Asthma prevalence

This factsheet presents statistics on the prevalence of medicated asthma among children aged 2–14 years in New Zealand. The data comes from the New Zealand Health Survey.

Key facts

In 2017/18, 1 in 7 children (14.9%) aged 2–14 years had medicated asthma. The rate of medicated asthma has remained consistent for over 10 years, from 2006/07 to 2017/18

Prevalence rates of medicated asthma were higher for boys (17.3%) than girls (12.3%) in 2017/18. Boys were 1.4 times more likely than girls to have medicated asthma

Māori children (22.9%) had the highest rate of medicated asthma. They were 1.9 times more likely to have medicated asthma than other children

Children living in high deprivation areas (NZDep 2013 quintile 5) (19.0%) had the highest rates of medicated asthma

A poor indoor environment can increase the risk of asthma in children

Asthma affects a person's airways and makes it difficult to breathe. Second-hand smoke exposure can increase the risk of having asthma and wheeze in children (US Department of Health and Human Services 2007). Indoor dampness/mould is also associated with asthma onset and exacerbation in children (Jaakkola et al 2011; Prezant and Douwes 2011). Additionally, several studies have found an increase in asthma prevalence or incidence associated with exposure to nitrogen dioxide (Guarnieri and Balmes 2014). Evidence also suggests that transport-related air pollution may increase the incidence of asthma (Orellano et al 2017). New Zealand has high asthma rates in children compared with other countries (Lai et al 2009; OECD 2015). Each year, a small number of children die from asthma; in 2016, five children died from asthma in New Zealand (Ministry of Health 2019a).

1 in 7 children aged 2–14 years had medicated asthma in 2017/18

In 2017/18, 14.9% of children aged 2–14 years had medicated asthma (Figure 1). This is about 122,000 children (Table 1).

Figure 1: Medicated asthma, children aged 2-14 years, 2006/07-2017/18 (unadjusted prevalence)

Note: There is no data available between 2006/07 and 2011/12 because the New Zealand Health Survey only became annual in 2011/12.
Source: New Zealand Health Survey (Ministry of Health 2019b).

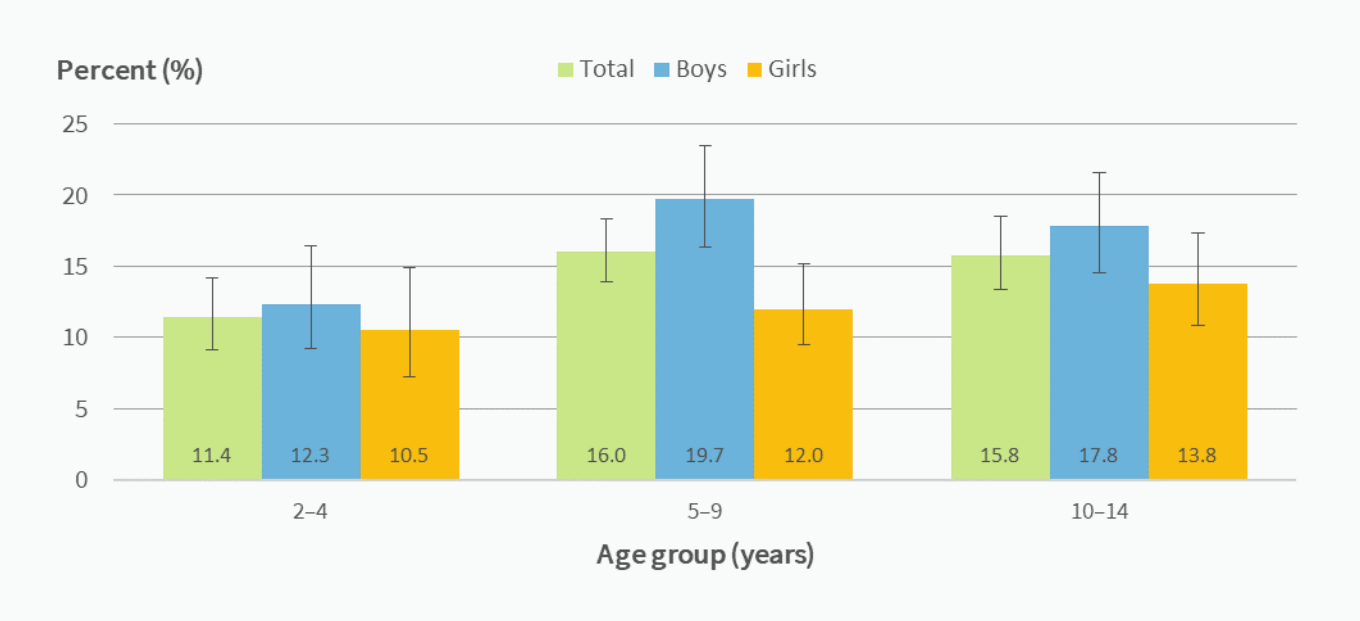
The percentage of children with medicated asthma over the last ten years has been relatively consistent, adjusting for age differences.

Boys were more likely to have medicated asthma than girls

In 2017/18, 17.3% of boys (95% confidence interval 15.3–19.4) and 12.3% of girls (10.5–14.5) took medication for asthma. Adjusting for age differences, boys were 1.4 times more likely than girls to have medicated asthma (adjusted rate ratio 1.40, 1.14 – 1.73).

The percentage of children taking asthma medication was somewhat higher for children aged 5–9 years (16.0%) and 10–14 (15.8%) (Figure 2).

Figure 2: Medicated asthma, children aged 2-14 years, by sex and age group, 2017/18 (unadjusted prevalence)



Source: New Zealand Health Survey (Ministry of Health 2019b)

Māori children were more likely than non-Māori children to have medicated asthma

In 2017/18, the highest rate of medicated asthma was among Māori children (22.9%), followed by Pacific children (16.4%) and European/Other children (14.5%) (Table 1).

Table 1: Medicated asthma, children aged 2-14 years, by ethnic group (total response), 2017/18

Ethnic group (total response)	Unadjusted prevalence (%, 95% CI)	Estimated number of children	Comparison groups for adjusted rate ratio	Adjusted rate ratio (RR, 95% CI)^
Total	14.9 (13.6-16.3)	122,000		
Māori	22.9 (20.4-25.6)	46,000	Māori vs non-Māori	1.87 (1.55-2.25)*
Pacific	16.4 (13.3-20.0)	18,000	Pacific vs non-Pacific	1.12 (0.89-1.39)
Asian	10.9 (8.2-14.4)	12,000	Asian vs non-Asian	0.72 (0.53-0.97)*
European/Other	14.5 (12.9-16.3)	86,000		Not available

^Rate ratios (RR) are used to compare results for different population subgroups. Adjusted rate ratios are for age and sex differences that could influence the comparison. An adjusted rate ratio above 1.0 shows that the indicator is more likely in the group of interest than in the reference group. An adjusted ratio below 1.0 shows the indicator is less likely in the group of interest than the reference group.

* Indicates a statistically significant result for an adjusted rate ratio greater or lower than 1.0.

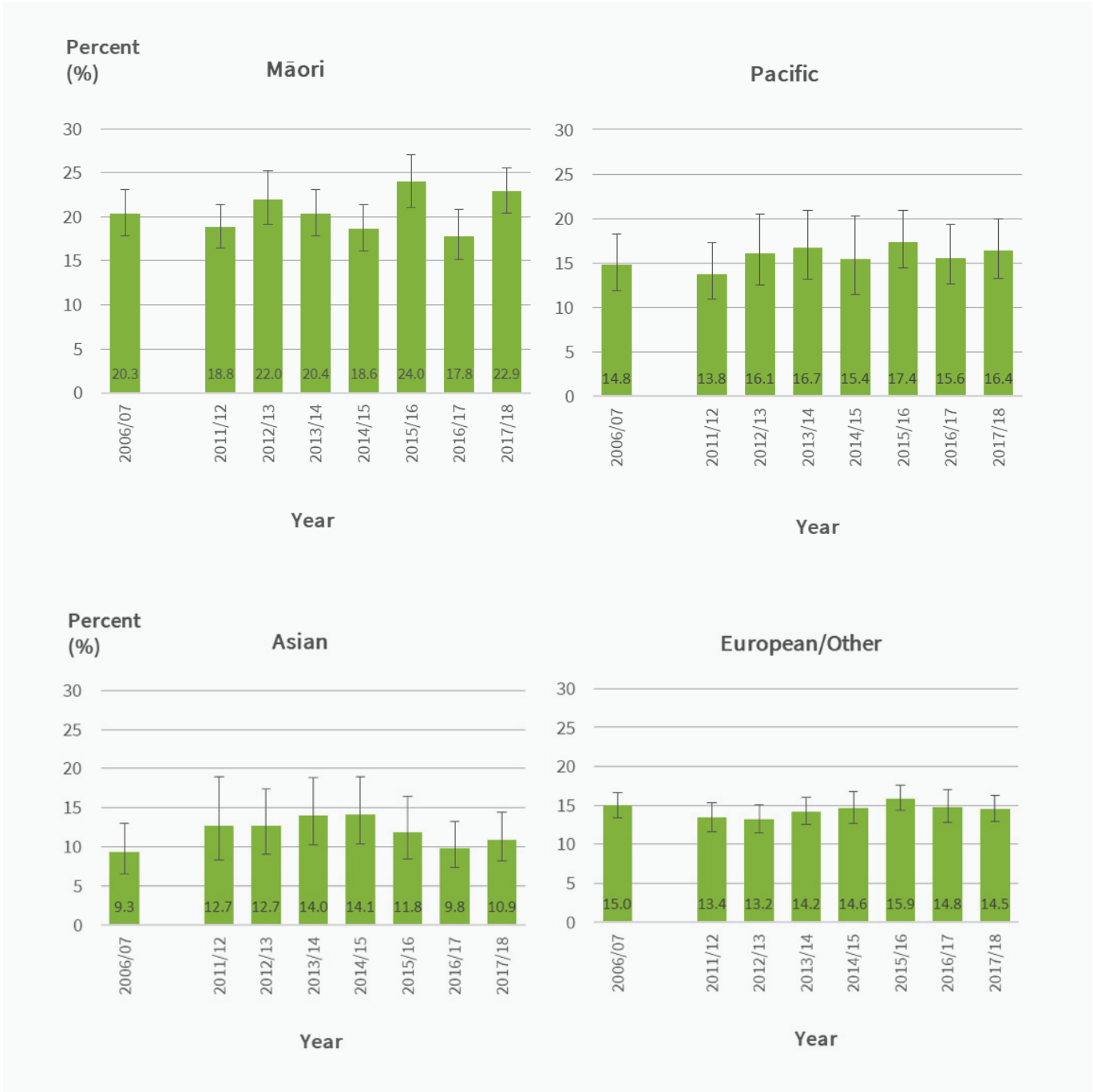
Notes: 95% confidence intervals (CI) are given in brackets. Estimated numbers will add to more than the total for ethnic groups, due to total response ethnicity being used (where everyone is included in every ethnic group they report).
Source: New Zealand Health Survey (Ministry of Health 2019b)

Adjusting for age and sex differences, Māori children were 1.9 times more likely than non-Māori children to have medicated asthma (Table 1). Asian children were significantly less likely to have medicated asthma than non-Asian children. There were no significant differences between Pacific and non-Pacific children.

Medicated asthma rates were consistent for each ethnic group over time

The unadjusted rate of medicated asthma for each ethnic group has been relatively stable since 2006/07, except for Māori children (Figure 3). Between 2014/15 and 2017/18, the rate of medicated asthma for Māori children fluctuated from year to year.

Figure 3: Medicated asthma, children aged 2–14 years, by ethnic group (total response), 2011/12–2017/18 (unadjusted prevalence)

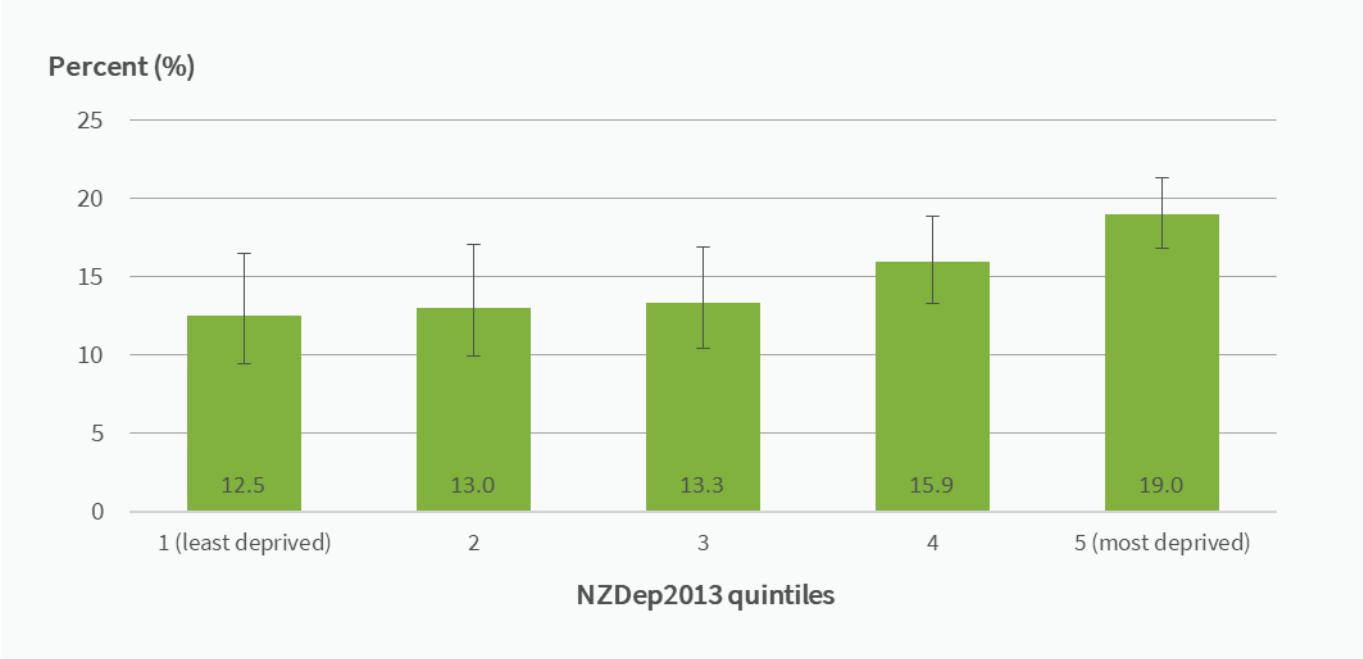


Note: Estimated numbers will add to more than the total for ethnic groups, due to total response ethnicity being used (where everyone is included in every ethnic group they report).
Source: New Zealand Health Survey (Ministry of Health 2019b)

Higher prevalence of medicated asthma in high deprivation areas

In 2017/18, children living in the most deprived areas (NZDep2013 quintile 5) had the highest rates of medicated asthma (19.0%), while children living in quintile 1 had the lowest rate (12.5%) (Figure 4).

Figure 4: Medicated asthma, children aged 2–14 years, by neighbourhood deprivation (NZDep2013 quintiles), 2017/18 (unadjusted prevalence) 2017/18 (unadjusted prevalence)



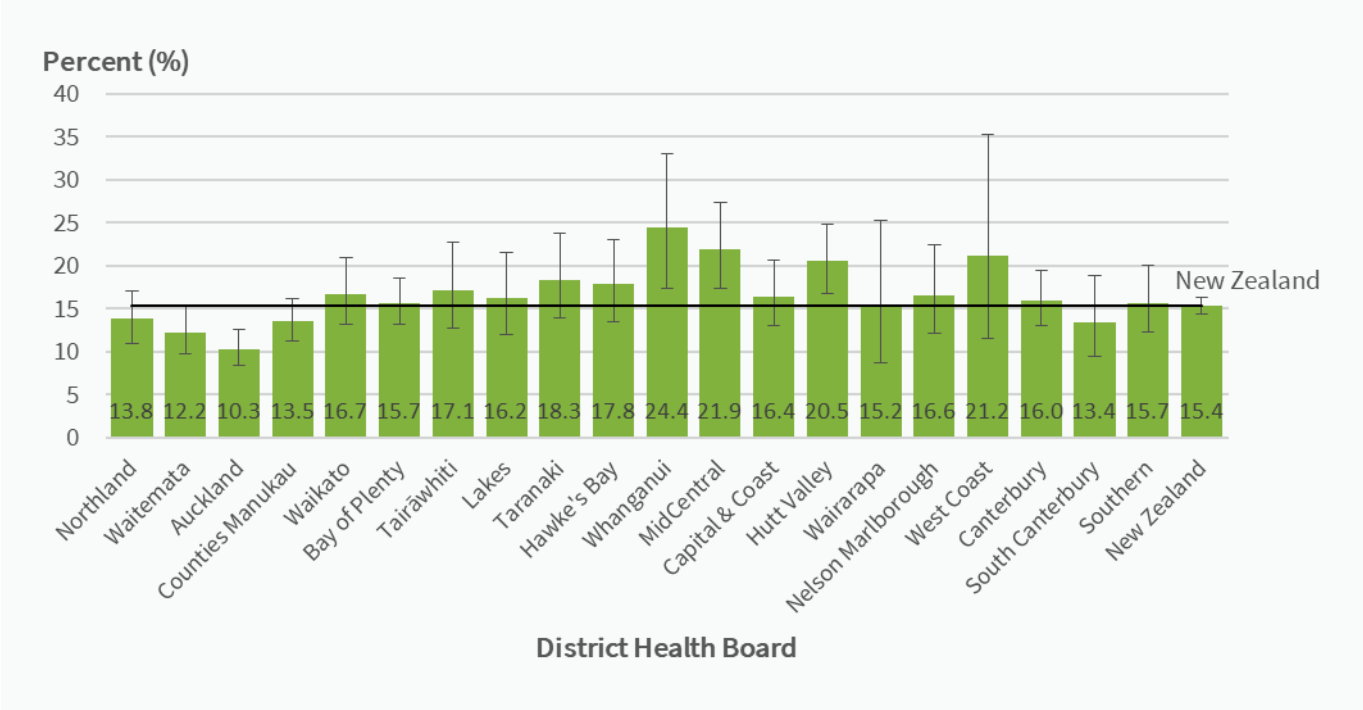
Source: New Zealand Health Survey (Ministry of Health 2019b)

Children living in the most deprived areas were 1.3 times more likely to have medicated asthma than children in the least deprived areas. However, there was no statistically significant difference in the rate of medicated asthma between the most deprived areas (NZDep quintile 5) and the least deprived areas (NZDep quintile 1), after adjusting for age, sex, and ethnic group differences (adjusted rate ratio 1.30, 0.92–1.84).

Highest rates of medicated asthma in Whanganui, MidCentral and Hutt Valley DHBs

In 2014–17, the following district health boards (DHBs) had the highest rates of medicated asthma for children compared to the national rate: Whanganui DHB (24.4%), MidCentral (21.9%) and Hutt Valley DHB (20.5%) (Figure 5). Auckland DHB (10.3%) and Waitemata DHB (12.2%) had a lower rate than the New Zealand rate. Adjusting for age differences between DHBs gave similar findings.

Figure 5: Medicated asthma children aged 2–14 years, by District Health Board, 2014–17 (unadjusted prevalence)



Source: New Zealand Health Survey (Ministry of Health 2018)

Data for this indicator

Data for this indicator come from the New Zealand Health Survey. Statistics come from the 2017/18 New Zealand Health Survey data tables (Ministry of Health 2019b), and the 2014–17 New Zealand Health Survey regional results data tables (Ministry of Health 2018).

Child respondents aged 2–14 years were defined as having medicated asthma if the child's parent or caregivers had ever been told by the doctor that a child has asthma, and if the child now takes treatments for asthma (inhalers, medicine, tablets or pills).

For additional information, see the metadata link below.

References

Guarnieri M, Balmes JR. 2014. Outdoor air pollution and asthma. Lancet 383(9928): 1581–1592.

Jaakkola MS, Haverinen-Shaughnessy U, Douwes J, Nevalainen A. 2011. Indoor dampness and mould problems in homes and asthma onset in children. In Braubach M, Jacobs DE, Ormandy D (eds), *Environmental burden of disease associated with inadequate housing: A method guide to the quantification of health effects of selected housing risks in the WHO European Region* (pp. 5–31). Copenhagen: World Health Organization Regional Office for Europe.

Lai CKW, Beasley R, Crane J, et al. 2009. Global variation in the prevalence and severity of asthma symptoms: Phase Three of the International Study of Asthma and Allergies in Childhood (ISAAC). *Thorax* 64: 476–483.

Ministry of Health. 2018. *Regional Results 2014–17: New Zealand Health Survey.* Wellington: Ministry of Health. URL: **https://www.health.govt.nz/publication/regional-results-2014-2017-new-zealand-health-survey** (accessed 11/06/2018)

Ministry of Health. 2019a. *Mortality 2016 data tables: Mortality and Demographic Data - series.* Wellington: Ministry of Health. URL: **https://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/mortality-and-demographic-data-series** (Accessed 22/10/2019).

Ministry of Health. 2019b. *Annual Update of Key Results 2017/18: New Zealand Health Survey. Annual Data Explorer 2017/18.* Wellington: Ministry of Health. URL: **https://www.health.govt.nz/publication/annual-update-key-results-2017-18-new-zealand-health-survey** (Accessed 30/9/2019).

OECD. 2015. *CO1.6: Disease-based indicators: prevalence of diabetes and asthma among children.* Organisation for Economic Co-operation and Development (OECD) Family Database. Available online: **https://www.oecd.org/els/family/CO_1_6_Diabetes_Asthma_Children.pdf** (accessed 30/10/2017).

Orellano P, Quaranta N, Reynoso J, et al. 2017. Effect of outdoor air pollution on asthma exacerbations in children and adults: Systematic review and multilevel meta-analysis. *PLoS ONE* 12(3): e0174050.

Prezant B, Douwes J. 2011. *Calculating the burden of disease attributable to indoor dampness in New Zealand: Technical Report.* Wellington: Centre for Public Health Research.

U.S. Department of Health and Human Services. 2007. *Children and Secondhand Smoke Exposure. Excerpts from The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General.* Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

Other hazardous substances topics include:

Household crowding

Second-hand smoke exposure

Lower respiratory tract infections

Sudden unexpected death in infancy (SUDI)

Meningococcal disease

Asthma hospitalisations

Author

The author of this factsheet is Helene Marsters **ehinz@massey.ac.nz**

Citation

Environmental Health Indicators. 2019. Asthma prevalence [Factsheet]. Wellington: Environmental Health Indicators Programme, Massey University.

Further information

For descriptive information about the data **Metadata Sheet**

Visit our website

Subscribe to our newsletter