans are associated with reduced hospitalisations;<sup>11</sup> if a patient is able to increase their inhaled corticosteroid dose (ICS) dose early during an exacerbation they are less likely to have a severe exacerbation.<sup>12</sup> Action plans include instructions on when and how to make short-term adjustments in treatment in response to worsening symptoms and when to access additional medical care.


The criteria for patients with asthma to increase their dosing of preventer medicine may vary depending on the individual. An example would be for a patient to double their ICS dose if they are finding it difficult completing daily activities or, if they are using a peak flow meter, if their peak expiratory flow (PEF) decreases by more than 20% for more than two days.<sup>12</sup> If an increase in ICS dosing does not provide symptom relief the patient should contact a member of the primary care team.

### Tools to create asthma action plans

The Pictorial Asthma Medication Plan (PAMP) has been

validated for use in Pacific children and is available online (see below) and in Te Reo and Pacific languages.<sup>15</sup>

The *bestpractice* electronic decision support module "Childhood asthma" produces printed action plans for patients and is nationally funded and freely available to all general practices in New Zealand. When the "Childhood Asthma – Action Plan" module is selected the action plan will be automatically populated with the patient's details, including any asthma medicines that have been prescribed and any peak flow recordings that have been made. The patient's asthma triggers can be selected from a menu, and if oral corticosteroids are required, a dose will be automatically calculated based on the patient's weight. Asthma action plan review dates can also be selected and all information that is entered will be automatically written back to the patient management system.

 For further information on PAMP, see: [www.pamp.co.nz](http://www.pamp.co.nz)

For further information on the *bestpractice* Asthma module, see: [www.bestpractice.net.nz](http://www.bestpractice.net.nz)

Asthma action plans for adults are also available online from: [www.asthmafoundation.org.nz/wp-content/uploads/2012/03/AsthmaSelfManagementPlan08\\_final.pdf](http://www.asthmafoundation.org.nz/wp-content/uploads/2012/03/AsthmaSelfManagementPlan08_final.pdf)

### Exploring barriers to good asthma control

Many whānau do not realise that asthma is a long-term condition, requiring preventative treatments even when well.<sup>7</sup> This misunderstanding is reinforced by a model of asthma care where patients generally only discuss the condition with health professionals following an acute deterioration in symptoms. Poor treatment adherence is associated with poor asthma control and should be assessed in a non-judgemental way. For example: *"It's difficult to remember to use your preventer inhaler every day. How many days a week do you think you are using your preventer?"*

If patients acknowledge that they do not take preventative medicines regularly, describing the benefits that the daily use of preventer medicines provide may improve adherence. For example, improving fitness so that sports practice and games do not have to be missed.

If forgetfulness is a reason for treatment non-adherence then this may be overcome by linking administration of asthma preventer medicines with another routine daily activity, or setting a reminder on a cell phone.



### Confirm that inhaler technique is appropriate

Incorrect inhaler technique can contribute to poor asthma control and should be assessed regularly.<sup>12</sup> Up to 80% of patients in the community are reported to use their inhalers incorrectly.<sup>12</sup> The patient's inhaler technique can be assessed by asking *"Inhalers are a bit like toothbrushes and we all get into bad habits when using them, can you show me how you use your inhaler?"* Spacers are recommended for all patients with pressurised asthma inhalers as they make it easier for patients to use the inhaler and improve medicine delivery.<sup>12</sup> Inhaler maintenance may also be discussed, e.g. the importance of regularly washing spacers with warm water and detergent then allowing them to air dry to reduce static charge.\*

\* From 1 November, 2015, three spacer devices will be listed on the Pharmaceutical Schedule: Apex Medical's e-chamber Turbo 220 mL (ideal for children aged under five years) and La Grande 510 mL spacers as well the e-chamber paediatric mask for spacer devices (suitable for children of all ages). As these spacers have antistatic properties there will be no need to prime these devices.

### Revisit the patient's action plan

If a patient is experiencing less than optimal symptom control, revisit their action plan and ensure that it is appropriate. To confirm that the patient and whānau understands the action plan ask an open-ended question, e.g. *"Can you tell me what you usually do when your child wakes up in the night with a wheezy chest?"* Reiterate the importance of avoiding triggers for exacerbations and taking all reasonable steps to avoid them.


### Concerns about the adverse effects of treatment can reduce adherence

Concern about possible adverse effects associated with the daily use of ICS may be a reason for non-adherence with asthma preventer treatment.<sup>7</sup> Confusion about the differences between oral or ICS may be another cause for concern in patients being treated with asthma. Some patients may link ICS use with the adverse effects experienced by people who misuse anabolic steroids.


Patients with asthma can be reassured that the majority of people who are treated do not experience any noticeable adverse effects due to ICS use. The use of spacers with pressurised inhalers improves the delivery of medicine directly to the lungs, therefore reducing the amount required to microgram doses. Good inhaler technique or the use of spacers by patients taking ICS also reduces the risk of dysphonia and oral candidiasis, and this risk can be further reduced by rinsing the mouth and spitting after taking the ICS.<sup>12</sup>

### Further educational resources are available

The Asthma Foundation has educational resources for patients and families that are useful for explaining what asthma is and how asthma can be controlled effectively. These include Te Ha Ora Huango (asthma posters), and an illustrated book in which a cartoon Maui takes control of his asthma with the help of his tupuna (ancestors).

 For further information, see: <http://asthmafoundation.org.nz/education/for-health-professionals/useful-resources/>

The Health Quality and Safety Commission (HSQC) provides a resource "Three steps to better health literacy".

 For further information, see: [www.hqsc.govt.nz/our-programmes/partners-in-care/work-streams/health-literacy/](http://www.hqsc.govt.nz/our-programmes/partners-in-care/work-streams/health-literacy/)

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