



The Health of New Zealand Children 2011/12

Key findings of the New Zealand Health Survey

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Foreword

I welcome this report of key findings about our children's health in 2011/12, from the New Zealand Health Survey. This report contains the first comprehensive set of statistics about children's health published from the survey since it moved to a continuous design in 2011.

A healthy start to life is crucial for enabling children and young people to reach their full potential. Understanding the issues facing our children's health helps us to address these issues and improve their health.

This report includes information about obesity, asthma, mental health, oral health and access to health care, based on data collected from over 4000 children.

The information in this report provides a basis for identifying and measuring trends and changes in the patterns of children's health in New Zealand. The report highlights some of the key issues facing the health of our children, and the challenges for the future. These findings will guide us as we plan for delivering effective health services for New Zealand children, and work towards improving their health.

This is only the start of the information releases from the survey. I look forward to further insights about the health of New Zealand children and adults from future reports from the survey. Future releases will include regional results for the survey, which will be published next year.

I would like to thank the many people who have been involved in the survey. I'd like to especially acknowledge and thank the many thousands of New Zealand children and their parents who gave their time to take part in the survey. The information they have provided is critical in developing and monitoring public health policy in New Zealand.

I hope you will find this report useful and informative.

Kevin Woods
Director-General of Health
Ministry of Health

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Executive Summary

The New Zealand Health Survey is a valuable source of information about children's health behaviours, their health status and their access to health care. In 2011/12 the survey included face-to-face interviews with the parents of more than 4000 children selected randomly from throughout New Zealand.

This report presents results for children aged 0–14 years from the 2011/12 survey. The companion report *The Health of New Zealand Adults 2011/12* presents the adults' results from the survey. Key findings for children are summarised here.

At a glance

Almost all (98%) of children are in good health, according to their parents.

- > **Improving trends:** later age for introducing solid food, more general practitioner visits free for those under six years.
- > **No change:** eating breakfast at home every day, asthma.
- > **Worsening trends:** obesity.
- > **Differences by population group:** generally poorer health and poorer access to primary health care among Māori and Pacific children, and children living in more deprived areas.

Health behaviours and health status

Fewer children are being given solid food before four months of age

The Ministry of Health recommends exclusive breastfeeding until around the age of six months when solid food should be introduced. The percentage of children under five years who were given solid food before the age of four months has decreased from 16% in 2006/07 to 10% in 2011/12.

Obesity is becoming more common in children

The majority of children aged 2–14 years were normal weight (65%). However, 21% were overweight (but not obese) and 10% of children were obese. Obesity rates were higher among Māori (17%) and Pacific (23%) children, and children living in the most deprived areas (19%).

The obesity rate for children aged 5–14 years was stable between 2002 (9%) and 2006/07 (8%), but increased to 11% in 2011/12.

Asthma remains a common health condition in childhood

One in seven (14%) children aged 2–14 years currently takes medication for asthma – about 100,000 children. This level has not changed since 2006/07. Māori children (19%) had higher rates of asthma than non-Māori children.

Diagnosed emotional and behavioural problems have increased

In 2011/12, 3.2% of children aged 2–14 years had been diagnosed with depression, anxiety disorder or behavioural problems (such as attention deficit and hyperactivity disorder). This level has increased from 1.8% in 2006/07. The increase is mainly driven by an increase in diagnosed anxiety disorder.

The most common diagnosis was for anxiety disorder. Boys were twice as likely to be diagnosed with emotional and behavioural problems as girls.

Primary health service use

More children under six years have had a free GP visit

For over half of all children (55%), their last GP visit at a GP clinic, medical centre or family practice was free.

The percentage of children aged under six years who had no charge for their last GP visit (in any setting) has increased substantially from 67% in 2006/07 to 83% in 2011/12. There was little change over time for other age groups.

One in four children had visited a practice nurse (without seeing a GP at the same time) in the past year. For the majority (87%) of children, these visits were free.

Most children were able to access primary health care when they needed to

However, about 20% of children had an unmet need for primary health care in the past 12 months. The most common reason was that parents were not able to get an appointment at their child's usual medical centre within 24 hours (14% of children). Other reasons why children did not visit a GP when they needed to were cost (5%), lack of transport (3%) and lack of child care (2%). Cost (5%) and lack of transport (2%) also prevented some children from visiting after-hours services when they needed to.

Additionally about 7% of children missed out on one or more prescription items in the past year due to the cost. The rate was similar across all age groups, including children younger than six years, for whom most prescriptions are free.

It is not possible to present time trends for these unmet need indicators, as this is the first time the survey has asked directly about them.

Most children have visited a dental health care worker in the past year

In New Zealand, basic dental care is funded for children and adolescents from birth until their 18th birthday. Access to dental care was generally high: about 90% of school-aged children had visited a dental health care worker in the past year. However, fewer children aged 1–4 years (52%) had visited a dental health care worker in the past year.

Are these findings the same for everyone?

There were some notable differences in health status, health behaviours and access to health care by age group, ethnic group, and neighbourhood deprivation.

Risk factors are relatively common among older children

Children aged 10–14 years were more likely to watch two or more hours of television a day, and were less likely to eat breakfast at home, than younger children. Also of concern is the higher rate of diagnosed anxiety disorders among older boys.

Māori children had higher rates of asthma, obesity and unmet need for health care

Asthma is a particular issue for Māori children, affecting one in five. Māori children were twice as likely to be obese as non-Māori children and the obesity rate for Māori boys increased from 2006/07. Also, Māori children were 1.7 times as likely to have had a tooth removed in the past year as non-Māori children. Despite these findings, Māori children were just as likely to have good parent-rated health as non-Māori children.

One in four (28%) Māori children had experienced one or more barriers to accessing primary health care in the past year.

Pacific children had higher rates of obesity and unmet need for health care

One in four Pacific children was obese. However, the observed increase in obesity rates over time for Pacific children was not statistically significant. Pacific children were just as likely to have good parent-rated health as non-Pacific children.

One in four Pacific children experienced barriers to accessing primary health care in the past year (26%). They were also less likely to have visited a dental health care worker in the past year than other children.

Socioeconomic deprivation influences health

Many health conditions were more common for children living in the most socioeconomically deprived neighbourhoods.

Children living in the most deprived areas had higher levels of obesity (19%) and asthma (15%) than children living in the least deprived areas (3% and 10% respectively). They were also less likely to eat breakfast at home every day (83%) than children living in the least deprived areas (91%). These differences were not due to the ethnic, age or sex structure of the population.

Some types of unmet need for health care were also more common for children living in more deprived areas. In particular, children living in the most deprived areas were 2.8 times as likely to have had a prescription that was not filled due to cost in the past year as children in the least deprived areas. Lack of transport is another type of barrier to health care more commonly reported for children living in the more deprived areas than for those in the least deprived areas.

Looking ahead

Over the past five years, access to some health services has improved for New Zealand children. For example, free GP visits for children under the age of six are more common. School-aged children continue to have good access to oral health services.

However, the health sector faces several challenges to improve children's health. For example, the obesity rate has increased for children since 2006/07. It is important to prevent further increases in the obesity rate in order to reduce obesity-related conditions in young New Zealanders and obesity in adults.

Another challenge is improving the health status and access to health services for Māori and Pacific children, and children living in more deprived areas. Achieving health equity for these groups of children will require efforts across government, schools, communities and families.

The New Zealand Health Survey will continue to monitor the changes in the health of New Zealand children.

In brief – key survey results

The following table summarises the indicators presented in this report for children aged 0–14 years. For more detailed results, see the main report and/or Appendices 2 and 3.

Indicator	Percent (%)	Estimated number	Time trends since 2006/07
Excellent, very good or good parent-rated health	98	874,000	≈ No change
Given solid food before four months (0–4 years)	10	30,000	▼ Decrease
Ate breakfast at home every day (2–14 years)	87	664,000	≈ No change
Usually watched 2+ hours of television each day (2–14 years)	53	406,000	▼ Decrease
Obesity (2–14 years)	10	91,000	▲ Increase
Asthma (medicated) (2–14 years)	14	107,000	≈ No change
Diagnosed emotional or behavioural problems (2–14 years)	3	25,000	▲ Increase
Visited a GP in the past 12 months	74	658,000	▼ Decrease
Visited a practice nurse (without seeing a GP at the same visit) in the past 12 months	26	233,000	▲ Increase
Visited an after-hours medical centre in the past 12 months	22	193,000	na
Experienced unmet need for primary health care (any of following) in the past 12 months	20	180,000	na
Unable to get appointment at usual medical centre within 24 hours	14	118,000	na
Unmet need for GP services due to cost	5	44,000	na
Unmet need for after-hours services due to cost	5	43,000	na
Unmet need for GP services due to lack of transport	3	28,000	na
Unmet need for after-hours services due to lack of transport	2	14,000	na
Unmet need for GP services due to lack of child care	2	21,000	na
Unfilled prescription due to cost in the past 12 months	7	61,000	na
Visited a dental health care worker in the past 12 months (1–14 years)	78	652,000	▲ Increase
Had any teeth extracted due to decay, abscess, infection or gum disease in the past year (1–14 years)	4	34,000	na

Notes: Indicator covers children aged 0–14 years unless otherwise stated.

na = not available, as data not collected in 2006/07, or question wording has changed since then.

Percentages rounded to nearest whole number. For percentages accurate to one decimal place, see Appendices 2 and 3. Estimated numbers are rounded to the nearest 1000 children. Time trends are standardised for age.



Introduction

Welcome to *The Health of New Zealand Children 2011/12*. This report gives a snapshot of children's health and wellbeing in New Zealand in 2011/12, using data from the New Zealand Health Survey.

These results tell us about the health of children in New Zealand, their use of primary health care services and whether they have difficulties accessing health care when they need it. You can find a summary and discussion of the key results of the survey at the end of this report.

This report will be useful for government departments, researchers, regional and community organisations, and the wider public. The information in this report will be particularly useful for those with an interest in child health.



What's in this report?

This report presents key findings about the health of all children from birth to 14 years in 2011/12, which come from the New Zealand Health Survey (the '2011/12 New Zealand Health Survey'). It includes indicators about the following topics:

- > health behaviours and risk factors
- > health status and conditions
- > primary health care use in past year
- > barriers to accessing primary health services
- > oral health status and service use.

Results are presented to answer three guiding questions for each indicator:

- > What is the current level in the population?
- > How has it changed?
- > Is it the same for everyone?

This report presents key statistical information through graphs and tables, with short comments about the key results. It highlights areas where we are doing well and areas where we could improve.

Adult results from the survey are presented in the companion report, *The Health of New Zealand Adults 2011/12* (Ministry of Health 2012a).

Indicators in this report

The indicators in this report (Table 1) present key measures of the health of New Zealand children from the New Zealand Health Survey. Health indicators can give an indication of wider health concerns and focus attention on key issues.

We will update these indicators every year with results from the survey.

Table 1: Indicator topics included in this report

Report section	Indicator topic
Health behaviours and risk factors	Introduction of solid food before 4 months Eating breakfast at home Television watching Obesity
Health status and conditions	Parent-rated health Asthma Mental health
Primary health care use	General practitioners Practice nurses After-hours medical centres
Barriers to accessing primary health care	One or more barriers to accessing care Unable to get an appointment at usual medical centre within 24 hours Unmet need for GP services due to cost Unmet need for after-hours due to cost Unfilled prescription due to cost
Oral health status and service use	Teeth removed Visited dental health care worker

Data for all the key indicators in this report are available in online data tables. For some sections of the report, additional indicators related to the topic are also available in online data tables.

Trends over time are presented where possible

This report compares trends over time in the key indicators, where possible. Time trends are presented for the total population and for certain population groups, including Māori and Pacific children.

Most time trends compare results from the 2006/07 and 2011/12 surveys and, where possible, the 1996/97 New Zealand Health Survey and the 2002 Children's Nutrition Survey. For these comparisons, data from previous surveys were reanalysed to ensure the information presented is comparable.

Results are presented by population group

This report presents the indicators for the total population, as well as by population groups defined by sex, age, ethnic group and neighbourhood deprivation. This information helps us to identify whether each indicator shows the same results for all groups of children in New Zealand.

In particular, this information tells us about groups most affected by health inequalities. For example, Māori and Pacific peoples have poorer health status across a wide variety of measures, compared with other population groups in New Zealand. Socioeconomic status also broadly influences health status through a variety of mechanisms. Many studies have shown that lower socioeconomic status leads to poorer health outcomes.

It is important to monitor the health status of these groups and their patterns of service use. This information can then be used to develop appropriate programmes and policies and to drive improvements across the health and disability sector.

Background of the New Zealand Health Survey

The New Zealand Health Survey – past and present

In the past, the Ministry of Health repeated national population health surveys at regular intervals, with children's data collected in the 1996/97 and 2006/07 New Zealand Health Surveys. A wider survey programme also included surveys on specific subjects, including children's nutrition.

From July 2011, the New Zealand Health Survey and the subject-specific surveys have been integrated into a single survey, which is in continuous operation.

Having an integrated, continuous survey means that survey content is more flexible and information can be updated more frequently. It also allows us to combine survey samples across multiple years, so that we can report information for smaller population groups (such as the areas of the smaller district health boards) from time to time.

Core questionnaire and modules

The survey now has core questions that it asks every year. All the indicators in this report use data from these core questions.

The survey also includes a flexible programme of topic modules that change every 12 months (Table 2). In 2011/12 the module topics for children and adults included in-depth questions about health service use and patient experience. We will publish the results from these module topics in 2013.

Table 2: Summary of module topics for New Zealand Health Survey for 2011/12 to 2015/16

Survey year	Adult module topic(s)	Child module topic(s)
2011/12	Health service use Patient experience Problem gambling Discrimination	Health service use Patient experience
2012/13	Alcohol use Tobacco use Drug use	Child development Food security Exposure to second-hand smoke
2013/14	Long-term conditions Health status Disability status Living standards Housing quality	Long-term conditions Health status Disability status Living standards Housing quality
2014/15	Sexual and reproductive health	To be determined
2015/16	Physical activity	Physical activity

Regular publication of survey results

From December 2012 we will regularly publish results from the New Zealand Health Survey. These information releases will include:

- > annual reporting of key indicators for adults and children
- > periodic reporting of results by region, district health board and sub-population
- > subject-specific reports based on module information, which will vary from year to year
- > technical information about the survey (such as methodology reports and questionnaires).

Technical details about the 2011/12 survey

The survey results refer to the usually resident population of all ages, living in permanent dwellings, aged-care facilities and student accommodation. The following people were not included in the survey: people living in institutions, such as for long-term hospital care, hospital- and dementia-level care in aged-care facilities, and in prisons; the homeless; short-term visitors; and tourists.

The 2011/12 survey included 12,370 adults and 4478 children selected randomly from throughout New Zealand. The adults were interviewed face-to-face in their own homes. For children, interviews were at home with their parent or caregiver. Data collection involved an interview, followed by measurements of height, weight and waist circumference.

Trained surveyors from CBG Health Research Ltd carried out the survey interviews. The child survey had a response rate of 85%.

The results in this report refer to the sample selected from 1 July 2011 to 30 June 2012. These selected respondents completed survey interviews between July 2011 and August 2012.

Appendix 1 provides further information about the survey methodology. Detailed reports on the survey design and methodology are available online (Ministry of Health 2011, 2012b).

Overview of methods

Ethnicity

This report uses **total response ethnicity** to define ethnic groups. Total response ethnicity classifies a person in all the ethnic groups that they identify with. This means that people can appear in more than one ethnic group.

Neighbourhood deprivation (NZDep2006)

The New Zealand Index of Deprivation 2006 (NZDep2006) is used as a measure of socioeconomic deprivation in this report. The NZDep is an area-based index of deprivation that measures the level of socioeconomic deprivation for people in each neighbourhood (meshblock) (Salmond et al 2007).

The NZDep2006 was constructed from nine 2006 Census variables: income, benefit receipt, transport (access to car), household crowding, home ownership, employment status, qualifications, support (sole-parent families), and access to a telephone.

This report presents results by NZDep2006 quintiles 1–5. Each quintile contains about 20% of small areas in New Zealand. The two quintiles at opposite ends of the scale are:

- > quintile 1, which represents children living in the **least** deprived 20% of small areas ('the least deprived areas')
- > quintile 5, which represents children living in the **most** deprived 20% of small areas ('the most deprived areas').

95% confidence intervals

A confidence interval is a range around an estimate that tells us how precise it is. It indicates the level of uncertainty in a measurement that is created by taking a sample.

The results presented in this report have 95% confidence intervals. If we selected many samples, the 95% confidence interval would enclose the 'true' value for the population 95% of the time.

The sample size of the group influences the size of the confidence interval. When the sample size is small, the confidence interval is typically wider and the estimate is less precise.

The difference between two groups is statistically significant if their confidence intervals do not overlap. Sometimes, even when two confidence intervals overlap, the difference between these groups can be statistically significant. The text only reports differences that are statistically significant. If the text states there is a difference between two rates, we have carried out a statistical test (a 't-test') to confirm that the finding is statistically significant.

You can find 95% confidence intervals for all estimates in the data tables in Appendices 2 and 3 and in the online data tables.

Age standardisation is used in time trends

Age is an important determinant of health status. In this report, all time trend results have been age-standardised in the graphs so that populations can be compared over time. This means that changes in age-standardised rates over time are not due to changes in the population age structure. If the text states there has been a change over time, this change is significant when we compare the age-standardised rates over time, as well as when we compare the unadjusted rates over time (unless stated otherwise).

For this report, age standardisation was performed by the direct method using the World Health Organization (WHO) world population age distribution (Ahmad et al 2000).

Adjusted rate ratios are used for comparisons

Adjusted rate ratios are used in this report to compare different population groups.

A rate ratio tells us how many times larger or smaller the rate is for the group of interest (eg, Māori) compared with the reference group (eg, non-Māori). A rate ratio **above** 1 means the indicator is **more** likely in the group of interest than in the reference group; a rate ratio **below** 1 means the indicator is **less** likely. Statistically significant rate ratios are indicated with an asterisk (*).

To analyse ethnic differences, we compared each ethnic group with other people. This analysis helps to answer the question, 'Does each ethnic group differ from other New Zealanders for this outcome?'

In this report, adjusted rate ratios are presented for the following comparisons:

- > boys and girls
- > Māori and non-Māori (for total, boys, girls)
- > Pacific and non-Pacific (for total, boys, girls)
- > Asian and non-Asian (for total, boys, girls)
- > children living in the most and least deprived areas.

The adjusted rate ratios are **adjusted** for other demographic factors that may be influencing ('confounding') the comparison, such as age, sex and ethnic group. This means that the comparisons take into account differences in the age, sex and/or ethnicity structure between the population groups.

- > When comparing boys and girls (in the total, Māori, Pacific or Asian population), rate ratios adjust for age.
- > For ethnic comparisons where data on boys and girls are combined, rate ratios adjust for age and sex.
- > Ethnic rate ratios are not adjusted for neighbourhood deprivation in this report, as deprivation is one of the key mechanisms contributing to differences in health status between ethnic groups (that is, deprivation is on the causal pathway between ethnicity and health status).
- > Deprivation comparisons adjust for age, sex and ethnic group. In this report, deprivation comparisons refer to the 'relative index of inequality', which can be interpreted in the same way as rate ratios (see page 11 and Appendix 1 for more details).

This approach is only one of several options for making comparisons. Other approaches, such as different ways of comparing ethnic groups and more complex analyses of ethnic differences by deprivation level, were not in the scope of this document. Further analyses could explore these differences in more depth.

Interpretation notes

This section gives some key points for interpreting survey results. For more details about the survey methodology, see Appendix 1 or the methodology report (Ministry of Health 2012b).

Results are representative of the total child population

All results presented in this report are weighted so that they are representative of the total child population.

Percentages refer to unadjusted values

Any percentages given in the text refer to the **unadjusted prevalence** – that is, the percentage of children affected in the population group of interest.

Statistical significance

All differences reported in the text of this report are statistically significant unless noted otherwise.

Statistical significance is measured at the 5% significance level (that is, *p*-value less than 0.05). If needed, we carried out a statistical test (a '*t*-test') to confirm that the finding was statistically significant.

Rounding

In the main body of this report, percentages are rounded to whole numbers, except for low percentages. Estimated numbers of children affected are rounded to the nearest 1000 children. Unrounded values were used during calculations.

Data tables in Appendices 2 and 3 and the online data tables give prevalence estimates precise to one decimal place.

Survey results present associations, not cause-and-effect relationships

This survey presents a picture of the health of New Zealand children at one point in time. The survey can be used to look at associations between different factors, such as health status and neighbourhood deprivation. However, we cannot conclude that the survey results show cause-and-effect relationships between these factors, in part because we do not know which occurred first.

For example, if the survey finds that a particular condition is more common in children living in deprived areas, an association has been identified. This association does not necessarily mean the condition is caused by living in deprived areas.

Reliability of survey results

The survey results are likely to underestimate or overestimate some indicators due to the nature of self-reported information.

For example, many of the survey results are based on the assumption that primary caregivers can accurately recall previous events (such as a child's diagnosis by a doctor). Also, not all children with a particular condition will have had it diagnosed by a doctor. Caregivers may also tend to over-report those behaviours perceived as 'good' or under-report risk behaviours based on what they consider to be socially desirable. The amount of error will vary by indicator, depending on a number of factors.

Indicators about body size (such as obesity) are based on height and weight measurements taken by the interviewers rather than self-reported information. These results are more reliable than information based on self-reported information would have been.

What we present in this report

We based our comments in this report on the following information.

Time trends

- > The graphs show age-standardised prevalences.
- > Percentages in the text are unadjusted prevalences.
- > Any changes over time reported in the text are statistically significant using both age-standardised and unadjusted prevalence estimates, unless noted in the text.

Age group comparisons

- > The graphs show unadjusted prevalences.
- > Any comparisons reported between age groups have been tested for statistical significance (using a *t*-test).

Sex comparisons

- > Percentages noted in the text are unadjusted prevalences.
- > Comparisons reported in the text are based on adjusted rate ratios, which adjust for age.

Ethnic comparisons

- > The ethnicity tables present unadjusted prevalences, the estimated number of children affected in the population in each group, and adjusted rate ratios. The rate ratios allow us to compare each ethnic group with other children in the population.
- > Percentages in the text are unadjusted prevalences.
- > Comparisons reported in the text are based on adjusted rate ratios, which adjust for age (and sex if appropriate).

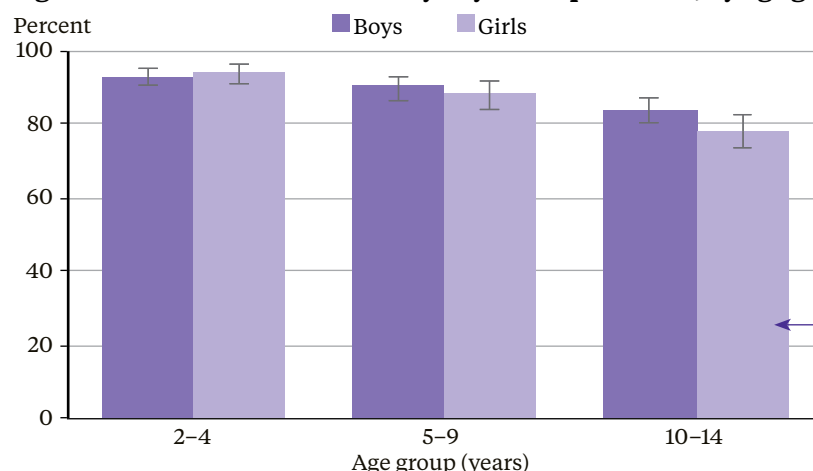
Neighbourhood deprivation comparisons

- > Percentages in the text are unadjusted prevalences.
- > The graphs show unadjusted prevalences.
- > Adjusted rate ratios are also reported in the text. These allow us to compare children in the most and least deprived areas, adjusting for age, sex and ethnic differences between these groups. These comparisons can be interpreted in the same way as adjusted rate ratios, but are based on the 'relative index of inequality', using data for all deprivation quintiles (see page 11 and Appendix 1 for more details).

Interpreting graphs

The following figure explains how to interpret the graphs in this report.

Figure X: Breakfast at home every day in the past week, by age group and sex



The caption describes what the figure is about.

Estimates are given for boys and girls. 95% confidence intervals are given as vertical lines, telling us the uncertainty in each estimate.

Source: 2011/12 New Zealand Health Survey (2-14 years)

The notes and source information provide important information, such as whether rates are age-standardised, the survey data presented, and the age of the children that the data relate to.

Interpreting the ethnicity data tables

The following diagram explains how to interpret the tables of results by ethnic group in this report.

These rows tell us the percentage (%) – and the estimated number of children – in each group who are affected. Ethnic groups are **total response**, so children are included in every ethnic group that they belong to.

This column tells us the estimated number of children affected, overall and in each ethnic group. The summed number across the ethnic groups may sum to more than the total number due to total response ethnicity.

Table X: Obesity, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	10	10	10	91,000
	Māori	17	19	14	38,000
	Pacific	23	23	24	33,000
	Asian	7	9	5	6,000
	European/Other	6	6	7	39,000
Adjusted rate ratios (comparing each ethnic group with people not in that ethnic group) ²	Māori	2.1*	2.8*	1.6*	
	Pacific	3.1*	3.0*	3.2*	
	Asian	0.7	0.9	0.5*	

Rate ratios above 1 show that the indicator is **more** likely in the group of interest than in the comparison group; rate ratios **below** 1 show the indicator is **less** likely. An asterisk (*) shows that the rate ratio is significant.

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1. Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.
2. Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (2-14 years)

These rows compare each ethnic group with other people (eg, Pacific boys vs non-Pacific boys). These comparisons adjust for differences in age structure between groups (and differences in sex structure for the total column).

Interpreting the neighbourhood deprivation results

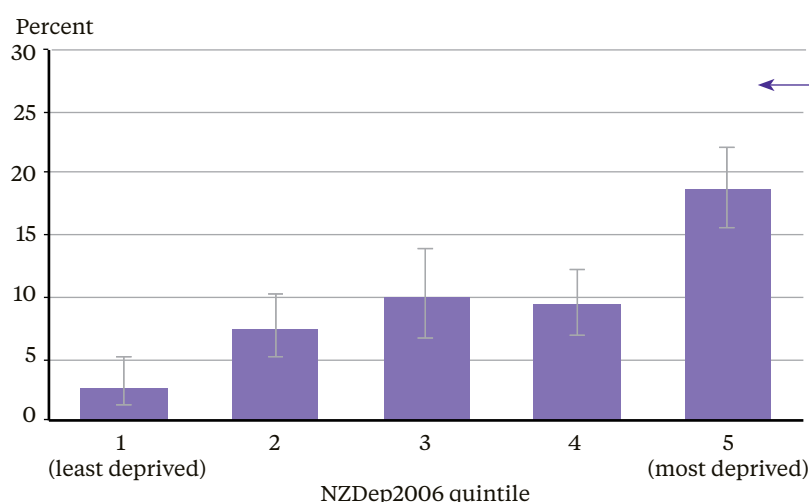
The following diagram explains how to interpret the results by neighbourhood deprivation in this report.

Obesity rates are higher in more deprived areas

The obesity rate was much higher among children living in the most deprived areas (19%) than among those living in the least deprived areas (3%).

The percentages presented in this paragraph are for children living in the least deprived and most deprived quintiles (quintiles 1 and 5), based on NZDep2006.

Figure Y: Obesity, by neighbourhood deprivation



Source: 2011/12 New Zealand Health Survey (2–14 years)

This graph presents the unadjusted rates (prevalence estimates) for children living in each NZDep2006 deprivation quintile.

After adjusting for age, sex and ethnic group, children living in the most deprived areas were 2.3 times as likely to be obese as children who live in the least deprived areas.

The ratio reported in this section gives a comparison by neighbourhood deprivation, after adjusting for age, sex and ethnic differences. This ratio can be interpreted in the same way as adjusted rate ratios in this report, although it is actually a 'relative index of inequality'. It uses adjusted data from all deprivation quintiles to create a best fit line, and then compares the estimated values for children at the minimum and maximum points on this deprivation scale (instead of simply comparing children living in quintiles 1 and 5).

Where you can find more survey results and information

You can find more information and results from the survey, including data tables, online at www.health.govt.nz

- > **A summary of key findings** is in the 'Summary and Conclusions' section at the end of this report.
- > **Adults' results** from the survey are available in the companion report, *The Health of New Zealand Adults 2011/12* (Ministry of Health 2012a).
- > **Brief summaries of results for Māori and Pacific children** will be made available online.
- > **Selected data tables** are available in Appendix 3. More extensive data tables can be found online.
- > **Technical information** about the survey are in Appendix 1. Detailed reports about the survey methodology (Ministry of Health 2012b) and the survey questionnaires are online.
- > **Regional results** from the survey will be available online in mid 2013.
- > **Further survey results** will be available online when they are published.
- > **Survey datasets** (microdata) will be available to researchers through Statistics New Zealand by mid 2013.

Glossary

Term	Description
95% confidence interval	Indicates the level of uncertainty of the value, due to taking a sample of the population. If we selected multiple samples, the 95% confidence interval is the range that would enclose the true population value 95% of the time.
Adjusted rate ratio	The ratio of two rates. It shows whether the outcome of interest is more likely (adjusted rate ratio greater than 1) or less likely (adjusted rate ratio less than 1) in the group of interest, compared with the reference group.
Adjusting	A statistical procedure used to control for any differences in age, sex and ethnic structures of populations being compared.
Age standardisation	A statistical procedure that standardises the age structures of different population groups so that they are comparable.
Confounding	Interference by a third variable that distorts the association between two variables. For example, age confounds the relationship between ethnicity and health outcomes, as some ethnic groups have a more youthful population.
Diagnosed	Having a condition identified by a doctor.
Least deprived	People living in NZDep2006 quintile 1 (the 20% least socioeconomically deprived small areas in New Zealand).
Most deprived	People living in NZDep2006 quintile 5 (the 20% most socioeconomically deprived small areas in New Zealand).
Neighbourhood deprivation	An area-based measure of socioeconomic position or deprivation.
NZDep2006	The New Zealand Index of Deprivation 2006. This is an area-based measure of neighbourhood socioeconomic deprivation.
Prevalence	A measure of the level of disease or outcome of interest in the population, at one point in time. Also referred to as a rate in this report.
Rate	In this report, a prevalence estimate.
Rate ratio	A comparison of two rates; for example, boys and girls.
Significant	In this report, statistically significant ; that is, the result is unlikely to happen by chance. In this report, statistical significance is reported at the 5% significance level (ie, <i>p</i> -value less than 0.05). Where appropriate, statistical testing (using a <i>t</i> -test) was carried out to determine significance.
Standardising	A statistical procedure that adjusts for differences between the populations being compared.
Statistically significant	Refers to results that are statistically significant at the 95% confidence level (<i>p</i> -value less than 0.05).
Total response ethnicity	A method of reporting ethnicity where children who belong to more than one ethnic group are counted once in each group reported. This means that the total number of responses for all ethnic groups can be greater than the total number of children.



Section 1: Health Behaviours and Risk Factors

Children's health and wellbeing can be affected by a range of factors.

This section focuses on selected behaviours and risk factors that can influence children's health – both now and in the future.

These indicators are the first introduction of solid food to infants, eating breakfast every day, television viewing and obesity.



Key findings

- **Fewer children are being given solid food before four months of age**

One in ten children (10%) was given solid food before four months of age, a decrease from 16% in 2006/07 (among children aged under five years).

- **Most children eat breakfast at home every day**

Although nine out of ten (87%) New Zealand children ate breakfast at home every day, some groups were less likely to do so, including older children (10–14 years), Māori and Pacific children, and children living in the most deprived areas. There was no change in the overall percentage of children who ate breakfast at home every day since 2006/07.

- **More than half of children watch two or more hours of television per day**

The percentage of children aged between 5–14 years watching two or more hours of television each day decreased from 57% in 2006/07 to 53% in 2011/12. The rate was higher for children aged 10–14 years, Māori and Pacific children and children living in the most deprived areas.

- **One in ten children aged 2–14 years is obese**

One in ten children (10%) was obese. Groups more likely to be obese included Māori and Pacific children, and children living in the most deprived areas. The obesity rate has increased from 8% in 2006/07.

Table 3: Summary of health behaviours and risk factors for children, 2011/12

Indicator	Percent	Estimated number	Time trends since 2006/07
Given solid food before four months ¹	10	30,000	▼ Decrease
Ate breakfast at home every day ²	87	664,000	≈ No change
Usually watched 2+ hours of television each day ²	53	406,000	▼ Decrease
Obesity ²	10	91,000	▲ Increase

Notes: ¹ Children aged 4 months–4 years. ² Children aged 2–14 years.

1.1 Introducing solid food before four months

One in ten children (10%) is given solid food before they are four months old. This percentage has fallen from 16% in 2006/07.

The Ministry of Health recommends that babies are exclusively breastfed until they are ready for and need extra food – at around six months of age (Ministry of Health 2008). Introducing solid food before four months of age may be associated with an increased risk of a number of health conditions such as eczema, asthma, food allergies, respiratory disease and gut infections.

Introducing solid food later than six months of age may be associated with an increased risk of iron deficiency, malnutrition and delays in oral motor development (Ministry of Health 2008).

Ministry of Health policy advice changed in 2008 to recommend exclusive breastfeeding until around the age of six months when solid food should be introduced. Before 2008 the Ministry of Health recommended exclusive breastfeeding until around four to six months of age and the introduction of solid food at around the same age.

The New Zealand Health Survey asked parents of children aged under five years at what age their child was first given solid food. The following analyses focus on the percentage of children aged under five (four months to four years) who were given solid food before four months of age.

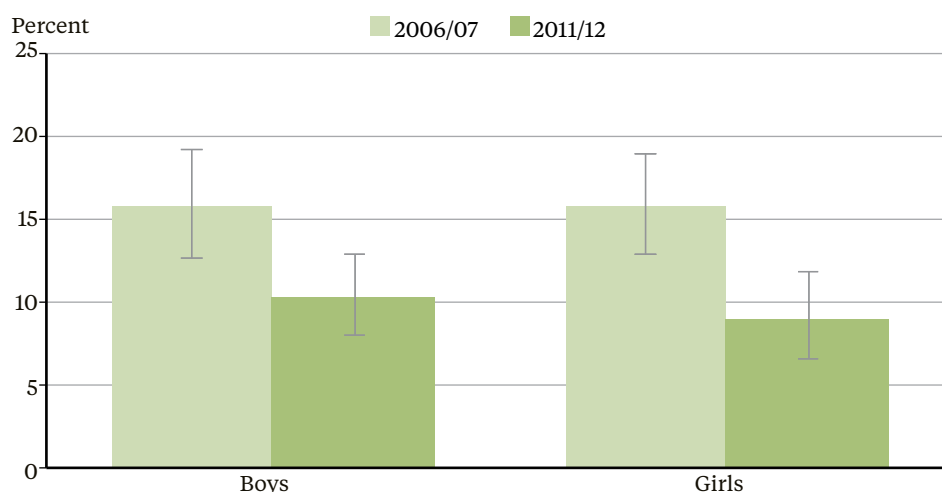
One in ten children under five starts on solid food before four months of age

One in ten children (10%) under five years had been given solid food before they were four months old. There was no difference between boys and girls.

Fewer children are starting on solid food before four months than in 2006/07

Since 2006/07 the percentage of children under five who were given solid food before the age of four months has fallen (from 16% to 10%). This rate fell for both boys and girls (Figure 1).

Figure 1: Given solid food before four months of age, by sex, 2006/07 and 2011/12



Source: 2006/07 and 2011/12 New Zealand Health Surveys (4 months–4 years)

Māori and Pacific children are more likely to be given solid food before four months

Sixteen percent of Māori children had been given solid food before four months of age (Table 4).

Table 4: Given solid food before four months of age, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	10	10	9	30,000
	Māori	16	16	15	14,000
	Pacific	14	15	13	8,000
	Asian	3	3	3	1,000
	European/Other	8	9	7	17,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	2.2*	2.0*	2.5*	
	Pacific	1.7*	1.6	1.7	
	Asian	0.3*	0.3*	0.3	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (4 months–4 years)

Pacific children were also more likely to have been given solid food before four months of age (14%) than non-Pacific children.

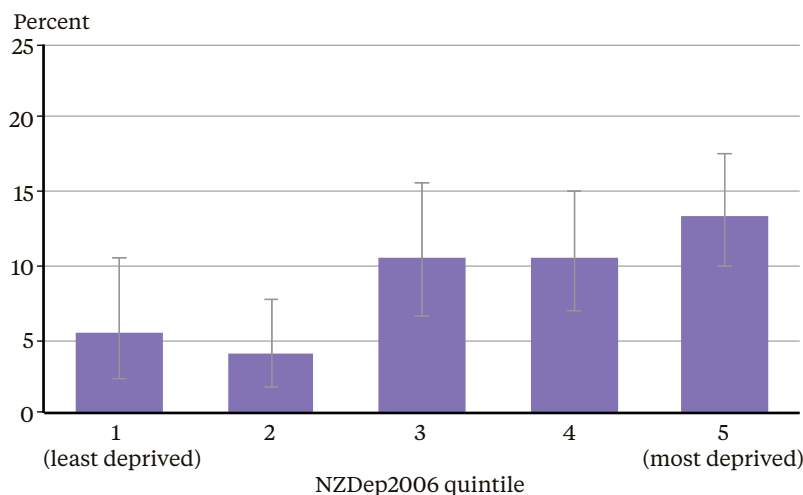
Asian children were less likely to have been given solid food before four months of age (3%) than other children.

The percentage of Māori children who were given solid food before four months of age has fallen from 22% in 2006/07 to 16% in 2011/12. There was also a drop for Asian children over this time, from 10% in 2006/07 to 3% in 2011/12. The decrease for Pacific children was not statistically significant.

One in eight children living in the most deprived neighbourhoods is given solid food before four months

Children living in the least deprived neighbourhoods were less likely to have been given solids before four months of age (5%) than children living in the most deprived areas (13%) (Figure 2). However, after adjusting for age, sex and ethnic group, this difference was not statistically significant.

Figure 2: Given solid food before four months of age, by neighbourhood deprivation



Source: 2011/12 New Zealand Health Survey (4 months–4 years)

Where can you go for more information?

You can find the data for the above indicator in Appendix 3 and the online data tables. Data for the following indicator are also available in the online data tables:

- > ever been breastfed (under five-year-olds).

What was the survey question?

The 2011/12 New Zealand Health Survey asked parents and caregivers of children aged under five (four months to four years) the following question:

- > At what age was [your child] first given solids?

1.2 Eating breakfast at home

Most New Zealand children eat breakfast at home every day. Some groups are less likely to do so, including those aged 10–14 years, Māori and Pacific children, and children living in the most deprived areas.

Eating breakfast at home every day is an indicator for good nutritional intake and healthy eating behaviours. Children who do not eat breakfast at home are more likely to eat snacks high in fat and/or sugar and are more likely to be overweight or obese (Utter et al 2007).

This indicator focuses on children aged 2–14 years who had eaten breakfast at home every day in the past week.

Nine in ten children eat breakfast at home every day

Nearly nine in ten children (87%) in New Zealand ate breakfast at home every day in the past week. There was no difference between boys and girls.

Breakfast habits have not changed since 2006/07

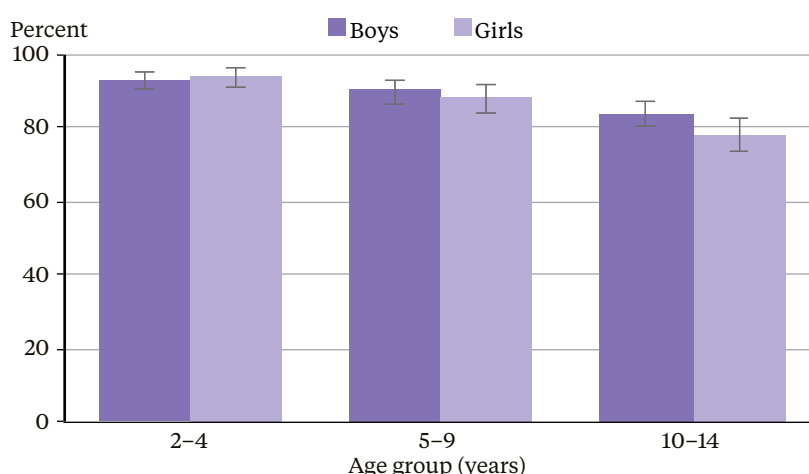
Since 2006/07 there has been no change in the percentage of children aged 2–14 years who ate breakfast at home every day in the past week.

Older children are less likely to eat breakfast at home every day

Only 81% of children aged 10–14 years ate breakfast at home every day in the past week compared with 94% of children aged 2–4 years.

Among those aged 10–14 years, girls were less likely to eat breakfast at home (78%) than boys (84%) (Figure 3).

Figure 3: Breakfast at home every day in the past week, by age group and sex



Source: 2011/12 New Zealand Health Survey (2–14 years)

Māori and Pacific children are less likely to eat breakfast at home every day

The percentage of Māori children (82%) and Pacific children (83%) who ate breakfast at home was lower than that for non-Māori and non-Pacific children respectively (Table 5).

Table 5: Breakfast at home every day in the past week, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	87	89	86	664,000
	Māori	82	83	82	154,000
	Pacific	83	85	80	99,000
	Asian	91	91	90	66,000
	European/Other	89	91	87	481,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	0.9*	0.9*	0.9*	
	Pacific	0.9*	0.9*	0.9*	
	Asian	1.0	1.0	1.0	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

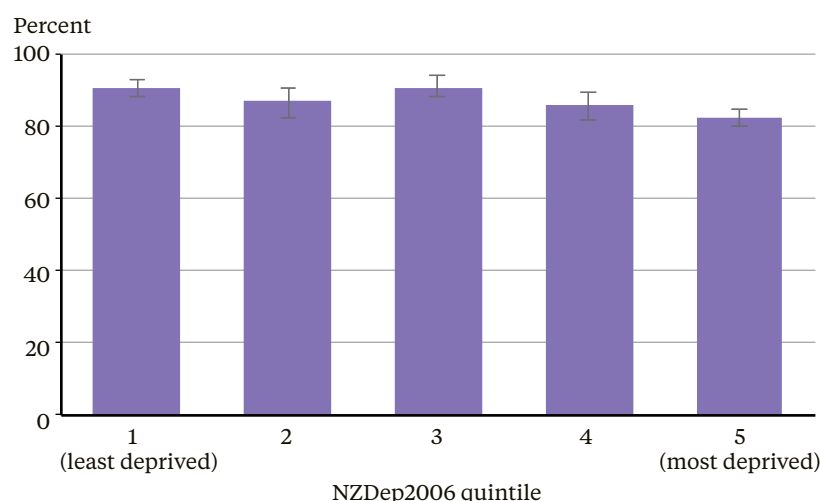
2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (2–14 years)

Children living in less deprived areas are more likely to eat breakfast at home

Children living in the least deprived areas were more likely to eat breakfast at home every day in the past week (91%) than children living in the most deprived areas (83%) (Figure 4).

Figure 4: Breakfast at home every day in the past week, by neighbourhood deprivation



Source: 2011/12 New Zealand Health Survey (2–14 years)

The association between neighbourhood deprivation and eating breakfast at home every day remained statistically significant after adjusting for age, sex and ethnic group.

Related child nutrition information

Fizzy drink intake

One in five children (20%) aged 2–14 years had a fizzy drink three or more times in the past week. The percentage has not changed for boys or girls since 2006/07.

Boys were more likely to have had three or more fizzy drinks in the past week than girls. In addition, older children (10–14 years) were more likely to have consumed three or more fizzy drinks in the past week (28%) than those aged 2–4 years (13%).

Māori, Pacific and Asian children were more likely to have had a fizzy drink three or more times in the past week than non-Māori, non-Pacific and non-Asian children respectively.

Children living in the most deprived areas were more likely to have had a fizzy drink three or more times in the past week (25%) than children living in the least deprived areas (15%). After adjusting for ethnic group, age and sex, children living in the most deprived areas were 1.8 times as likely to have had three or more fizzy drinks as children living in the least deprived areas.

Fast food intake

Seven percent of children aged 2–14 years ate fast food three or more times in the past week, with no changes since 2006/07.

Māori children were nearly twice as likely as non-Māori children to have eaten fast food three or more times in the past week. Pacific children were three times as likely to have eaten fast food more than three times in the past week as non-Pacific children.

Children living in the most deprived areas were more likely to have eaten fast food three or more times in the past week (12%) than children living in the least deprived areas (2%). After adjusting for ethnic group, age and sex, children living in the most deprived areas were 3.2 times as likely to have eaten fast food three or more times in the past week than children living in the least deprived areas.

Where can you go for more information?

You can find the data for the indicator ‘ate breakfast at home every day in the past week’ in Appendix 3 and in the online data tables. The online data tables also provide data for the following indicators:

- > had fizzy drink three or more times in the past week
- > ate fast food three or more times in the past week.

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents and caregivers of children aged 2–14 years the following questions:

- > Thinking back over the past seven days, on how many days did [your child] have breakfast at home? The analysis focused on those who answered ‘seven’ (every day).
- > In the past seven days, how many times did [your child] have a fizzy or soft drink such as cola or lemonade? The analysis focused on those who answered ‘three or more’.
- > In the past seven days, how many times did [your child] eat any food purchased from a fast food place or takeaway shop, such as fish and chips, burgers, fried chicken or pizza? The analysis focused on those who answered ‘three or more’.

1.3 Television watching

More than half of New Zealand children watch two or more hours of television each day. This figure is higher for those aged 10–14 years, Māori children and children living in the most deprived areas.

Watching television is a sedentary behaviour. It takes up time that could be spent being physically active. It is also associated with the consumption of high-energy food and drinks (Utter et al 2006).

New Zealand's physical activity guidelines recommend that children and young people (aged 5–18 years) spend no more than two hours in front of television, computers and games consoles per day (out of school time).

This indicator focuses on the percentage of children aged 2–14 years who watch two or more hours of television a day (averaged over a week). The survey did not ask about other screen time such as time in front of computers or games consoles. To compare changes over time, this report focuses on the 5–14 year age group, as data for this age group are available from 2006/07 onwards.

More than half of children watch two or more hours of television a day

More than half (53%) of all New Zealand children aged 2–14 years usually watched two or more hours of television each day.

Fewer children are watching two or more hours of television a day than in 2006/07

The percentage of children aged 5–14 years who watched two or more hours of television per day has decreased from 57% in 2006/07 to 53% in 2011/12. The decrease was statistically significant for boys but not girls (Figure 5).

Figure 5: Usually watched two or more hours of television per day (5–14 years), by sex, 2006/07 and 2011/12



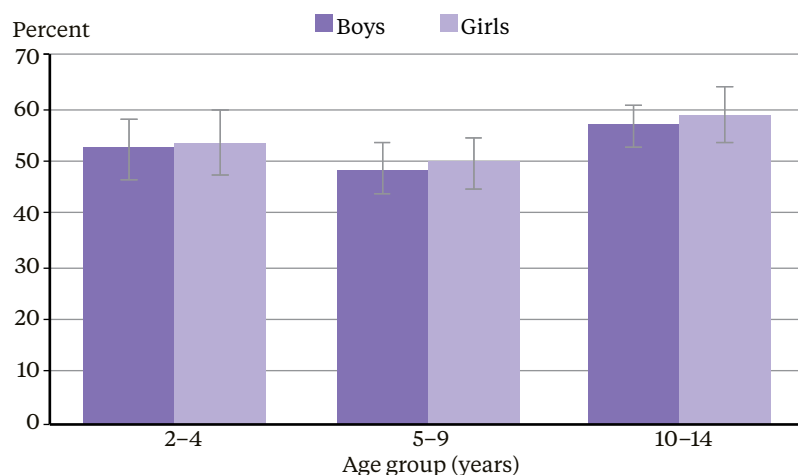
Note: Rates are age-standardised to the WHO world population.

Source: 2006/07 and 2011/12 New Zealand Health Surveys (5–14 years)

Older children are more likely to watch two or more hours of television a day

Children aged 10–14 years were more likely to watch two or more hours of television a day (58%) than children aged 5–9 years (49%). There was no difference by sex for any age group (Figure 6).

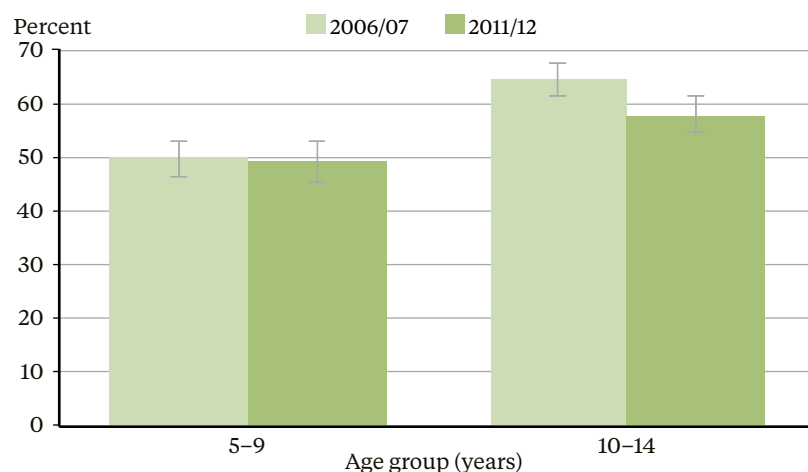
Figure 6: Usually watched two or more hours of television per day (2–14 years), by age group and sex



Source: 2011/12 New Zealand Health Survey (2–14 years)

Among children aged 10–14 years, the percentage who watched two or more hours of television a day fell from 2006/07 to 2011/12. There was no change for those aged 5–9 years (Figure 7).

Figure 7: Usually watched two or more hours of television per day, by age group, 2006/07 and 2011/12



Source: 2006/07 and 2011/12 New Zealand Health Surveys (5–14 years)

Māori children are more likely to watch two or more hours of television a day

Three out of five (62%) Māori children watched two or more hours of television a day (Table 6). For both Māori boys and girls, this rate was higher than for their non-Māori counterparts.

About 59% of Pacific children watched two or more hours of television a day, which was a higher rate than for non-Pacific children.

Table 6: Usually watched two or more hours of television per day (2–14 years), by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	53	53	54	406,000
	Māori	62	64	61	117,000
	Pacific	59	55	64	71,000
	Asian	50	53	47	36,000
	European/Other	51	50	51	275,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	1.2*	1.3*	1.2*	
	Pacific	1.1*	1.0	1.2*	
	Asian	0.9	1.0	0.9	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (2–14 years)

The percentage of Māori children aged 5–14 years who watched two or more hours of television a day decreased from 2006/07 to 2011/12. This decrease was statistically significant for Māori girls but not Māori boys (Figure 8).

Figure 8: Usually watched two or more hours of television (5–14 years), Māori boys and girls, 2006/07 and 2011/12



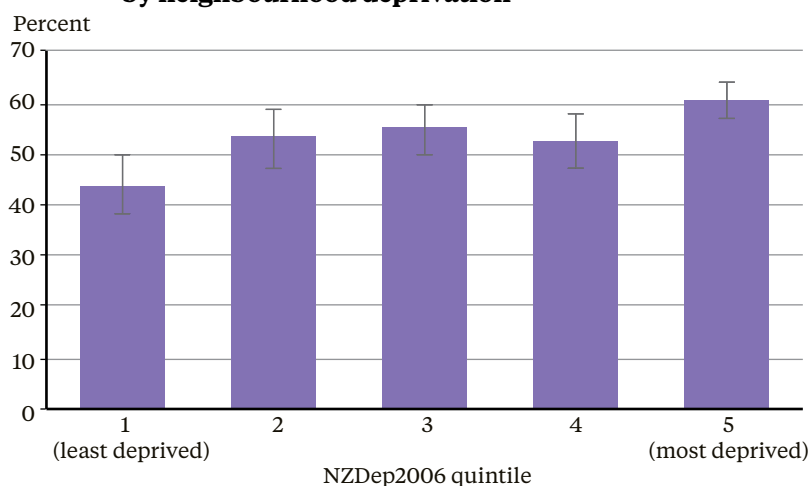
Note: Rates are age-standardised to the WHO world population.

Source: 2006/07 and 2011/12 New Zealand Health Surveys (5–14 years)

Three in five children living in the most deprived areas watch two or more hours of television per day

Children living in the most deprived areas were more likely to watch two or more hours of television per day (61%) than children living in the least deprived areas (44%).

Figure 9: Usually watched two or more hours of television (2–14 years), by neighbourhood deprivation



Source: 2011/12 New Zealand Health Survey (2–14 years)

After adjusting for differences in age, sex and ethnic group, children living in the most deprived areas were 1.2 times as likely to watch two or more hours of television per day as children living in the least deprived areas.

Use of active transport to get to and from school

Active transport (such as walking or biking) gives children of all physical abilities an opportunity to take part in some kind of physical activity. Almost half of children aged 5–14 years (47%) usually use active transport to get to and from school. This is about 275,000 children who walk, bike, skate or use another form of physical activity to get to and from school. This percentage has not changed since 2006/07.

Where can you go for more information?

You can find the data for the above indicator of ‘usually watched two or more hours of television per day’ in Appendix 3 and in the online data tables. The online data tables also provide data for the following indicator:

- > usually uses active transport (such as walking, biking or skating) to get to and from school.

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents and caregivers of children aged 2–14 years the following questions:

- > What is the average amount of time [your child] spends watching TV each weekday? This could be anywhere, not just in your home, and includes DVDs/videos but does not include games.
- > What is the average amount of time [your child] spends watching TV in the weekend? Again, this could be anywhere, not just in your home, and includes DVDs/videos but does not include games.

These questions were asked separately to help respondents recall the behaviour. Weekday and weekend data have been combined to produce an indicator for ‘usually watched two or more hours of television a day’ (averaged over a week).

1.4 Obesity

One in ten children is obese, which is more than in 2006/07. Māori and Pacific children and children living in the most deprived areas were more likely to be obese.

A healthy body size is important for good health and wellbeing. Overweight and obese children are more likely to be obese as adults. In addition, they are more likely to have abnormal cholesterol and blood pressure levels at a younger age than children who are within the normal weight range. Being overweight or obese in childhood is also associated with social and mental health problems, including low self-esteem.

To classify underweight, overweight and obesity in children aged 2–14 years, this report used body mass index (BMI) cut-off points developed by the International Obesity Taskforce. Survey interviewers measured the height and weight of participants aged 2–14 years, from which BMI could be calculated. To compare changes over time, this report includes rates for the 5–14 year age group, as data for this age group are available from 2002 onwards.

One in ten children is obese

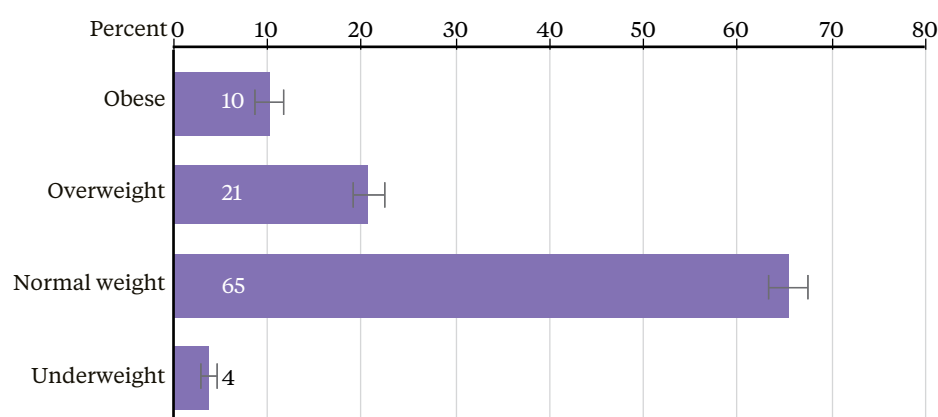
The majority (65%) of children aged 2–14 years were a normal weight (Figure 10).

Two in ten (21%) children were overweight but not obese. This represents about 184,000 children.

One in ten (10%) children was obese, representing about 91,000 children.

There was no difference in the overall rate of obesity between boys and girls.

Figure 10: Body size



Source: 2011/12 New Zealand Health Survey (2–14 years)

More children are obese now than in 2006/07

Since 2006/07 the obesity rate for children aged 2–14 years has increased from 8% to 10%. The increase was statistically significant for boys but not girls.

When comparing only children aged 5–14 years, the rate of obesity did not change from 2002 (9%) to 2006/07 (8%). However, there was then a statistically significant increase from 2006/07 to 2011/12 (11%).

Figure 11: Obesity, by sex (5–14 years), 2002–2011/12



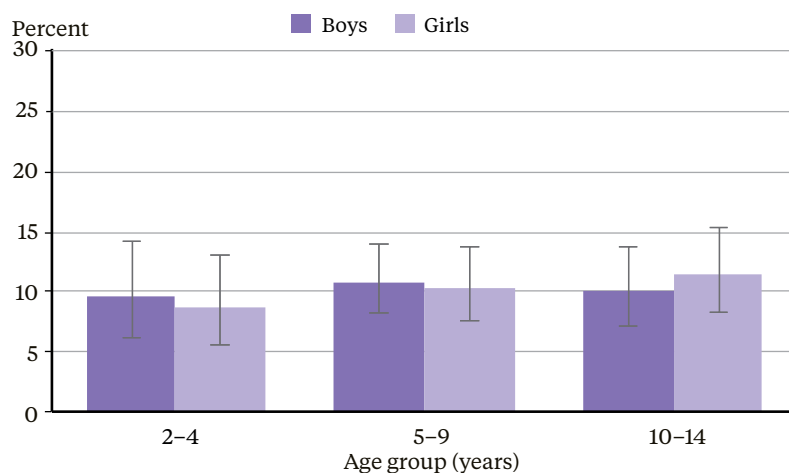
Notes: Rates are age-standardised to the WHO world population.

Source: New Zealand Health Surveys (2006/07 and 2011/12) and 2002 Children's Nutrition Survey

All age groups have similar levels of obesity

Obesity rates were similar across all age groups, at 9% for those aged 2–4 years and 11% for the two older age groups (Figure 12).

Figure 12: Obesity, by age group and sex



Source: 2011/12 New Zealand Health Survey (2–14 years)

Obesity rates continue to be higher among Māori and Pacific children

One in six Māori children (17%) was obese (Table 7). Adjusting for age and sex differences, Māori children were twice as likely to be obese as non-Māori children.

One in four Pacific children (23%) was obese. Pacific children were three times as likely to be obese as non-Pacific children, after adjusting for age and sex.

Table 7: Obesity, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	10	10	10	91,000
	Māori	17	19	14	38,000
	Pacific	23	23	24	33,000
	Asian	7	9	5	6,000
	European/Other	6	6	7	39,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	2.1*	2.8*	1.6*	
	Pacific	3.1*	3.0*	3.2*	
	Asian	0.7	0.9	0.5	

* Significant at the 5% level (for adjusted rate ratios).

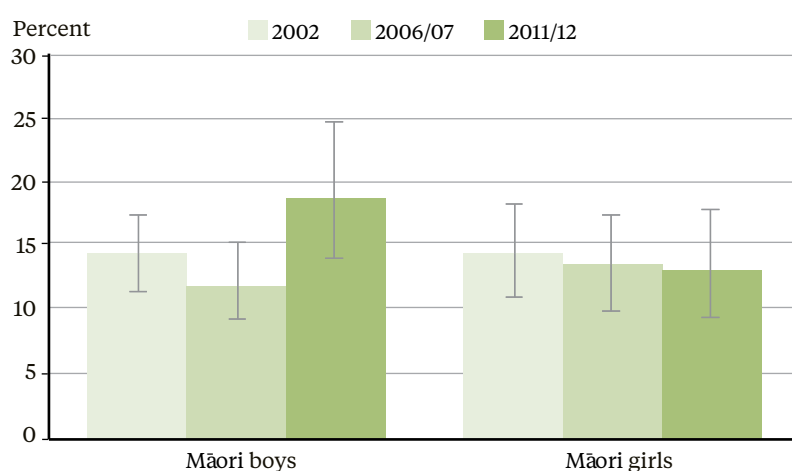
Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys and girls in each ethnic group with children, boys and girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (2–14 years)

For Māori boys aged 5–14 years, the obesity rate did not change from 2002 (14%) to 2006/07 (12%), but then it increased from 2006/07 to 2011/12 (19%) (Figure 13). There was no change over time for Māori girls.

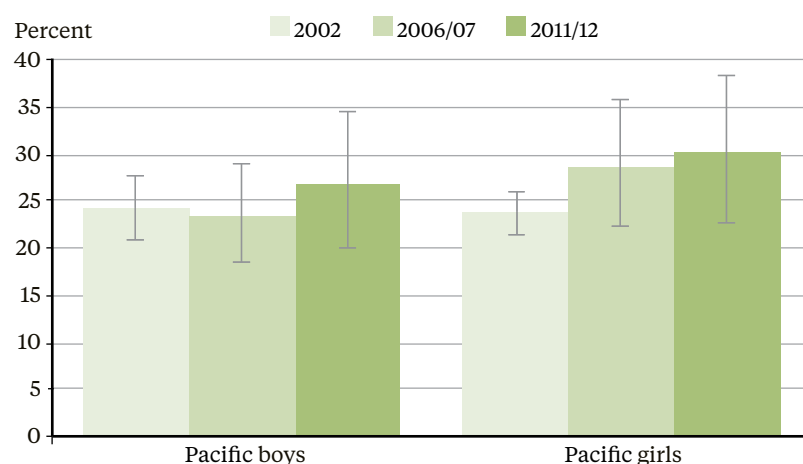
Figure 13: Obesity, Māori boys and girls (5–14 years), 2002–2011/12

Note: Rates are age-standardised to the WHO world population.

Source: New Zealand Health Surveys (2006/07 and 2011/12) and 2002 Children's Nutrition Survey

The observed increase in obesity rates over time for Pacific children was not statistically significant (Figure 14).

Figure 14: Obesity, Pacific boys and girls (5–14 years), 2002–2011/12



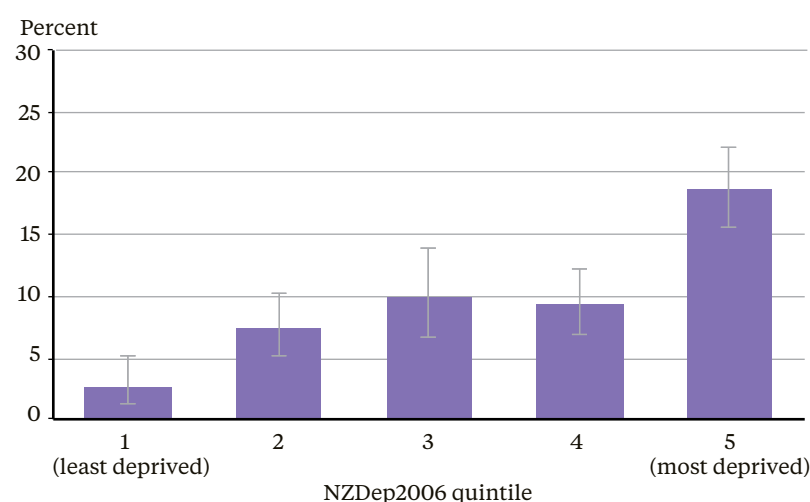
Note: Rates are age-standardised to the WHO world population.

Source: New Zealand Health Surveys (2006/07 and 2011/12) and 2002 Children's Nutrition Survey

Obesity rates are higher in more deprived areas

The obesity rate was much higher among children living in the most deprived areas (19%) than among those living in the least deprived areas (3%) (Figure 15).

Figure 15: Obesity, by neighbourhood deprivation



Source: 2011/12 New Zealand Health Survey (2–14 years)

After adjusting for age, sex and ethnic group, children living in the most deprived areas were 2.3 times as likely to be obese as children who live in the least deprived areas.

Where can you go for more information?

You can find the data for the indicator of obesity in Appendix 3 and in the online data tables. Data for all of the following indicators are also available in the online data tables:

- > overweight
- > normal weight
- > underweight
- > overweight or obese
- > mean BMI.

How did we measure obesity?

Obesity is measured using the body mass index. BMI is calculated by dividing weight in kilograms by the square of height in metres (kg/m^2). In the New Zealand Health Survey, BMI was calculated for survey respondents using measured height and weight.

For adults aged 18 years and over, **obesity** is defined as a BMI of 30 or over, **overweight** is a BMI of 25.0–29.9, **normal range** is a BMI of 18.5–24.9 and **underweight** is a BMI of less than 18.5. These categories are based on the World Health Organization's BMI cut-off points for adults aged 18 years and over (WHO 2007). For survey respondents aged 2–17 years, the age- and sex-specific BMI cut-off points developed by the International Obesity Taskforce (IOTF) were used to classify underweight, normal range, overweight and obesity (Cole et al 2000; Cole et al 2007). These BMI cut-offs were designed to coincide with the adult cut-offs at 18 years.

These BMI cut-off points identify populations at increased risk of health conditions associated with excess body fat. For all populations, the risk of these health conditions begins at a BMI in the normal range (below 25) and increases with increasing BMI.



Section 2: Health Status and Conditions

This section focuses on the general health status of children. It also presents information on two childhood conditions: asthma and mental health issues.



Key findings

- **Parents rate their children's health highly**

Almost all children (98%) were in good health according to their parents.

- **Asthma affects one in seven children**

One in seven children (14%) was taking medication for asthma. Rates were higher among boys, Māori children and children living in the most deprived areas.

- **Diagnosed emotional or behavioural problems have increased**

The proportion of children diagnosed with emotional or behavioural problems has increased. However, the prevalence remains low.

Table 8: Summary of health status and conditions for children, 2011/12

Indicator	Percent	Estimated number	Time trends since 2006/07
Excellent, very good or good parent-rated health ¹	98	874,000	≈ No change
Medicated asthma ²	14	107,000	≈ No change
Diagnosed emotional or behavioural problems ²	3	25,000	▲ Increase

Notes: ¹ Children aged 0–14 years. ² Children aged 2–14 years.

2.1 Parent-rated child health status

Almost all (98%) children are in good health according to their parents.

The parents of all children participating in the New Zealand Health Survey were asked whether they considered their child's health to be 'excellent, very good, good, fair or poor'.

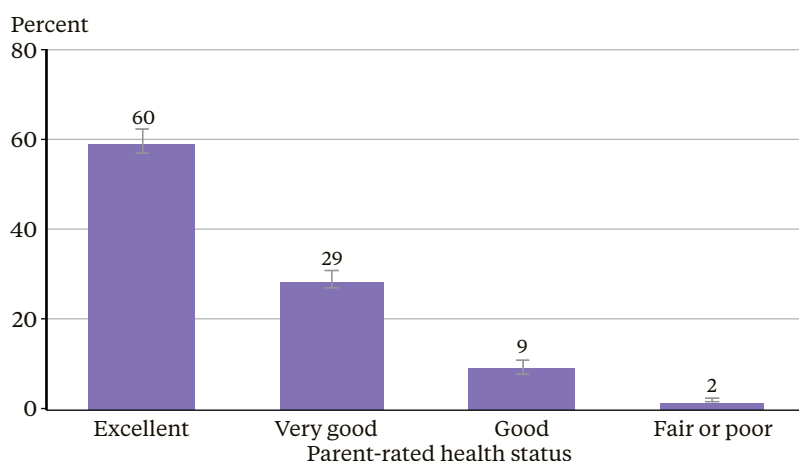
In this report, **being in good health** refers to having excellent, very good or good health as rated by the child's parent.

Nearly all parents consider their child to be in good health

Over half (60%) of parents considered their child to be in excellent health (Figure 16). Nearly a third (29%) rated their child's health as very good and 9% rated it as good. Only 2% of parents rated their child's health as fair or poor.

Parent-rated health status was the same for boys and girls.

Figure 16: Parent-rated health



Source: 2011/12 New Zealand Health Survey (0–14 years)

Parent-rated health status has not changed since 2006/07

In the past five years, the percentage of parents who considered their child to be in good health has not changed.

Parent-rated health status is similar for all age groups and all ethnic groups

The percentage of children considered to be in good health was similar across all age groups and ethnic groups (Table 9).

Table 9: Excellent, very good or good health, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	98	97	98	874,000
	Māori	97	97	97	223,000
	Pacific	98	97	99	140,000
	Asian	98	99	97	86,000
	European/Other	98	97	98	617,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	0.98	0.99	0.98*	
	Pacific	1.00	1.00	1.01	
	Asian	1.00	1.02	0.99	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (0–14 years)

Neighbourhood deprivation is not associated with parent-rated health

Parents living in the most deprived areas were slightly less likely to consider their child to be in good health (98%) than parents living in the least deprived areas (99%).

However, after adjusting for differences in age, sex and ethnic group, there was no association between neighbourhood deprivation and parent-rated health.

Fair or poor parent-rated health is rare

Only 2% of parents considered their child's health to be fair or poor. However, Māori children were 1.8 times more likely to have fair or poor parent-rated health than non-Māori children.

Where can you go for more information?

You can find the data for the indicator 'excellent, very good or good health (parent-rated)' in Appendix 3. Data for the following indicators are available in the online data tables:

- > excellent or very good parent-rated health
- > fair or poor parent-rated health
- > individual parent-rated health categories (excellent, very good, good, fair, poor).

What was the survey question?

The New Zealand Health Survey asked parents or caregivers:

- > This question is about [your child's] general health. In general, would you say [your child's] health is excellent, very good, good, fair or poor?

2.2 Asthma

One in seven children takes medication for asthma. Rates are higher among boys, Māori children and children living in the most deprived areas.

People with asthma have over-sensitive airways that react to triggers that do not affect other people. A person's asthma triggers cause their airways to tighten, partially close up, swell inside, and make more mucus. This makes it hard for the person to breathe in and even harder to breathe out. Most asthma attacks are short-lived, lasting minutes to hours, with complete recovery after the attack.

About half of people with asthma develop it before the age of 10 years, and most develop it before the age of 40 years.

This report focuses on children aged 2–14 years who have been told by a doctor that they have asthma and who currently take medication (inhalers, aerosols or tablets) for it. Medication can be taken daily to prevent symptoms or only when needed to relieve symptoms. This definition excludes children who may have been diagnosed with asthma in the past but who no longer experience symptoms or take asthma medication.

Asthma affects one in seven children

One in seven children (14%) takes medication for asthma. This represents an estimated 107,000 children (aged 2–14 years) living with asthma in New Zealand.

Boys were more likely to take medication for asthma (16%) than girls (12%).

Levels of asthma have not changed since 2006/07

The proportion of children taking medications for asthma has not changed from 2006/07 to 2011/12.

Asthma is more common among Māori children

Māori children were 1.5 times as likely to take medication for asthma as non-Māori children. About 22% of Māori boys and 16% of Māori girls were currently taking medication for asthma (Table 10).

Table 10: Medicated asthma, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	14	16	12	107,000
	Māori	19	22	16	36,000
	Pacific	14	15	12	16,000
	Asian	11	14	8	8,000
	European/Other	14	16	12	75,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	1.5*	1.5*	1.6*	
	Pacific	1.0	0.9	1.0	
	Asian	0.8	0.8	0.7	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

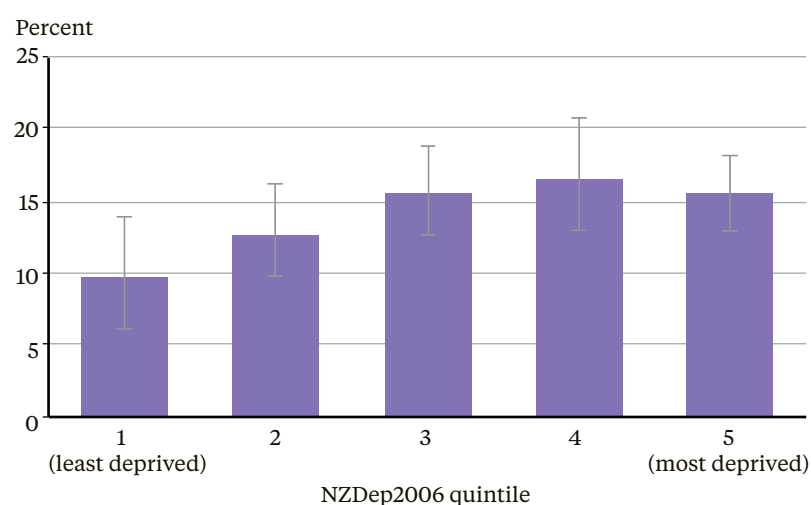
1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (2–14 years)

Asthma is more prevalent in the most deprived areas

Children living in the most deprived areas were more likely to take medication for asthma (15%) than children living in the least deprived areas (10%) (Figure 17).

Figure 17: Medicated asthma by neighbourhood deprivation

Source: 2011/12 New Zealand Health Survey (2–14 years)

After adjusting for age, sex and ethnic group, children living in the most deprived areas were 1.5 times as likely to have medicated asthma as children living in the least deprived areas.

Where can you go for more information?

You can find the data for the above indicator in Appendix 3 and in the online data tables.

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents and caregivers of children aged 2–14 years:

- > Have you ever been told by a doctor that [your child] has asthma?
- > What treatments does [your child] now have for asthma? No treatment; inhalers; medicine; tablets and pills; or other?

2.3 Mental health

The proportion of children diagnosed with emotional and behavioural problems has increased. However, the prevalence remains low.

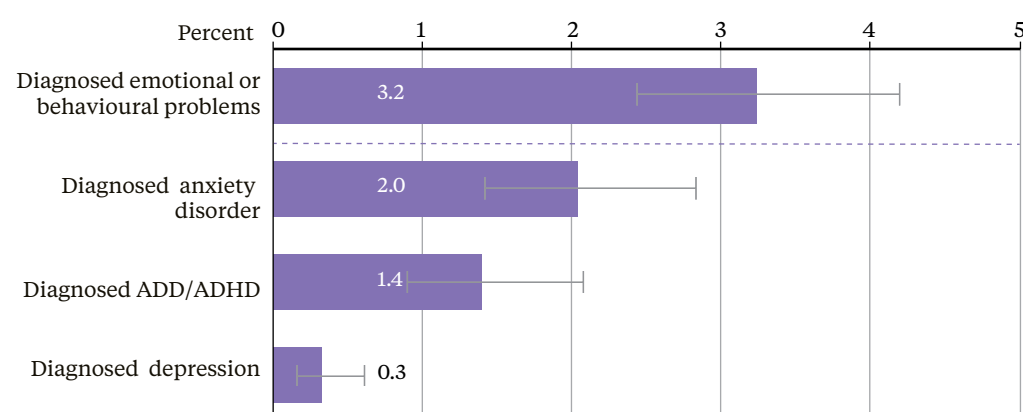
Among those children diagnosed with mental illness, depression, anxiety disorders and behavioural problems are most common. Anxiety disorders include general anxiety disorder, panic disorder, phobias, obsessive compulsive disorder, acute stress disorder and post-traumatic stress disorder. Cognitive behavioural therapy and other psychotherapy, as well as medication, may be used to treat mood and anxiety disorders and behavioural problems in children.

In this report, **diagnosed emotional and behavioural problems** means those children who have been told by a doctor at some time in their life that they had depression, anxiety disorder, attention deficit disorder (ADD) and/or attention deficit and hyperactivity disorder (ADHD). The following analyses refer to children aged 2–14 years.

Diagnosed mental health problems in children are uncommon

A small percentage (3.2%) of New Zealand children had been diagnosed with emotional or behavioural problems (about 25,000 children) (Figure 18). The most common diagnosis was for anxiety disorder (2.0%), followed by ADD/ADHD (1.4%) and depression (0.3%).

Figure 18: Diagnosed emotional or behavioural problems



Note: Respondents could choose multiple responses.

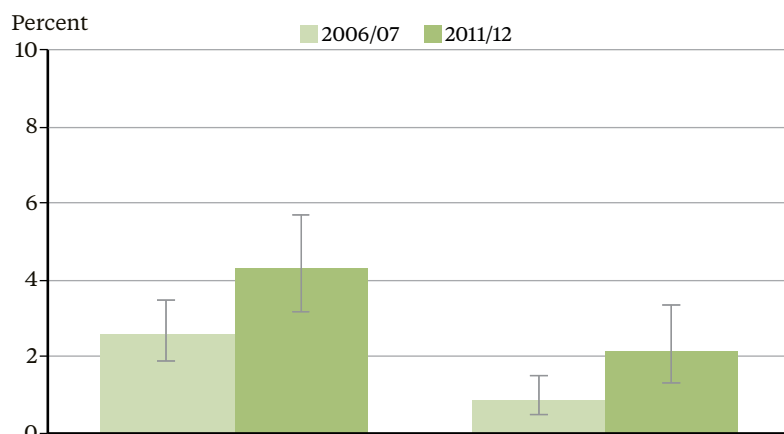
Source: 2011/12 New Zealand Health Survey (2–14 years)

Diagnosed mental health problems among children have increased

The percentage of children aged 2–14 years with diagnosed emotional or behavioural problems has increased from 1.8% in 2006/07 to 3.2% in 2011/12. The main reason for this increase was an increase in diagnosed anxiety disorder.

The increase was statistically significant for both boys and girls (Figure 19), and for younger children (aged 2–4 years) and older children (aged 10–14 years).

Figure 19: Diagnosed emotional or behavioural problems, by sex, 2006/07 and 2011/12



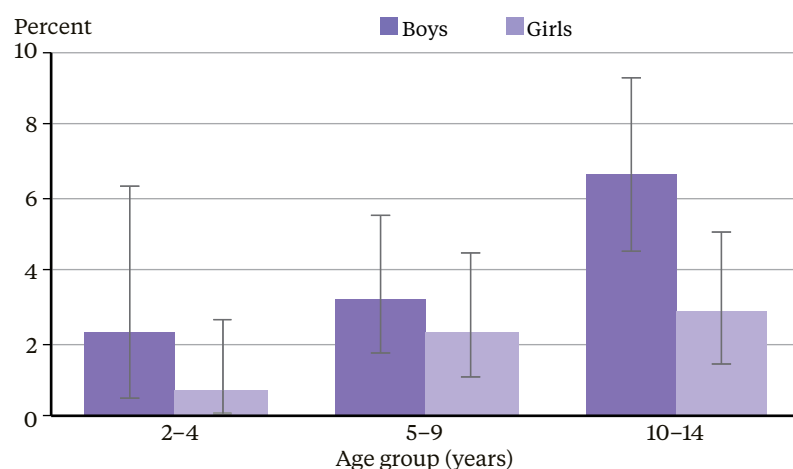
Note: Rates are age-standardised to the WHO world population.

Source: 2006/07 and 2011/12 New Zealand Health Surveys (2–14 years)

Boys are more likely to be diagnosed with mental health problems

Boys were twice as likely to be diagnosed with emotional or behavioural problems as girls, after adjusting for age. Boys aged 10–14 years had the highest percentage of diagnosed emotional and behavioural problems (6.6%) (Figure 20).

Figure 20: Diagnosed emotional or behavioural problems, by age group and sex



Source: 2011/12 New Zealand Health Survey (2–14 years)

Pacific and Asian children are less likely to be diagnosed with mental health problems

Diagnosed emotional and behavioural problems were less common among Pacific and Asian children than among non-Pacific and non-Asian children respectively (Table 11).

Table 11: Diagnosed emotional and behavioural problems, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	3.2	4.3	2.1	25,000
	Māori	3.2	4.3	2.0	6,000
	Pacific	1.6	2.3	0.9	2,000
	Asian	0.7	1.3	0.0	<1,000
	European/Other	3.9	5.1	2.6	21,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	1.0	1.0	0.9	
	Pacific	0.5*	0.5	0.4	
	Asian	0.2*	0.3	–	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group. The adjusted rate ratio for Asian girls was suppressed due to low numbers

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (2–14 years)

Diagnosed mental health problems are not related to deprivation

There was no statistically significant association between neighbourhood deprivation and the prevalence of diagnosed emotional and behavioural problems in children.

Where can you go for more information?

You can find the data for the indicator ‘diagnosed depression, anxiety disorder and/or ADD/ADHD’ in Appendix 3 and in the online data tables. Data for all the following indicators are available in the online data tables:

- > diagnosed depression
- > diagnosed anxiety disorder
- > diagnosed ADD/ADHD.

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents and caregivers of children aged 2–14 years the following questions:

- > Have you ever been told by a doctor that [your child] has depression?
- > Have you ever been told by a doctor that [your child] has an anxiety disorder? This includes panic attack, phobia, post-traumatic stress disorder and obsessive compulsive disorder.
- > Have you ever been told by a doctor that [your child] has attention deficit disorder (ADD) or attention deficit and hyperactivity disorder (ADHD)?

The analysis focuses on children who had been told by a doctor during their lifetime that they had one or more of the emotional or behavioural problems mentioned above.



Section 3: Use of Primary Health Care

Primary health care is the professional health care that people receive in the community, and is usually people's first point of contact with the health care system.

General practitioners (GPs) and practice nurses are a central component of primary health care services in New Zealand. Their work includes preventing, diagnosing and treating health problems.

This section focuses on the percentage of children aged 0–14 years who have visited a GP, practice nurse or after-hours medical centre in the past year.



Key findings

- **Three in four children have visited a GP in the past year**

Among children aged under six years, the percentage whose last GP visit (in any setting) was free increased from 67% in 2006/07 to 83% in 2011/12.

One in four children had visited a practice nurse in the past year without seeing a GP at the same visit.

One in five children had visited an after-hours medical centre in the past year.

Table 12: Summary of primary health care use for children aged 0–14 years, 2011/12

Indicator (in past 12 months)	Percent	Estimated number	Time trends since 2006/07
Visited a GP	74	658,000	▼ Decrease
Visited a practice nurse (without seeing a GP at the same visit)	26	233,000	▲ Increase
Visited an after-hours medical centre	22	193,000	Not collected in 2006/07

3.1 Visited a GP in the past 12 months

Three in four children have visited a GP in the past 12 months.
More children under six years have had a free GP visit.

General practitioners, or family doctors, are the first point of contact with the health care system for most people. GPs usually work in general practices or medical centres, alongside practice nurses and other health professionals.

Along with practice nurses, GPs are an integral part of primary health care in New Zealand. Their work includes preventing, diagnosing and treating health problems. GPs, along with nurses and other health professionals who are suitably qualified, can also refer people to specialist health services if needed.

Access to primary health care is particularly important for young children. The government provides funding to encourage practices to offer free GP consultations for children under six years of age.

This indicator reports on the percentage of children aged 0–14 years who had visited a GP in the past 12 months. For age group analyses, children aged 0–5 years have been grouped together to reflect the higher level of subsidies in place for this age group.

Three in four children have visited a GP in the past 12 months

In 2011/12 three in four (74%) children aged 0–14 years had visited a GP in the past 12 months. This is nearly 660,000 children.

Boys and girls were equally likely to have visited a GP in the past 12 months.

Fewer children have visited a GP compared with 2006/07

The percentage of children who had visited a GP in the past 12 months fell from 79% in 2006/07 to 74% in 2011/12. The percentage decreased for both boys and girls (Figure 21).

Figure 21: Visited a GP in the past 12 months, by sex, 2006/07 and 2011/12



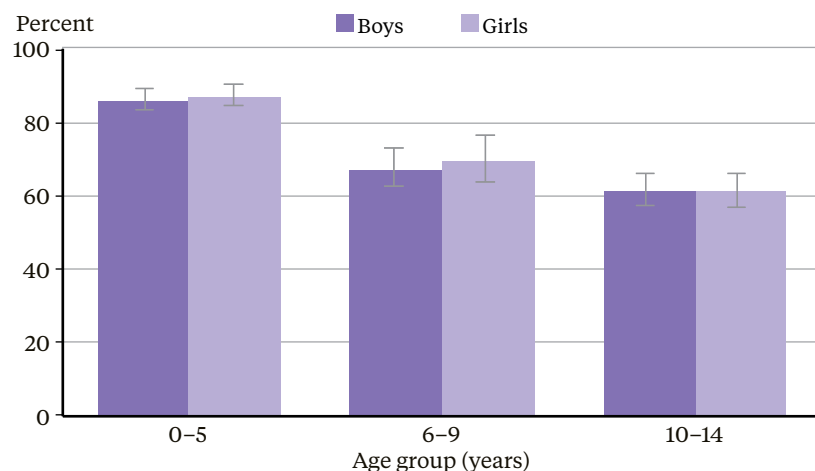
Note: Rates are age-standardised to the WHO world population.

Source: 2006/07 and 2011/12 New Zealand Health Surveys (0–14 years)

Younger children are more likely to have visited a GP

Children younger than six years were more likely to have visited a GP in the past 12 months than older children (Figure 22).

Figure 22: Visited a GP in the past 12 months, by age group and sex

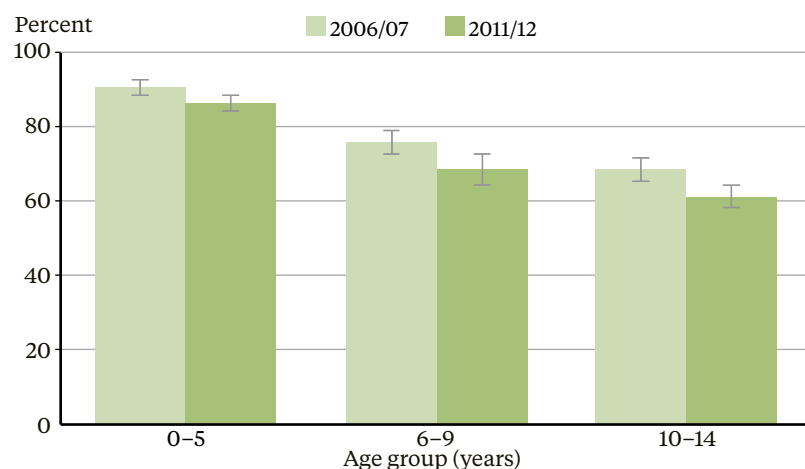


Source: 2011/12 New Zealand Health Survey (0–14 years)

Decline in GP visits across all age groups

The percentage of children who had visited a GP in the past 12 months has decreased across all age groups since 2006/07 (Figure 23).

Figure 23: Visited a GP in the past 12 months, by age group, 2006/07 and 2011/12



Source: 2006/07 and 2011/12 New Zealand Health Surveys (0–14 years)

Few differences linked to ethnic groups

Pacific children were more likely to have visited a GP in the past 12 months than non-Pacific children (Table 13). There were no other significant differences in the rate of GP visits by ethnic group.

Table 13: Visited a GP in the past 12 months, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	74	73	74	658,000
	Māori	74	73	74	170,000
	Pacific	78	78	78	111,000
	Asian	74	76	71	65,000
	European/Other	74	73	75	465,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	1.0	1.0	1.0	
	Pacific	1.1*	1.1	1.1	
	Asian	1.0	1.0	0.9	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (0–14 years)

Since 2006/07 the percentage of Māori and Pacific children who had visited a GP in the past 12 months has fallen, similar to the decrease for all children.

The rate of GP visits is similar for children living in more and less deprived areas

About 73% of children living in the most deprived areas had visited a GP in the past year, compared with 69% of children in the least deprived areas.

After adjusting for age, sex and ethnic group, this difference was not statistically significant.

Free GP visits

Among children who had visited a GP in the past year (at a GP clinic, medical centre or family practice), over half (55%) had no charge for their last visit. Of those visits where there was a charge, the average cost was \$21 (as reported by parents).

The percentage of children aged under six years who had no charge for their last GP visit (in any setting) has increased substantially from 67% in 2006/07 to 83% in 2011/12. There was little change over time for other age groups.

Where can you go for more information?

You can find the data for the indicator ‘visited a GP in the last 12 months’ in Appendix 3 and in the online data tables. Data for the following indicators are also available in the online data tables:

- > cost of last GP visit
- > last GP visit at a GP clinic, medical centre or family practice was free
- > last GP visit (in any setting) was free.

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents or caregivers of children aged 0–14 years:

These next questions are about seeing general practitioners (GPs) or family doctors. This can be at your child's usual medical centre or somewhere else.

- > In the past 12 months, has [your child] seen a GP, or been visited by a GP, about his/her own health? By health, I mean mental and emotional health as well as physical health.

The average cost presented is for the child's last visit to a GP, medical centre or family doctor (but not student health or after-hours centres). This analysis is among children who had visited a GP in the last 12 months and their last visit was at a GP clinic, medical centre or family centre. The survey asked the following questions:

- > Thinking back to the last time [your child's] saw a GP about his/her own health, what type of medical centre was it? A GP clinic, medical centre or family practice; an after-hours or an Accident and Medical Centre – not an Emergency Department at a public hospital; other.
- > Thinking about [your child's] last visit to a GP, what were you charged for that visit?

3.2 Visited a practice nurse in the past 12 months

One in four children has visited a practice nurse without seeing a GP at the same time in the past year. The majority of these visits were free.

Practice nurses (also called **primary health care nurses**) are registered nurses with knowledge and expertise in primary health care practice. They are a key part of the primary health care team.

Practice nurses focus on health promotion, disease prevention, wellness, first-point-of-contact care and disease management across the lifespan. They run screening and preventative programmes, such as immunisations, and have an important role around care coordination for patients and their families.

This indicator focuses on whether children had visited a practice nurse in the past 12 months without seeing a GP at the same visit.

One in four children has visited a practice nurse (without seeing a GP at the same time) in the past year

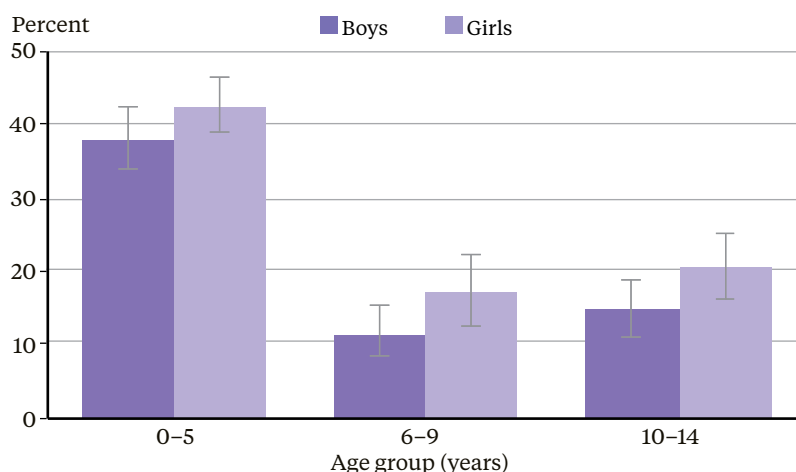
One in four children aged 0–14 years (26%) had visited a practice nurse in the past 12 months without seeing a GP at the same time. This represents about 233,000 children.

Girls were more likely to have seen a practice nurse in the past 12 months (29%) than boys (24%).

Children younger than six years were much more likely than older children to have visited a practice nurse in the past year (Figure 24). This finding may relate to the five routine immunisations that are scheduled between birth and four years of age, which are usually given by practice nurses.

Figure 24: Visited a practice nurse (without seeing a GP at the same time) in the past 12 months, by age group and sex

Source: 2011/12 New Zealand Health Survey (0–14 years)



More girls have visited a practice nurse than in 2006/07

Since 2006/07 the percentage of girls who visited a practice nurse in the past year has increased (Figure 25).

Figure 25: Visited a practice nurse (without seeing a GP at the same time) in the past 12 months, by sex, 2006/07 and 2011/12



Note: Rates are age-standardised to the WHO world population.

Source: 2006/07 and 2011/12 New Zealand Health Surveys (0–14 years)

Māori and Pacific children are less likely to visit a practice nurse

Māori and Pacific children were less likely to have visited a practice nurse in the past 12 months than other children.

Only 14% of Pacific boys had visited a practice nurse in the past 12 months, compared with 24% of all boys (Table 14).

Table 14: Visited a practice nurse (without seeing a GP at the same time) in the past 12 months, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	26	24	29	233,000
	Māori	24	22	26	55,000
	Pacific	18	14	22	26,000
	Asian	23	19	27	20,000
	European/Other	29	27	32	184,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	0.8*	0.8	0.8	
	Pacific	0.6*	0.5*	0.7*	
	Asian	0.8	0.7	0.9	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys and girls in each ethnic group with children, boys and girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (0–14 years)

One in five children in the most deprived areas has visited a practice nurse

About 22% of children living in the most deprived areas had visited a practice nurse, compared with 28% of children in the least deprived areas.

After adjusting for age, sex and ethnic group, there was no statistically significant association between neighbourhood deprivation and visits to a practice nurse.

Free practice nurse visits

For most children who had visited a practice nurse in the past year (87%), the visit was free. Children aged under six years had the highest percentage of free visits to a practice nurse (96%). This result may be because the majority of these visits are likely to be for routine immunisations, which are free.

Where can you go for more information?

You can find the data for the indicator ‘visited a practice nurse (without seeing GP at the same time) in past 12 months’ in Appendix 3 and in the online data tables. Data for the following indicators are also available in the online data tables:

- > cost of last practice nurse visit
- > last visit to a practice nurse was free.

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents or caregivers of children aged 0–14 years:

The next few questions are about nurses who work at GP clinics and medical centres. These nurses are sometimes called Practice Nurses or Primary Health Care Nurses. This does not include nurses that may have visited [your child] at home or school, and does not include nurses [your child] may have seen in a hospital, or midwives and dental nurses.

- > In the past 12 months, has [your child] seen a Practice Nurse without seeing a GP at the same visit or appointment?
- > What were you charged the last time [your child] saw the Practice Nurse without seeing a GP at the same visit?

3.3 Visited an after-hours medical centre in the past year

One in five children has visited an after-hours medical centre in the past year.

After-hours medical centres provide health care outside of normal primary care hours. Their hours of service include nights, weekends and public holidays, when most GP clinics and medical centres are closed. It is important that children can access health care in a timely way before a condition becomes severe. If they get early care, they are less likely to need to visit an emergency department or be admitted to hospital.

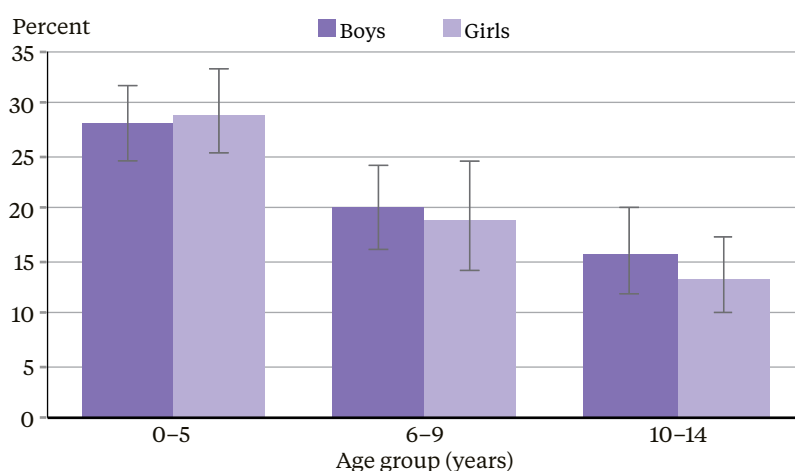
This indicator focuses on whether children had visited an after-hours medical centre in the past 12 months.

One in five children has visited an after-hours medical centre in the past year

In 2011/12 one in five children aged 0–14 years (22%) had visited an after-hours medical centre in the past 12 months. This is about 193,000 children. There were no differences between boys and girls.

Younger children aged 0–5 years were most likely to have visited an after-hours medical centre in the past 12 months (29%) (Figure 26).

Figure 26: Visited an after-hours medical centre in the past 12 months, by sex and age group



Source: 2011/12 New Zealand Health Survey (0–14 years)

Asian children are less likely to have visited an after-hours medical centre in the past year

Compared with other children, Asian children were less likely to have visited an after-hours medical centre in the past 12 months (18% for Asian children compared with 22% for all children) (Table 15). Otherwise, the proportion of children who visited an after-hours medical centre in the past year was similar across ethnic groups.

Table 15: Visited an after-hours medical centre in the past 12 months, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	22	22	21	193,000
	Māori	21	21	21	48,000
	Pacific	22	26	19	32,000
	Asian	18	17	18	16,000
	European/Other	23	24	23	148,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	0.9	0.9	0.9	
	Pacific	1.0	1.2	0.9	
	Asian	0.8*	0.7	0.8	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

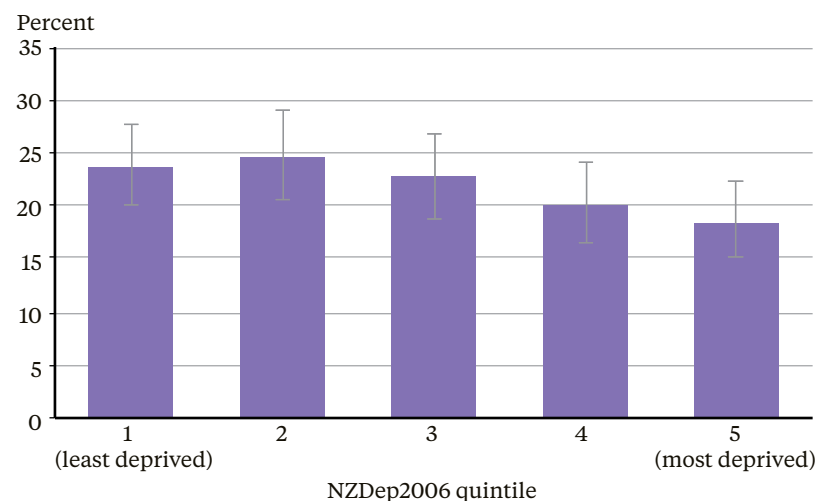
1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (0–14 years)

Children in less deprived areas are more likely to have visited after-hours in the past 12 months

About 24% of children in the least deprived areas had visited an after-hours medical centre in the past 12 months, compared with 18% of children in the most deprived areas (Figure 27).

Figure 27: Visited an after-hours medical centre in the past 12 months, by neighbourhood deprivation

Source: 2011/12 New Zealand Health Survey (0–14 years)

Adjusting for differences by age, sex and ethnic group, children living in the least deprived areas were 1.7 times as likely to have visited an after-hours medical centre in the past 12 months as children living in the most deprived areas.

Free after-hours visits

For about a quarter (27%) of those children who had visited an after-hours medical centre in the past year, the visit was free. Children aged under six years were the age group most likely to have had a free after-hours visit (37%). On 1 July 2012 funding to encourage free access to after-

hours services for children aged under six was introduced. This report covers the 12-month period prior to this change, but it will be possible to measure any effect of this new policy in future analyses.

Where can you go for more information?

You can find the data for the indicator 'visited an after-hours medical centre in the past year' in Appendix 3 and the online data tables. Data for the following indicators are also available in the online data tables:

- > cost of last after-hours visit
- > last visit to an after-hours medical centre was free.

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents or caregivers of children aged 0–14 years:

- > In the past 12 months, how many times has [your child] gone to an after-hours medical centre about his/her own health? Do not include visits to an emergency department at a public hospital.
- > What were you charged for [your child's] last after-hours visit?

This is the first year that these questions have been asked in the survey, so no time trends are available.



Section 4: Barriers to Accessing Health Care

Primary health care services, including GP clinics and medical centres, are one of the main places where children's health needs are met.

Children need to be able to access primary health care to get treatment for a health condition before it becomes more severe. If there is a delay in seeking medical help, the condition may worsen and the child may need to go to hospital. Primary health care services also provide treatment for accidents and injuries.

This section focuses on a number of indicators about barriers to accessing primary health care in New Zealand. It is not possible to present time trends for these indicators, as this is the first time the survey has asked directly about them.



Key findings

- **Most children were able to access primary health care when they needed to**
 - > However, about 20% of children had an unmet need for primary health care in the past 12 months, which is about 180,000 children.
 - > The most common cause of this unmet need was that children were unable to get an appointment at their usual medical centre within 24 hours (14% of children).
 - > Parents of younger children and parents of Māori children were more likely to be unable to get an appointment for their child within 24 hours.
 - > For about 5% of children, cost prevented them from visiting a GP when they needed to in the past 12 months.
 - > For about 5% of children, cost prevented them from visiting an after-hours service when they needed to in the past 12 months.
 - > About 7% of children had a prescription that was not collected for them due to the cost in the past 12 months. Rates were higher for Māori and Pacific children and for children living in more deprived areas.

Table 16: Summary of barriers to health care for children aged 0–14 years, 2011/12

Indicator (in past 12 months)	Percent	Estimated number
Experienced unmet need for primary health care ¹	20	180,000
Unable to get appointment at usual medical centre within 24 hours	14	118,000
Unmet need for GP services due to cost	5	44,000
Unmet need for after-hours services due to cost	5	43,000
Unfilled prescription due to cost	7	61,000

¹ Experienced any of the following at some time in the past 12 months: unable to get an appointment at their usual medical centre within 24 hours; unmet need for GP services due to cost, lack of transport or lack of child care; unmet need for after-hours services due to cost or lack of transport.

4.1 Unmet need for primary health care

Most children were able to access primary health care when they needed to.

However, one in five children has had a need for primary health care that was not met in the past year. The most common reason for their unmet need was that they were unable to get an appointment within 24 hours.

Barriers to accessing health care can occur for a number of reasons. For example, a person may be unable to get an appointment soon enough, may not have enough money to pay for an appointment at a medical centre or may not have the transport to get there.

This indicator gives a broad picture of children who had experienced any **unmet need for primary health care** in the past 12 months. These children experienced one or more of the following in the past 12 months:

- > unable to get an appointment at their usual medical centre within 24 hours
- > unmet need for GP services due to cost
- > unmet need for after-hours services due to cost
- > unmet need for GP services due to lack of transport
- > unmet need for after-hours services due to lack of transport
- > unmet need for GP services due to lack of child care.

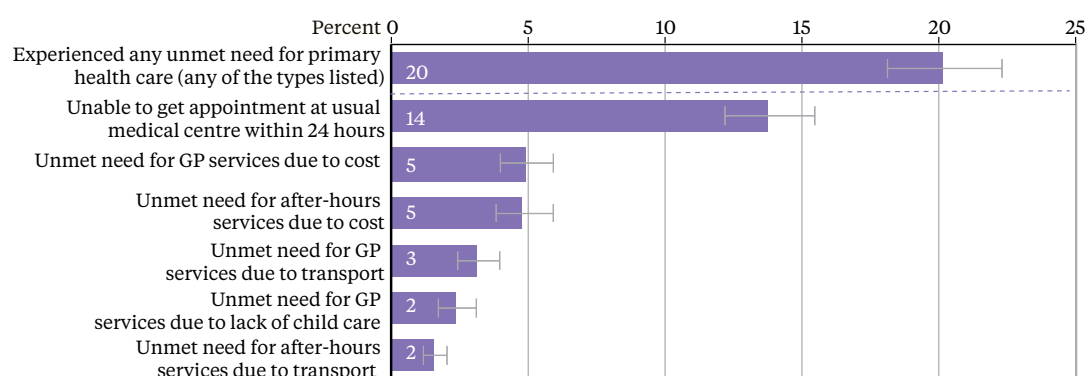
Some of the more common types of unmet need are discussed in more detail later in this section. Time trends are not available for any of the unmet need indicators as the 2011/12 survey was the first time the New Zealand Health Survey asked directly about them.

Most children were able to access primary health care when they needed to

In 2011/12 one in five (20%) children aged 0–14 years had experienced unmet need for primary health care in the past 12 months. This is about 180,000 children.

The main cause of unmet need was that children were unable to get an appointment at their usual medical centre within 24 hours (Figure 28).

Figure 28: Unmet need for primary health care in the past 12 months, by type



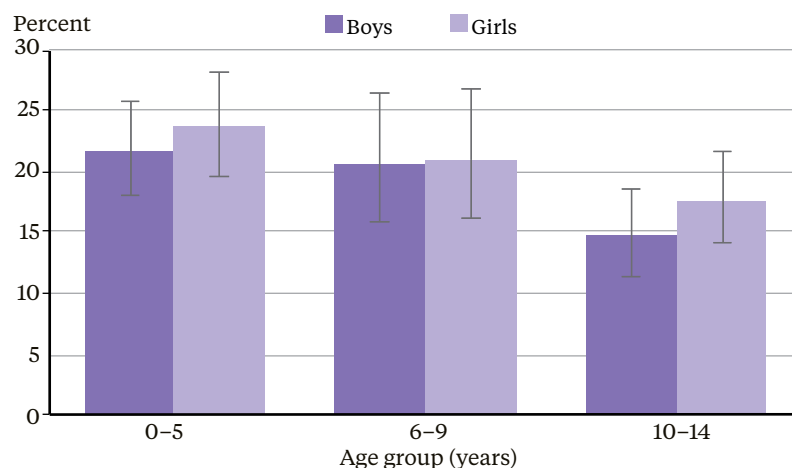
Note: Parents could report multiple types of unmet need.

Source: 2011/12 New Zealand Health Survey (0–14 years)

Levels of unmet need for primary health care were similar for boys and girls

Older children (10–14 years) were less likely to have experienced unmet need for primary health care in the past 12 months than younger children (0–5 and 6–9 years) (Figure 29).

Figure 29: Unmet need for primary health care in the past 12 months, by sex and age group



Note: Unmet need includes any of the following in the past 12 months: being unable to get an appointment at their usual medical centre within 24 hours; unmet need for GP services due to cost, lack of transport and/or lack of child care; and unmet need for after-hours services due to cost and/or lack of transport.

Source: 2011/12 New Zealand Health Survey (0–14 years)

Levels of unmet need were higher for Māori and Pacific children

Māori and Pacific children were more likely to have experienced unmet need for primary health care.

About 28% of Māori children had experienced unmet need for primary health care in the past 12 months (Table 17). This rate was about 1.6 times as high as the rate for non-Māori children, after adjusting for age and sex differences.

Similarly about 26% of Pacific children had experienced unmet need for primary health care in the past 12 months. Overall, Pacific children were 1.4 times as likely as non-Pacific children to have unmet need.

Rates of unmet need were lower among Asian children (14%).

Table 17: Unmet need for primary health care in the past 12 months, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	20	19	21	180,000
	Māori	28	29	27	65,000
	Pacific	26	26	27	38,000
	Asian	14	16	12	13,000
	European/Other	19	17	20	118,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	1.6*	1.8*	1.4*	
	Pacific	1.4*	1.4*	1.4*	
	Asian	0.7*	0.8	0.5*	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group. Unmet need includes any of the following in the past 12 months: being unable to get an appointment at their usual medical centre within 24 hours; unmet need for GP services due to cost, lack of transport and/or lack of child care; and unmet need for after-hours services due to cost and/or lack of transport.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (0–14 years)

One in four children in the most deprived areas experienced unmet need

About 23% of children in the most deprived areas had experienced unmet need in the past 12 months, compared with 15% of children in the least deprived areas.

However, after adjusting for sex, age and ethnic group, there were no differences in unmet need for primary health care linked to neighbourhood deprivation.

Comparison with results for adults

The adult population had similar patterns of unmet need for primary health care (experienced by one in four adults). However, cost was less likely to prevent children from visiting a GP in the past year (5%) compared with adults (14%).

Where can you go for more information?

You can find the data for the following indicators in Appendix 3 and the online data tables:

- > unmet need for primary health care
- > unable to get appointment at usual medical centre within 24 hours of wanting one
- > unmet need for GP services due to cost
- > unmet need for after-hours services due to cost.

Data for the following indicators are also available in the online data tables:

- > unmet need for GP services due to lack of transport
- > unmet need for GP services due to lack of child care
- > unmet need for after-hours services due to transport.

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents or caregivers of children aged 0–14 years:

- > In the last 12 months, has there been a time when you wanted [your child] to see a GP, nurse or other healthcare worker at his/her usual medical centre within the next 24 hours, but he/she was unable to be seen?
- > In the past 12 months, was there a time when [your child] had a medical problem but did not visit a GP because of cost?
- > In the past 12 months, was there a time when [your child] had a medical problem but did not visit a GP because you had no transport to get there?
- > In the past 12 months, was there a time when [your child] had a medical problem but did not visit a GP because you could not arrange childcare for other children?
- > In the past 12 months, was there a time when [your child] had a medical problem outside regular office hours but you did not take him/her to an after-hours medical centre because of cost?
- > In the past 12 months, was there a time when [your child] had a medical problem outside regular office hours but you did not take him/her to an after-hours medical centre because you had no transport to get there?

In this report, **unmet need for primary health care** means that the parent or caregiver reported that the child had experienced any one or more of the above barriers in the past 12 months. The overall measure, **unmet need for primary health care**, may be an underestimate of all barriers if children experience some other barriers that are not captured here.

4.2 Unable to get appointment at usual medical centre within 24 hours

One in seven children has been unable to get an appointment at their usual medical centre within 24 hours at some time in the past 12 months.

Timely access to health care is important. If someone cannot get an appointment promptly when they ask for one, they face an important barrier to accessing health care.

Parents were asked whether there had been a time in the past 12 months when they wanted their child to see a GP, nurse or other health care worker at their usual medical centre within the next 24 hours, but this had not been possible. Possible reasons for this unmet need included that there were no appointments available, that the times offered did not suit, or that the appointment was with a doctor they didn't want to see.

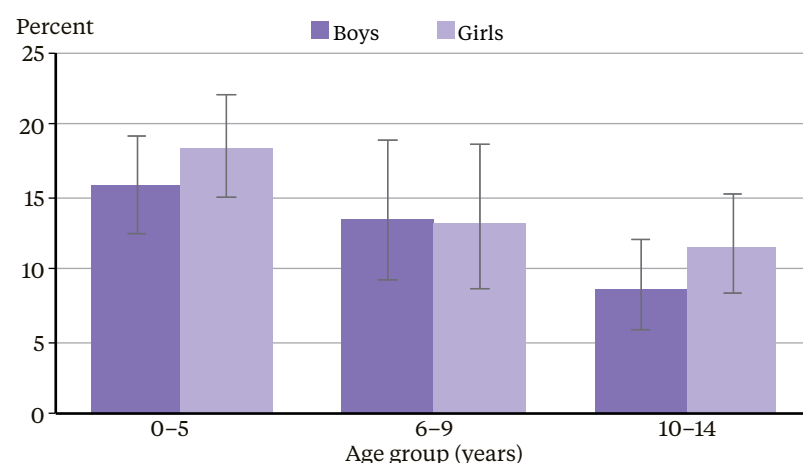
One in seven children was unable to get an appointment at their usual medical centre within 24 hours

In 2011/12 the parents of one in seven children (14%) were unable to get an appointment for their child at their usual medical centre within 24 hours, at some point in the past 12 months. This is about 118,000 children. There was no difference between boys and girls.

Parents of younger children were more likely to be unable to get an appointment

Parents of younger children aged 0–5 years were more likely to be unable to get an appointment for their child within 24 hours than parents of older children (Figure 30).

Figure 30: Unable to get an appointment at usual medical centre within 24 hours in past 12 months, by sex and age group



Source: 2011/12 New Zealand Health Survey (0–14 years)

Difficulties getting an appointment were more common for parents of Māori children

The parents of Māori children were more likely to be unable to get an appointment for their child within 24 hours (Table 18). After adjusting for age and sex, the parents of Māori children were 1.4 times as likely to experience this barrier as parents of other children.

Table 18: Unable to get an appointment at usual medical centre within 24 hours in past 12 months, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	14	13	15	118,000
	Māori	18	17	18	39,000
	Pacific	16	17	16	22,000
	Asian	12	14	10	10,000
	European/Other	13	12	15	82,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	1.4*	1.5*	1.3	
	Pacific	1.2	1.3	1.1	
	Asian	0.9	1.1	0.7	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (0–14 years)

No difference by neighbourhood deprivation

The proportions of parents of children living in the least deprived areas (11%) and of those in the most deprived areas (14%) who were unable to get an appointment for their child within 24 hours were not significantly different.

Where can you go for more information?

You can find the data for the above indicator in Appendix 3 and in the online data tables.

What was the survey question?

The 2011/12 New Zealand Health Survey asked parents or caregivers of children aged 0–14 years:

- > In the last 12 months, has there been a time when you wanted [your child] to see a GP, nurse or other healthcare worker at his/her usual medical centre within the next 24 hours, but he/she was unable to be seen?

4.3 Unmet need for GP services due to cost

About 44,000 – one in twenty – children have been unable to access GP services at some time in the past year due to cost.

A general practice or medical clinic is often the first place people go to when they are unwell and need help, except in emergencies.

All New Zealanders are eligible for reduced health care costs when they go to their regular practice. Most general practices offer free GP consultations for children under six years. However, cost may still be a barrier to accessing primary health care.

This indicator focuses on whether there was a time in the past 12 months when children had a medical problem but did not visit a GP because of cost. Time trends are not reported because the wording of this question has changed since 2006/07.

About 5% of children have experienced cost barriers in the past 12 months

One in twenty children (4.9%) had been unable to see a GP due to cost at some time in the past 12 months. This is about 44,000 children.

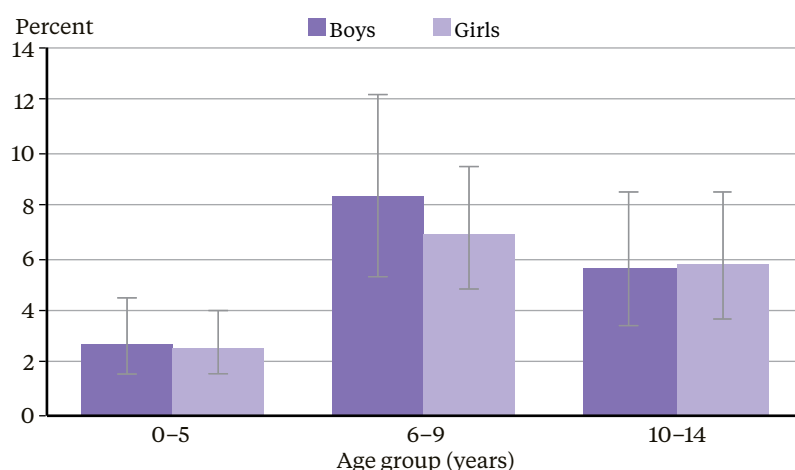
The rates for boys and girls were similar.

Older children were more likely to have experienced cost barriers

Older children (6–9 years and 10–14 years) were more likely to have been unable to see a GP at some time in the past 12 months due to cost (Figure 31).

Very few younger children (0–5 years) had experienced this cost barrier. This finding is likely to reflect the higher subsidies for children in this age group.

Figure 31: Unmet need for GP services due to cost in the past 12 months, by age group and sex



Source: 2011/12 New Zealand Health Survey (0–14 years)

Cost was more likely to prevent Māori and Pacific children from seeing a GP

Māori children were more likely to have experienced cost barriers to seeing a GP at some time in the past 12 months (8%) than other children (Table 19).

Overall, Māori children were 2.3 times as likely to have been unable to visit a GP at some time in the past 12 months due to cost as non-Māori children, after adjusting for age and sex.

About 7% of Pacific children had not visited a GP when they had a medical problem at some time in the past 12 months due to cost. Pacific children were 1.5 times as likely to have experienced this cost barrier as non-Pacific children.

Table 19: Unmet need for GP services due to cost in the past 12 months, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	4.9	5.1	4.7	44,000
	Māori	8.1	8.4	7.9	19,000
	Pacific	6.8	7.1	6.5	10,000
	Asian	2.5	2.3	2.7	2,000
	European/Other	4.2	4.6	3.9	27,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	2.3*	2.3*	2.3*	
	Pacific	1.5*	1.6	1.5	
	Asian	0.5	0.5	0.6	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (0–14 years)

No differences were linked to neighbourhood deprivation

Overall, cost had prevented 7% of children living in the most deprived areas from seeing a GP at some time in the past 12 months, compared with 3% of children in the least deprived areas.

However, these differences were not significant, after adjusting for age, sex and ethnic group.

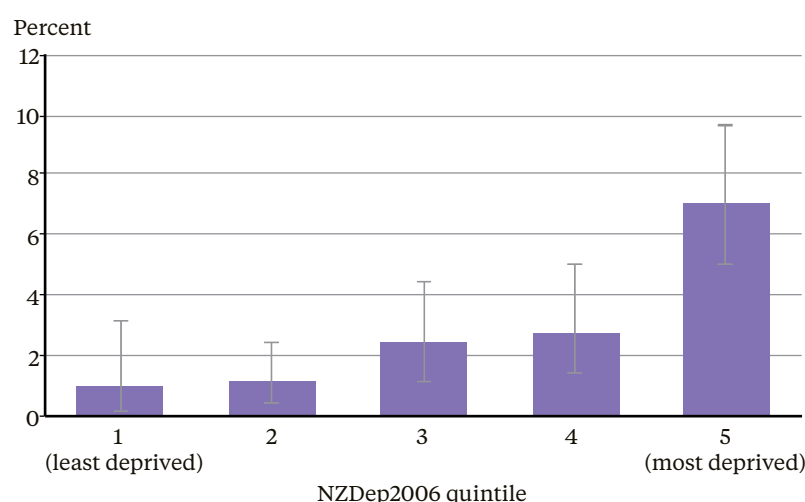
Other reasons for unmet need for a GP include having no transport to get there and having no child care

About 3.2% of children were unable to see a GP when they needed to at some time in the last year because they did not have the transport to get there. This is about 28,000 children.

Lack of transport had prevented about 6.1% of Māori children and 7.5% of Pacific children from seeing a GP at some time in the past year. Māori children were 2.8 times as likely as non-Māori children, and Pacific children were 3.2 times as likely as non-Pacific children, to have experienced this barrier.

Children living in the most deprived areas were much more likely to have been unable to see a GP due to lack of transport at some time in the past year (7%), compared with children in the least deprived areas (1%) (Figure 32). Children in the most deprived areas were 4.8 times as likely to have been unable to see a GP for this reason as children in the least deprived areas, after adjusting for age, sex and ethnic group.

Figure 32: Unmet need for GP services due to lack of transport in the past 12 months, by neighbourhood deprivation



Source: 2011/12 New Zealand Health Survey (0–14 years)

Additionally the parents of some (2.3%) children reported that their child had been unable to see a GP when they needed to at some time in the past 12 months due to a lack of child care. This is about 21,000 children.

Where can you go for more information?

You can find the data for the indicator ‘unmet need for GP services due to cost’ in Appendix 3 and the online data tables. Data for the following indicators are also available in the online data tables:

- > unmet need for GP services due to lack of transport
- > unmet need for GP services due to lack of child care.

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents or caregivers of children aged 0–14 years:

- > In the past 12 months, was there a time when [your child] had a medical problem but did not visit a GP because of cost?
- > In the past 12 months, was there a time when [your child] had a medical problem but did not visit a GP because you had no transport to get there?
- > In the past 12 months, was there a time when [your child] had a medical problem but did not visit a GP because you could not arrange childcare for other children?

4.4 Unmet need for after-hours services due to cost

One in twenty children (about 43,000) had not used after-hours services when needed at some time in the past year due to cost.

After-hours medical centres provide health care outside of normal primary care hours. Their hours include nights, weekends and public holidays, when most GP clinics and medical centres are closed.

One barrier to visiting after-hours medical centres is the cost. In New Zealand, most young children have access to free after-hours health care, and the fees for older children are usually reduced. However, accident and medical care provided after regular hours is often more expensive than that during regular hours.

This indicator focuses on whether there was a time in the past 12 months when children had a medical problem outside regular office hours but did not visit an after-hours medical centre because of cost. It was not possible to present time trends as this is the first time the New Zealand Health Survey has asked this question.

A small number of children had an unmet need for after-hours services due to cost in the past 12 months

In 2011/12 about 5% of children aged 0–14 years needed after-hours services but were unable to access them due to the cost at some time in the past 12 months. This is about 43,000 children.

The rates did not differ between boys and girls or between different age groups.

Cost barriers to after-hours services were more likely for Māori and Pacific children

While the overall rates of unmet need for after-hours services were relatively low for children, rates were higher for Māori and Pacific children.

Overall, cost had prevented 9% of Māori children from using after-hours services when they needed to at some time in the past 12 months (Table 20). Māori children were 2.5 times as likely as other children to experience this cost barrier, after adjusting for age and sex.

Similarly, Pacific children also experienced higher levels of unmet need for after-hours services due to cost (8%). Pacific children were nearly twice as likely to experience this barrier as other children, after adjusting for age and sex.

Table 20: Unmet need for after-hours services due to cost in the past 12 months, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	4.8	5.0	4.6	43,000
	Māori	8.6	8.4	8.9	20,000
	Pacific	7.9	8.0	7.9	11,000
	Asian	3.7	4.8	2.6	3,000
	European/Other	4.0	4.1	3.8	25,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	2.5*	2.3*	2.9*	
	Pacific	1.9*	1.8*	2.0*	
	Asian	0.8	1.0	0.5	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (0–14 years)

No differences linked to neighbourhood deprivation

Overall, cost prevented 8% of children living in the most deprived areas from accessing after-hours services at some time in the past 12 months, compared with 3% of children living in the least deprived areas.

However, the difference was not statistically significant, after adjusting for age, sex and ethnic group.

Lack of transport is another reason for unmet need for after-hours services

About 1.6% of children could not access after-hours services when they needed to at some time in the past 12 months due to a lack of transport. This is about 14,000 children.

Lack of transport prevented about 3.3% of Māori children and 2.9% of Pacific children from accessing after-hours services at some time in the past year. Māori children were 3.2 times as likely as non-Māori children, and Pacific children were 2.2 times as likely as non-Pacific children, to have experienced this barrier, after adjusting for age and sex.

Children living in the most deprived areas were much more likely to have been unable to access after-hours services due to lack of transport (3.5%) than children in the least deprived areas (0.3%).

Children living in the most deprived areas were 9.6 times as likely to have been unable to access after-hours services due to lack of transport in the past year as children in the least deprived areas, after adjusting for age, sex and ethnic group.

Where can you go for more information?

You can find the data for the indicator 'unmet need for after-hours services due to cost' in Appendix 3 and the online data tables. Data for the following indicator are also available in the online data tables:

- > unmet need for after-hours services due to lack of transport.

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents or caregivers of children aged 0–14 years:

- > In the past 12 months, was there a time when [your child] had a medical problem outside regular office hours but you did not take him/her to an after-hours medical centre because of cost?
- > In the past 12 months, was there a time when [your child] had a medical problem outside regular office hours but you did not take him/her to an after-hours medical centre because you had no transport to get there?

4.5 Unfilled prescriptions due to cost

About 7% of children have had a prescription that was not filled due to cost in the past 12 months.

Medication plays an important role in treating health problems. Prescription medicines can relieve pain, cure illnesses, and help control many common conditions and lessen the complications associated with them. Medication can also prevent health conditions from worsening and can help keep children out of hospital.

One barrier to accessing prescription medicine is cost. In New Zealand, most prescription medicines are subsidised, so that people only need to pay a small amount for each prescription (in 2011/12 this cost was \$3). Subsidised prescription medicines are free for children under six years of age.

This indicator shows whether there was a time in the past 12 months when parents were given a prescription for their child but did not collect one or more items because of cost. It was not possible to present reliable time trends because this is the first time that the New Zealand Health Survey has asked directly about any unfilled prescriptions due to cost.

About 7% of children has had a prescription that was not filled due to cost in past 12 months

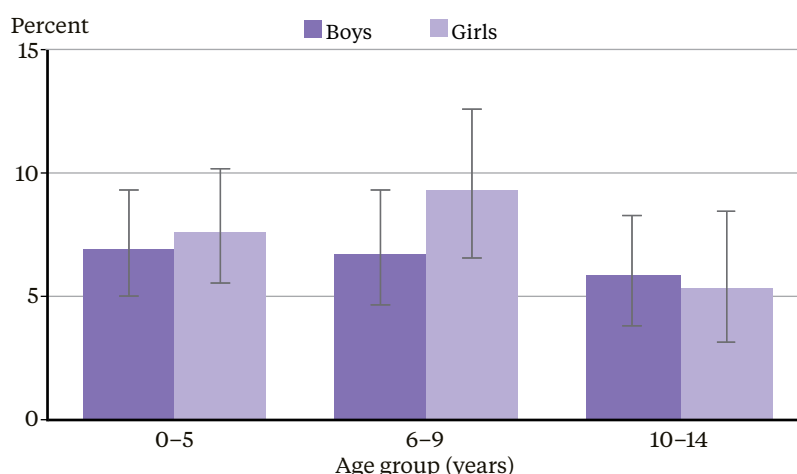
In 2011/12, 7% of children had a prescription that was not filled due to the cost at some time in the past 12 months. This is about 61,000 children.

This level of unmet need for prescriptions due to cost is similar to that for adults (8%).

Few differences linked to age group and sex

Girls aged 6–9 years were more likely to miss out on prescriptions due to cost than those aged 10–14 years (Figure 33). Otherwise, the percentage of children who had experienced this cost barrier in the past year was similar between boys and girls and across age groups.

Figure 33: Unfilled prescription due to cost in the past 12 months, by age group and sex



Source: 2011/12 New Zealand Health Survey (0–14 years)

One in eight Māori children has missed out on prescriptions due to cost

Māori and Pacific children were much more likely than other children to have unfilled prescriptions due to cost. This finding is similar to that for adults.

One in eight Māori children (12%) and Pacific children (11%) had a prescription that was not filled due to cost in the past 12 months (Table 21).

Overall, Māori children were 2.5 times as likely to have been prevented from getting a prescription due to cost as non-Māori children. Pacific children were 1.8 times as likely as non-Pacific children to have experienced this cost barrier. These comparisons have been adjusted for age and sex differences.

Table 21: Unfilled prescription due to cost in the past 12 months, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	7	6	7	61,000
	Māori	12	12	13	28,000
	Pacific	11	10	12	16,000
	Asian	3	3	3	3,000
	European/Other	5	4	5	31,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	2.5*	2.7*	2.3*	
	Pacific	1.8*	1.7*	1.9*	
	Asian	0.4*	0.5	0.4*	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

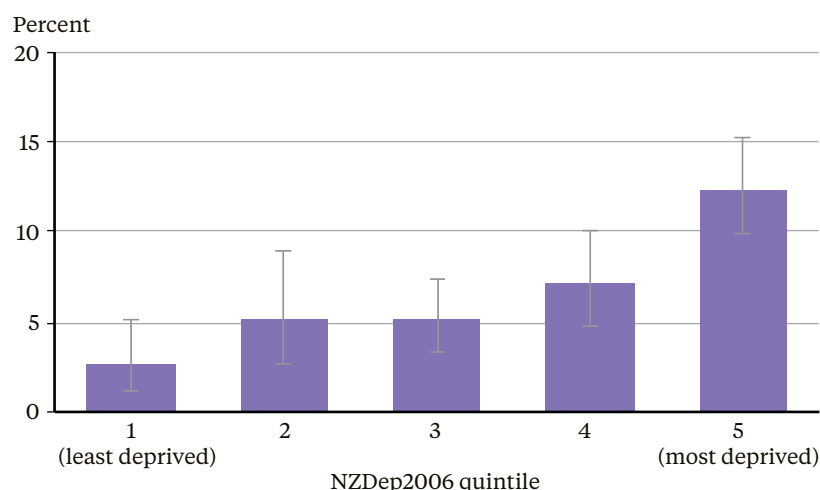
Source: 2011/12 New Zealand Health Survey (0–14 years)

Unfilled prescriptions due to cost were much more likely in more deprived areas

Neighbourhood deprivation was strongly linked to unfilled prescriptions due to cost for children.

In the past 12 months, 12% of children living in the most deprived areas had a prescription that was not filled due to the cost, compared with 3% of children in the least deprived areas (Figure 34).

Figure 34: Unfilled prescription due to cost in the past 12 months, by neighbourhood deprivation



Source: 2011/12 New Zealand Health Survey (0–14 years)

Children living in the most deprived areas were 2.8 times as likely to have an unfilled prescription due to cost as children in the least deprived areas, after adjusting for age, sex and ethnic group.

Where can you go for more information?

You can find the data for the above indicator in Appendix 3 and in the online data tables.

What was the survey question?

The 2011/12 New Zealand Health Survey asked parents or caregivers of children aged 0–14 years:

- > In the last 12 months, was there a time when [your child] got a prescription but you did not collect one or more prescription items from the pharmacy or chemist because of cost?

This is the first time that the New Zealand Health Survey has asked directly about any unfilled prescriptions due to cost in the previous year. For this reason, it was not possible to report time trends.



Section 5: Oral Health Status and Service Use

Good oral health is important for good health and wellbeing. Poor oral health is a common cause of discomfort and pain and can affect children's development, school performance and behaviour. Children are at risk of dental caries as soon as their first teeth emerge (from around the age of six months).

Important ways to prevent dental decay include brushing teeth at least twice a day with fluoride toothpaste, limiting the consumption of sugary food and drinks, and drinking fluoridated water.

Regular visits to a dental health care worker can also help to keep teeth and gums healthy. At these visits, the dental health care worker can identify oral health problems early or take action to prevent them.

This section focuses on indicators relating to both the use of dental services and oral health status.

Key findings

- **Eight in ten children had visited a dental health care worker in the past year**

The percentage of children aged 1–14 years who had visited a dental health care worker in the past year increased from 75% in 2006/07 to 78% in 2011/12.

Boys, young children (aged 1–4 years) and Pacific children were less likely to have had a dental visit in the past year.

- **Four percent of children have had a tooth removed in the past year**

Around 34,000 children had a tooth removed in the past year due to decay, abscess or infection.

Children aged 5–9 years and Māori and Pacific children were more likely to have had a tooth removed in the past year than other children.

Table 22: Summary of oral health care and status for children aged 1–14 years, 2011/12

Indicator	Percent	Estimated number	Time trends since 2006/07
Visited a dental health care worker in the past 12 months	78	652,000	▲ Increase
Had any teeth removed due to decay, abscess or infection in the past 12 months	4	34,000	Not collected in 2006/07

5.1 Visited a dental health care worker in the past 12 months

Most school-aged children have visited a dental health care worker in the previous year.

If children have regular dental visits, a dental health care worker can detect oral health problems early. They can also apply timely preventive measures and treatments (such as fillings) to maintain and improve oral health.

The Ministry of Health and the New Zealand Dental Association recommend regular dental checks as one of the ways to keep teeth and gums healthy.

In New Zealand, basic oral health services are funded for children and adolescents from birth up until their 18th birthday. Parents are encouraged to enrol their children with a dental therapist from the age of nine months. A 'lift the lip' assessment of oral health is carried out at the 9–12 month *Well Child Tamariki Ora* check and referrals provided if needed.

In this report, the term **dental health care workers** refers to dentists and other dental health care workers, such as dental therapists, dental nurses, dental hygienists and dental health specialists such as orthodontists.

This indicator focuses on whether children had visited a dental health care worker in the past 12 months.

Eight in ten children have had a dental visit in the past 12 months

In 2011/12, 78% of children aged 1–14 years had visited a dental health care worker in the past 12 months, which is about 652,000 children. This proportion has increased from 75% in 2006/07.

Boys were less likely to have visited a dental health care worker (77%) than girls (81%).

The percentage of girls who had visited a dental health care worker in the past year increased from 76% in 2006/07 to 81% in 2011/12 (Figure 35).

Figure 35: Visited a dental health care worker in the past 12 months, by sex, 2006/07 and 2011/12



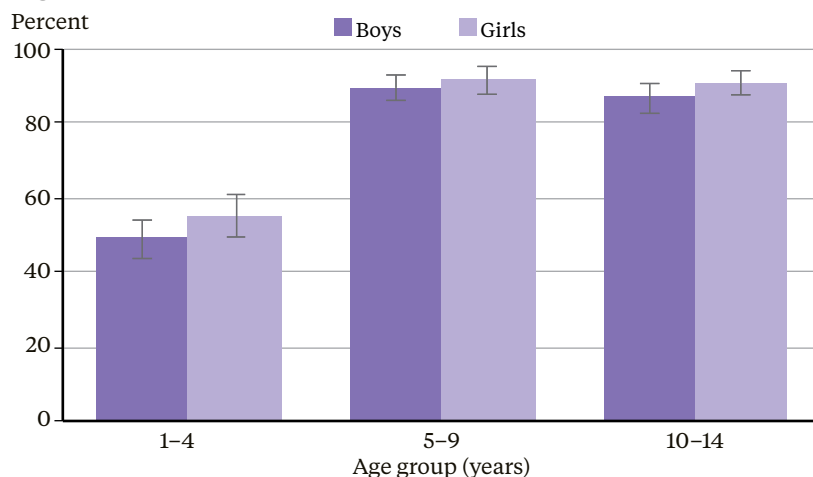
Note: Rates are age-standardised to the WHO world population.

Source: 2006/07 and 2011/12 New Zealand Health Surveys (1–14 years)

Rates of dental visits were lower among children aged 1–4 years

Children aged 1–4 years were much less likely to have visited a dental health care worker (52%) than those of school age (about 90%) (Figure 36).

Figure 36: Visited a dental health care worker in the past 12 months, by age group and sex



Source: 2011/12 New Zealand Health Survey (1–14 years)

The percentage of children aged 10–14 years who had visited a dental health care worker in the past year increased from 85% in 2006/07 to 89% in 2011/12. The percentages for other age groups did not change significantly.

Pacific children made fewer dental visits

Three in four Pacific children (73%) had visited a dental health care worker in the past 12 months (Table 23). This rate was lower than the rate for non-Pacific children, after adjusting for age and sex differences.

Table 23: Visited a dental health care worker in the past 12 months, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	78	77	81	652,000
	Māori	75	73	77	157,000
	Pacific	73	72	74	95,000
	Asian	74	71	78	61,000
	European/Other	81	79	83	474,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	0.97	0.96	0.97	
	Pacific	0.93*	0.95	0.90*	
	Asian	0.97	0.95	0.99	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (1–14 years)

Three in four children living in the most deprived areas have had a dental visit

Children living in the most deprived areas were less likely to have visited a dental health care worker in the past 12 months (75%) than children in the least deprived areas (84%).

However, no differences in visits for dental care were linked to neighbourhood deprivation, after adjusting for age, sex and ethnic group.

Where can you go for more information?

You can find the data for the above indicator in Appendix 3 and in the online data tables.

For more information about children's oral health from the 2009 New Zealand Oral Health Survey, see the report *Our Oral Health* (Ministry of Health 2010).

What was the survey question?

The 2011/12 New Zealand Health Survey asked parents and caregivers of children aged 1–14 years:

- > The next questions are about dental health care services. When I say 'dental health care worker', I mean dentists, dental nurses, dental hygienists, dental therapists, as well as other dental health specialists such as orthodontists.

How long has it been since [your child] last visited a dental health care worker, for any reason?

5.2 Had a tooth removed in the past 12 months

A small proportion of children have had a tooth removed due to decay, abscess or infection in the past year. Children aged 5–9 years, and Māori and Pacific children, are more likely to have had a tooth removed than other children.

Teeth may be removed (extracted) as a result of decay, an abscess, an infection, gum disease or injury (trauma). Extensive decay is the most common reason for teeth being removed, and is largely preventable.

Parents of children aged 1–14 years were asked if their children had had one or more teeth (primary or permanent) removed due to decay, abscess or infection in the past 12 months.

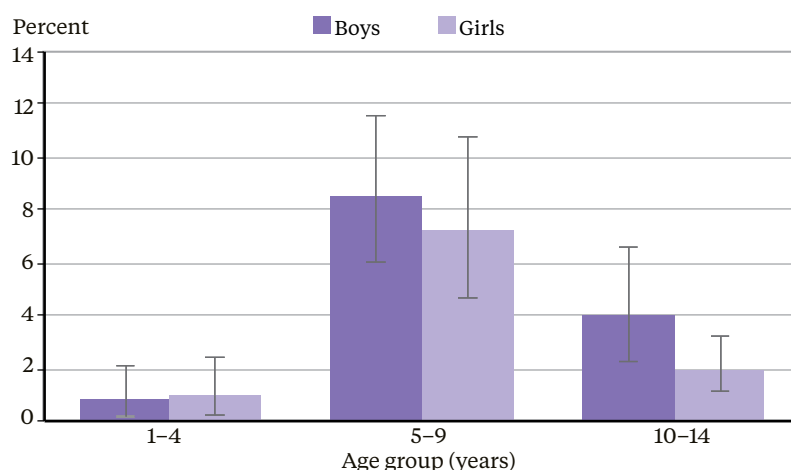
Four percent of children have had a tooth removed due to decay in the past year

Four percent of New Zealand children aged 1–14 years had one or more teeth removed due to decay, abscess or infection in the past 12 months. This is about 34,000 children.

Children aged 1–4 years were less likely than older children to have had a tooth removed

Tooth extraction due to decay, abscess or infection in the past year was highest among those aged 5–9 years (8%) and lowest among those aged 1–4 years (1%) (Figure 37).

Figure 37: Had a tooth removed in the past year due to decay, abscess or infection, by age group and sex



Source: 2011/12 New Zealand Health Survey (1–14 years)

Māori and Pacific children were more likely to have had a tooth removed

About 6% of Māori and Pacific children had had a tooth removed due to decay, abscess or infection in the past year. After adjusting for age, Māori children were 1.7 times as likely to have had a tooth removed in the past year as non-Māori children (Table 24). Similarly, Pacific children were 1.8 times as likely as non-Pacific children to have had a tooth removed in the past year.

Asian boys were twice as likely to have had a tooth removed in the past year as non-Asian boys.

Table 24: Had a tooth removed in the past year due to decay, abscess or infection, by ethnic group and sex

		Total	Boys	Girls	Estimated number ¹
Percent (%)	Total NZ	4.1	4.6	3.5	34,000
	Māori	5.8	6.4	5.2	12,000
	Pacific	6.5	7.4	5.6	8,000
	Asian	6.4	8.3	4.4	5,000
	European/Other	3.2	3.6	2.7	19,000
Adjusted rate ratios (comparing each ethnic group with children not in that ethnic group) ²	Māori	1.7*	1.7*	1.8	
	Pacific	1.8*	1.9*	1.7	
	Asian	1.7	2.1*	1.3	

* Significant at the 5% level (for adjusted rate ratios).

Notes: Total response measure of ethnicity. Children may be counted in more than one ethnic group.

1 Due to total response ethnicity, summed numbers across ethnic groups may add to more than the total.

2 Adjusted rate ratios compare children, boys or girls in each ethnic group with children, boys or girls not in that ethnic group. Adjusted rate ratios adjust for age and, for the total column, sex.

Source: 2011/12 New Zealand Health Survey (1–14 years)

No differences linked to neighbourhood deprivation

One in sixteen (6%) children living in the most deprived areas had a tooth removed due to decay, abscess or infection in the past year, compared with 3% of children in the least deprived areas.

This difference was not significant, after adjusting for age, sex and ethnic group.

Where can you go for more information?

You can find the data for the above indicator in Appendix 3 and in the online data tables. Data for the following indicator are also available in the online data tables:

> ever had any teeth removed due to decay, abscess or infection.

For more information about children's oral health from the 2009 New Zealand Oral Health Survey, see the report *Our Oral Health* (Ministry of Health 2010).

What were the survey questions?

The 2011/12 New Zealand Health Survey asked parents and caregivers of children aged 1–14 years:

- > Have any of [your child's] teeth been removed by a dental health care worker because of tooth decay, abscess or infection?' (Do not include teeth lost for other reasons such as injury, crowded mouth, or orthodontics. Include baby teeth ONLY if removed because of tooth decay, abscess or infection.)
- > Were any of these teeth removed in the last 12 months?



Summary and Conclusions

This section discusses the key findings for children from the 2011/12 New Zealand Health Survey.



Health behaviours and health status

Fewer children are being given solid food before four months of age

The Ministry of Health recommends exclusive breastfeeding until around the age of six months when solid food should be introduced. The percentage of children under five years who were given solid food before the age of four months has decreased from 16% in 2006/07 to 10% in 2011/12. This decrease means that more children are benefitting from the later introduction of solid food.

More children are obese now than in the past

Although the survey results show that the majority (65%) of children aged 2–14 years are normal weight, one in ten children was obese in 2011/12. The obesity rate for children aged 5–14 years was stable between 2002 (9%) and 2006/07 (8%), but increased to 11% in 2011/12.

Māori and Pacific children and children living in the most deprived areas were more likely to be obese. The level of obesity for Māori boys has increased since 2006/07.

Obesity is a major risk factor for heart disease, type 2 diabetes and some types of cancer. Overweight and obese children are more likely to be obese as adults and to have higher cholesterol and blood pressure levels at a younger age. If not addressed, a higher obesity rate in children may lead to a rise in associated health conditions such as type 2 diabetes and heart disease in the future.

Asthma remains a common health condition in childhood

Asthma is one of the most common long-term health conditions among New Zealand children. One in seven (14%) children aged two years and over is currently taking medication for asthma – over 100,000 children. This condition is a particular issue for Māori children, affecting nearly one in five.

On a positive note, the overall level of medicated asthma has not increased from 2006/07 to 2011/12.

The level of diagnosed emotional and behavioural problems in children has increased

Depression, anxiety disorders and behavioural problems, such as attention deficit and hyperactivity disorder (ADHD) and attention deficit disorder (ADD), are the more common types of emotional and behavioural problems children experience.

In 2011/12, 3.2% of children had been diagnosed with emotional or behavioural problems, most often for anxiety disorder. Boys were twice as likely as girls to be diagnosed with emotional or behavioural problems; boys aged 10–14 years have the highest prevalence.

Diagnosed mental health problems increased from 1.8% in 2006/07. The main reason for this increase has been an increase in diagnosed anxiety, particularly in boys aged 10–14 years.

Despite these findings about health conditions, almost all (98%) of children are in good health, according to their parents.

Primary health care use

Most children were able to access primary health care when they needed to

Having good access to primary health care is important so that children can get appropriate and timely treatment for health conditions and effective preventative care (eg, immunisations). Barriers to accessing care can lead to worse health for children (resulting in increased hospitalisations), and can contribute to disparities in health outcomes.

One in five children (20%) has experienced barriers to accessing primary health care in the past year – about 180,000 children. Not being able to get an appointment at their usual medical centre within 24 hours when they had a medical problem was the most common barrier experienced by children (14%). Other less common reasons were that they could not access GP services due to cost (5%), lack of transport (3%) or lack of child care (2%), and that they could not access after-hours services due to cost (5%) or lack of transport (2%).

Additionally 7% of children (about 61,000) have had a prescription that was not filled in the past year due to cost. This rate is similar to that of adults (8%). Subsidised prescriptions are free for children under six years of age.

Māori and Pacific children and children living in more deprived areas are more likely to have experienced a barrier to accessing primary health care.

More children under six years have had a free GP visit

For over half (55%) of all children, their last GP visit at a GP clinic or medical centre was free.

The percentage of children aged under six years who had no charge for their last GP visit (in any setting) has increased substantially from 67% in 2006/07 to 83% in 2011/12. There was little change over time for other age groups.

One in four children has visited a practice nurse (without seeing a GP at the same time) in the past year. The majority (87%) of these visits were free. Practice nurses are registered nurses with knowledge and expertise in primary care practice. They are a key part of the primary health care team.

Most children had visited a dental health care worker in the previous year

Good oral health is important for good health and wellbeing, and regular dental checks can keep teeth and gums healthy. In New Zealand, basic oral health services are funded for children and adolescents from birth until their 18th birthday.

The survey results show that access to dental care is generally high: about 90% of school-aged children have visited a dental health care worker in the past 12 months. However, dental visiting rates were lower for those aged 1–4 years (52%) compared with school-aged children (90%).

Māori and Pacific children were almost twice as likely to have had teeth removed in the previous year. Pacific children were also less likely than other children to have visited a dental health care worker in the previous year.

Health of population groups

The survey results showed some differences by population group.

Some risk factors were relatively common among older children

The main issues facing older children (10–14 years) relate to more unhealthy behaviours, which can lead to poor health later in life. Children aged 10–14 years were more likely to watch two or more hours of television a day, and were less likely to eat breakfast at home, than younger children. Also of note is that diagnosed anxiety disorders have increased among older boys.

Māori children generally have poorer health and higher rates of unmet need for health care

The survey results highlight the difference in experiences of health between Māori and non-Māori children. For example, Māori children have higher rates of medicated asthma than non-Māori children.

Māori children were twice as likely to be obese as non-Māori children. Since 2006/07 the obesity rate has increased for Māori boys.

Māori children also experienced disproportionately more unmet need for health care, across all types of unmet need measured in the survey. One in four (28%) Māori children had experienced one or more barriers to accessing primary health care in the past year.

Pacific children have higher rates of obesity and unmet need for health care

Obesity is a key health issue facing Pacific children, with one in four Pacific children obese. Obesity is also a key health issue for Pacific adults.

Pacific children had relatively high levels (26%) of unmet need for primary health care in the past year. They were also less likely to have visited a dental health care worker in the past year than other children.

Socioeconomic deprivation is strongly associated with poorer health outcomes and unmet need

Many health conditions were more common in children living in the most deprived neighbourhoods. Factors such as income, employment status, housing and education directly and indirectly affect health, with the effect accumulating throughout life (Robson and Harris 2007).

Children living in the most deprived areas were 2.3 times as likely to be obese and 1.5 times as likely to have medicated asthma as children living in the least deprived areas. They were also less likely to eat breakfast at home every day. These different rates are not explained by differences in the ethnic, age or sex structure of the population.

Unmet need for health care was also more common for children living in more deprived areas. In particular, children living in the most deprived areas were 2.8 times as likely to have had a prescription that was not filled due to the cost at some time in the past 12 months as children in the least deprived areas. Lack of transport is another type of barrier to health care more commonly reported for children living in the more deprived areas than for those in the least deprived areas.

Conclusion

The survey highlights that the majority of parents consider their child's health is good, very good or excellent.

Over the past five years, access to some health services has improved for New Zealand children. For example, more children under the age of six now have free GP visits. School-aged children also continue to have good access to oral health services.

However, the health sector faces a number of challenges to improve the health of New Zealand children. For example, although stable between 2002 and 2006/07 the obesity rate for children aged 5–14 years has increased (from 8% to 11%) since 2006/07. It is important to prevent further increases in the obesity rate (and to reduce it) in order to reduce the future burden of obesity-related conditions in New Zealand.

Another challenge is to improve the health status and access to health services for Māori and Pacific children, and children living in areas of high socioeconomic deprivation. Achieving health equity for these groups of children will require efforts across government, schools, communities and families.

In future, the New Zealand Health Survey will continue to monitor the changes in the health of New Zealand children so that we can highlight areas where we are doing well and areas where we need to improve.

References

- Ahmad O, Boschi-Pinto C, Lopez A, et al. 2000. *Age-standardization of rates: a new WHO standard*. Geneva: World Health Organization.
- Cole TJ, Bellizzi MC, Flegal KM, Dietz WH. 2000. Establishing a standard definition for child overweight and obesity worldwide: international survey. *British Medical Journal* 320(7244): 1240.
- Cole TJ, Flegal KM, Nicholls D, Jackson A. 2007. Body mass index cut offs to define thinness in children and adolescents: international survey. *British Medical Journal* 335(7612): 194.
- Hayes L, Berry G. 2002. Sampling variability of the Kunst-Mackenbach relative index of inequality. *Journal of Epidemiology and Community Health* 56: 762–5.
- Ministry of Health. 2008. *Food and Nutrition Guidelines for Healthy Infants and Toddlers (Aged 0–2): A background paper* (4th ed). Wellington: Ministry of Health.
- Ministry of Health. 2010. *Our Oral Health: Key findings of the 2009 New Zealand Oral Health Survey*. Wellington: Ministry of Health.
- Ministry of Health. 2011. *The New Zealand Health Survey: Sample design, years 1–3 (2011–2013)*. Wellington: Ministry of Health.
- Ministry of Health. 2012a. *The Health of New Zealand Adults 2011/12: Key findings of the New Zealand Health Survey*. Wellington: Ministry of Health.
- Ministry of Health. 2012b. *New Zealand Health Survey Methodology Report*. Wellington: Ministry of Health.
- Robson B, Harris R (eds). 2007. *Hauora: Māori Standards of Health IV. A study of the years 2000–2005*. Wellington: Te Rōpū Rangahau Hauora a Eru Pōmare.
- Salmond C, Crampton P, Atkinson J. 2007. *NZDep2006 Index of Deprivation User's Manual*. Wellington: Department of Public Health, University of Otago.
- Utter J, Scragg R, Ni Mhurchu C, Schaaf D. 2007. At-home breakfast consumption among New Zealand children: associations with body mass index and related nutrition behaviours. *Journal of the American Dietetic Association* 107(4): 570–6.
- Utter J, Scragg R, Schaaf D. 2006. Associations between television viewing and consumption of commonly advertised foods among New Zealand children and young adolescents. *Public Health Nutrition* 9(5): 606–12.
- WHO. 2007. *Global Database on Body Mass Index*. Geneva: World Health Organization.

Appendix 1:

Methodology of the New Zealand Health Survey

This section briefly describes the methodology of the 2011/12 New Zealand Health Survey. For more information, see the *New Zealand Health Survey Methodology Report* (Ministry of Health 2012b).

Survey population

The target population for the survey is the usually resident population of all ages, including those living in aged-care facilities and student accommodation. The target population excludes some non-private dwellings such as prison, hospitals, hospices and dementia care units, and some remote areas.

Reference period

The results in this report refer to the sample selected from 1 July 2011 to 30 June 2012. Data for the 2011/12 New Zealand Health Survey were collected from July 2011 to August 2012.

Sample size

The 2011/12 New Zealand Health Survey was answered by 12,370 adults aged 15 years and over, and the primary caregivers of 4478 children aged from birth to 14 years.

Table A1 provides the sample sizes for interviews and measurements by population group, for children in the 2011/12 New Zealand Health Survey. The table also provides the population total that the survey data were weighted to.

Table A1: Sample size for children aged 0–14 years, 2011/12 New Zealand Health Survey

Population group	Parent/ caregiver interviews	Measurements (height, weight) for 2+ years	Population total
Total	4478	3047	893,108
Males	2309	1588	457,700
Females	2169	1459	435,408
0–4 years	1790	761	313,383
5–9 years	1267	1091	289,303
10–14 years	1421	1195	290,423
Māori	1592	1009	230,336
Pacific	730	492	142,654
Asian	432	292	88,126
European/Other	2968	2056	630,947
Quintile 1 (least deprived)	643	486	155,084
Quintile 2	671	466	163,623
Quintile 3	829	549	173,220
Quintile 4	915	605	182,442
Quintile 5 (most deprived)	1420	941	218,739

Weighted data

Survey weights were used in all of the results presented in this report, so that estimates of population totals, averages and proportions represent the total resident child population of New Zealand.

Survey weights were calculated for all survey respondents to indicate how many people each respondent represents in the total population. The weights were calculated over three stages. After an initial selection weight is calculated, it is adjusted for non-response and then for calibration. The survey data were benchmarked to the estimated annual resident population by age, sex and Māori/non-Māori.

For measurement data (heights, weights and body mass index), survey weights were recalculated to account for item non-response, so that the estimates still represent the total resident child population aged 2–14 years.

Response rate

An important measure of the quality of a survey is the final weighted response rate. The response rate is a measure of how many people who were selected to take part in the survey actually participated. A high response rate means that the survey results are more representative of the New Zealand population.

The weighted response rate for children was 85% for the 2011/12 New Zealand Health Survey. The response rate was calculated by dividing the weighted percentage of eligible individuals who participated in the survey by the estimated number of eligible individuals.

Survey content

The survey questionnaire collects demographic and socioeconomic information, along with information about diagnosed health conditions, health service use, barriers to use, patient experience, health risks and lifestyle behaviours. The survey interview also includes measurements of height, weight and waist circumference.

Interviews are conducted using computer-assisted personal interviews (CAPI). On average each child interview lasts less than 30 minutes. Surveyors from CBG Health Research Ltd carried out the survey interviews. They underwent dedicated training and many have a health background.

Information about survey design and data collection

The New Zealand Health Survey is designed to provide estimates at the national level.

The 2011/12 survey has a dual sample frame approach: an area-based frame of meshblocks (geographically defined areas for the Census) and a list-based frame consisting of a sample of addresses from the electoral roll. This approach increases the sample sizes of Māori, Pacific and Asian ethnic groups.

The area-based sample used a three-stage selection process. The first stage of selection consists of selecting a sample of meshblocks. This process used a probability-proportional-to-size methodology, modified to give higher probabilities for households in areas where more Māori, Pacific and Asian people lived. Second, a sample of eligible dwellings was selected within the selected meshblocks. Third, one eligible adult and one eligible child (if any) were selected from within each selected dwelling. The eligible individual(s) were chosen at random from the list of all eligible individuals in the dwelling.

For the electoral roll sample, the electoral roll was used to get a sample of addresses where a person living there had self-identified as having Māori ancestry. A sample of meshblocks was then selected within each stratum (district health board), with probability proportional to the number of addresses on the electoral roll in the meshblock. From each selected meshblock, a random sample of 10 addresses (from the list of households where a person had self-identified as having Māori ancestry) was then selected. The household contact process and selection of an adult and child were carried out exactly as for the area-based sample; at each selected address, one eligible adult and one eligible child were selected at random.

In 2011/12 some survey interviews were delayed in one region in the North Island. The reduced sample size in this region has been accounted for through the weighting process and does not affect the national results. Data collection for this region will be completed by the end of 2012. These additional data will be included in the release of results by region/district health board and in the microdata release in 2013.

Ethics approval

The Multi-region Ethics Committee provided approval of the New Zealand Health Survey for 2011/12 (Multi-region Ethics Committee Reference MEC/10/10/103).

Reliability of survey estimates

Two types of error are possible in estimates based on a sample survey: sampling error and non-sampling error.

Sampling error can be measured and quantifies the variability that occurs by chance because a sample rather than an entire population is surveyed. Sampling errors have been estimated using a jack-knife method, which is based on the variation between estimates using 100 mutually exclusive subsamples from the whole sample. Sampling errors are quoted at the 95% confidence level.

Non-sampling errors are all errors that are not sampling errors. These errors are not quantifiable and include unintentional mistakes by respondents, variation in the respondents' and interviewers' interpretation of the questions, and errors in the recording and coding of data. The Ministry of Health aims to minimise the impact of these errors by using best survey practices and by monitoring known indicators (such as non-response).

Most of the information from the New Zealand Health Survey is self-reported, according to the questionnaire. This is a potential source of non-sampling error due to unintentional mistakes such as recall error and social desirability bias.

Indicators about body size (such as obesity and overweight) used measured height and weight data rather than self-reported data to increase the reliability of results.

Rounding and percentages

All percentages used in the text have been calculated from weighted data and then rounded to a whole number. To improve the readability of the data, the calculation of percentages excludes residual categories such as 'don't know' and 'refused' in the population base from which percentages are calculated.

Testing differences between two groups

The difference between two groups is statistically significant if their confidence intervals do not overlap. Sometimes, even when two confidence intervals overlap, the difference between these groups can be statistically significant. In these cases, if a difference has been reported

in the text, a statistical test (a ‘*t*-test’) has been carried out to confirm that the finding is statistically significant.

Calculating adjusted rate ratios

Regression models were used to calculate the adjusted rate ratios. For rate ratios, sampling errors were estimated using the Taylor linearisation method.

When adjusting for ethnicity, regression models used prioritised ethnic group in the order: Māori, Pacific, Asian and European/Other. Using prioritised ethnic group in models simplifies the modelling process and gives results similar to including total response ethnicity variables in the models.

Relative index of inequality

In neighbourhood deprivation comparisons, the rate ratio refers to the **relative index of inequality** (Hayes and Berry 2002). This measure gives a comparison by neighbourhood deprivation after adjusting for age, sex and ethnic differences. A relative index of inequality can be interpreted in the same way as adjusted rate ratios, although it is calculated in a slightly different way.

A relative index of inequality uses data from all deprivation quintiles to create a best fit line. It then compares the estimated values for children living at the minimum and maximum points on the deprivation scale, instead of simply comparing children living in quintiles 1 and 5.

Software used

All analyses were carried out using SAS and SUDAAN.

For more information

For more information, see the survey design report (Ministry of Health 2011) and the methodology report (Ministry of Health 2012b).

Appendix 2:

Data Tables of Key Results

The following tables summarise the results for the key indicators presented in this report.
For definitions of topics and indicators, please refer to the appropriate section of this report.

Table A2: Summary of results by sex and ethnic group (unadjusted prevalence and estimated number of children)

Indicator	Total		Percent (%)					
	Percent (%)	Estimated number	Boys	Girls	Māori	Pacific	Asian	European/Other
Excellent, very good or good health (parent-rated) (0–14 years)	97.9	874,000	97.5	98.3	96.7	98.1	98.1	97.9
Introduction of solid food before 4 months (4 months–4 years)	9.5	30,000	10.2	8.8	15.6	14.3	2.9	8.1
Ate breakfast at home every day (2–14 years)	87.3	664,000	88.6	85.9	82.1	82.6	90.7	88.8
Watched TV 2+ hours per day (2–14 years)	53.3	406,000	52.6	54.1	62.5	59.3	49.9	50.7
Obese (2–14 years)	10.2	91,000	10.2	10.2	16.6	23.5	7.5	6.2
Overweight or obese (2–14 years)	30.9	275,000	29.4	32.4	42.8	51.4	21.9	25.2
Medicated asthma (2–14 years)	14.1	107,000	16.3	11.7	19.2	13.6	11.0	13.8
Diagnosed depression, anxiety disorder or ADD/ADHD (2–14 years)	3.2	25,000	4.3	2.1	3.2	1.6	0.7	3.9
Visited a GP in the past 12 months (0–14 years)	73.7	658,000	73.3	74.2	73.6	77.9	73.6	73.7
Visited a practice nurse in the past 12 months (0–14 years)	26.1	233,000	23.6	28.8	23.9	18.4	22.7	29.1
Visited an after-hours medical centre in the past 12 months (0–14 years)	21.6	193,000	22.0	21.3	21.0	22.2	17.8	23.5
Experienced unmet need for primary health care in the past 12 months (0–14 years)	20.2	180,000	19.3	21.1	28.2	26.5	14.4	18.7
- Unable to get an appointment at usual medical centre within 24 hours in the past 12 months	13.8	118,000	12.8	14.7	17.6	16.1	12.4	13.4
- Unmet need for GP services due to cost in the past 12 months	4.9	44,000	5.1	4.7	8.1	6.8	2.5	4.2
- Unmet need for after-hours services due to cost in the past 12 months	4.8	43,000	5.0	4.6	8.6	7.9	3.7	4.0
- Unmet need for GP services due to lack of transport in the past 12 months	3.2	28,000	2.8	3.5	6.1	7.5	2.1	1.9
- Unmet need for after-hours services due to lack of transport in the past 12 months	1.6	14,000	1.3	1.9	3.3	2.9	1.0	1.0
- Unmet need for GP services due to lack of child care in the past 12 months	2.3	21,000	1.8	2.9	3.5	4.6	0.9	1.8
Unfilled prescription due to cost in the past 12 months (0–14 years)	6.9	61,000	6.5	7.3	12.4	11.2	3.3	4.9
Visited a dental health care worker in past 12 months (1–14 years)	78.5	652,000	76.5	80.6	74.9	73.1	74.1	80.5
Had a tooth removed due to decay, abscess or infection in past 12 months (1–14 years)	4.1	34,000	4.6	3.5	5.8	6.5	6.4	3.2

Note: Percents are rounded to one decimal place. Estimated numbers are rounded to nearest 1000 children. Total response measure of ethnicity.

Table A3 gives comparisons by sex, ethnic group and neighbourhood deprivation, for the key indicators in this report. The table only presents adjusted rate ratios that are statistically significant.

A rate ratio less than 1 means the outcome is less likely in the group of interest than the reference group. A rate ratio greater than 1 means the outcome is more likely in the group of interest.

Table A3: Summary of results by sex, ethnic group and neighbourhood deprivation (significant adjusted rate ratios)

Indicator	Adjusted rate ratios (significant only)				
	Boys vs girls	Māori vs non-Māori	Pacific vs non-Pacific	Asian vs non-Asian	Most deprived vs least deprived
Excellent, very good or good health (parent-rated) (0–14 years)					
Introduction of solid food before 4 months (4 months–4 years)		2.2	1.7	0.3	
Ate breakfast at home every day (2–14 years)		0.9	0.9		0.9
Watched TV 2+ hours per day (2–14 years)		1.2	1.1		1.2
Obese (2–14 years)		2.1	3.1		2.3
Overweight or obese (2–14 years)		1.6	1.9	0.7	1.9
Medicated asthma (2–14 years)	1.4	1.5			1.5
Diagnosed depression, anxiety disorder or ADD/ADHD (2–14 years)	2.0		0.5	0.2	
Visited a GP in the past 12 months (0–14 years)			1.1		
Visited a practice nurse in the past 12 months (0–14 years)	0.8	0.8	0.6		
Visited an after-hours medical centre in the past 12 months (0–14 years)				0.8	0.6
Experienced unmet need for primary health care in the past 12 months (0–14 years)		1.6	1.4	0.7	
- Unable to get an appointment at usual medical centre within 24 hours in the past 12 months		1.4			
- Unmet need for GP services due to cost in the past 12 months		2.3	1.5		
- Unmet need for after-hours services due to cost in the past 12 months		2.5	1.9		
- Unmet need for GP services due to transport in the past 12 months		2.8	3.2		4.8
- Unmet need for after-hours services due to transport in the past 12 months		3.2	2.2		9.6
- Unmet need for GP services due to lack of child care in the past 12 months		1.7	2.3		
Unfilled prescription due to cost in the past 12 months (0–14 years)		2.5	1.8	0.4	2.8
Visited a dental health care worker in past 12 months (1–14 years)	1.0 ^a		0.9		
Had a tooth removed due to decay, abscess or infection in past 12 months (1–14 years)		1.7	1.8		

^a The rate ratio is 0.95 for boys (compared with girls) for visiting a dental health care worker in the past 12 months.

Notes: Only statistically significant adjusted rate ratios are presented. Sex rate ratios adjust for age. Ethnic rate ratios adjust for age and sex. Deprivation ratios adjust for age, sex and ethnic group. Total response measure of ethnicity.

Appendix 3:

Detailed Data Tables

The following tables provide detailed data for the key indicators presented in this report.

For each indicator, the first table presents the unadjusted prevalence and estimated number of children, by sex, age group, ethnic group (total response) and neighbourhood deprivation. Deprivation results are presented for the least deprived quintile (q1) and the most deprived quintile (q5).

The second table presents adjusted rate ratios for comparisons by sex, ethnic group and neighbourhood deprivation. A rate ratio greater than 1 means that the outcome is more likely in the group of interest than the reference group. A rate ratio less than 1 means that the outcome is less likely in the group of interest. Statistically significant rate ratios are noted with an asterisk (*). The table notes the variables that each analysis adjusts for.

Prevalence estimates are rounded to one decimal place. Estimated numbers of children are rounded to the nearest 100 children. Rate ratios are rounded to two decimal places.

95% confidence intervals are given for all estimates.

For definitions of topics and indicators, please refer to the appropriate section of this report. Further data tables are available online.

1.1 Introduced solid food before four months, children aged 4 months to 4 years, 2011/12

Population group	Prevalence (% , 95% CI)						Estimated number
	Total		Boys		Girls		
Total	9.5	(7.9–11.4)	10.2	(8.0–12.9)	8.8	(6.4–11.7)	29,900
Māori	15.6	(11.7–20.2)	16.0	(11.6–21.3)	15.2	(9.5–22.6)	14,300
Pacific	14.3	(8.8–21.5)	15.0	(8.3–24.2)	13.5	(4.9–27.6)	7,600
Asian	2.9	(1.0–6.4)	2.9	(0.8–7.3)	2.8	(0.3–10.7)	1,000
European/Other	8.1	(6.2–10.3)	8.7	(6.0–12.1)	7.4	(4.7–10.9)	17,300
Least deprived areas (q1)	5.4	(2.3–10.6)	7.7	(2.9–16.2)	2.6	(0.5–7.6)	2,300
Most deprived areas (q5)	13.4	(9.9–17.5)	15.4	(9.9–22.3)	11.4	(7.6–16.2)	11,300

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	1.17 (0.81–1.68)		Age
Māori	Non-Māori	2.23 (1.56–3.19)	*	Age, sex
Māori boys	Non-Māori boys	2.04 (1.27–3.26)	*	Age
Māori girls	Non-Māori girls	2.49 (1.44–4.31)	*	Age
Pacific	Non-Pacific	1.67 (1.09–2.56)	*	Age, sex
Pacific boys	Non-Pacific boys	1.63 (0.97–2.72)		Age
Pacific girls	Non-Pacific girls	1.73 (0.86–3.49)		Age
Asian	Non-Asian	0.28 (0.11–0.68)	*	Age, sex
Asian boys	Non-Asian boys	0.26 (0.09–0.72)	*	Age
Asian girls	Non-Asian girls	0.30 (0.07–1.31)		Age
Most deprived areas	Least deprived areas	2.12 (0.98–4.56)		Age, sex, ethnic group

1.2 Ate breakfast at home every day in the past week, children aged 2–14 years, 2011/12

Population group	Prevalence (%; 95% CI)			Estimated number
	Total	Boys	Girls	
Total	87.3 (85.7–88.7)	88.6 (86.6–90.4)	85.9 (83.5–88.0)	663,800
2–4 years	93.9 (91.7–95.6)	93.6 (90.5–95.9)	94.2 (91.1–96.5)	170,000
5–9 years	89.2 (86.6–91.4)	90.2 (86.5–93.2)	88.1 (84.1–91.3)	258,000
10–14 years	81.2 (78.3–83.9)	83.9 (80.5–86.8)	78.4 (73.7–82.7)	235,900
Māori	82.1 (79.4–84.5)	82.6 (78.7–86.0)	81.6 (77.8–85.0)	153,900
Pacific	82.6 (78.4–86.3)	85.0 (80.3–88.9)	80.3 (73.8–85.9)	99,400
Asian	90.7 (86.5–94.0)	91.4 (84.9–95.7)	90.1 (83.5–94.7)	66,200
European/Other	88.8 (86.9–90.6)	90.6 (88.2–92.7)	86.9 (84.0–89.5)	480,900
Least deprived areas (q1)	90.9 (87.8–93.4)	91.6 (86.8–95.1)	90.2 (84.7–94.2)	127,900
Most deprived areas (q5)	82.7 (80.0–85.3)	82.0 (78.3–85.3)	83.5 (79.4–87.1)	150,700

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	1.03 (1.00–1.07)		Age
Māori	Non-Māori	0.92 (0.88–0.95)	*	Age, sex
Māori boys	Non-Māori boys	0.91 (0.86–0.95)	*	Age
Māori girls	Non-Māori girls	0.93 (0.88–0.98)	*	Age
Pacific	Non-Pacific	0.93 (0.89–0.98)	*	Age, sex
Pacific boys	Non-Pacific boys	0.94 (0.89–1.00)	*	Age
Pacific girls	Non-Pacific girls	0.92 (0.86–0.99)	*	Age
Asian	Non-Asian	1.04 (0.99–1.08)		Age, sex
Asian boys	Non-Asian boys	1.03 (0.98–1.09)		Age
Asian girls	Non-Asian girls	1.04 (0.98–1.12)		Age
Most deprived areas	Least deprived areas	0.94 (0.88–1.00)	*	Age, sex, ethnic group

1.3 Watched TV 2+ hours per day in past week, children aged 2–14 years, 2011/12

Population group	Prevalence (% , 95% CI)			Estimated number
	Total	Boys	Girls	
Total	53.3 (51.2–55.5)	52.6 (49.8–55.4)	54.1 (51.0–57.1)	405,700
2–4 years	52.9 (48.9–56.9)	52.3 (46.2–58.3)	53.6 (47.4–59.6)	95,800
5–9 years	49.1 (45.2–53.1)	48.6 (43.5–53.8)	49.7 (44.7–54.7)	142,200
10–14 years	57.8 (54.5–60.9)	56.8 (52.5–61.0)	58.8 (53.5–64.0)	167,700
Māori	62.5 (58.8–66.1)	64.1 (59.6–68.5)	60.7 (55.0–66.1)	117,100
Pacific	59.3 (54.7–63.7)	54.6 (45.3–63.6)	63.8 (57.0–70.2)	71,400
Asian	49.9 (44.3–55.4)	52.9 (44.0–61.6)	46.7 (37.9–55.7)	36,400
European/Other	50.7 (48.1–53.3)	50.2 (47.0–53.5)	51.2 (47.5–55.0)	274,600
Least deprived areas (q1)	43.7 (37.9–49.6)	44.5 (36.6–52.6)	42.7 (34.4–51.4)	61,400
Most deprived areas (q5)	60.6 (56.9–64.2)	59.7 (53.8–65.4)	61.5 (57.0–65.8)	110,400

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	0.97 (0.90–1.05)		Age
Māori	Non-Māori	1.24 (1.15–1.34)	*	Age, sex
Māori boys	Non-Māori boys	1.32 (1.18–1.46)	*	Age
Māori girls	Non-Māori girls	1.17 (1.05–1.30)	*	Age
Pacific	Non-Pacific	1.14 (1.03–1.25)	*	Age, sex
Pacific boys	Non-Pacific boys	1.05 (0.91–1.21)		Age
Pacific girls	Non-Pacific girls	1.23 (1.08–1.39)	*	Age
Asian	Non-Asian	0.93 (0.82–1.07)		Age, sex
Asian boys	Non-Asian boys	1.01 (0.85–1.20)		Age
Asian girls	Non-Asian girls	0.86 (0.70–1.05)		Age
Most deprived areas	Least deprived areas	1.19 (1.03–1.39)	*	Age, sex, ethnic group

1.4 Obesity, children aged 2–14 years, 2011/12

Population group	Prevalence (%; 95% CI)						Estimated number
	Total		Boys		Girls		
Total	10.2	(8.8–11.7)	10.2	(8.3–12.2)	10.2	(8.4–12.3)	90,700
2–4 years	9.2	(6.5–12.5)	9.6	(6.1–14.2)	8.8	(5.6–13.0)	28,600
5–9 years	10.6	(8.6–12.9)	10.8	(8.1–13.9)	10.4	(7.6–13.8)	30,700
10–14 years	10.8	(8.7–13.2)	10.1	(7.1–13.8)	11.5	(8.3–15.4)	31,400
Māori	16.6	(12.7–21.0)	19.2	(14.0–25.4)	13.8	(9.8–18.7)	37,900
Pacific	23.5	(18.9–28.6)	23.1	(17.0–30.1)	23.9	(18.2–30.3)	33,200
Asian	7.5	(4.5–11.5)	9.4	(4.8–16.1)	5.4	(1.8–12.1)	6,400
European/Other	6.2	(5.0–7.6)	5.7	(4.1–7.7)	6.7	(4.9–8.8)	38,900
Least deprived areas (q1)	2.8	(1.3–5.2)	1.3	(0.4–3.0)	4.2	(1.6–8.9)	4,600
Most deprived areas (q5)	18.7	(15.6–22.2)	17.4	(13.8–21.5)	20.0	(15.7–24.9)	41,300

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	0.99 (0.78–1.27)		Age
Māori	Non-Māori	2.10 (1.64–2.68)	*	Age, sex
Māori boys	Non-Māori boys	2.76 (1.95–3.90)	*	Age
Māori girls	Non-Māori girls	1.55 (1.10–2.19)	*	Age
Pacific	Non-Pacific	3.08 (2.41–3.93)	*	Age, sex
Pacific boys	Non-Pacific boys	2.97 (2.07–4.26)	*	Age
Pacific girls	Non-Pacific girls	3.19 (2.27–4.47)	*	Age
Asian	Non-Asian	0.71 (0.44–1.17)		Age, sex
Asian boys	Non-Asian boys	0.92 (0.52–1.64)		Age
Asian girls	Non-Asian girls	0.51 (0.21–1.24)		Age
Most deprived areas	Least deprived areas	2.33 (1.37–3.93)	*	Age, sex, ethnic group

2.1 Excellent, very good or good health status (parent-rated), children aged 0–14 years, 2011/12

Population group	Prevalence (% , 95% CI)			Estimated number
	Total	Boys	Girls	
Total	97.9 (97.2–98.4)	97.5 (96.3–98.3)	98.3 (97.3–98.9)	874,000
0–4 years	97.5 (96.3–98.4)	96.9 (94.8–98.3)	98.2 (96.5–99.2)	305,600
5–9 years	98.1 (96.9–99.0)	98.5 (97.0–99.4)	97.7 (95.3–99.1)	283,900
10–14 years	98.0 (96.6–98.9)	97.1 (94.4–98.7)	98.9 (97.7–99.6)	284,500
Māori	96.7 (95.0–98.0)	96.7 (93.5–98.6)	96.8 (94.4–98.3)	222,800
Pacific	98.1 (96.7–98.9)	97.3 (94.7–98.8)	98.8 (97.0–99.6)	139,900
Asian	98.1 (95.0–99.5)	98.9 (95.1–100.0)	97.1 (90.6–99.6)	86,400
European/Other	97.9 (96.9–98.6)	97.4 (95.8–98.5)	98.4 (97.1–99.2)	617,400
Least deprived areas (q1)	99.1 (97.5–99.8)	99.0 (96.4–99.9)	99.2 (96.3–100.0)	153,700
Most deprived areas (q5)	97.9 (96.7–98.7)	97.8 (96.1–98.9)	98.0 (95.8–99.2)	214,100

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	0.99 (0.98–1.00)		Age
Māori	Non-Māori	0.98 (0.97–1.00)		Age, sex
Māori boys	Non-Māori boys	0.99 (0.97–1.01)		Age
Māori girls	Non-Māori girls	0.98 (0.96–1.00)	*	Age
Pacific	Non-Pacific	1.00 (0.99–1.02)		Age, sex
Pacific boys	Non-Pacific boys	1.00 (0.98–1.02)		Age
Pacific girls	Non-Pacific girls	1.01 (0.99–1.02)		Age
Asian	Non-Asian	1.00 (0.98–1.02)		Age, sex
Asian boys	Non-Asian boys	1.02 (1.00–1.04)		Age
Asian girls	Non-Asian girls	0.99 (0.95–1.02)		Age
Most deprived areas	Least deprived areas	0.98 (0.96–1.00)		Age, sex, ethnic group

2.2 Medicated asthma, children aged 2–14 years, 2011/12

Population group	Prevalence (%; 95% CI)			Estimated number
	Total	Boys	Girls	
Total	14.1 (12.8–15.4)	16.3 (14.5–18.3)	11.7 (9.7–14.1)	107,200
2–4 years	14.8 (11.8–18.1)	19.8 (14.8–25.6)	9.4 (6.8–12.6)	26,700
5–9 years	14.7 (12.4–17.2)	16.0 (12.9–19.6)	13.3 (9.8–17.5)	42,500
10–14 years	13.1 (10.8–15.6)	14.4 (11.2–18.2)	11.6 (8.2–15.9)	37,900
Māori	19.2 (16.8–21.8)	21.9 (18.3–26.0)	16.3 (13.4–19.6)	36,000
Pacific	13.6 (10.7–16.9)	15.0 (10.1–21.1)	12.2 (8.7–16.5)	16,300
Asian	11.0 (7.2–16.0)	14.1 (8.9–20.9)	7.8 (3.0–16.2)	8,000
European/Other	13.8 (12.0–15.7)	15.5 (13.1–18.2)	12.0 (9.4–15.1)	74,800
Least deprived areas (q1)	9.5 (6.1–13.9)	11.2 (6.2–18.1)	7.7 (4.0–13.1)	13,400
Most deprived areas (q5)	15.5 (12.8–18.4)	18.7 (14.7–23.3)	12.2 (8.8–16.3)	28,100

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	1.39 (1.13–1.71)	*	Age
Māori	Non-Māori	1.54 (1.27–1.87)	*	Age, sex
Māori boys	Non-Māori boys	1.50 (1.17–1.93)	*	Age
Māori girls	Non-Māori girls	1.60 (1.19–2.16)	*	Age
Pacific	Non-Pacific	0.95 (0.74–1.22)		Age, sex
Pacific boys	Non-Pacific boys	0.89 (0.64–1.23)		Age
Pacific girls	Non-Pacific girls	1.04 (0.71–1.53)		Age
Asian	Non-Asian	0.77 (0.53–1.10)		Age, sex
Asian boys	Non-Asian boys	0.84 (0.56–1.28)		Age
Asian girls	Non-Asian girls	0.65 (0.33–1.31)		Age
Most deprived areas	Least deprived areas	1.55 (1.04–2.30)	*	Age, sex, ethnic group

2.3 Diagnosed depression, anxiety disorder and/or ADD/ADHD, children aged 2–14 years, 2011/12

Population group	Prevalence (% , 95% CI)			Estimated number
	Total	Boys	Girls	
Total	3.2 (2.4–4.2)	4.3 (3.2–5.7)	2.1 (1.3–3.3)	24,600
2–4 years	1.5 (0.4–3.6)	2.3 (0.5–6.3)	0.7 (0.1–2.6)	2,700
5–9 years	2.8 (1.7–4.4)	3.2 (1.7–5.5)	2.3 (1.1–4.4)	8,100
10–14 years	4.8 (3.4–6.5)	6.6 (4.5–9.3)	2.8 (1.4–5.0)	13,900
Māori	3.2 (2.1–4.7)	4.3 (2.6–6.8)	2.0 (1.0–3.6)	6,000
Pacific	1.6 (0.7–3.0)	2.3 (0.8–5.0)	0.9 (0.2–2.6)	1,900
Asian	0.7 (0.1–2.2)	1.3 (0.2–4.4)	0.0 (0.0–2.2)	<1,000
European/Other	3.9 (2.8–5.2)	5.1 (3.6–7.0)	2.6 (1.5–4.2)	20,900
Least deprived areas (q1)	2.8 (1.3–5.4)	3.2 (1.3–6.4)	2.4 (0.4–7.3)	4,000
Most deprived areas (q5)	3.4 (2.1–5.1)	4.5 (2.8–7.0)	2.2 (1.0–4.3)	6,200

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	2.01 (1.21–3.34)	*	Age
Māori	Non-Māori	1.01 (0.65–1.59)		Age, sex
Māori boys	Non-Māori boys	1.05 (0.60–1.82)		Age
Māori girls	Non-Māori girls	0.95 (0.44–2.05)		Age
Pacific	Non-Pacific	0.47 (0.23–0.96)	*	Age, sex
Pacific boys	Non-Pacific boys	0.51 (0.21–1.25)		Age
Pacific girls	Non-Pacific girls	0.39 (0.12–1.30)		Age
Asian	Non-Asian	0.20 (0.05–0.72)	*	Age, sex
Asian boys	Non-Asian boys	0.29 (0.08–1.06)		Age
Asian girls	Non-Asian girls	–		Age
Most deprived areas	Least deprived areas	1.67 (0.73–3.85)		Age, sex, ethnic group

Note: Adjusted rate ratio for Asian girls was suppressed due to low numbers.

3.1 Visited a GP in the past 12 months, children aged 0–14 years, 2011/12

Population group	Prevalence (%; 95% CI)			Estimated number
	Total	Boys	Girls	
Total	73.7 (72.2–75.1)	73.3 (70.7–75.8)	74.2 (71.6–76.6)	658,300
0–5 years	86.6 (84.4–88.5)	86.1 (83.1–88.8)	87.0 (83.9–89.7)	323,000
6–9 years	68.5 (64.5–72.3)	67.3 (61.8–72.5)	69.8 (62.9–76.1)	157,300
10–14 years	61.3 (58.4–64.2)	61.6 (56.9–66.1)	61.0 (56.4–65.4)	178,100
Māori	73.6 (70.6–76.5)	73.2 (69.4–76.8)	74.0 (69.9–77.8)	169,500
Pacific	77.9 (73.8–81.7)	77.6 (72.4–82.3)	78.1 (71.0–84.2)	111,100
Asian	73.6 (68.1–78.6)	76.0 (67.9–82.9)	71.1 (62.2–78.9)	64,900
European/Other	73.7 (71.6–75.7)	72.8 (69.2–76.2)	74.6 (71.4–77.7)	464,900
Least deprived areas (q1)	69.5 (64.2–74.4)	70.2 (61.2–78.2)	68.6 (60.8–75.7)	107,700
Most deprived areas (q5)	73.1 (70.3–75.9)	71.8 (67.4–75.9)	74.5 (69.9–78.6)	160,000

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	0.99 (0.94–1.03)		Age
Māori	Non-Māori	0.98 (0.93–1.03)		Age, sex
Māori boys	Non-Māori boys	0.98 (0.91–1.05)		Age
Māori girls	Non-Māori girls	0.98 (0.92–1.05)		Age
Pacific	Non-Pacific	1.06 (1.00–1.12)	*	Age, sex
Pacific boys	Non-Pacific boys	1.05 (0.97–1.14)		Age
Pacific girls	Non-Pacific girls	1.06 (0.99–1.15)		Age
Asian	Non-Asian	0.98 (0.90–1.06)		Age, sex
Asian boys	Non-Asian boys	1.02 (0.93–1.13)		Age
Asian girls	Non-Asian girls	0.93 (0.82–1.05)		Age
Most deprived areas	Least deprived areas	1.00 (0.91–1.09)		Age, sex, ethnic group

3.2 Visited a practice nurse without seeing GP at the same time in the past 12 months, children aged 0–14 years, 2011/12

Population group	Prevalence (%; 95% CI)			Estimated number
	Total	Boys	Girls	
Total	26.1 (24.4–28.0)	23.6 (21.4–25.9)	28.8 (26.3–31.4)	233,500
0–5 years	40.3 (37.3–43.3)	38.0 (34.0–42.2)	42.6 (38.8–46.4)	150,200
6–9 years	14.3 (11.2–17.8)	11.6 (8.5–15.3)	17.1 (12.6–22.4)	32,700
10–14 years	17.6 (14.8–20.6)	14.7 (11.1–19.0)	20.5 (16.3–25.3)	51,000
Māori	23.9 (21.1–26.9)	21.8 (18.4–25.5)	26.2 (22.0–30.6)	55,100
Pacific	18.4 (14.7–22.7)	14.5 (10.5–19.2)	22.2 (16.0–29.5)	26,300
Asian	22.7 (18.0–28.0)	18.7 (12.9–25.7)	27.1 (20.0–35.2)	20,000
European/Other	29.1 (26.8–31.5)	26.6 (23.8–29.6)	31.8 (28.6–35.2)	183,900
Least deprived areas (q1)	27.7 (23.0–32.8)	25.9 (19.7–32.9)	29.9 (23.6–36.8)	43,000
Most deprived areas (q5)	21.8 (18.5–25.3)	19.7 (15.2–24.7)	23.9 (19.3–29.0)	47,600

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	0.82 (0.72–0.93)	*	Age
Māori	Non-Māori	0.84 (0.73–0.96)	*	Age, sex
Māori boys	Non-Māori boys	0.84 (0.69–1.02)		Age
Māori girls	Non-Māori girls	0.84 (0.70–1.01)		Age
Pacific	Non-Pacific	0.64 (0.53–0.78)	*	Age, sex
Pacific boys	Non-Pacific boys	0.53 (0.40–0.70)	*	Age
Pacific girls	Non-Pacific girls	0.74 (0.57–0.97)	*	Age
Asian	Non-Asian	0.81 (0.65–1.00)		Age, sex
Asian boys	Non-Asian boys	0.72 (0.52–1.01)		Age
Asian girls	Non-Asian girls	0.89 (0.67–1.17)		Age
Most deprived areas	Least deprived areas	0.85 (0.67–1.08)		Age, sex, ethnic group

3.3 Visited an after-hours medical centre in the past 12 months, children aged 0–14 years, 2011/12

Population group	Prevalence (% , 95% CI)			Estimated number
	Total	Boys	Girls	
Total	21.6 (19.9–23.5)	22.0 (19.5–24.6)	21.3 (18.9–23.9)	193,300
0–5 years	28.6 (25.6–31.7)	28.1 (24.6–31.9)	29.1 (25.2–33.3)	106,700
6–9 years	19.4 (16.0–23.1)	20.0 (16.1–24.3)	18.7 (13.9–24.4)	44,400
10–14 years	14.6 (12.1–17.2)	15.7 (11.9–20.3)	13.3 (9.9–17.3)	42,300
Māori	21.0 (17.9–24.3)	21.0 (16.9–25.5)	21.0 (16.9–25.5)	48,300
Pacific	22.2 (18.1–26.8)	25.6 (19.0–33.2)	19.0 (14.5–24.1)	31,700
Asian	17.8 (13.9–22.3)	17.2 (11.9–23.6)	18.4 (12.0–26.4)	15,700
European/Other	23.5 (21.5–25.6)	23.8 (21.1–26.8)	23.1 (20.2–26.3)	148,200
Least deprived areas (q1)	23.6 (19.9–27.7)	22.1 (17.1–27.8)	25.4 (19.6–31.9)	36,600
Most deprived areas (q5)	18.5 (15.0–22.3)	19.5 (15.0–24.7)	17.4 (13.8–21.6)	40,400

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	1.03 (0.89–1.19)		Age
Māori	Non-Māori	0.93 (0.79–1.08)		Age, sex
Māori boys	Non-Māori boys	0.91 (0.73–1.12)		Age
Māori girls	Non-Māori girls	0.95 (0.76–1.19)		Age
Pacific	Non-Pacific	1.01 (0.83–1.23)		Age, sex
Pacific boys	Non-Pacific boys	1.16 (0.89–1.52)		Age
Pacific girls	Non-Pacific girls	0.87 (0.65–1.16)		Age
Asian	Non-Asian	0.77 (0.61–0.99)	*	Age, sex
Asian boys	Non-Asian boys	0.74 (0.53–1.03)		Age
Asian girls	Non-Asian girls	0.81 (0.57–1.17)		Age
Most deprived areas	Least deprived areas	0.60 (0.46–0.79)	*	Age, sex, ethnic group

4.1 Unmet need for primary health care in the past 12 months, children aged 0–14 years, 2011/12

Population group	Prevalence (% , 95% CI)			Estimated number
	Total	Boys	Girls	
Total	20.2 (18.2–22.3)	19.3 (17.0–21.7)	21.1 (18.4–24.1)	180,200
0–5 years	22.8 (20.0–25.7)	21.8 (18.1–25.9)	23.7 (19.6–28.3)	84,900
6–9 years	21.0 (17.1–25.4)	20.8 (15.9–26.5)	21.2 (16.1–27.0)	48,200
10–14 years	16.2 (13.8–18.9)	14.7 (11.4–18.6)	17.7 (14.2–21.8)	47,100
Māori	28.2 (24.9–31.5)	29.0 (24.5–33.8)	27.3 (23.0–31.8)	64,900
Pacific	26.5 (21.6–31.9)	25.6 (19.2–32.9)	27.3 (20.7–34.7)	37,800
Asian	14.4 (10.1–19.7)	16.2 (9.3–25.5)	12.4 (7.9–18.3)	12,700
European/Other	18.7 (16.4–21.2)	17.1 (14.4–20.1)	20.4 (17.4–23.6)	118,000
Least deprived areas (q1)	14.5 (10.8–19.0)	13.2 (8.2–19.8)	16.1 (10.7–22.8)	22,600
Most deprived areas (q5)	23.3 (20.1–26.7)	22.0 (17.9–26.7)	24.6 (19.8–29.9)	51,000

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	0.91 (0.78–1.06)		Age
Māori	Non-Māori	1.60 (1.38–1.86)	*	Age, sex
Māori boys	Non-Māori boys	1.81 (1.46–2.23)	*	Age
Māori girls	Non-Māori girls	1.42 (1.15–1.75)	*	Age
Pacific	Non-Pacific	1.38 (1.16–1.65)	*	Age, sex
Pacific boys	Non-Pacific boys	1.39 (1.08–1.79)	*	Age
Pacific girls	Non-Pacific girls	1.37 (1.06–1.78)	*	Age
Asian	Non-Asian	0.68 (0.50–0.92)	*	Age, sex
Asian boys	Non-Asian boys	0.82 (0.54–1.24)		Age
Asian girls	Non-Asian girls	0.55 (0.36–0.83)	*	Age
Most deprived areas	Least deprived areas	1.12 (0.83–1.49)		Age, sex, ethnic group

4.2 Unable to get appointment at usual medical centre within 24 hours in the past 12 months, children aged 0–14 years, 2011/12

Population group	Prevalence (% , 95% CI)			Estimated number
	Total	Boys	Girls	
Total	13.8 (12.2–15.5)	12.8 (10.9–14.9)	14.7 (12.6–17.1)	118,200
0–5 years	17.0 (14.6–19.6)	15.7 (12.5–19.4)	18.3 (15.0–22.0)	61,300
6–9 years	13.3 (10.0–17.3)	13.6 (9.3–18.9)	13.1 (8.7–18.7)	29,200
10–14 years	10.0 (7.9–12.3)	8.5 (5.8–12.0)	11.4 (8.3–15.1)	27,700
Māori	17.6 (15.1–20.4)	17.3 (13.6–21.5)	18.0 (14.3–22.1)	38,700
Pacific	16.1 (11.9–21.1)	16.6 (10.9–23.8)	15.7 (10.0–22.9)	22,200
Asian	12.4 (8.0–18.2)	14.5 (7.4–24.4)	10.3 (5.9–16.3)	10,300
European/Other	13.4 (11.6–15.5)	12.1 (9.9–14.5)	14.9 (12.4–17.6)	82,000
Least deprived areas (q1)	11.1 (8.4–14.4)	9.5 (5.8–14.4)	13.0 (8.6–18.7)	16,800
Most deprived areas (q5)	14.4 (11.4–17.7)	13.2 (9.4–17.9)	15.5 (11.4–20.2)	30,000

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	0.87 (0.71–1.06)		Age
Māori	Non-Māori	1.38 (1.14–1.68)	*	Age, sex
Māori boys	Non-Māori boys	1.49 (1.13–1.97)	*	Age
Māori girls	Non-Māori girls	1.29 (0.99–1.69)		Age
Pacific	Non-Pacific	1.19 (0.93–1.52)		Age, sex
Pacific boys	Non-Pacific boys	1.32 (0.94–1.87)		Age
Pacific girls	Non-Pacific girls	1.07 (0.75–1.54)		Age
Asian	Non-Asian	0.87 (0.61–1.24)		Age, sex
Asian boys	Non-Asian boys	1.11 (0.68–1.82)		Age
Asian girls	Non-Asian girls	0.65 (0.41–1.04)		Age
Most deprived areas	Least deprived areas	1.13 (0.77–1.66)		Age, sex, ethnic group

4.3 Unmet need for GP services due to cost in the past 12 months, children aged 0–14 years, 2011/12

Population group	Prevalence (% , 95% CI)			Estimated number
	Total	Boys	Girls	
Total	4.9 (4.0–5.9)	5.1 (3.8–6.7)	4.7 (3.7–5.9)	43,800
0–5 years	2.7 (1.9–3.7)	2.7 (1.5–4.4)	2.6 (1.6–4.0)	9,900
6–9 years	7.6 (5.6–10.0)	8.3 (5.3–12.2)	6.9 (4.8–9.4)	17,400
10–14 years	5.7 (4.1–7.6)	5.6 (3.4–8.6)	5.7 (3.6–8.5)	16,400
Māori	8.1 (6.3–10.3)	8.4 (5.7–11.9)	7.9 (5.8–10.4)	18,800
Pacific	6.8 (4.2–10.4)	7.1 (3.4–13.0)	6.5 (3.9–10.2)	9,700
Asian	2.5 (0.6–6.7)	2.3 (0.0–13.3)	2.7 (0.9–6.3)	2,200
European/Other	4.2 (3.2–5.5)	4.6 (3.0–6.7)	3.9 (2.7–5.4)	26,800
Least deprived areas (q1)	3.4 (1.3–7.1)	4.0 (0.9–11.0)	2.6 (0.8–5.9)	5,200
Most deprived areas (q5)	6.7 (5.0–8.8)	7.5 (5.1–10.7)	5.9 (3.8–8.5)	14,700

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	1.08 (0.77–1.51)		Age
Māori	Non-Māori	2.27 (1.64–3.14)	*	Age, sex
Māori boys	Non-Māori boys	2.27 (1.41–3.63)	*	Age
Māori girls	Non-Māori girls	2.27 (1.46–3.54)	*	Age
Pacific	Non-Pacific	1.54 (1.02–2.32)	*	Age, sex
Pacific boys	Non-Pacific boys	1.59 (0.86–2.94)		Age
Pacific girls	Non-Pacific girls	1.49 (0.87–2.55)		Age
Asian	Non-Asian	0.51 (0.18–1.45)		Age, sex
Asian boys	Non-Asian boys	0.45 (0.06–3.18)		Age
Asian girls	Non-Asian girls	0.58 (0.24–1.43)		Age
Most deprived areas	Least deprived areas	1.19 (0.59–2.40)		Age, sex, ethnic group

4.4 Unmet after-hours need due to cost in the past 12 months, children aged 0–14 years, 2011/12

Population group	Prevalence (% , 95% CI)						Estimated number
	Total		Boys		Girls		
Total	4.8	(3.8–5.9)	5.0	(3.6–6.6)	4.6	(3.4–6.1)	42,800
0–5 years	4.2	(3.1–5.7)	4.1	(2.6–6.1)	4.5	(2.6–7.0)	15,900
6–9 years	5.7	(3.9–8.1)	5.6	(3.5–8.5)	5.8	(3.5–8.9)	13,100
10–14 years	4.8	(3.4–6.5)	5.6	(3.3–8.8)	3.9	(2.4–5.9)	13,800
Māori	8.6	(6.7–10.9)	8.4	(5.7–11.8)	8.9	(6.1–12.4)	19,800
Pacific	7.9	(5.6–10.8)	8.0	(4.9–12.1)	7.9	(4.9–11.9)	11,300
Asian	3.7	(1.4–8.0)	4.8	(1.0–13.3)	2.6	(0.9–5.7)	3,300
European/Other	4.0	(2.8–5.3)	4.1	(2.6–6.0)	3.8	(2.4–5.8)	25,000
Least deprived areas (q1)	2.6	(0.9–5.7)	2.7	(0.6–7.6)	2.5	(0.4–7.9)	4,000
Most deprived areas (q5)	7.6	(5.8–9.6)	8.0	(5.2–11.5)	7.2	(4.9–10.1)	16,500

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	1.08 (0.77–1.51)		Age
Māori	Non-Māori	2.53 (1.82–3.52)	*	Age, sex
Māori boys	Non-Māori boys	2.27 (1.43–3.61)	*	Age
Māori girls	Non-Māori girls	2.87 (1.79–4.59)	*	Age
Pacific	Non-Pacific	1.91 (1.35–2.70)	*	Age, sex
Pacific boys	Non-Pacific boys	1.85 (1.13–3.02)	*	Age
Pacific girls	Non-Pacific girls	1.98 (1.20–3.25)	*	Age
Asian	Non-Asian	0.77 (0.36–1.65)		Age, sex
Asian boys	Non-Asian boys	0.98 (0.34–2.82)		Age
Asian girls	Non-Asian girls	0.54 (0.23–1.28)		Age
Most deprived areas	Least deprived areas	1.38 (0.66–2.90)		Age, sex, ethnic group

4.5 Unfilled prescription due to cost in the past 12 months, children aged 0–14 years, 2011/12

Population group	Prevalence (% , 95% CI)			Estimated number
	Total	Boys	Girls	
Total	6.9 (5.7–8.2)	6.5 (5.1–8.1)	7.3 (5.8–9.1)	61,500
0–5 years	7.3 (5.8–9.0)	7.0 (5.0–9.3)	7.6 (5.5–10.2)	27,200
6–9 years	7.9 (6.2–9.9)	6.7 (4.6–9.2)	9.2 (6.6–12.5)	18,100
10–14 years	5.6 (3.8–7.8)	5.8 (3.8–8.3)	5.3 (3.1–8.4)	16,200
Māori	12.4 (10.0–15.0)	12.1 (8.8–16.2)	12.6 (9.4–16.4)	28,500
Pacific	11.2 (7.7–15.5)	10.2 (6.7–14.7)	12.1 (7.5–18.3)	16,000
Asian	3.3 (1.8–5.5)	3.2 (1.1–7.1)	3.4 (1.3–7.1)	2,900
European/Other	4.9 (3.6–6.5)	4.4 (2.9–6.4)	5.4 (3.7–7.5)	30,800
Least deprived areas (q1)	2.7 (1.2–5.1)	2.7 (1.0–5.8)	2.6 (0.5–7.4)	4,100
Most deprived areas (q5)	12.4 (9.9–15.2)	12.7 (9.2–16.9)	12.1 (8.8–16.1)	27,100

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	0.89 (0.68–1.16)		Age
Māori	Non-Māori	2.46 (1.89–3.20)	*	Age, sex
Māori boys	Non-Māori boys	2.65 (1.82–3.88)	*	Age
Māori girls	Non-Māori girls	2.29 (1.60–3.27)	*	Age
Pacific	Non-Pacific	1.83 (1.37–2.44)	*	Age, sex
Pacific boys	Non-Pacific boys	1.73 (1.15–2.61)	*	Age
Pacific girls	Non-Pacific girls	1.92 (1.27–2.89)	*	Age
Asian	Non-Asian	0.44 (0.25–0.77)	*	Age, sex
Asian boys	Non-Asian boys	0.46 (0.21–1.01)		Age
Asian girls	Non-Asian girls	0.43 (0.19–0.95)	*	Age
Most deprived areas	Least deprived areas	2.82 (1.54–5.17)	*	Age, sex, ethnic group

5.1 Visited a dental health care worker in the past 12 months, children aged 1–14 years, 2011/12

Population group	Prevalence (%; 95% CI)			Estimated number
	Total	Boys	Girls	
Total	78.5 (76.6–80.3)	76.5 (74.0–78.9)	80.6 (78.1–82.9)	651,500
1–4 years	51.9 (48.1–55.7)	48.9 (43.3–54.5)	55.1 (49.5–60.7)	130,000
5–9 years	90.9 (88.1–93.2)	89.9 (86.2–93.0)	91.9 (87.8–94.9)	262,900
10–14 years	89.1 (86.1–91.6)	87.1 (82.7–90.7)	91.2 (87.7–94.0)	258,700
Māori	74.9 (71.7–77.8)	72.6 (68.5–76.4)	77.3 (72.3–81.9)	157,000
Pacific	73.1 (67.9–78.0)	71.8 (64.3–78.4)	74.4 (66.9–81.0)	95,500
Asian	74.1 (67.7–79.9)	71.0 (61.7–79.1)	77.5 (70.0–83.9)	60,700
European/Other	80.5 (78.2–82.7)	78.6 (75.5–81.4)	82.6 (79.6–85.3)	474,300
Least deprived areas (q1)	84.3 (80.4–87.7)	82.3 (76.6–87.2)	86.5 (80.9–91.0)	124,100
Most deprived areas (q5)	75.1 (71.8–78.2)	74.2 (69.7–78.4)	76.0 (71.3–80.3)	151,100

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	0.95 (0.92–0.99)	*	Age
Māori	Non-Māori	0.97 (0.93–1.01)		Age, sex
Māori boys	Non-Māori boys	0.96 (0.91–1.02)		Age
Māori girls	Non-Māori girls	0.97 (0.92–1.03)		Age
Pacific	Non-Pacific	0.93 (0.88–0.98)	*	Age, sex
Pacific boys	Non-Pacific boys	0.95 (0.88–1.03)		Age
Pacific girls	Non-Pacific girls	0.90 (0.84–0.97)	*	Age
Asian	Non-Asian	0.97 (0.91–1.03)		Age, sex
Asian boys	Non-Asian boys	0.95 (0.86–1.04)		Age
Asian girls	Non-Asian girls	0.99 (0.91–1.07)		Age
Most deprived areas	Least deprived areas	0.97 (0.90–1.04)		Age, sex, ethnic group

5.2 Had any teeth removed due to decay, abscess or infection in the past 12 months, children aged 1–14 years, 2011/12

Population group	Prevalence (% , 95% CI)						Estimated number
	Total		Boys		Girls		
Total	4.1	(3.3–4.9)	4.6	(3.5–5.9)	3.5	(2.5–4.8)	33,800
1–4 years	0.8	(0.3–1.7)	0.7	(0.2–2.1)	0.9	(0.2–2.4)	2,100
5–9 years	7.9	(6.0–10.1)	8.5	(6.0–11.5)	7.3	(4.6–10.8)	22,900
10–14 years	3.0	(1.9–4.5)	4.0	(2.2–6.6)	2.0	(1.1–3.3)	8,800
Māori	5.8	(4.2–7.8)	6.4	(4.2–9.2)	5.2	(3.3–7.8)	12,200
Pacific	6.5	(4.3–9.3)	7.4	(4.0–12.3)	5.6	(3.0–9.3)	8,500
Asian	6.4	(3.4–10.9)	8.3	(4.3–14.1)	4.4	(0.5–15.7)	5,300
European/Other	3.2	(2.3–4.3)	3.6	(2.5–5.0)	2.7	(1.7–4.2)	18,800
Least deprived areas (q1)	3.4	(1.7–6.1)	3.2	(1.2–6.7)	3.7	(1.6–7.5)	5,100
Most deprived areas (q5)	6.2	(4.4–8.4)	5.9	(3.3–9.6)	6.4	(3.7–10.2)	12,400

Group of interest	Reference group	Adjusted rate ratio (95% CI)	Significant (*)	Adjustment variables
Boys	Girls	1.30 (0.88–1.93)		Age
Māori	Non-Māori	1.75 (1.20–2.54)	*	Age, sex
Māori boys	Non-Māori boys	1.71 (1.05–2.78)	*	Age
Māori girls	Non-Māori girls	1.80 (1.00–3.24)		Age
Pacific	Non-Pacific	1.82 (1.17–2.82)	*	Age, sex
Pacific boys	Non-Pacific boys	1.92 (1.07–3.43)	*	Age
Pacific girls	Non-Pacific girls	1.70 (0.87–3.32)		Age
Asian	Non-Asian	1.75 (0.96–3.19)		Age, sex
Asian boys	Non-Asian boys	2.10 (1.14–3.86)	*	Age
Asian girls	Non-Asian girls	1.30 (0.33–5.15)		Age
Most deprived areas	Least deprived areas	1.17 (0.50–2.76)		Age, sex, ethnic group

