

The Burden of
Asthma

IN NEW ZEALAND

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Asthma and Respiratory Foundation of New Zealand (Inc.)



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< FOREWORD:

The Asthma and Respiratory Foundation of New Zealand has commissioned this report to highlight the burden of asthma in New Zealand. The Foundation believes that the Ministry of Health may have underestimated the impact of asthma on children and adults in New Zealand in the development of the New Zealand Health Strategy, and the Foundation wishes to see greater emphasis placed on the provision of adequate services for patients with asthma in this country.

As the authors of this report Dr Shaun Holt and Professor Richard Beasley note, asthma is one of the most common chronic diseases affecting children and adults in New Zealand, which has the highest prevalence of asthma in the world. Although asthma mortality has fallen, there is data both in this report and from other recent research in New Zealand to indicate that the morbidity associated with asthma remains very high. Evidence for this comes from high hospital admission rates and ongoing symptoms of severe asthma, which have been documented in many children and adults. Importantly, the disability associated with asthma is much higher than previously appreciated, with this condition rating as the number one cause of Years Lost to Disability in males and the third highest ranking cause in females. The economic consequences of this in terms of time lost from work and school are enormous. The economic burden of asthma to New Zealand has been conservatively estimated as \$800 million per annum.

Based on the findings of this report, the Foundation is calling for:

- All barriers to accessing adequate primary care to be eliminated as a matter of urgency. People with asthma need ready access to medical advice in a culturally appropriate setting, and free access to all relevant medications.

- An integrated approach to asthma management, including:
 - diagnosis and review of severity
 - provision of asthma education
 - provision of written asthma plans
 - regular review of asthma-related medication.

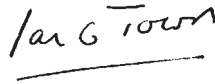
The Foundation considers that adequate funding should be made available to primary health care providers to ensure that all patients can access these services.

- Increased co-ordination between secondary and primary care services. We are specifically recommending the formation of Regional Advisory Groups to assist District Health Boards in planning and co-ordinating services for people with asthma and related respiratory conditions.

Failure to address these issues will lead to an increasing burden of asthma in our society.



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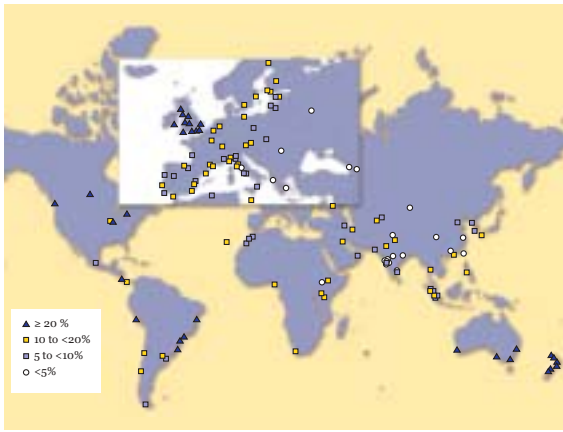
< ASTHMA IN NEW ZEALAND AT A GLANCE

10 Key Points:

1. New Zealand has one of the highest prevalence rates of asthma in the world, with asthma occurring in about 15% to 20% of children and adults and affecting at least 600,000 people.
2. Asthma is one of the most common chronic diseases in children in New Zealand.
3. Asthma is the most common cause of hospital admission in children in New Zealand, and this country has one of the highest rates of hospital admission for asthma (in adults and children) in the world.
4. Asthma is the third highest-ranking specific cause of long-term disability in New Zealand.
5. Asthma disproportionately affects Maori, Pacific Islanders and low socio-economic groups.
6. The economic cost of asthma in New Zealand is over \$800 million per year.
7. Asthma management is adversely affected by financial and other barriers to health care.
8. The restriction in availability of new medicines contributes to the burden of asthma in New Zealand.
9. There has been a major beneficial impact from the internationally recognised asthma research effort in New Zealand.
10. The burden of asthma in New Zealand is so substantial that it warrants recognition by the Ministry of Health as a priority disorder in the New Zealand Health Strategy.

1. < PREVALENCE

- 15–20% of New Zealand children and adults have asthma.
- For both children and adults, New Zealand has one of the highest rates of asthma in the world.
- The rates of asthma are particularly high in Maori and Pacific Island adults.



Prevalence of self-reported asthma symptoms in 13–14-year-old children

FIGURE 1: *World map for the 13–14-year age group, showing percentage of children who answered “yes” to the written question “Have you had wheezing or whistling in the chest in the last 12 months?”* (© 1998 European Respiratory Journal. Reproduced with permission)

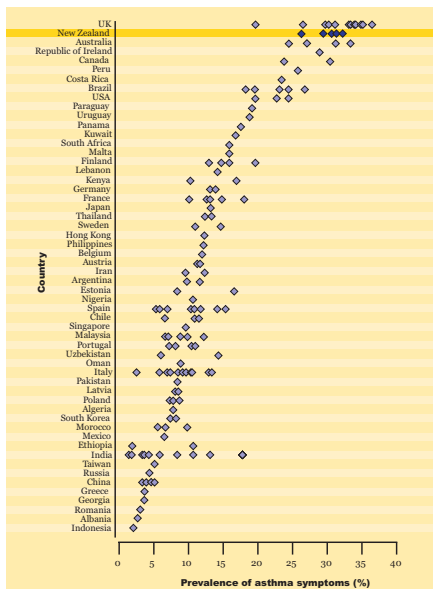


FIGURE 2: *12-month prevalence (%) of self-reported asthma symptoms from written questionnaires in 13–14-year-old children in different countries* (Reprinted with permission from Elsevier Science. *The Lancet* 1998; 351: 1228)

2. < INCREASING PREVALENCE

- Asthma has become more common in both children and adults in New Zealand over recent decades.
- The rate of asthma doubles in communities that emigrate from the Pacific Islands to New Zealand.
- The increase in the prevalence of asthma is paralleled by similar increases in other allergic disorders such as eczema and rhinitis.

Asthma prevalence among Tokelau Islanders increases when they emigrate to New Zealand

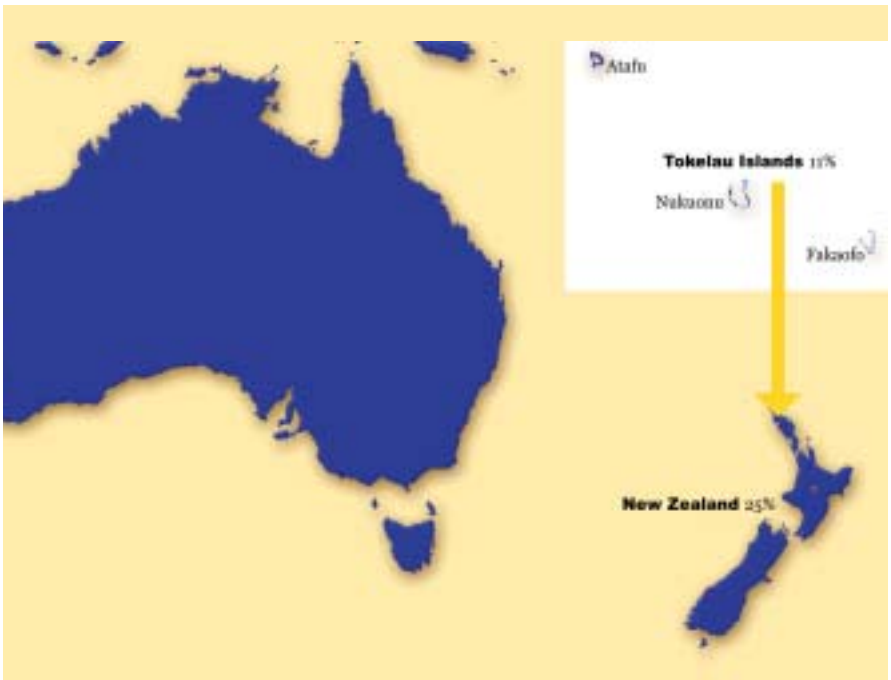


FIGURE 3: *Asthma prevalence in the Tokelau Islands compared with prevalence among Tokelau Islanders living in New Zealand.*

3. < MORBIDITY

- The occurrence of symptoms of severe asthma is among the highest recorded throughout the world for both children and adults in New Zealand.
- Severe attacks of asthma are common in New Zealand
 - 8% of teenagers report wheeze limiting speech
 - 10% of adults report waking with breathlessness.

Prevalence of severe asthma among children aged 13-14 years

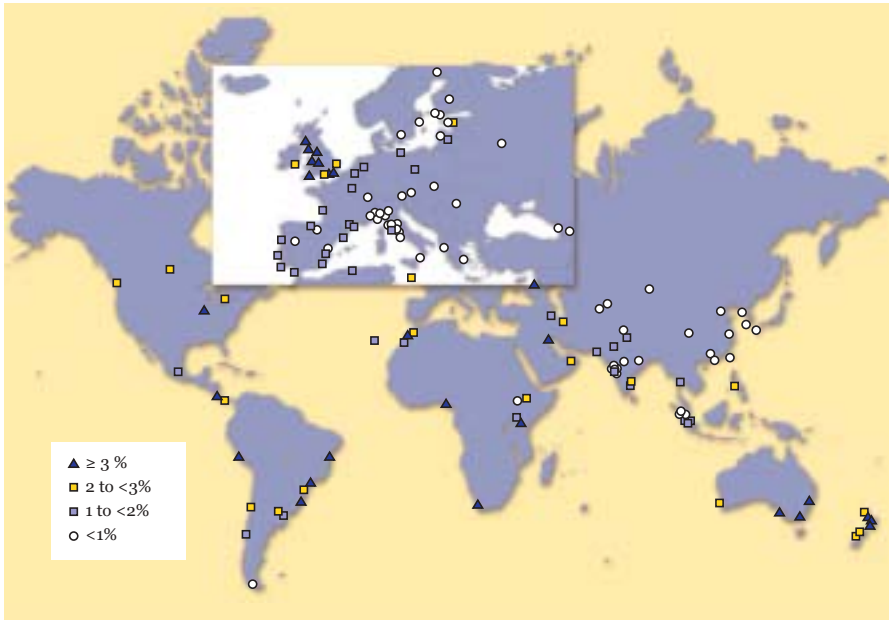


FIGURE 4: *World map of the 13–14-year age group showing the percentage of children with severe asthma symptoms*

4. < HOSPITAL ADMISSION RATES

- Hospitalisation rates for asthma have more than doubled in the last 30 years.
- The rates of hospital admissions for asthma are highest in infants <5 years and lowest in adults.
- Hospital admissions are twice as common in Maori.

Asthma hospitalisation rates in New Zealand

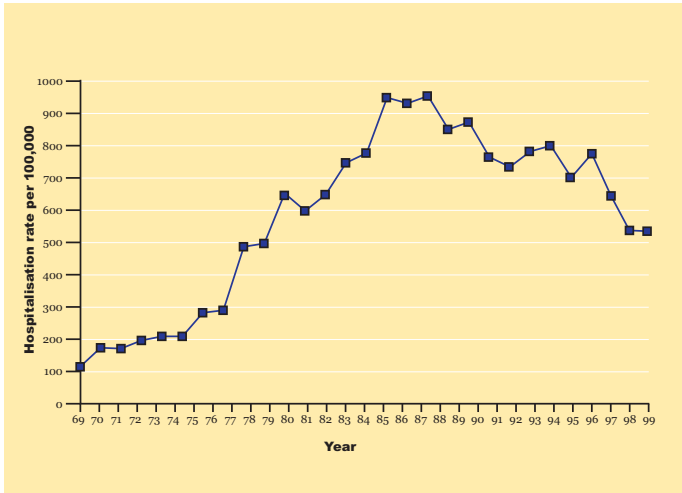


FIGURE 5: *Asthma hospitalisation rates per 100,000 in persons aged 0-14 years*

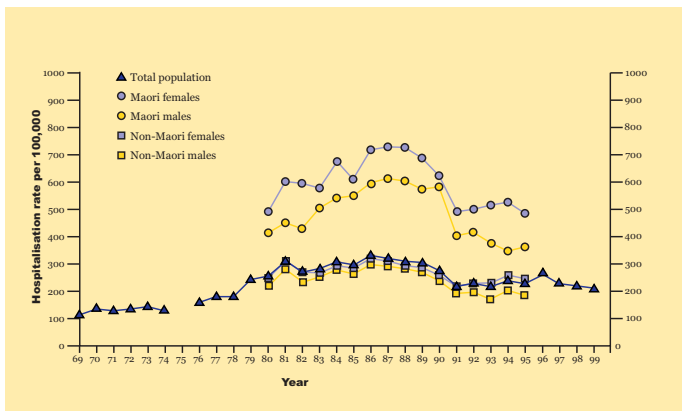


FIGURE 6: *Asthma hospitalisation rates per 100,000 for total population and by ethnicity and gender in persons aged 5-34 years**

*Ethnicity data prior to 1980, and from 1996 onwards, are not comparable with available data between these periods

5. < YEARS LOST TO DISABILITY

- Asthma is the highest ranking specific disease in terms of years lost to disability in males and the third highest in females.
- Overall, asthma is responsible for about 7% of the total years lost to disability in the whole population.
- The very high ranking of asthma reflects a combination of high prevalence and prolonged and severe disability.

Table 1: *Top 10 causes of years lost to disability (YLD) by gender, 1996*

Rank	Male	Female	Total	
	Cause	Cause	Cause	YLD
1	Asthma	Depression	Depression	20,497
2	COPD	Anxiety disorders	Anxiety disorders	17,930
3	Diabetes	Asthma	Asthma	17,059
4	Anxiety disorders	Diabetes	Diabetes	14,684
5	Depression	Dementia	COPD	12,418
6	Hearing disorders	Osteoarthritis	Osteoarthritis	11,126
7	IHD	COPD	Dementia	11,070
8	Osteoarthritis	IHD	IHD	9,708
9	Dementia	Stroke	Hearing disorders	9,427
10	Stroke	Breast cancer	Stroke	7,775
Top 10				131,694

COPD: chronic obstructive pulmonary disease

IHD: ischaemic heart disease

6. < MORTALITY

- New Zealand had the highest death rate from asthma between 1965 and 1990 as a result of two drug-related mortality epidemics.
- Since 1990, the asthma mortality rate in New Zealand has been similar to that in other countries.
- Currently 1 in every 200 deaths in New Zealand is due to asthma.
- The highest mortality rates are in the elderly.

Asthma mortality rates in New Zealand in the 20th century

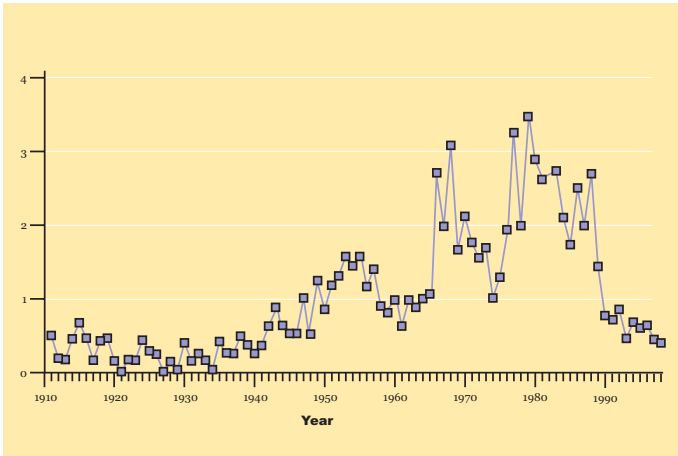


FIGURE 7: *Asthma mortality rates per 100,000 New Zealand persons aged 5–34 years*

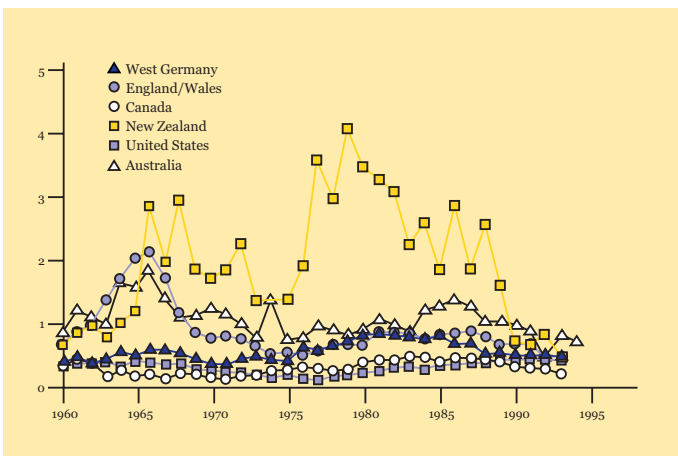


FIGURE 8: *International patterns of asthma mortality (deaths per 100,000 persons aged 5–34 years) 1960–1994, showing the different trends* (©1998 Marcel Dekker Inc. Reproduced with permission)

7. < SOCIAL AND ETHNIC INEQUALITIES

- The proportion of asthmatics with severe disease is greater in Maori, Pacific Islanders and low socio-economic status groups.
- The greater hospital admission rates and mortality in these disadvantaged groups reflect, in the broadest sense, lack of access to medical care and are consistent with the described social inequalities in health.

Table 2: *Prevalence of asthma in adults in different ethnic groups in New Zealand*

Maori	21.9%
Pacific Island	20.0%
Non-Polynesian	14.6%

8. < YEARS OF HEALTHY LIFE LOST

- A year of healthy life lost is recognised as a composite measure of the burden of both fatal and non-fatal disease, the "disability-adjusted life year" (DALY).
- Asthma ranks as the sixth most common cause of DALYs lost.
- Overall, asthma accounts for over 18,000 DALYs lost in New Zealand every year, representing a major burden of disease.

Table 3: *Top 10 causes of disability-adjusted life years lost by top 10 specific causes*

Rank	Cause	YLD
1	IHD	73,804
2	Stroke	30,115
3	COPD	27,848
4	Diabetes	21,263
5	Depression	20,497
6	Asthma	18,800
7	Anxiety disorders	17,930
8	Lung cancer	17,919
9	Road traffic injury	17,634
10	Colorectal cancer	16,262

9. < ECONOMIC BURDEN

- The economic costs of asthma in New Zealand have been conservatively estimated to be around \$825 million per year.
- The economic costs consist of about \$125 million in direct medical costs and \$700 million in indirect medical costs (including days off work, premature disability and death from asthma).
- The small number of asthmatics with poorly controlled disease are responsible for a disproportionately large share of the costs.

Table 4: *Estimated direct annual medical costs of asthma in the late 1990s*

Area of expenditure	Estimated cost (\$ M)
Pharmaceuticals	50.0
Hospital inpatient	14.0
Emergency department services	6.7
Primary care services	19.3
Specialist services	0.8
Patient costs	25.6
Others	8.8
Total direct costs	\$125.2

Table 5: *Indirect costs*

Area of expenditure	Estimated cost (\$ M)
Work loss	105
Premature death	254
DALY	340
Total indirect costs	\$699M

Table 6: *Proportion of costs by severity*

	Asthmatics (%)	Costs (%)
Mild	70	20
Moderate	20	30
Severe	10	50

10. < RESTRICTIONS IN ASTHMA MEDICATIONS

- The severe restrictions on the availability of new medications including long-acting beta-agonist therapy has contributed to the burden of asthma in New Zealand over the last decade.
- While acknowledging the severe financial constraints imposed on PHARMAC, in the field of asthma the decisions made have not necessarily been based on international consensus guidelines or on the recommendations made by the Pharmacology and Therapeutics Advisory Committee (PTAC).

Availability of long-acting beta-agonist drugs in New Zealand

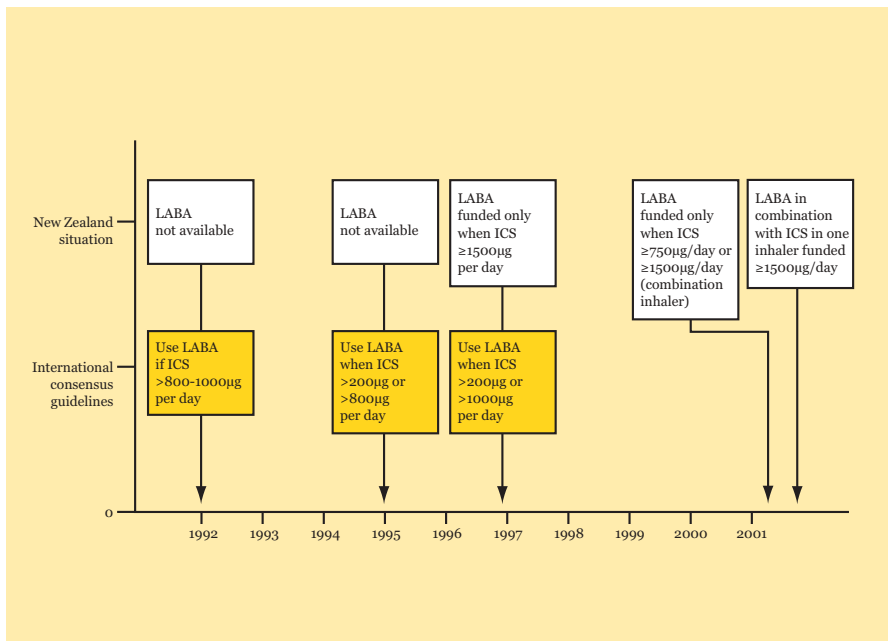


FIGURE 9: *Discrepancy between the availability of long-acting beta-agonists (LABA) in New Zealand and the recommendations of international consensus guidelines on their use.*

LABA = long-acting beta-agonists

ICS = inhaled corticosteroids

11. < RESEARCH OUTCOMES

- There has been a huge internationally recognised research effort in the field of asthma in New Zealand. New Zealand research has resulted in a greater understanding of asthma and advances in management leading to major improvements in the quality of life of asthmatics in New Zealand.

12. < THE FUTURE

The burden of asthma in New Zealand is likely to increase with the continuing increase in prevalence. Until there is greater understanding of the factors which cause asthma, particularly severe asthma, and novel public health and pharmacological measures become available to reduce the prevalence of severe asthma, the emphasis needs to remain on cost-effective management approaches which have been proven to reduce morbidity and mortality. This will require a number of public health initiatives including:

- the greater availability of cost-effective medications
- the promotion of proven approaches to management
- reduction of barriers to primary health care
- novel initiatives such as specialist nurse prescribing
- restructuring of partial government funding of primary care
- innovative programmes to fund regular patient review
- recognition of asthma as a priority by the Ministry of Health.

The implementation of such measures, especially for patients with severe or uncontrolled asthma, should result in a significant reduction in the personal and economic burden of asthma in New Zealand.

