

Annual Update of Key Results 2015/16

New Zealand Health Survey



New Zealand Health Survey

Citation: Ministry of Health. 2016. *Annual Update of Key Results 2015/16: New Zealand Health Survey*. Wellington: Ministry of Health.

Published in December 2016
by the Ministry of Health
PO Box 5013, Wellington 6140, New Zealand

ISBN 978-0-947515-91-1 (online)
HP 6521

This document is available at health.govt.nz



MANATŪ HAUORA



This work is licensed under the Creative Commons Attribution 4.0 International licence. In essence, you are free to: share ie, copy and redistribute the material in any medium or format; adapt ie, remix, transform and build upon the material. You must give appropriate credit, provide a link to the licence and indicate if changes were made.

Foreword

I am pleased to present the latest findings from the New Zealand Health Survey. Started in 2011 as a continuous survey, it is a vital tool in helping us understand the health of New Zealanders.

This latest report provides information on the health of both adults and children from July 2015 to June 2016, together with trend data. It also updates the *Annual Update of Key Results 2014/15: New Zealand Health Survey*.

Being able to look at comprehensive information over time enables us to monitor trends and identify changing patterns of disease. It also provides an excellent source of data on many risk factors that influence New Zealanders' health and wellbeing, including obesity.

The knowledge we've gained from this survey has helped determine the direction set out in the New Zealand Health Strategy. It will continue to inform how we respond to the challenges we face, and help identify where investment, effort and education will make the most difference – allowing more New Zealanders to live well, stay well and get well.

Some of the data collected by the New Zealand Health Survey have been designated as key official statistics. These statistics, known as Tier 1 statistics, include smoking (current), past-year drinking, hazardous drinking, obesity, unmet need for a general practitioner due to cost, unfilled prescription due to cost, self-rated health and mental health status (psychological distress). This report has been produced, analysed and released according to the high statistical standards expected of producers of Tier 1 statistics.

I would like to thank the many people who have been involved in the survey. I would also like to extend a special thank you to the many thousands of New Zealanders who gave their time to take part. The information they have provided is critical in developing and monitoring health policy and services in New Zealand.

I hope you find this report of interest.

Chai Chuah
Director-General of Health
Ministry of Health

Authors

This report was written by Sharon Cox, with important contributions from Bridget Murphy, Deepa Weerasekera, Inbal Salz, Maria Turley, Martin Tobias, Matthew Cronin, Michelle Liu, Sonia Chen and Steven Johnston. All of these authors are employed by the Health and Disability Intelligence Group, Ministry of Health.

Input into the report and/or peer review were also provided by Alan Henderson, Barbara Burt, Barry Welsh, Fran McGrath, Harriette Carr, John Stribling, Louise McIntyre, Pat Tuohy, Paula Searle, Peter Kennerly and Ross Judge, all employed by the Ministry of Health.

Acknowledgements

The New Zealand Health Survey would not have been possible without the support and enthusiasm of many individuals, including the many thousands of New Zealanders who gave their time to participate in it and the interviewers who worked so diligently to collect the data. This report would not have been possible without your generosity.

Contents

Foreword	iii
Authors	iv
Acknowledgements	iv
Executive summary	vii
Introduction	1
Overview	1
Methodology	2
How are the results reported?	7
The health of New Zealand adults	8
Health status, health behaviours and risk factors of adults	12
Health conditions of adults	25
Adults' access to health care	36
Oral health of adults	45
The health of New Zealand children	48
Health status, health behaviours and risk factors of children	52
Health conditions of children	58
Children's access to health care	60
Oral health of children	69
References	72
Appendix 1: Definitions and statistical methods	74
Total response ethnicity	74
Adjusted rate ratios	74
Neighbourhood deprivation	75
Results are representative of the total adult or child population	75
Percentages refer to unadjusted values	75
Statistical significance	75
Time trends	76
Linear regression	76
Absolute and relative differences	76
Survey results show associations rather than cause-and-effect relationships	76
Reliability of survey results	76

List of Tables

Table 1:	Sample sizes for children and adults, by ethnic group, New Zealand Health Survey 2015/16	2
Table 2:	Annual indicators from the survey	3
Table 3:	Key survey results for adults (15 years and over)	9
Table 4:	Key survey results for Māori adults	10
Table 5:	Key survey results for Pacific adults	11
Table 6:	Change in daily smoking prevalence, linear regressions, 2006/07–2015/16	16
Table 7:	Key survey results for children (aged 0–14 years, unless stated below)	49
Table 8:	Key survey results for Māori children (aged 0–14 years, unless stated below)	50
Table 9:	Key survey results for Pacific children (aged 0–14 years, unless stated below)	51

List of Figures

Figure 1:	Daily smoking prevalence, 2006/07–2015/16	15
Figure 2:	The picture showcard used in the 2015/16 survey, showing the number of standard drinks in commonly consumed alcoholic drinks	19
Figure 3:	Prevalence of hypertension, by age groups, 2012–2016	27
Figure 4:	Prevalence of controlled high blood pressure among adults taking hypertensive medication, by sex and age group, 2012–2016	28

Executive summary

The following is a summary of the key findings of the 2015/16 New Zealand Health Survey (the survey), including notable trends and differences between population groups.

- **Most New Zealanders report being in good health.**
Most adults rate their own (88%) and their children's (98%) health as good, very good or excellent. Adults living in the most socioeconomically deprived areas were 2.5 times as likely to rate themselves as being in fair or poor health compared with adults living in the least deprived areas, after adjusting for age, sex and ethnicity.
- **The current smoking rate has decreased.**
The current smoking rate (adults who smoke at least monthly) has fallen from 20% in 2006/07 to 16% in 2015/16. The most substantial reduction in current smoking since 2006/07 was for 15- to 17-year-olds, 6% of whom smoked in 2015/16 compared with 16% in 2006/07.
- **The percentage of adults with hazardous drinking patterns is increasing.**
The survey measured drinking in 'standard drinks' as well as 'drinks' in 2015/16. 'Standard drinks' set a specific size to the drink being consumed. Measuring in 'drinks' is the measure used in previous years. It did not specify a size to the drink being consumed. Measuring in 'drinks' as well as 'standard drinks' allowed us to compare this years' results with previous years. The hazardous drinking rate (measured in 'drinks') declined from 18% in 2006/07 to 15% in 2011/12 and then increased steadily to 19% in 2015/16. The improved measure of 'standard drinks' used in 2015/16 shows that about one in five (21%) adults had a hazardous drinking pattern in 2015/16.
- **Less than half of all adults eat the recommended amounts of both vegetables and fruit.**
Four in ten adults (40%) eat at least three servings of vegetables as well as two servings of fruit each day, as recommended in the *Eating and Activity Guidelines for New Zealand Adults* (Ministry of Health 2015a). The percentage of adults eating the recommended amounts of both vegetables and fruit has dropped from 43% in 2006/07.
- **The percentage of adults who are physically active is decreasing, while the percentage of adults who do little or no physical activity is increasing.**
The survey categorises physical activity into three groups: those who are physically active (getting at least 30 minutes of physical activity on at least five days a week); those who are somewhat active but do not meet the physical activity guidelines and those who do little or no physical activity (defined as getting less than 30 minutes of physical activity a week, including housework, work-related activity and walking). Less than half of adults (48%) are physically active, down from 52% in 2006/07. More adults are physically inactive (15%) than in 2006/07, when 10% were physically inactive.
- **About half of the adults who currently take hypertensive medication have their high blood pressure under control.**
One in six (17%) adults reported that a doctor had diagnosed them with high blood pressure and they were taking medication for it. Of the adults who self-reported high blood pressure (and were medicated), just over half (53%) of them had their blood pressure under control when measured in the survey.

- Obesity rates have been stable for children since 2011/12.**
One in nine children aged 2–14 years (11%) are obese. The child obesity rate has not changed significantly since 2011/12 (when it was 11%). Twenty percent of children living in the most socioeconomically deprived areas are obese, compared with 4% living in the least deprived areas.
- Obesity rates have increased for adults since 2006/07.**
Thirty-two percent of adults are obese, up from 27% in 2006/07. Since 2006/07, rates of extreme obesity (about 2%) and obesity (about 23%) have stayed the same for adults in the least deprived areas. In contrast, for adults in the most deprived areas, extreme obesity rates increased from 8% to 11% and obesity rates increased from 39% to 44% during the same period.
- More than one in five adults experience chronic pain and this number is increasing.**
Twenty-one percent of adults experience chronic pain, up from 17% in 2006/07. This represents about 777,000 adults experiencing pain almost every day; a 37% increase from 567,000 adults in 2006/07.
- Child physical punishment rates are decreasing.**
The percentage of children who were physically punished (eg, smacked) by their parent or primary caregiver in a four-week period has decreased from 10% in 2006/07 to 6% in 2015/16. Māori and Pacific children are about twice as likely to be physically punished as non-Māori and non-Pacific children, after adjusting for age and sex differences.
- The percentage of adults experiencing psychological distress decreases with age.**
About 256,000 adults (7%) experienced psychological distress in the four weeks before taking part in the survey, indicating a high probability of the person having an anxiety or depressive disorder. Psychological distress rates decreased with age. Less than 5% of adults aged 65 years and over experienced psychological distress in the previous four weeks. In contrast, more than 8% of adults aged 15–44 years experienced psychological distress in the previous four weeks.
- A lower percentage of adults have definite confidence and trust in their general practitioner (GP).**
Most adults (79%) have definite confidence and trust in the GP they last visited. However, this figure has decreased since 2011/12, when it was 84%. At the same time, adults who have some confidence and trust has increased from 14% in 2011/12 to 17% in 2015/16. The percentage of adults who have no confidence and trust at all in their GP has increased from 2.1% in 2011/12 to 3.4% in 2015/16.
- Most children had their last visit with a GP or after-hours medical centre for free.**
In July 2015, the Ministry of Health (the Ministry) started the Zero Fees for Under 13s initiative, providing funding to encourage free GP and after-hours medical centre visits for children under 13 years of age. Eighty-two percent of children received their last GP visit free and 67% received their last after-hours visit free, up from 57% and 55% respectively in 2014/15. For children aged 6–12 years, more than three-quarters (77%) had their last GP visit free (up from one-quarter in 2014/15) and about half (52%) had their last after-hours medical centre visit free (up from 18% in 2014/15).

The survey also asks questions about unmet need for primary health care, including questions about whether children were unable to visit the GP or after-hours medical centre in the past 12 months because of cost. The survey interview was conducted over a range of dates, and these questions asked respondents to recall visits in the *past* year. This meant that

for most respondents interviewed during 2015/16, the 12 month recall period for the unmet need questions will have included a period of time before Zero Fees for Under 13s was introduced. There was no significant change, compared with 2014/15, in the rate of children aged 6–12 years experiencing unmet need for GPs or after-hours medical centres due to cost. All of next year's data will be from a recall period after Zero Fees for Under 13s was introduced.

- **Rates of experiencing one or more type of unmet need for primary health care are increasing for adults and children.**

While most people were able to access primary health care when they needed to, rates of experiencing one or more type of unmet need for primary health care are increasing. Twenty-nine percent of adults reported one or more types of unmet need for primary health care in the past 12 months, up from 27% in 2011/12. Nearly one-quarter of children (24%) experienced one or more types of unmet need for primary health care at some point in the past 12 months, up from 20% in 2011/12.

These increases were mainly driven by more adults and children not being able to get an appointment at their usual medical centre within 24 hours when they wanted to, rather than unmet need for primary health care due to cost. Eighteen percent of children were unable to get an appointment at their usual medical centre within 24 hours when their parents wanted them to be seen within 24 hours, up from 13% in 2011/12. For adults, this rate declined from 18% in 2006/07 to 15% in 2011/12 and then increased steadily to 18% in 2015/16.

- **Māori have poorer health and more unmet need for health care.**

Māori adults have higher rates for most health risks and conditions, such as smoking, hazardous drinking, obesity, physical inactivity, psychological distress, asthma, arthritis and chronic pain, than non-Māori adults. Māori children also experience comparatively high rates of obesity and asthma.

On a positive note, Māori women experienced a small decline (although not statistically significant) in current smoking (from 45% in 2006/07 down to 40% in 2015/16). Also, a lower percentage of Māori children were introduced to solid foods before four months of age; the rate decreased from 17% in 2006/07 to 11% in 2015/16.

Māori have a greater level of unmet need for primary health care than non-Māori. One reason for this is prescription costs. Prescription costs have prevented 15% of Māori adults and the parents or primary caregivers of 7% of Māori children from collecting a prescription in the past 12 months. Māori adults and children are more than twice as likely to have not collected a prescription due to cost as non-Māori adults and children respectively, after adjusting for age and sex differences.

- **Pacific peoples have poorer health and more unmet need for health care.**

Pacific adults have higher rates of health risks such as smoking, not eating enough vegetables and fruit, physical inactivity and psychological distress than non-Pacific adults.

Pacific adults and children have the highest rates of obesity. Two-thirds of Pacific adults (67%) and almost one-third of Pacific children (30%) are obese.

Cost may be a barrier to Pacific peoples accessing prescription medications to treat health problems. Prescription costs have prevented 19% of Pacific adults and the parents or primary caregivers of 10% of Pacific children from collecting a prescription in the past 12 months. Pacific adults and children are more than three times as likely to have not collected a prescription due to cost as non-Pacific adults and children respectively, after adjusting for age and sex differences.

- **Asian health is generally good.**

Asian adults have low rates of smoking and hazardous drinking compared with non-Asian adults. Asians have comparatively low rates of obesity, asthma, arthritis and chronic pain. However, Asian adults are about 1.8 times as likely as non-Asians to have been diagnosed with diabetes in the last 12 months, after adjusting for age and sex differences.

Asian adults generally report lower use of primary health care services than other adults, possibly due to their better health status. Asian adults also have the lowest rate of unmet need for health care (23%).

Note that the Asian ethnic group is very diverse, and therefore data should be interpreted with caution. For example, the health profile of Indians is different to that of Chinese. Furthermore, profiles differ within these different Asian groups, for example, depending on whether people were born in New Zealand or overseas.

- **People living in more socioeconomically deprived areas have poorer health and report greater unmet need for health care, after adjusting for age, sex and ethnic differences.**

Adults living in the most deprived areas are less likely to report being in good health than those living in the least deprived areas.

Adults living in the most socioeconomically deprived areas have significantly higher levels of most health risks, including smoking, hazardous drinking, inadequate vegetable and fruit intake, physical inactivity and obesity. They also have higher rates of high blood pressure (medicated), psychological distress, asthma, arthritis and chronic pain.

Children living in socioeconomically deprived areas also have higher levels of most health risks than those living in the least deprived areas. For example, they are less likely to eat breakfast at home every day, more likely to drink three or more fizzy drinks in a week and more likely to be obese. They also have higher rates of asthma (medicated) and teeth being removed due to decay, abscess or infection. Children living in the most deprived areas are three times as likely to be physically punished as those living in the least deprived areas, after adjusting for age, sex and ethnic differences.

Although adults living in the most deprived areas report similar levels of GP use over the past year to those living in the least deprived areas, they have much higher levels of unmet need for health care. Adults living in the most deprived areas are more than twice as likely to have not visited a GP due to cost in the past year and more than four times as likely to have not collected a prescription due to cost, compared with those living in the least deprived areas, after adjusting for age, sex and ethnic differences.

Children living in the most deprived areas were 5.6 times as likely to have not collected a prescription due to cost in the past year, compared with those living in the least deprived areas, after adjusting for age, sex and ethnic differences. These types of unmet need for health care are of particular concern where they affect people who are already in poor health.

Did you find what you were looking for?

Please help us improve our reports – tell us whether we are giving you the information you want at **www.health.govt.nz/nzhs-feedback**

It will only take a minute or two, and we really value your feedback!

Introduction

Overview

The New Zealand Health Survey conducts face-to-face interviews with over 13,000 adults and the parents or primary caregivers of over 4000 children annually. The survey collects a wealth of information on the health and wellbeing of New Zealanders. Every year, it includes a core set of questions, which help the Ministry of Health (the Ministry) identify key issues and monitor trends.

This report presents the annual update of key results from the 2015/16 New Zealand Health Survey (the survey), which collected data from July 2015 to June 2016. It includes data for key survey indicators, providing a snapshot of health behaviours, health status and access to health care for both adults and children. These key indicators help highlight at-risk groups and focus attention on important issues, as well as identifying areas for further research.

Data from the survey are made available in a range of formats to suit the needs of different users, including as:

- an annual update of key findings (this report)
- online tables – detailed national results broken down for adults and children by age, sex, ethnic group and socioeconomic deprivation (previous survey results are also provided for comparison). You can now download the data in these tables in a machine-readable format.

The survey publications are intended to answer three questions for each indicator.

1 What is the rate in the total population?

- The report presents 2015/16 rates (and estimated numbers) for adults and children.

2 What has changed?

- Where available, the report presents rates for the key survey indicators for all years of the New Zealand Health Survey since 2006/07,¹ enabling comparisons to be made.
- The beginning of the adult and child sections of this report provide key survey indicators for Māori and Pacific peoples, enabling comparisons to be made.
- Online tables provide more detailed trend data, including analyses by sex, age and ethnicity.

3 Are the results the same for everyone? In particular, do indicators vary by sex, age, ethnicity or neighbourhood deprivation?

- Rate ratios compare males with females, Māori with non-Māori, Pacific with non-Pacific, and people living in high-deprivation areas with those in low-deprivation areas for each key survey indicator. These rate ratios are adjusted for differences in the age, sex and ethnic structure of the population groups being compared, as appropriate.
- A bar chart summarises the age distribution of each indicator. The online tables provide detailed results, including trends by sex, age and ethnicity.

¹ Previous New Zealand Health Surveys were conducted for isolated years, that is, 1992/93, 1996/97, 2002/03 and 2006/07. The survey has been in continuous operation since July 2011.

Methodology

Sample selection

The 2015/16 results provided in this report refer to the sample selected for the period July 2015 to June 2016. Survey respondents are selected from the 'usually resident' population of all ages living in private dwellings, aged-care facilities and student accommodation. The survey did not include: people living in institutions (such as long-term hospital care, hospital- and dementia-level care in aged-care facilities and prisons), the homeless, short-term visitors and tourists. Trained interviewers from CBG Health Research Ltd randomly selected participants and carried out the survey interviews. Further details on the sample design are available in *Sample Design from 2015/16: New Zealand Health Survey* (Ministry of Health 2016a).

Sample size

Of those invited to participate in the survey, 80% of adults (13,781 adults) and 80% of parents or primary caregivers (representing 4721 children) agreed to be interviewed. Table 1 summarises the number of survey respondents by ethnic group.

Please note that the data in the table are based on total response ethnicity so, when the different categories are summed, the total is greater than the total number of respondents. Appendix 1 provides further information on total response ethnicity.

Note also that the Asian ethnic group is very diverse, and therefore data should be interpreted with caution. For example, the health profile of Indians is different to that of Chinese. Furthermore, profiles differ within the different Asian groups; for example, depending on whether people were born in New Zealand or overseas.

Table 1: Sample sizes for children and adults, by ethnic group, New Zealand Health Survey 2015/16

Ethnic group (total response)	Adults	Children
European/Other	10,435	3181
Māori	2770	1722
Pacific	838	693
Asian	1236	583

Interview process

Data collection involved a face-to-face interview, followed by measurement of height and weight (in those aged two years and over), waist circumference (in those aged five years and over) and blood pressure (in adults, aged 15 years and older).

Annual indicators from the survey

Table 2 lists the annual indicators from the survey for adults and children. The annual indicators either relate to single survey questions or are derived from a number of questions in the survey. The *Indicator Interpretation Guide 2015/16: New Zealand Health Survey* provides more detailed definitions for each indicator and includes the survey questions.

In addition to the tables in this report, the online tables include a number of supplementary indicators. They provide more information on the topics covered in this report.

Table 2: Annual indicators from the survey

Domain	Topic	Adult indicator	Child indicator
Health status, health behaviours and risk factors	Self- or parent-rated health status	Good or better self-rated health <i>Excellent self-rated health</i> <i>Very good self-rated health</i> <i>Good self-rated health</i> <i>Fair self-rated health</i> <i>Poor self-rated health</i>	Good or better parent-rated health <i>Excellent parent-rated health</i> <i>Very good parent-rated health</i> <i>Good parent-rated health</i> <i>Fair parent-rated health</i> <i>Poor parent-rated health</i>
	Tobacco use	Current smokers Daily smokers <i>Ex-smokers</i> <i>Mean number of cigarettes smoked per day (daily smokers)</i>	
	Alcohol use	Past-year drinkers Hazardous drinkers (total population) <i>Hazardous drinkers (past-year drinkers)</i> <i>Consumption of 6+ drinks on one occasion at least monthly (total population)</i> <i>Consumption of 6+ drinks on one occasion at least monthly (past-year drinkers)</i> <i>Consumption of 6+ drinks on one occasion at least weekly (total population)</i> <i>Consumption of 6+ drinks on one occasion at least weekly (past-year drinkers)</i>	
Nutrition and physical activity	Vegetable and fruit intake Physically active Little or no physical activity	Vegetable intake	Solid food before four months of age (4 months to 4 years)
		Fruit intake <i>Vegetable and fruit intake</i>	<i>Solid food before six months of age (six months to four years)</i>
		Physically active	Breakfast eaten at home every day (2–14 years)
		Little or no physical activity	<i>Breakfast eaten at home less than 5 days in past week (2–14 years)</i> <i>Fast food at least once per week (2–14 years)</i> <i>Fast food 3+ times per week (2–14 years)</i> <i>Fizzy drink at least once per week (2–14 years)</i> Fizzy drink 3+ times per week (2–14 years) <i>Vegetable intake (2–14 years)</i> <i>Fruit intake (2–14 years)</i> <i>Television watching (2–14 years)</i> <i>Active travel (5–14 years)</i>

Domain	Topic	Adult indicator	Child indicator
	Body size	<i>Mean weight</i> <i>Mean height</i> <i>Mean waist</i> <i>Mean body mass index (BMI)</i> <i>Underweight</i> <i>Healthy weight</i> <i>Overweight (but not obese)</i> <i>Overweight or obese</i> <i>Obesity</i> <i>Obese class 1</i> <i>Obese class 2</i> <i>Obese class 3</i>	<i>Mean weight (2–14 years)</i> <i>Mean height (2–14 years)</i> <i>Mean waist (5–14 years)</i> <i>Mean BMI (2–14 years)</i> <i>Thinness (2–14 years)</i> <i>Healthy weight (2–14 years)</i> <i>Overweight (but not obese) (2–14 years)</i> <i>Overweight or obese (2–14 years)</i> <i>Obesity (2–14 years)</i> <i>Obese class 1 (2–14 years)</i> <i>Obese class 2 or 3 (2–14 years)</i>
	Physical punishment		Physical punishment in past 4 weeks
Health conditions	Cardiovascular health	High blood pressure (medicated) <i>Raised blood pressure (measured)</i> <i>Mean systolic blood pressure</i> <i>Mean diastolic blood pressure</i> High cholesterol (medicated) Ischaemic heart disease (diagnosed) <i>Heart failure (diagnosed)</i> Stroke (diagnosed)	
	Mental health	<i>Mood or anxiety disorder (diagnosed)</i> <i>Depression (diagnosed)</i> <i>Bipolar disorder (diagnosed)</i> <i>Anxiety disorder (diagnosed)</i> <i>Mood disorder (diagnosed depression or bipolar)</i> Psychological distress	Emotional and/or behavioural problems (diagnosed) (2–14 years) <i>Depression (diagnosed) (2–14 years)</i> <i>Anxiety disorder (diagnosed) (2–14 years)</i> <i>Attention deficit disorder or attention deficit hyperactivity disorder (diagnosed) (2–14 years)</i> <i>Autism spectrum disorder (diagnosed) (2–14 years)</i>
	Other health conditions	<i>Diabetes (diagnosed)</i> <i>Type 2 diabetes (proxy)</i> Asthma (medicated) Arthritis (diagnosed) <i>Osteoarthritis (diagnosed)</i> <i>Rheumatoid arthritis (diagnosed)</i> <i>Gout (diagnosed)</i> Chronic pain	Asthma (medicated) (2–14 years) <i>Eczema (medicated)</i>

Domain	Topic	Adult indicator	Child indicator
Access to health care	Primary health care use	GP visit in the past 12 months <i>Mean number of GP visits</i>	GP visit in the past 12 months <i>Mean number of GP visits</i>
		Practice nurse (only) visit in the past 12 months <i>Mean number of practice nurse (only) visits</i>	<i>Last GP visit (GP clinic) was free</i> <i>Last GP visit (any location) was free</i> Practice nurse (only) visit in the past 12 months <i>Mean number of practice nurse (only) visits</i>
		After-hours medical centre visit in the past 12 months <i>Mean number of after-hours medical centre visits</i>	<i>Last practice nurse (only) visit was free</i> After-hours medical centre visit in the past 12 months <i>Mean number of after-hours medical centre visits</i> <i>Last after-hours medical centre visit was free</i>
	Barriers to accessing health care	Experienced any unmet need for primary health care in the past 12 months	Experienced any unmet need for primary health care in the past 12 months
		Unable to get an appointment at usual medical centre within 24 hours	Unable to get an appointment at usual medical centre within 24 hours
		Unmet need for GP due to cost <i>Unmet need for GP due to lack of transport</i>	Unmet need for GP due to cost <i>Unmet need for GP due to lack of transport</i> <i>Unmet need for GP due to lack of childcare</i>
	Patient experience	Unmet need for after-hours due to cost <i>Unmet need for after-hours due to lack of transport</i>	Unmet need for after-hours due to cost <i>Unmet need for after-hours due to lack of transport</i>
		Unfilled prescription due to cost	Unfilled prescription due to cost
		Definite confidence and trust in GP <i>GP was very good or good at explaining health conditions and treatments</i> <i>GP was very good or good at involving patient in decisions</i>	Definite confidence and trust in GP <i>GP was very good or good at explaining health conditions and treatments</i>
Oral health		Dental health care worker visit in the past 12 months	Dental health care worker visit in the past 12 months (1–14 years)
		Teeth removed due to decay in past 12 months	Teeth removed due to decay in past 12 months (1–14 years)
		<i>Teeth removed due to decay in lifetime</i>	<i>Teeth removed due to decay in lifetime (1–14 years)</i>
		<i>All teeth removed due to decay</i> Usually only visits dental health care worker for dental problems (or never visits)	

Note: Indicators in italics are included in online tables only.

Definitions and statistical methods

Appendix 1 provides information on the statistical methods used in this report.

Corrections to previously published data

We have made minor corrections to previously published data. Please use this report and the accompanying data tables for estimates for 2011/12, 2012/13, 2013/14 and 2014/15. The errors that were corrected are described in the *Methodology Report 2015/16: New Zealand Health Survey* (Ministry of Health 2016b).

Additional information

The following publications provide additional information about the 2015/16 survey:

- *Sample Design from 2015/16: New Zealand Health Survey* (Ministry of Health 2016a)
- *Methodology Report 2015/16: New Zealand Health Survey* (Ministry of Health 2016b)
- *Indicator Interpretation Guide 2015/16: New Zealand Health Survey* (Ministry of Health 2016c)
- *Content Guide 2015/16: New Zealand Health Survey* (Ministry of Health 2016d).

How are the results reported?

Results for each of the survey indicators are summarised in the format shown below.

The box title briefly defines the indicator. (A more detailed definition can be found in the *Indicator Interpretation Guide 2015/16*, Ministry of Health 2016c).

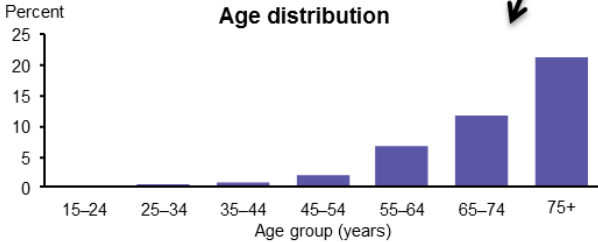
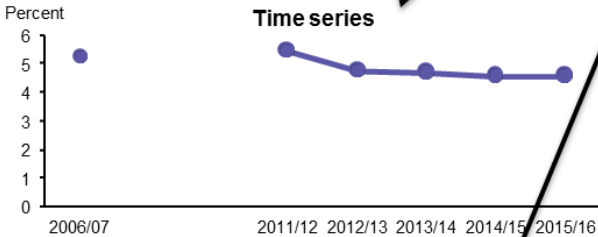
Results are presented as the percentage of the denominator, which is usually all survey respondents.

An estimate is provided of the total number of New Zealanders who fell within this category in 2015/16.

This graph shows how the results differ over time.

This graph shows how the results differ with age.

Box 12: Adults diagnosed with ischaemic heart disease, 2015/16



Adjusted rate ratio	
Men vs women	1.9 *
Māori vs non-Māori	1.8
Pacific vs non-Pacific	1.2
Asian vs non-Asian	0.9
Most vs least deprived	2.0

* There is a statistically significant difference between the two groups.

Ethnicity is reported as total response ethnicity, where people who identified with more than one ethnic group are counted once in each group they identified with.

This means that the total number of responses for all ethnic groups can be greater than the total number of people who stated their ethnicities.

Rate ratios are used to compare the results for different population groups. They tell us whether the results are more or less likely in the group of interest, as follows:

- a rate ratio above 1 = more likely
- a rate ratio of 1 = equally likely
- a rate ratio less than 1 = less likely.

For example, the above data show that men were 1.9 times as likely as women to have ischaemic heart disease in the 2015/16 survey period.

The rate ratios presented in this report have been adjusted for other demographic factors that may be influencing the comparison, such as age, sex and ethnic group.

- The sex comparison is adjusted for age differences.
- Ethnic comparisons are adjusted for age and sex differences.
- Deprivation comparisons are adjusted for age, sex and ethnic differences.

In this report, we often compare the prevalence estimates for two groups. Following usual practice, we have said that a difference between groups is statistically significant if the *p*-value is less than 0.05.

A statistically significant difference is likely to represent a real difference in the underlying populations rather than a random variation due to the sampling process.

To calculate *p*-values for the significance of differences between years, age-standardised prevalences have been used. These prevalences take into account changing age structures in the underlying populations over time.

The health of New Zealand adults

This section includes information on:

- key survey results for adults (Table 3)
- key survey results for Māori adults (Table 4)
- key survey results for Pacific adults (Table 5)
- health status, health behaviours and risk factors of adults
- health conditions of adults
- adults' access to health care
- oral health of adults.

Table 3: Key survey results for adults (15 years and over)

Indicator	Percent 2015/16	Percent 2011/12	Percent 2006/07	Change since 2011/12	Change since 2006/07
Health status, health behaviours and risk factors					
Good or better self-rated health	87.8	89.3	89.6	▼	▼
Current smokers	16.3	18.2	20.1	▼	▼
Daily smokers	14.2	16.3	18.3	▼	▼
Past-year drinkers	80.0	79.5	83.6	=	▼
Hazardous drinkers (total population)	20.8	.	.	.	.
Vegetable intake (3+ servings per day)	62.5	68.6	63.9	▼	=
Fruit intake (2+ servings per day)	55.8	58.6	59.9	▼	▼
Physically active	47.7	54.4	52.0	▼	▼
Little or no physical activity	15.4	12.5	10.0	▲	▲
Obesity	31.6	28.6	26.5	▲	▲
Health conditions					
High blood pressure (medicated)	16.6	16.0	13.8	=	▲
High cholesterol (medicated)	11.5	10.5	8.4	=	▲
Ischaemic heart disease (diagnosed)	4.6	5.5	5.3	▼	▼
Stroke (diagnosed)	1.5	1.8	1.9	▼	▼
Psychological distress	6.8	4.5	6.6	▲	=
Asthma (medicated)	10.8	11.0	11.3	=	=
Arthritis (diagnosed)	16.7	15.1	14.9	▲	=
Chronic pain	20.8	16.2	17.0	▲	▲
Access to health care					
GP visit in the past 12 months	79.3	78.3	81.3	=	▼
Practice nurse (only) visit in the past 12 months	32.5	30.5	28.7	=	▲
After-hours medical centre visit in the past 12 months	11.0	12.6	0.0	▼	.
Experienced any unmet need for primary health care in the past 12 months	28.8	26.6	.	▲	.
Unable to get an appointment at usual medical centre within 24 hours	17.8	15.5	17.6	▲	=
Unmet need for GP due to cost	14.3	13.6	.	=	.
Unmet need for after-hours due to cost	6.9	6.7	.	=	.
Unfilled prescription due to cost	6.3	7.2	.	▼	.
Definite confidence and trust in GP	79.2	84.2	.	▼	.
Oral health					
Dental health care worker visit in the past 12 months ¹	47.5	48.9	51.5	=	▼
Teeth removed due to decay in the past 12 months	7.0	7.5	.	=	.
Usually only visits a dental health care worker for dental problems (or never visits) ¹	54.5	54.4	49.1	=	▲
Key: ▲ Statistically significant increase ² = No statistically significant change					
▼ Statistically significant decrease ² . Data not available					
1 Among adults with natural teeth.					
2 The significance (<i>p</i> -values) of differences between years is based on age-standardised rates.					

Table 4: Key survey results for Māori adults

Indicator	Percent 2015/16	Percent 2011/12	Percent 2006/07	Change since 2011/12	Change since 2006/07
Health status, health behaviours and risk factors					
Good or better self-rated health	81.0	83.6	86.5	=	▼
Current smokers	38.6	40.2	42.1	=	=
Daily smokers	35.5	37.7	39.2	=	=
Past-year drinkers	80.3	78.9	84.3	=	▼
Hazardous drinkers (total population)	31.1	.	.	.	.
Vegetable intake (3+ servings per day)	58.1	64.7	59.9	▼	=
Fruit intake (2+ servings per day)	46.4	49.1	55.2	=	▼
Physically active	49.6	57.5	56.3	▼	▼
Little or no physical activity	17.6	13.4	8.7	▲	▲
Obesity	47.1	44.1	41.6	=	▲
Health conditions					
High blood pressure (medicated)	13.9	13.8	10.3	=	=
High cholesterol (medicated)	9.5	8.0	5.5	=	▲
Ischaemic heart disease (diagnosed)	4.8	5.2	4.7	=	=
Stroke (diagnosed)	1.8	2.2	1.8	=	=
Psychological distress	10.5	7.4	10.9	▲	=
Asthma (medicated)	17.7	17.0	15.4	=	▲
Arthritis (diagnosed)	14.3	11.9	11.1	=	=
Chronic pain	21.6	17.8	17.2	▲	▲
Access to health care					
GP visit in the past 12 months	75.0	75.0	78.8	=	▼
Practice nurse (only) visit in the past 12 months	30.7	30.2	27.7	=	=
After-hours medical centre visit in the past 12 months	10.5	13.1	.	=	.
Experienced any unmet need for primary health care in the past 12 months	39.3	38.8	.	=	.
Unable to get an appointment at usual medical centre within 24 hours	20.7	20.0	22.4	=	=
Unmet need for GP due to cost	22.7	22.5	.	=	.
Unmet need for after-hours due to cost	12.8	13.6	.	=	.
Unfilled prescription due to cost	14.9	17.8	.	=	.
Definite confidence and trust in GP	74.5	80.7	.	▼	.
Oral health					
Dental health care worker visit in the past 12 months ¹	35.9	38.1	38.6	=	=
Teeth removed due to decay in the past 12 months	9.2	11.4	.	=	.
Usually only visits a dental health care worker for dental problems (or never visits) ¹	74.1	72.9	69.7	=	▲
Key: ▲ Statistically significant increase ² = No statistically significant change ▼ Statistically significant decrease ² . Data not available					
1 Among adults with natural teeth.					
2 The significance (<i>p</i> -values) of differences between years is based on age-standardised rates.					

Table 5: Key survey results for Pacific adults

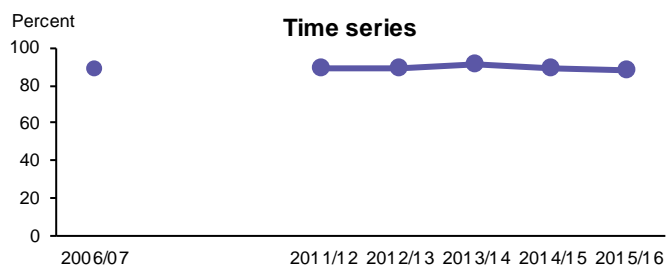
Indicator	Percent 2015/16	Percent 2011/12	Percent 2006/07	Change since 2011/12	Change since 2006/07
Health status, health behaviours and risk factors					
Good or better self-rated health	80.7	87.2	85.5	▼	▼
Current smokers	25.5	25.9	27.1	=	=
Daily smokers	22.8	22.6	24.8	=	=
Past-year drinkers	58.2	58.1	59.5	=	=
Hazardous drinkers (total population)	23.6	.	.	.	.
Vegetable intake (3+ servings per day)	49.5	45.5	44.9	=	=
Fruit intake (2+ servings per day)	49.0	53.8	58.8	=	▼
Physically active	43.8	47.4	48.9	=	=
Little or no physical activity	20.3	14.0	13.9	=	▲
Obesity	66.9	61.4	63.4	=	=
Health conditions					
High blood pressure (medicated)	14.3	11.4	10.6	=	=
High cholesterol (medicated)	11.0	7.3	6.7	=	▲
Ischaemic heart disease (diagnosed)	2.8	1.7	2.9	=	=
Stroke (diagnosed)	2.1	0.6	2.1	▲	=
Psychological distress	11.3	8.5	13.2	=	=
Asthma (medicated)	12.1	9.6	9.0	=	=
Arthritis (diagnosed)	10.5	6.7	7.9	=	=
Chronic pain	14.9	13.7	12.0	=	=
Access to health care					
GP visit in the past 12 months	76.5	75.6	78.1	=	=
Practice nurse (only) visit in the past 12 months	23.2	20.3	17.9	=	=
After-hours medical centre visit in the past 12 months	13.9	12.9	.	=	.
Experienced any unmet need for primary health care in the past 12 months	34.2	29.1	.	▲	.
Unable to get an appointment at usual medical centre within 24 hours	16.4	14.5	20.7	=	=
Unmet need for GP due to cost	21.5	16.3	.	▲	.
Unmet need for after-hours due to cost	12.7	9.6	.	=	.
Unfilled prescription due to cost	19.3	13.0	.	▲	.
Definite confidence and trust in GP	74.8	78.9	.	=	.
Oral health					
Dental health care worker visit in the past 12 months ¹	32.4	33.0	34.8	=	=
Teeth removed due to decay in the past 12 months	12.0	10.8	.	=	.
Usually only visits a dental health care worker for dental problems (or never visits) ¹	81.1	78.0	76.8	=	▲
Key: ▲ Statistically significant increase ² = No statistically significant change ▼ Statistically significant decrease ² . Data not available					
1 Among adults with natural teeth.					
2 The significance (<i>p</i> -values) of differences between years is based on age-standardised rates.					

Health status, health behaviours and risk factors of adults

Most adults reported that they were in good health

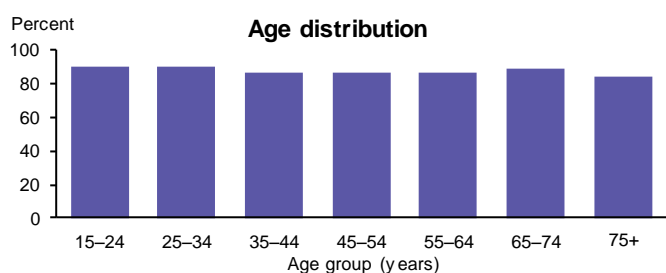
Box 1: Adults who rated their health as at least good (including excellent, very good or good), 2015/16

The prevalence was **87.8%**
which is an estimated
3,283,000 adults



Adjusted rate ratio	
Men vs women	1.0
Māori vs non-Māori	0.9 *
Pacific vs non-Pacific	0.9 *
Asian vs non-Asian	1.0
Most vs least deprived	0.9 *

* There is a statistically significant difference between the two groups.



Self-rated health is a widely used indicator of health. Interviewers asked adults taking part in the survey whether they considered their health to be ‘excellent, very good, good, fair or poor’. In this report, ‘good health’ means good, very good or excellent. Ratings of ‘fair or poor’ health are also discussed as they are predictive of mortality and morbidity (Idler and Benyamini 1997).

Most adults (88%) were in good health, down from 90% in 2006/07. Conversely, 12% of adults were in fair or poor health in 2015/16 (a total of 458,000 adults). There was no difference in the percentage of men and women who reported that they were in good health.

The percentage of adults who reported being in good health was high for all age groups. However, it did decline with increasing age: the percentage of young people aged 15–24 years who reported being in good health (90%) was higher than the percentage of older people aged 75 years and over who reported being in good health (84%).

Eighty-one percent of both Māori and Pacific adults reported that they were in good health, down from 86% for both in 2006/07.² Māori and Pacific adults were less likely to report being in good health than non-Māori and non-Pacific adults respectively, after adjusting for age and sex differences.

Adults living in the most socioeconomically deprived areas were 2.5 times as likely to rate themselves as being in fair or poor health compared with adults living in the least deprived areas, after adjusting for age, sex and ethnicity. In the most socioeconomically deprived areas, 82% of adults reported being in good health and 18% reported being in fair or poor health. In the least deprived areas, the rates were 93% and 7% respectively.³

² Results for Māori and Pacific adults are provided in Tables 4 and 5 at the beginning of this section.

³ Results are available in the online tables accompanying this report.

The current smoking rate decreased

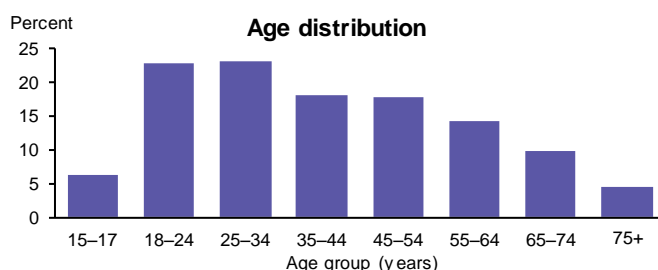
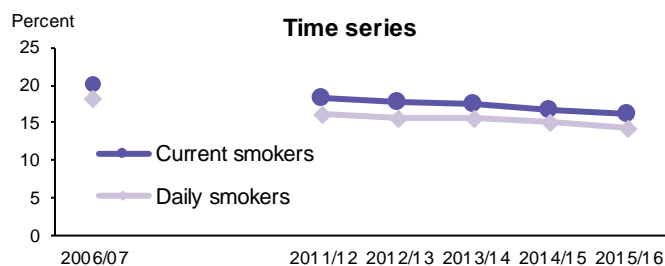
Box 2: Adults who are current smokers (smoke at least monthly) and time trend for adults who are daily smokers, 2015/16

The prevalence was **16.3%**
which is an estimated
610,000 adults

Adjusted rate ratio

Men vs women	1.2 *
Māori vs non-Māori	2.8 *
Pacific vs non-Pacific	1.5 *
Asian vs non-Asian	0.4 *
Most vs least deprived	3.1 *

* There is a statistically significant difference between the two groups.



Smoking was one of the two leading modifiable risks to health in 2013 (it has probably since been overtaken by high body mass index, BMI, as a cause of health loss), accounting for about 9% of all illness, disability and premature mortality (Ministry of Health 2016e). Smoking harms nearly every organ and system in the body. It is the main cause of lung cancer and chronic obstructive pulmonary disease (COPD). It is also a major cause of heart disease, stroke and many cancers.

Sixteen percent of adults were current smokers (smoke at least monthly) and 14% of adults were daily smokers. Both current and daily cigarette smoking rates have declined from 2006/07, when 20% of adults were current smokers and 18% of adults were daily smokers.⁴

The Government's goal is to make New Zealand essentially smokefree by 2025. This is supported by goals in the Ministry's *Statement of Intent 2015 to 2019* (2015b). By 2018, we are aiming for daily smoking to have fallen to 10% and Māori and Pacific adults' daily smoking rates to have fallen to 19% and 11% respectively. This means that we are aiming for an estimated 58,000 adults to have quit daily smoking by 2018, of which 27,000 will be Māori adults and 8,000 will be Pacific adults.⁵

Fifteen percent of European/Other adults are current smokers, down from 19% in 2006/07. Although not statistically significant, current smoking for Māori women declined from 45% to 40%. Māori women were 3.5 times as likely to be current smokers as non-Māori, after adjusting for age.

The most substantial reduction in current smoking since 2006/07 was for 15- to 17-year-olds, 6% of whom smoked in 2015/16, compared with 16% in 2006/07. Adults aged 18–34 years had the highest rates of current smoking, at 23%. Current smoking rates for adults aged under 55 years declined from 2006/07.⁴ However, smoking rates in older adults have not changed since 2006/07.

⁴ Results are available in the online tables accompanying this report.

⁵ Estimated using Statistics New Zealand population projections (which were based on the 2013 population), excluding any impact of change in initiation rate among young adults.

Adults living in the most socioeconomically deprived areas were 3.1 times as likely to be current smokers and 3.7 times as likely to be daily smokers compared with adults living in the least deprived areas, after adjusting for age, sex and ethnic differences. Also, daily smokers living in the most deprived areas smoked more cigarettes per day (10.5) than those in the least deprived areas (8.6). In 2006/07, this disparity between daily smokers living in the most and least deprived areas existed (12.0 and 10.7 respectively) but it was smaller and not significant.

More information on smoking

Tobacco use in New Zealand has long been characterised by marked disparities between ethnic and socioeconomic groups: ‘tobacco is not an equal opportunity killer’ (Tobias and Cheung 2001). In particular, high tobacco use among Māori has long been an issue of public health concern. Various explanations have been offered for the high smoking prevalence among Māori, including material deprivation, systemic racism and interpersonal racism (embedded in the historical context of colonization) (Harris et al 2011).

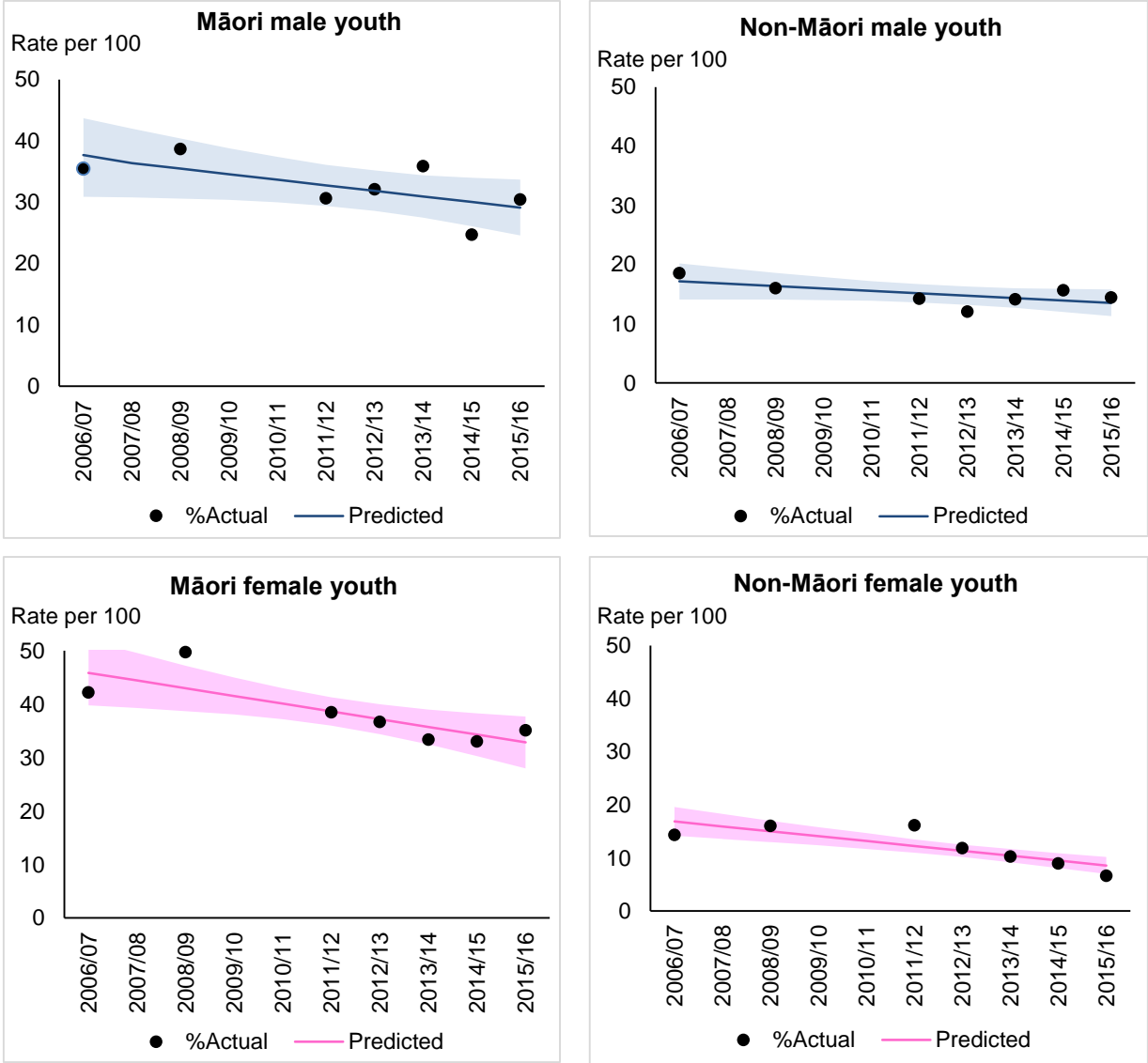
In New Zealand, tobacco use has been declining overall for more than half a century (Tobias et al 2010, Ball et al 2016). Is smoking now declining faster among Māori than non-Māori? If not, the current wide gap in smoking prevalence between the Treaty partners will never close, and indeed will widen further on a relative scale.

In considering this question, we focus on youth (here defined as 15- to 24-year-olds) – the age group that is currently experiencing by far the fastest rate of decline in smoking prevalence (Tobias et al 2010). Trends in smoking prevalence among youth indicate changes in both smoking initiation and quitting behaviours. By contrast, smoking prevalence trends in older age groups only indicate quitting behaviours – and are also confounded by higher rates of long-term conditions (multi-morbidity) and death due to smoking (Tobias et al 2010).

Seven surveys were identified over the past 10 years that (1) provide nationally representative samples along with survey sampling weights and (2) use identical items and definitions to elicit current daily smoking status. The seven are: New Zealand Tobacco Use Survey 2008/09 (Ministry of Health 2010) and New Zealand Health Surveys 2006/07, 2011/12, 2012/13, 2013/14, 2014/15 and 2015/16.

Linear regression models were fitted to the weighted unit record data (Figure 1 and Table 6). Absolute and relative declines in smoking prevalence from 2006/07 to 2015/16 were estimated, assuming linearity.

Figure 1: Daily smoking prevalence, 2006/07–2015/16



Note: Shading indicates 95% confidence interval.

Sources: NZTUS 2008/09 and New Zealand Health Surveys 2006/07, 2011/12, 2012/13, 2013/14, 2014/15 and 2015/16

Female Māori youth had the highest daily smoking prevalence

Among youth, Māori males’ smoking prevalence is currently (average of the 2014/15 and 2015/16 survey data) almost twice that of non-Māori males (27% and 15% respectively), and Māori females’ smoking prevalence is over four times that of non-Māori females (34% and 8% respectively). Furthermore, smoking prevalence is higher for Māori female youth than Māori male youth (34% and 27% respectively); quite different from the pattern for non-Māori female and male youth (8% and 15% respectively).

Smoking prevalence declined among all subgroups of youth

Among male youth, daily smoking prevalence declined over the nine-year observation period by 8.2 per 100 among Māori and 3.6 per 100 among non-Māori youth (see Table 6 below). This is a 22.0% decline for Māori and a 20.9% decline for non-Māori. That is, smoking declined at about the same rate for both ethnic groups, once their different starting positions are taken into account.

Among female youth, daily smoking declined over the nine-year observation period by 13.0 per 100 among Māori and 8.3 per 100 for non-Māori (see Table 6 below). This is a 28.5% decline for Māori and a 49.1% decline for non-Māori. That is, smoking declined more slowly among Māori female youth than non-Māori female youth, taking their different starting positions into account.

Table 6: Change in daily smoking prevalence, linear regressions, 2006/07–2015/16

		2006/07	2015/16	Change (per 100)	% change
Male youth	Māori	37.3 (30.9–43.7)	29.1 (24.6–33.7)	8.2 (0–16.8)	22.0% (2.2–41.6)
	Non-Māori	17.2 (14.1–20.2)	13.5 (11.3–15.8)	3.6 (0–8.0)	20.9% (1.1–43.3)
Female youth	Māori	45.9 (39.8–51.9)	32.9 (28.0–37.7)	13.0 (3.5–22.5)	28.5% (11.1–45.6)
	Non-Māori	16.9 (14.2–19.6)	8.6 (7.0–10.2)	8.3 (4.8–11.8)	49.1% (35.0–63.1)

Sources: NZTUS 2008/09 and New Zealand Health Surveys 2006/07, 2011/12, 2012/13, 2013/14, 2014/15 and 2015/16

What do these findings tell us about indigenous inequality? In 2006, the absolute inequality (rate difference) in daily smoking prevalence was 20.1 per 100 for male youth and 29.0 per 100 for female youth. By 2015, this had fallen to 15.5 per 100 and 24.2 per 100 respectively. Relative inequality (rate ratio) remained stable for males at 2.1 (2006 and 2015) while *increasing* for females, from 2.7 (2006) to 3.8 (2015). This is a 65% increase in inequality ($[(3.8-2.7) / (2.7-1)]$). That is, absolute inequality between Māori and non-Māori declined in both sexes.

Relative inequality (rate ratio), on the other hand, remained stable for males at 2.1 (2006 and 2015) while *increasing* for females, from 2.7 (2006) to 3.8 (2015). That is, smoking among Māori female youth went from almost three times higher to almost four times higher than their non-Māori counterparts.

Why did relative inequality in smoking prevalence increase for Māori female youth? The decline in prevalence over the observation period for this group was almost 29% – greater than that of their male counterparts (22%) and of non-Māori males (21%). The increase in inequality was caused entirely by the dramatic decline in smoking among non-Māori female youth – a fall of 49% or almost 8% per year (assuming linearity).

Policy implications

While smoking is declining among all subgroups of youth, the indigenous inequality in daily smoking prevalence, measured on a relative scale, will narrow only slowly (if at all) among male youth and will continue to widen among female youth, if current trends continue.⁶

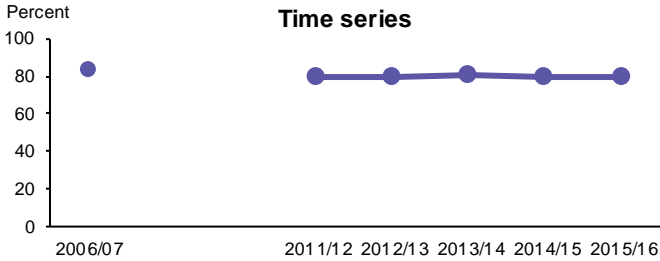
Thus, there is a critical need to enhance the effectiveness and responsiveness of tobacco control interventions and tobacco control policies for Māori youth, especially female Māori youth.

⁶ The comparative trend analysis may be confounded by the differences in deprivation between Māori and non-Māori youth. However, this is unlikely because (1) deprivation acts more as a mediator than a confounder of indigenous inequalities in health and (2) the ‘difference in differences’ analytic approach used here would only be sensitive to *change* in ethnic deprivation distributions – New Zealand Deprivation (NZDep) distributions for Māori and non-Māori youth have remained reasonably stable over the observation period.

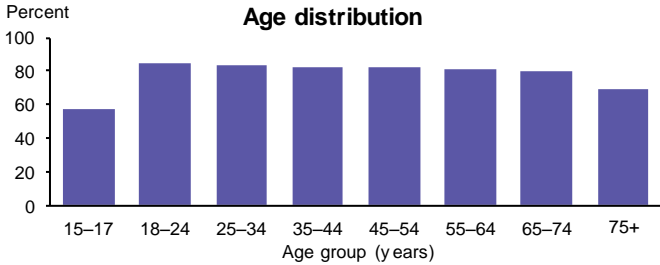
Four in five adults drank alcohol in the past year

Box 3: Adults who drank alcohol in the past 12 months, 2015/16

The prevalence was **80.0%**
which is an estimated
2,994,000 adults



Comparison	Adjusted rate ratio
Men vs women	1.1 *
Māori vs non-Māori	1.0
Pacific vs non-Pacific	0.7 *
Asian vs non-Asian	0.6 *
Most vs least deprived	0.9 *



* There is a statistically significant difference between the two groups.

Alcohol harm is driven by both the total volume consumed and by patterns of drinking (WHO 2014). Alcohol use accounted for just under 4% of total health loss in New Zealand in 2013 (Ministry of Health 2016e). Half of the alcohol-induced health loss was due to disease (especially mental illness, such as alcohol use disorder); the remainder was due to injury. The percentage of adults who had a drink containing alcohol in the past year, ‘past-year drinkers’, provides context for the potential for alcohol-related harm.

Four in five adults (80%) drank alcohol in the past year, down from 84% in 2006/07. Men (84%) were more likely to have drunk alcohol in the past year than women (76%).⁷

Fifty-seven percent of 15- to 17-year-olds drank alcohol in the past year, a large decrease from 75% in 2006/07. About eighty percent of adults aged 18–74 years drank alcohol in the past year, but the rate was lower for those aged over 75 years (70%). The difference was greater in older women than men. Seventy-four percent of women in the 65–74 years age group drank alcohol in the past year compared with 63% of women in the 75 years and over age group. For men, the rates were 85% and 78% for the respective age groups.

Only 56% of Asian and 58% of Pacific adults drank alcohol in the past year.⁷ Asian and Pacific adults were much less likely to have drunk alcohol in the past year than non-Asian and non-Pacific adults respectively, after adjusting for age and sex differences.

Adults in the most socioeconomically deprived areas were less likely to have drunk alcohol in the past year (70%) than adults in the least deprived areas (86%).⁷ However, this disparity in alcohol use was reversed for drinking patterns that are hazardous to health: those living in the most socioeconomically deprived areas were more likely to be hazardous drinkers than those living in the least deprived areas (see below).

According to Statistics New Zealand (2016), the amount of alcohol available for consumption in 2015 was less than the amount available in 2014. In 2015, there were 1.9 standard drinks available per person (aged 15 years and over) per day, down from 2.0 in 2014. This does not include alcohol produced by households (eg, homebrew).

⁷ Results are available in the online tables accompanying this report.

The percentage of adults with hazardous drinking patterns increased

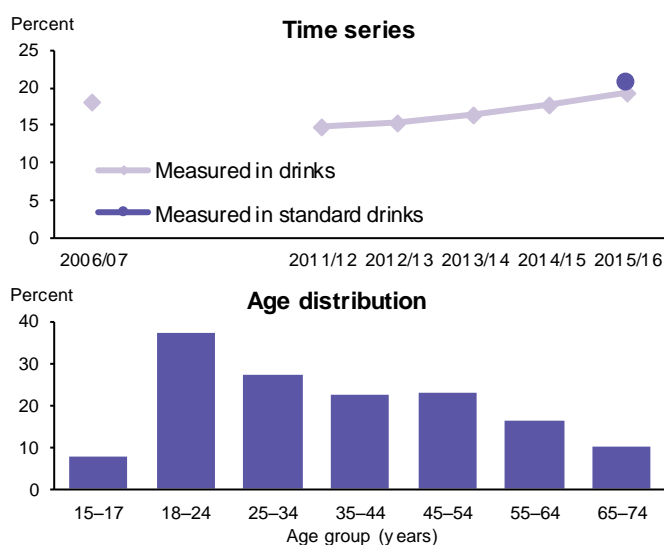
Box 4: Adults who are hazardous drinkers (score 8 or more on an Alcohol Use Disorders Identification Test), 2015/16

The prevalence was **20.8%**
which is an estimated
778,000 adults

Adjusted rate ratio

Men vs women	2.1 *
Māori vs non-Māori	1.5 *
Pacific vs non-Pacific	1.1
Asian vs non-Asian	0.2 *
Most vs least deprived	1.4 *

* There is a statistically significant difference between the two groups.



‘Hazardous drinking’ refers to an established alcohol drinking pattern that carries a risk of harming the drinker’s physical or mental health or having harmful social effects on the drinker or others. Hazardous drinking is defined as a score of 8 points or more on the Alcohol Use Disorders Identification Test (AUDIT).

In 2015/16, drinking was measured in ‘standard drinks’ as well as ‘drinks’ (for more information, see below). When we measured drinking in ‘standard drinks’, 20% of adults were hazardous drinkers.⁸

Rates of hazardous drinking varied by sex, age, ethnic group and area deprivation, as follows.⁸

- Men (29%) were twice as likely as women (13%) to be hazardous drinkers.
- Hazardous drinking rates peaked among young adults (44% of men and 30% of women aged 18–24 years) and decreased thereafter. Young adults (aged 18–24 years) also had the highest rate of weekly binge drinking (six or more drinks on one occasion) at 20%.
- Māori adults (31%) were more likely than non-Māori adults to be hazardous drinkers, and Asian adults (7%) were less likely than non-Asian adults to be hazardous drinkers. Relatively few Pacific adults drank alcohol in the past year (see above), but Pacific adults who drink were 1.5 times more likely to be hazardous drinkers than non-Pacific drinkers, after adjusting for age and sex. Forty-three percent of Pacific past-year drinkers were hazardous drinkers.
- Despite there being more non-drinkers in the most socioeconomically deprived areas (see above), adults in the most deprived areas were 1.4 times more likely to be hazardous drinkers than adults in the least deprived areas. In the most deprived areas, one in four (25%) adults and 35% of past-year drinkers were hazardous drinkers.

In previous years of the survey, we only measured drinking in ‘drinks’. The 2015/16 survey also measured ‘drinks’ to be able to analyse the change between survey years. This rate declined from 18% in 2006/07 to 15% in 2011/12, and then increased to 19% in 2015/16. Hazardous drinking has increased in all age groups, except for those aged 15–17 years and 75 years and over.

⁸ Results are available in the online tables accompanying this report.

More information on alcohol

Alcohol Use Disorders Identification Test (AUDIT)

In 2015/16, two alcohol questions were changed in the AUDIT section of the survey. The AUDIT is a 10-item questionnaire that covers three aspects of alcohol use: alcohol consumption, dependence and adverse consequences. A score of 8 or more indicates a hazardous drinking pattern. A respondent can reach a score of 8 from the alcohol consumption items of the questionnaire alone, for example, by drinking six or more drinks on one occasion, twice a week.

Before 2015/16, the survey did not define ‘drinks’ in the two AUDIT questions covering typical quantity and frequency of heavy drinking. To ensure consistency in interpreting the meaning of ‘drinks’ the authors of the AUDIT recommended that each country apply their own definition of a standard drink (in New Zealand, 10 g pure alcohol), with illustrations of standard drinks in local beverages (Babor et al 2001). Thus, for the 2015/16 survey, the two AUDIT alcohol consumption questions were changed from ‘drinks’ to ‘standard drinks’ and included a showcard illustrating the number of standard drinks in various common beverages. The changes were only made for half the survey sample (selected randomly) in order to assess their impact. From 2016/17, surveys will only use the standard drinks show-card version of AUDIT, creating a break in the time series.

In the 2015/16 survey, 19.3% of adults identified themselves as having a hazardous drinking pattern without the standard drinks picture showcard, compared with 20.8% with the showcard, a difference of 1.5 percentage points. Similarly, 9.5% of adults identified themselves drinking six or more drinks on one occasion at least weekly (binge drinking) without the showcard, compared with 12.0% with the showcard.

The impact of the standard drinks showcard is most evident when looking at the statistics for past-year drinkers. For example, without the showcard, 11.9% of past-year drinkers binged drank at least weekly, but with the showcard, 15.0% binge drank at least weekly.

Figure 2: The picture showcard used in the 2015/16 survey, showing the number of standard drinks in commonly consumed alcoholic drinks



Older adults were more likely than younger adults to eat three servings of vegetables a day

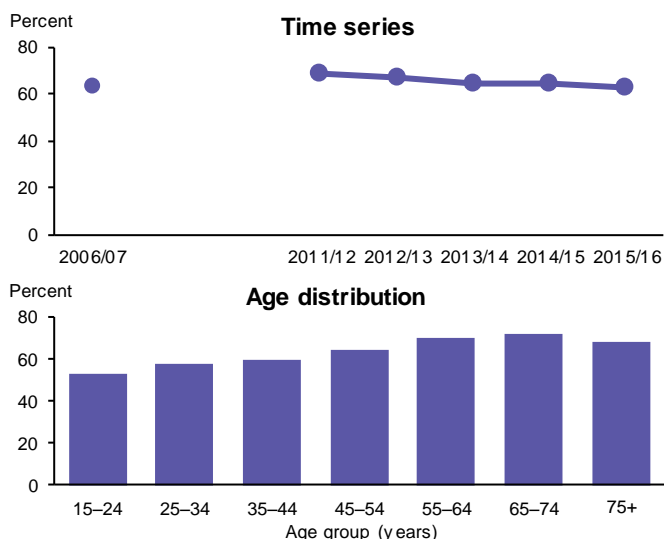
Box 5: Adults who eat at least three servings of vegetables per day, as recommended by the Ministry of Health, 2015/16

The prevalence was **62.5%**
which is an estimated
2,339,000 adults

Adjusted rate ratio

Men vs women	0.9 *
Māori vs non-Māori	1.0
Pacific vs non-Pacific	0.8 *
Asian vs non-Asian	0.7 *
Most vs least deprived	0.8 *

* There is a statistically significant difference between the two groups.



Eating plenty of vegetables and fruit can help protect against major diseases, such as heart disease, stroke, high blood pressure and some cancers. The *Eating and Activity Guidelines for New Zealand Adults* (Ministry of Health 2015a) recommend eating at least three servings of vegetables and at least two servings of fruit per day for good health.

About six in ten adults (63%) ate at least three servings of vegetables each day, down from seven in ten in 2011/12 (69%) and back to 2006/07 rates (64%).

Women were more likely to eat at least three servings of vegetables per day than men; the rates were 66% and 59% respectively.⁹ However, fewer women were eating at least three servings of vegetables each day (66%) than in 2006/07 (70%).

Older adults were more likely to eat three servings of vegetables each day than younger adults. Only 54% of those aged 18–24 years ate at least three servings of vegetables per day, compared with 72% of those aged 65–74 years.

Half of Pacific adults (50%) and 44% of Asian adults ate at least three servings of vegetables per day.⁹ Pacific and Asian adults were less likely than non-Pacific and non-Asian adults respectively to eat at least three servings of vegetables per day, after adjusting for age and sex differences.

Adults in the most socioeconomically deprived areas were less likely to eat the recommended three or more servings of vegetables each day than adults in the least deprived areas (the rates were 54% and 68% respectively).⁹

Similar patterns were seen for meeting both the vegetable and fruit intake guidelines (that is, at least three servings of vegetables as well as at least two servings of fruit per day). Only 40% of adults met both the vegetable and fruit intake guidelines, down from 43% in 2006/07.⁹

⁹ Results are available in the online tables accompanying this report.

The proportion of adults eating at least two servings of fruit continued to decrease across all ethnic groups

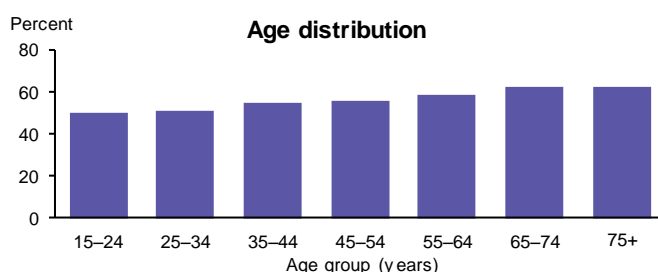
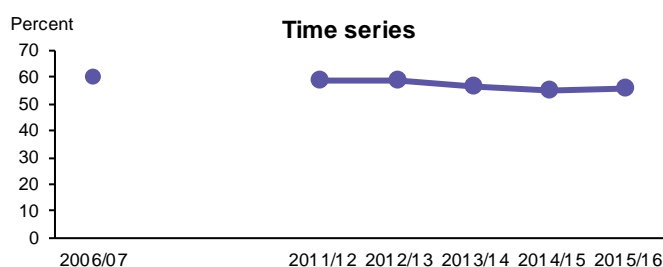
Box 6: Adults who eat at least two servings of fruit per day, as recommended by the Ministry of Health, 2015/16

The prevalence was **55.8%**
which is an estimated
2,088,000 adults

Adjusted rate ratio

Men vs women	0.8 *
Māori vs non-Māori	0.8 *
Pacific vs non-Pacific	0.9 *
Asian vs non-Asian	0.9 *
Most vs least deprived	0.7 *

* There is a statistically significant difference between the two groups.



The percentage of adults who ate at least two servings of fruit per day continued to decrease to 56%, down from 60% in 2006/07. This decline is seen across almost all adult age groups and for all ethnicities (Māori, Pacific peoples, Asian and European/Other).

Sixty-two percent of women ate at least two servings of fruit, compared with 49% of men.¹⁰

The percentage of adults eating at least two servings of fruit increased with age: 63% of those aged 65 years and over ate at least two servings of fruit per day, compared with about half of adults aged 15–34 years.

Just under half of Asian, Pacific and Māori adults (49%, 49% and 46% respectively) ate at least two servings of fruit per day. This represents a decrease since 2006/07 when the rates were 57%, 59% and 55% respectively.¹¹ Likewise, the prevalence of European/Other adults eating two serving of fruit per day has decreased from 61% in 2006/07 to 58% in 2015/16.

Adults living in the most socioeconomically deprived areas were less likely to eat at least two servings of fruit per day compared with adults living in the least deprived areas (the rates were 46% and 64% respectively).

¹⁰ Results are available in the online tables accompanying this report.

¹¹ Results for Māori and Pacific adults are provided in Tables 4 and 5 at the beginning of this section.

The percentage of adults who are physically active continued to decrease

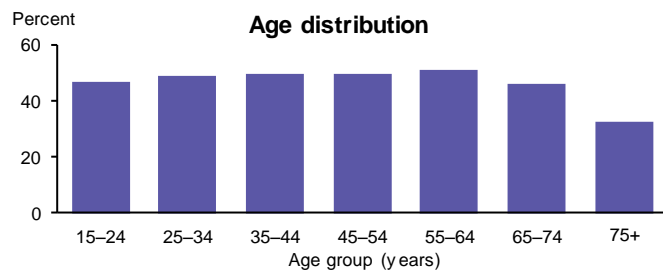
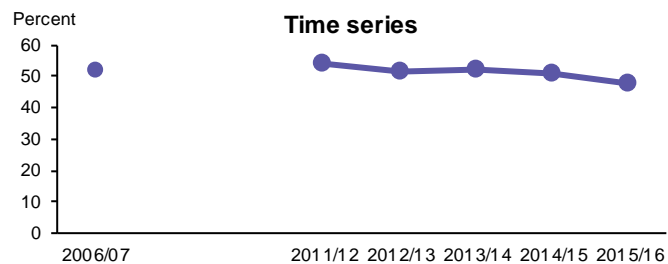
Box 7: Adults who were physically active for at least 30 minutes on five or more days in the past week, 2015/16

The prevalence was **47.7%**
which is an estimated
1,783,000 adults

Adjusted rate ratio

Men vs women	1.1 *
Māori vs non-Māori	1.0
Pacific vs non-Pacific	0.9
Asian vs non-Asian	0.8 *
Most vs least deprived	0.8 *

* There is a statistically significant difference between the two groups.



Physical activity helps protect against heart disease, stroke, type 2 diabetes, certain cancers, osteoporosis and depression. It is also important for maintaining a healthy weight. Physical activity includes deliberate exercise (eg, running and sports); activities of daily living (eg, housework); work-related activity and active transport. Low physical activity accounted for just under 3% of all illness, disability and premature mortality in 2013 (Ministry of Health 2016e).

The Ministry recommends that adults do at least 150 minutes of moderate-intensity physical activity (eg, brisk walking or equivalent vigorous activity) per week. This is interpreted as 30 minutes per day on at least five days per week for the survey (see *Indicator Interpretation Guide 2015/16: New Zealand Health Survey*, Ministry of Health 2016c). The survey categorises people doing physical activity into three groups: those who are physically active, those who are somewhat active but do not meet the physical activity guidelines and those who do little or no physical activity (defined as getting less than 30 minutes of physical activity a week). This report presents data on the first and third categories.

Less than half of adults (48%) were physically active, down from 52% in 2006/07. Men (51%) were more likely to be physically active than women (45%).¹²

There was little variation in physical activity by age group, apart from for those aged 75 years and over, of whom only 33% were physically active.

Less than half of Asian adults (39%) were physically active. Asian adults were 25% less likely to be physically active than non-Asian adults, after adjusting for age and sex differences.

Adults living in the most deprived areas were 25% less likely to be physically active than adults living in the least deprived areas, after adjusting for age, sex and ethnic differences. The rates were 43% and 50%, respectively.

¹² Results are available in the online tables accompanying this report.

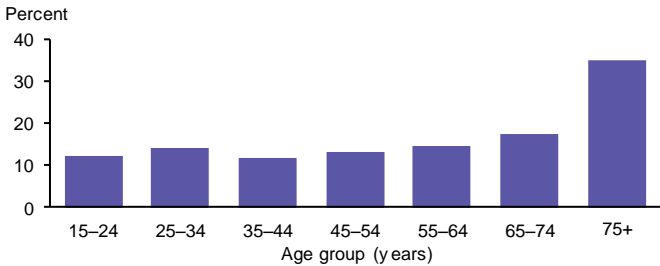
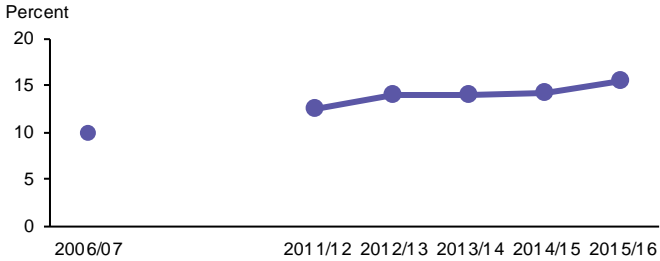
Rates of physical inactivity increased

Box 8: Adults who were physically active for less than 30 minutes in the past week, 2015/16

The prevalence was **15.4%** which is an estimated **575,000 adults**

Adjusted rate ratio	
Men vs women	0.7 *
Māori vs non-Māori	1.3 *
Pacific vs non-Pacific	1.5 *
Asian vs non-Asian	1.6 *
Most vs least deprived	2.3 *

* There is a statistically significant difference between the two groups.



Physical inactivity is different to sedentary behaviour, which is doing activities that use very little or no energy (eg, sitting down, lying down, watching television or using a computer). Adults who engaged in little or no physical activity – that is, less than 30 minutes physical activity in the past week – are described as physically inactive in this report.

Three in twenty adults (15%) were physically inactive, up from 10% in 2006/07. In relative terms, this is a 50% increase.

Women (18%) were more likely to be physically inactive than men (13%).¹³ Rates of physical inactivity have increased for both women and men since 2006/07 (12% and 8% respectively).

Rates of physical inactivity were higher in the 65 years and older age groups. At the peak of this trend, 35% of adults aged 75 years and over were physically inactive. Rates of physical inactivity have increased since 2006/07 for all age groups except adults aged over 65 years.

Asian, Pacific and Māori adults were more likely to be physically inactive than non-Asian, non-Pacific and non-Māori adults respectively, after adjusting for age and sex differences. Twenty percent of Asian and Pacific adults and 18% of Māori adults (double the proportion of physically inactive Māori adults in 2006/07) were physically inactive.

Adults living in the most socioeconomically deprived areas were 2.3 times more likely to be physically inactive than adults living in the least deprived areas, after adjusting for age, sex and ethnic differences. Twenty-two percent of adults living in the most deprived areas and 11% of adults living in the least deprived areas were physically inactive.

¹³ Results are available in the online tables accompanying this report.

Obesity rates increased as socioeconomic deprivation increased

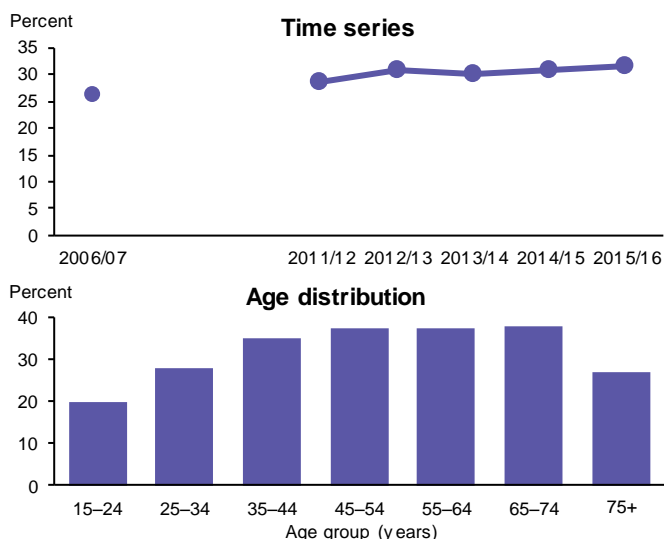
Box 9: Adults who are obese, with a measured body mass index (BMI) of 30 or more (or equivalent for <18 years), 2015/16

The prevalence was **31.6%**
which is an estimated
1,182,000 adults

Adjusted rate ratio

Men vs women	0.9
Māori vs non-Māori	1.7 *
Pacific vs non-Pacific	2.4 *
Asian vs non-Asian	0.5 *
Most vs least deprived	1.7 *

* There is a statistically significant difference between the two groups.



Excess weight is a leading contributor to a number of health conditions, including type 2 diabetes, cardiovascular diseases, some types of cancer (eg, kidney and uterus), osteoarthritis, gout, sleep apnoea, some reproductive disorders and gallstones. High BMI (overweight or obese) accounted for about 9% of all illness, disability and premature mortality in 2013, making it the leading modifiable risk to health (it has probably now overtaken smoking; Ministry of Health 2016e). Obesity is defined as a BMI of 30 or more (or equivalent for those younger than 18 years). Interviewers measured respondents' height and weight, from which BMI is calculated, gaining these measurements for 95% of adults (excluding pregnant women).

More than three in ten adults (32%) were obese in 2015/16, up from 27% in 2006/07.¹⁴ Mean BMI and mean waist measurements continued to increase in nearly all population groups since 2006/07.¹⁴ Furthermore, the percentage of adults who were extremely obese (that is, in obese class 3, with a BMI of 40 or more) increased from 3.4% in 2006/07 to 5.1% in 2015/16. The health risks associated with obesity are much higher for extreme obesity (Global BMI Mortality Collaboration 2016). There are about 192,000 extremely obese adults in New Zealand; a 70% increase from 112,000 adults in 2006/07.

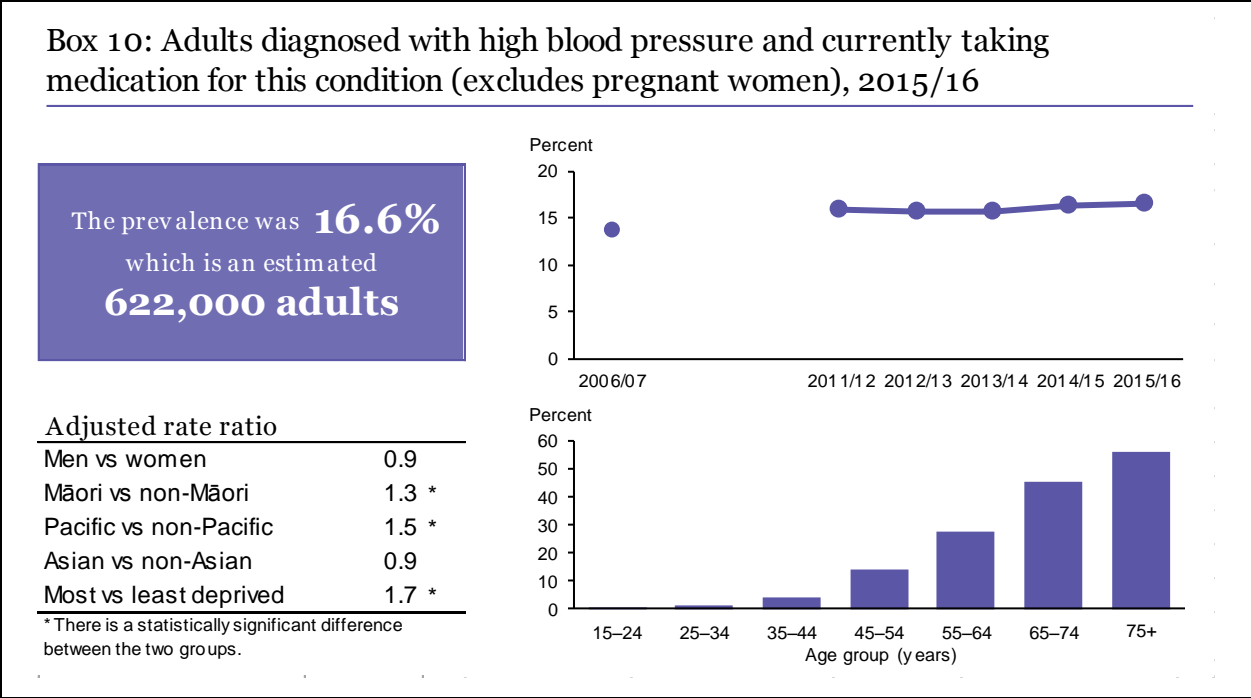
Obesity rates were highest in Pacific (67%) and Māori adults (47%), intermediate in European/Other adults (30%) and lowest in Asian adults (15%).¹⁴ This represents about 228,000 Māori; 149,000 Pacific adults; 849,000 European/Other and 69,000 Asian adults who are obese.

The inequality between adults living in the most deprived and the least deprived neighbourhoods was greater for extreme obesity rates (adjusted rate ratio of 4.1) than for obesity rates (adjusted rate ratio of 1.7). Since 2006/07, rates of extreme obesity (about 2%) and obesity (about 23%) have not changed significantly for adults in the least deprived areas. In contrast, for adults in the most deprived areas, extreme obesity rates increased from 8% to 11% and obesity rates increased from 39% to 44% during the same period.

¹⁴ Results are available in the online tables accompanying this report.

Health conditions of adults

One in six adults reported high blood pressure (medicated)



High blood pressure can damage the heart and kidneys. It can also lead to ischaemic heart disease, stroke and kidney (renal) failure. High blood pressure accounted for about 8% of illness, disability and premature mortality in 2013 (Ministry of Health 2016e). In this report, self-reported high blood pressure (medicated) is defined as adults who reported that they had been diagnosed with high blood pressure by a doctor and were currently taking medication for this condition.

One in six adults (17%) reported high blood pressure (medicated), up from 14% in 2006/07.

The prevalence of self-reported high blood pressure (medicated) increased steeply with age; over half of adults aged 75 years and over (56%) had self-reported high blood pressure (medicated).¹⁵ Even though rates were lower for adults aged 65–74 years (46%) this actually represents about 182,000 adults, compared with about 163,000 adults aged 75 years and over.

Although the observed rate was highest for the European/Other group (18%), when age and sex were adjusted for, Māori and Pacific adults (both 14%) were more likely to report high blood pressure (medicated) than non-Māori and non-Pacific adults respectively.¹⁵

Adults in the most socioeconomically deprived areas were 1.7 times more likely to report high blood pressure (medicated) than adults in the least deprived areas (the rates were 18% and 14%, respectively).

¹⁵ Results are available in the online tables accompanying this report.

More information on blood pressure

In addition to asking about diagnosed high blood pressure in the adult questionnaire, measurement of blood pressure in adults was introduced into the survey in 2012/13. Blood pressure measurements were obtained using a portable electronic sphygmomanometer (Omron HEM 907) with three cuff sizes. Blood pressure measurements were taken towards the end of the survey, after respondents had been seated for at least 10 minutes. The device is programmed to take three readings, with a one-minute pause between each. The mean of the second and third readings were used to minimise the impact of any increase in blood pressure as a result of taking measurements.

The survey data used for this section were collected from July 2012 to June 2016 from 50,028 adults (95% of eligible survey respondents). Blood pressure was not measured in pregnant women. Given there was no real difference in the blood pressure measurements across the four survey years (refer to online tables for more results), data were pooled across years to provide more robust results for population subgroups.

Conventionally, high blood pressure is defined as having a measured systolic blood pressure of ≥ 140 mmHg and/or diastolic blood pressure of ≥ 90 mmHg (WHO 2013).¹⁶ Blood pressure rises with each heartbeat and falls when the heart relaxes between beats. Blood pressure measurements fluctuate with changes in posture, exercise, stress or sleep. A single high blood pressure reading does not necessarily mean that a person has high blood pressure. However, uncontrolled high blood pressure may cause health problems over time.

One in five adults had measured high blood pressure

In this section, measured high blood pressure is defined as systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg, regardless of whether or not respondents were taking medications for high blood pressure.

The prevalence of measured high blood pressure in adults aged 15 years and over was 22% in the period 2012–2016. The prevalence of measured high blood pressure increased steeply with age; just under half of adults aged 75 years and over (47%) had a high blood pressure reading at the time of measurement.

The prevalence of measured high blood pressure was 25% for men and 20% for women. Men were 1.3 times more likely than women to have measured high blood pressure, after adjusting for age differences.

Māori and Pacific adults were both 1.3 times more likely to have measured high blood pressure, after adjusting for age and sex.

Adults living in the most deprived areas were 20% more likely to have measured high blood pressure than those living in the least deprived areas, after adjusting for age, sex and ethnic differences.

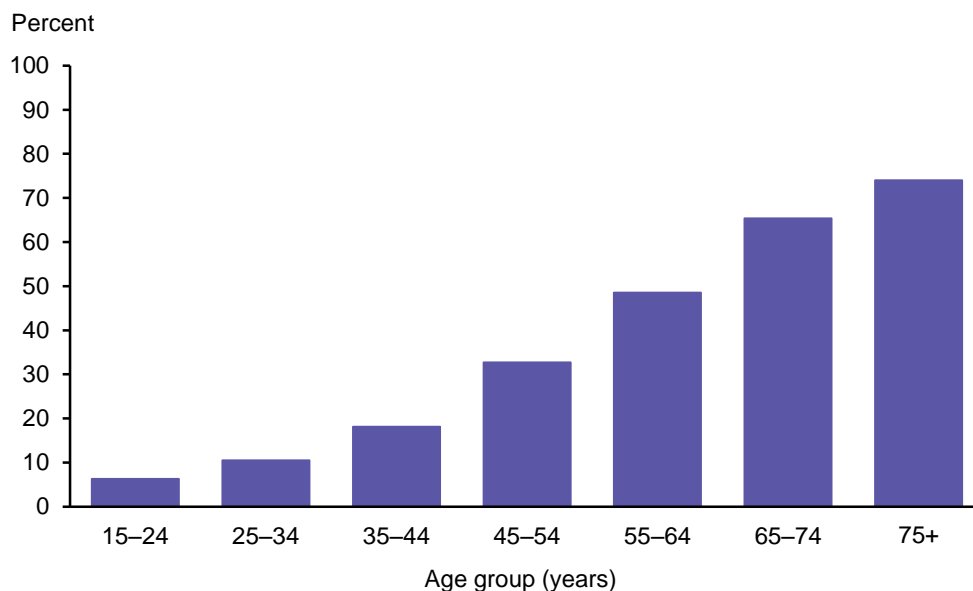
¹⁶ Systolic blood pressure is a measure of the maximum arterial blood pressure when the heart muscle contracts. Diastolic blood pressure is a measure of the minimum blood pressure when the heart relaxes between contractions.

One in three adults had hypertension

In this section, hypertension is defined as having measured high blood pressure and/or self-reported high blood pressure (medicated).

In the 2012–2016 period, one in three adults (31%) could be classified as having hypertension. The prevalence of hypertension increased steeply with age, with three in four (74%) adults aged 75 years and older affected (Figure 3).

Figure 3: Prevalence of hypertension, by age groups, 2012–2016



Māori and Pacific adults were both 1.3 times more likely to have hypertension, after adjusting for age and sex.

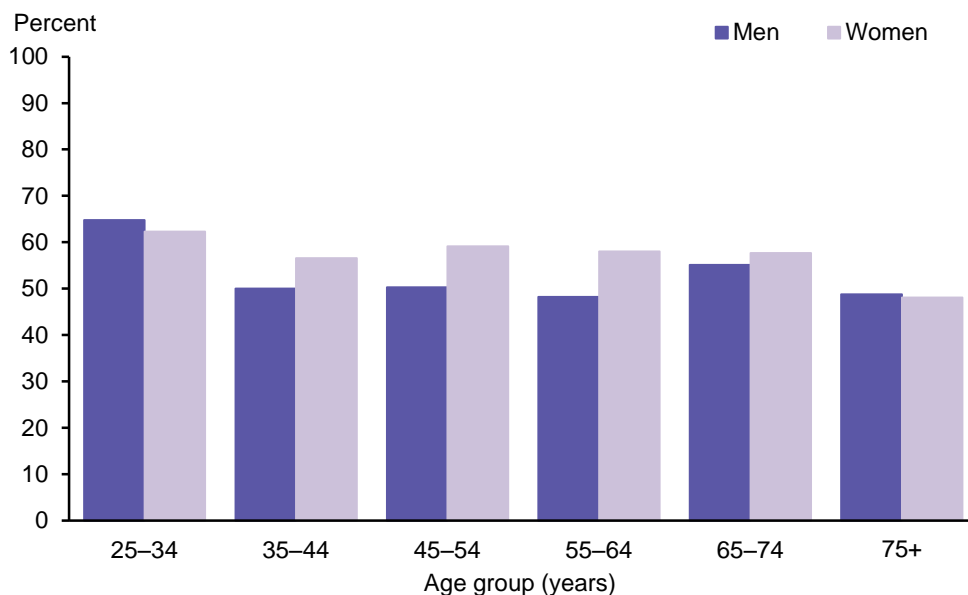
Adults living in the most deprived areas were 1.4 times to have hypertension than those living in the least deprived areas, after adjusting for age, sex and ethnic differences.

Half of adults currently taking hypertensive medication had their high blood pressure under control

In this section, we examine whether adults currently taking medication for high blood pressure had their blood pressure under control (that is, a measured systolic blood pressure of <140 mmHg and diastolic blood pressure of <90 mmHg).

Among adults taking medication for high blood pressure, just over half (53%) had their blood pressure under control. Although the prevalence of hypertension varies substantially by age, there is limited variation in the proportion of adults with controlled high blood pressure by age. Women aged 35 to 64 years were more likely to have their blood pressure under control than men in the same age groups (Figure 4).

Figure 4: Prevalence of controlled high blood pressure among adults taking hypertensive medication, by sex and age group, 2012–2016



No significant differences were found in the proportion of adults with controlled high blood pressure by socioeconomic deprivation and ethnicity.

In New Zealand, current guidelines recommend an assessment of five-year combined cardiovascular risk rather than treating blood pressure as an isolated health condition. Thus, people with blood pressure measurements above the 140/90 mmHg threshold may not be treated with antihypertensive medication because they have an estimated five-year combined cardiovascular risk below 10% (Ministry of Health 2013). Making adjustments to lifestyle factors such as sodium/salt intake, physical activity, body size and alcohol consumption can also help to control blood pressure.

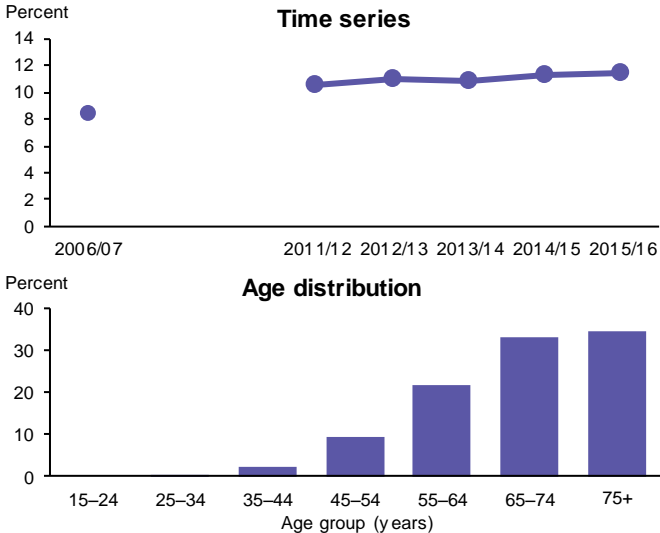
One in three adults aged over 65 years had high cholesterol

Box 11: Adults diagnosed with high cholesterol and currently taking medication for this condition, 2015/16

The prevalence was **11.5%** which is an estimated **430,000 adults**

Adjusted rate ratio	
Men vs women	1.4
Māori vs non-Māori	1.2
Pacific vs non-Pacific	1.5
Asian vs non-Asian	1.1
Most vs least deprived	1.3

* There is a statistically significant difference between the two groups.



High blood cholesterol increases a person’s risk of developing ischaemic heart disease and ischaemic stroke. High blood cholesterol accounted for about 4% of illness, disability and premature mortality in 2013 (Ministry of Health 2016e). In this report, high cholesterol (medicated) is defined as those adults currently taking medication for this condition.

About 430,000 adults (11.5%) reported high cholesterol (medicated), up from 8.4% in 2006/07.¹⁷ However, there has been little or no change in the prevalence of high cholesterol (medicated) since 2011/12 (10.5%).

The prevalence of high cholesterol (medicated) increased steeply with age and peaked at one in three adults aged 65 years and older. This represents about 232,000 adults aged 65 years and older with high cholesterol (medicated).

Overall, there were no disparities by sex, ethnic group or neighbourhood deprivation. However, Pacific and Māori women were more likely than non-Pacific and non-Māori women to have high cholesterol (medicated), after adjusting for age differences. Also, women living in the most socioeconomically deprived areas were more likely to have high cholesterol (medicated) than women living in the least deprived areas.

In 2014/15, the survey measured blood cholesterol levels in a sub-sample of adults as part of a one-off biomedical module. The Ministry will report measured blood cholesterol results from the module in 2017.

¹⁷ This may partly reflect the introduction of the health target ‘Better diabetes and cardiovascular services’ in 2009. From 1 January 2012, the target was renamed ‘More heart and diabetes checks’.

The prevalence of diagnosed ischaemic heart disease decreased

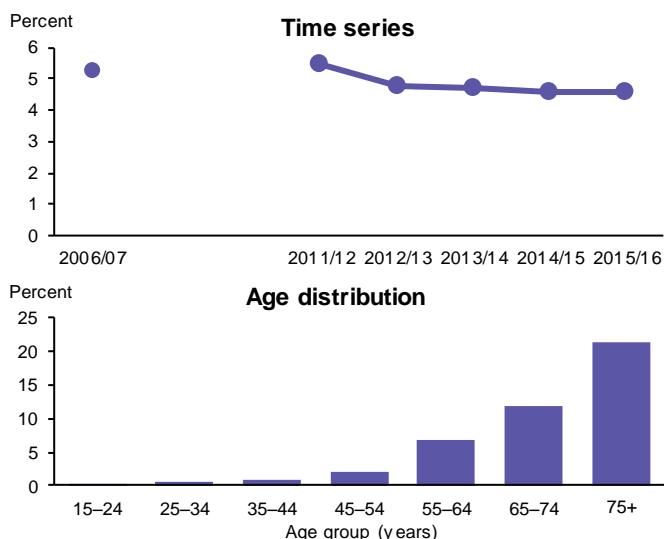
Box 12: Adults diagnosed with ischaemic heart disease, 2015/16

The prevalence was **4.6%**
which is an estimated
172,000 adults

Adjusted rate ratio

Men vs women	1.9 *
Māori vs non-Māori	1.8
Pacific vs non-Pacific	1.2
Asian vs non-Asian	0.9
Most vs least deprived	2.0

* There is a statistically significant difference between the two groups.



Ischaemic heart disease was the leading disease cause of health loss in 2013, accounting for about 8% of illness, disability and premature mortality (Ministry of Health 2016e). It was also the leading cause of death, accounting for about 18% of deaths in 2012 (Ministry of Health 2015c).

In this report, a person is defined as having ischaemic heart disease if they report having been admitted to hospital with a heart attack at some time in their life or if they have been diagnosed with angina (typically temporary chest pain while doing exercise) by a doctor.

In 2015/16, nearly one in twenty adults (4.6%) had ischaemic heart disease, down from 5.3% in 2006/07.

At least one in twenty men (5.9%) reported being diagnosed with ischaemic heart disease, compared with 3.4% of women.¹⁸ Men were 1.9 times as likely as women to have ischaemic heart disease, after adjusting for age differences. This sex ratio was mirrored in the ischaemic heart disease mortality statistics, which are age standardised: in 2012, the male rate was 1.9 times the female rate (Ministry of Health 2015c).

Ischaemic heart disease prevalence increased with age: about one in five adults (21%) aged 75 years and over had ischaemic heart disease.

About one in twenty Māori adults (4.8%) had ischaemic heart disease in 2015/16. After adjusting for age and sex differences, Māori adults were 1.8 times as likely to have ischaemic heart disease as non-Māori adults, although this difference was not statistically significant. Māori men were 1.6 times as likely to have ischaemic heart disease as non-Māori men, after adjusting for age differences. These findings were consistent with mortality data: in 2012, the Māori ischaemic heart disease mortality rate (age standardised) was about twice as high as that for non-Māori (Ministry of Health 2015c); the Māori male rate was 1.8 times the rate for non-Māori males and the rate for Māori females was 1.9 times the rate for non-Māori females.

¹⁸ Results are available in the online tables accompanying this report.

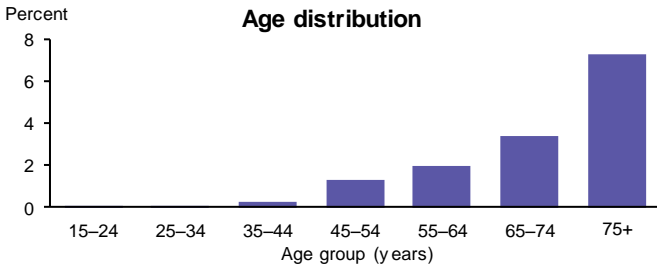
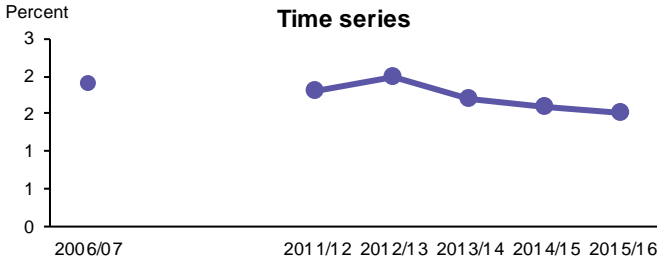
Men were more likely to have had a stroke than women

Box 13: Adults diagnosed as having had a stroke, excluding transient ischaemic attacks (TIA), 2015/16

The prevalence was **1.5%** which is an estimated **57,000 adults**

Adjusted rate ratio	
Men vs women	1.4 *
Māori vs non-Māori	2.1
Pacific vs non-Pacific	2.8
Asian vs non-Asian	0.6
Most vs least deprived	1.6

* There is a statistically significant difference between the two groups.



After a stroke, many people recover well; however, some may be permanently disabled or die. Stroke was the second leading cause of death in 2012, after ischaemic heart disease (Ministry of Health 2015c).

In this report, a person is defined as having had a stroke if a doctor has told them at some time in their life that they have had a stroke (this excludes transient ischaemic attacks, which are sometimes referred to as mini-strokes).

About 57,000 adults (1.5%) reported having had a stroke at some stage in their lives.

Older adults were more likely to have had a stroke than those in younger age groups. About 21,000 adults aged 75 years and over (7%) reported having had a stroke. Nevertheless, 64% of adults who had survived a stroke (37,000 adults) were younger than 75 years.¹⁹

Men were more 1.4 times more likely to have had a stroke than women, after adjusting for age differences. The rates were 1.7% and 1.3% respectively.

¹⁹ Results are available in the online tables accompanying this report.

The percentage of adults experiencing psychological distress decreased with age

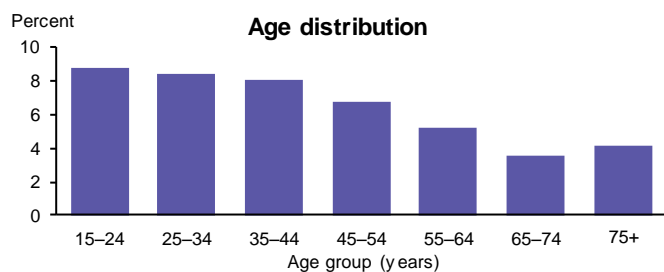
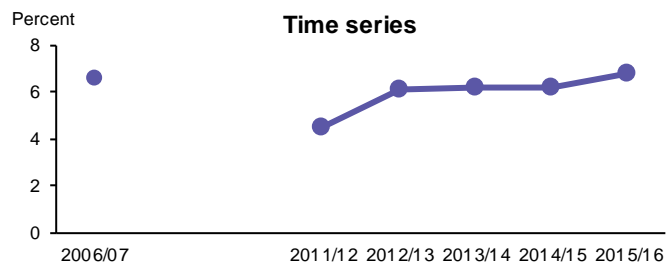
Box 14: Adults experiencing psychological distress in the past four weeks, with a score of 12 or more on the K10, 2015/16

The prevalence was **6.8%**
which is an estimated
256,000 adults

Adjusted rate ratio

Men vs women	0.6 *
Māori vs non-Māori	1.5 *
Pacific vs non-Pacific	1.5 *
Asian vs non-Asian	0.8
Most vs least deprived	3.1 *

* There is a statistically significant difference between the two groups.



The survey measures psychological (mental) distress using the Kessler Psychological Distress Scale (K10) (Kessler et al 2003). This measures a person's experience of symptoms such as anxiety, confused emotions, depression or rage in the past four weeks. People who have a score of 12 or more have a high probability of having an anxiety or depressive disorder.

In this report, 'psychological distress' means high or very high levels of psychological distress according to the K10 scale (ie, a score of 12 or more) in the past four weeks.

About 256,000 adults (7%) experienced psychological distress in the four weeks before taking part in the survey.

Prevalence of psychological distress varied by sex, age, ethnic group and neighbourhood deprivation, as follows.²⁰

- Women were more likely to have experienced psychological distress than men (the rates were 9% and 5% respectively).
- Psychological distress rates decreased with age. Less than 5% of adults aged 65 years and over experienced psychological distress in the previous four weeks. In contrast, more than 8% of adults aged 15–44 years experienced psychological distress in the past four weeks.
- One in nine Pacific and Māori adults (11%) experienced psychological distress in the past four weeks. After adjusting for age and sex differences, Pacific and Māori adults were 1.5 times as likely to have experienced psychological distress as non-Pacific and non-Māori adults respectively.
- The prevalence of psychological distress was higher in the most socioeconomically deprived neighbourhoods (11.5%), than in the least deprived neighbourhoods (3.8%). Those living in the most deprived areas were 3.1 times as likely to have experienced psychological distress as those in the least deprived areas, after adjusting for age, sex and ethnic differences.

²⁰ Results are available in the online tables accompanying this report.

The prevalence of asthma (medicated) continued to remain stable

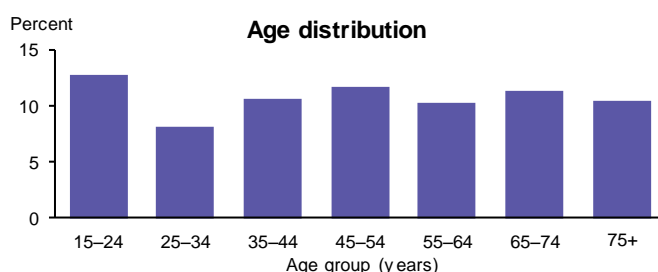
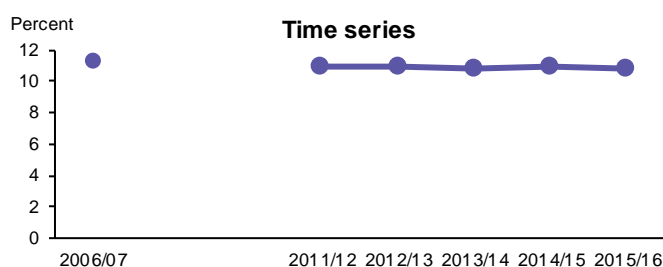
Box 15: Adults diagnosed with asthma and currently taking medication for this condition, 2015/16

The prevalence was **10.8%**
which is an estimated
405,000 adults

Adjusted rate ratio

Men vs women	0.6 *
Māori vs non-Māori	1.8 *
Pacific vs non-Pacific	1.1
Asian vs non-Asian	0.5 *
Most vs least deprived	1.7 *

* There is a statistically significant difference between the two groups.



In this report, the term ‘asthma (medicated)’ refers to adults who reported that a doctor had told them they had asthma and they were currently taking medication to treat it. Medication could be taken daily to prevent symptoms or only when needed to relieve symptoms.

The prevalence of asthma (medicated) has remained stable since 2006/07, at 11% of adults. This represents 405,000 adults.

Women were more likely to have asthma (medicated) than men, after adjusting for age. Thirteen percent of women and 8% of men had asthma (medicated).

Asthma (medicated) prevalence varied by ethnic group: the rate was highest in Māori adults (18%) and lowest in Asian adults (6%). After adjusting for age and sex differences, Māori adults were nearly twice as likely to have asthma (medicated) than non-Māori adults, and Asian adults were half as likely to have asthma (medicated) than non-Asian adults.

Adults in the most socioeconomically deprived areas were 1.7 times as likely to have asthma (medicated) than adults in the least deprived areas, after adjusting for age, sex and ethnic differences. Thirteen percent of adults living in the most deprived areas and 8% of adults living in the least deprived areas had asthma (medicated).

Half of adults over 75 years old had diagnosed arthritis

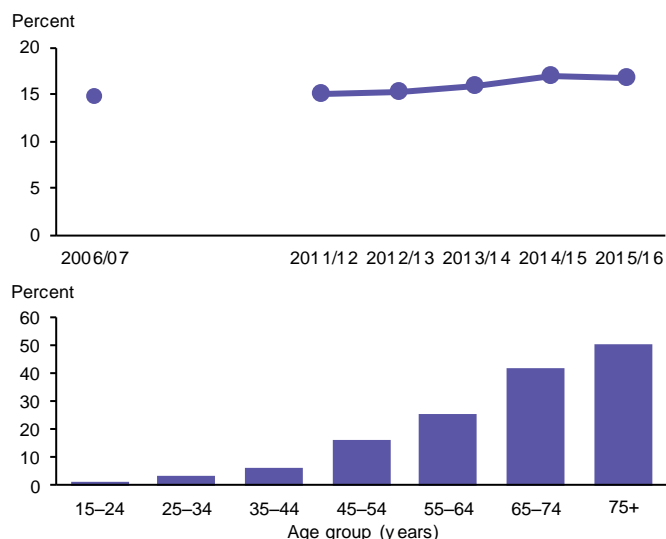
Box 16: Adults diagnosed with arthritis, including osteoarthritis, rheumatoid arthritis, gout, lupus and psoriatic arthritis, 2015/16

The prevalence was **16.7%**
which is an estimated
624,000 adults

Adjusted rate ratio

Men vs women	0.9 *
Māori vs non-Māori	1.2 *
Pacific vs non-Pacific	1.0
Asian vs non-Asian	0.6 *
Most vs least deprived	1.5 *

* There is a statistically significant difference between the two groups.



There are many different types of arthritis, which can affect people of any age. Chronic (long-term) arthritis can result in long-lasting pain and deformity and is a major cause of disability in older people.

In this report, the term 'arthritis' refers to adults who reported that a doctor had told them at some time in their life that they had any type of arthritis, including osteoarthritis, rheumatoid arthritis, gout, lupus and psoriatic arthritis.

More than one in six adults (17%) had arthritis, up from 15% in 2011/12. This represents about 624,000 adults with arthritis; an 18% increase from 527,000 adults in 2011/12.²¹

The prevalence of arthritis increased steeply with age, with half of adults aged over 75 years (51%) affected.

Arthritis prevalence varied by ethnic group. Although the observed rate was highest for the European/Other adult group (19%), when age and sex differences were adjusted for, Māori adults were 1.3 times more likely to have arthritis than non-Māori adults.²¹ Asian adults had the lowest prevalence of arthritis (6%). Asian adults were nearly half as likely to have arthritis as non-Asian adults, after adjusting for age and sex differences.

The most common form of arthritis was osteoarthritis, which affected 10% of adults (about 370,000 adults).²¹

Gout was the second most common form of arthritis, affecting 3.2% of adults (about 120,000 adults).²¹

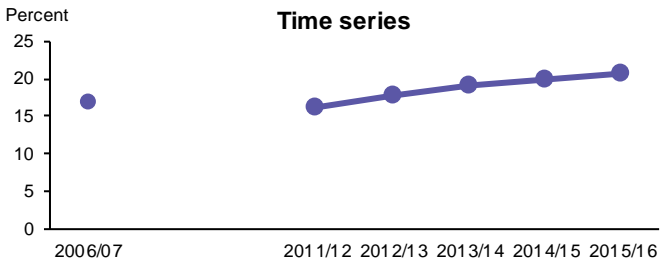
Rheumatoid arthritis affected 2.4% of adults, which represents about 89,000 adults.

²¹ Results are available in the online tables accompanying this report.

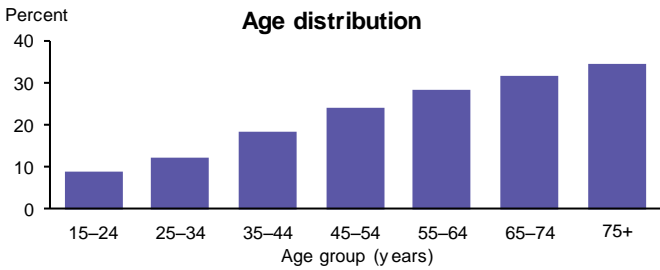
More than one in five adults experienced chronic pain and this number has increased

Box 17: Adults with chronic pain, 2015/16

The prevalence was **20.8%** which is an estimated **777,000 adults**



Adjusted rate ratio	
Men vs women	0.9
Māori vs non-Māori	1.2 *
Pacific vs non-Pacific	0.9
Asian vs non-Asian	0.8 *
Most vs least deprived	1.7 *



* There is a statistically significant difference between the two groups.

Chronic pain can be debilitating and can affect a person’s ability to carry out their usual activities. In this report, ‘chronic pain’ is defined as pain that is present almost every day and has lasted, or is expected to last, more than six months.

More than one in five adults (21%) experienced chronic pain, up from 17% in 2006/07.²² This represents about 777,000 adults experiencing pain almost every day; a 37% increase from 567,000 adults in 2006/07.

Rates of chronic pain increased with age: almost one-third of adults in the 65–74 years age group (32%) were affected. Rates of chronic pain have increased in all age groups over 35 years since 2006/07.²²

Thirteen percent of Asian adults experienced chronic pain.²² Asian adults were 25% less likely to experience chronic pain than non-Asians, after adjusting for age and sex differences.

Adults living in the most socioeconomically deprived areas were 1.7 times more likely to experience chronic pain than adults living in the least deprived areas, after adjusting for age, sex and ethnic differences. The rates were three in twelve (24%) for adults living in the most deprived areas and two in twelve (17%) for adults living in the least deprived areas.

²² Results are available in the online tables accompanying this report.

Adults' access to health care

Almost 80% of adults had visited a GP in the past 12 months

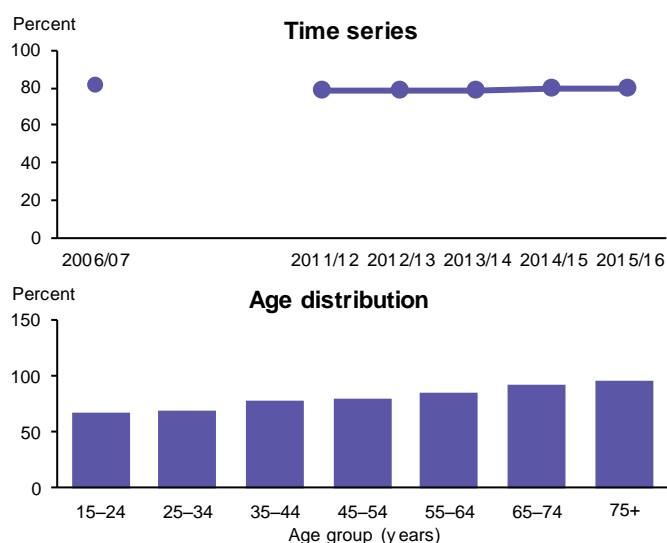
Box 18: Adults who had visited a GP in the past 12 months, 2015/16

The prevalence was **79.3%**
which is an estimated
2,965,000 adults

Adjusted rate ratio

Men vs women	0.9 *
Māori vs non-Māori	1.0
Pacific vs non-Pacific	1.0
Asian vs non-Asian	0.9 *
Most vs least deprived	1.0

* There is a statistically significant difference between the two groups.



Most New Zealand adults (93% or 3.5 million) are enrolled with a primary health organisation (PHO) that is funded by their local district health board (DHB) to provide general practice and other primary health care services. Additional funding is provided to meet the health needs of high-needs patients and to lower the cost of accessing services.

Four in five adults (79%) had visited a GP in the past 12 months. Women were more likely to have visited a GP in the past 12 months (84%) than men (75%).²³ This difference was only evident in those aged 15–44 years, when women may have visited a GP for reproductive health reasons.

Young men were the least likely to have visited a GP in the past 12 months. Only 60% of men aged 15–24 years and 61% of men aged 25–34 years had visited a GP in the past 12 months.²³

Older adults were more likely to have visited a GP in the past 12 months than younger adults: more than 90% of adults aged 65 years and over had visited a GP in the past 12 months, compared with less than 80% of those younger than 45 years.

Eighty-one percent of those in the least socioeconomically deprived neighbourhoods had visited a GP in the past 12 months, compared with 78% in the most deprived neighbourhoods. However, any difference between these groups was removed after adjusting for age, sex and ethnic differences. Nevertheless, it should be noted that reported unmet need for primary health care was higher in the more deprived neighbourhoods than the least deprived neighbourhoods (see page 39), reflecting the higher rates of illness in the most deprived neighbourhoods.

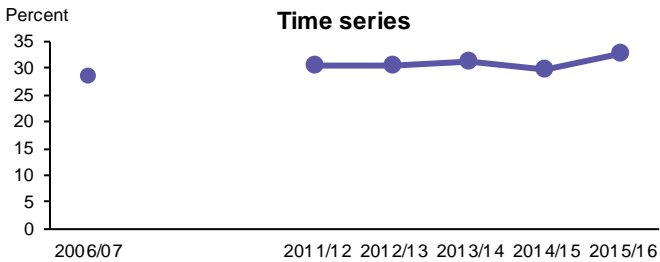
On average, adults had visited a GP 2.9 times in the past 12 months (this average includes adults who had not visited a GP in the past 12 months).²³ The number of GP visits was highest for older adults: 3.8 times in the past 12 months for those aged 65–74 years and 4.8 times for those aged 75 years and over.

²³ Results are available in the online tables accompanying this report.

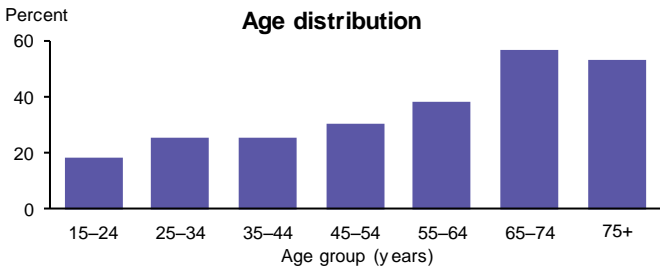
One in three adults had visited a practice nurse in the past 12 months

Box 19: Adults who had visited a practice nurse in the past 12 months without seeing a GP at the same visit, 2015/16

The prevalence was **32.5%** which is an estimated **1,215,000 adults**



Adjusted rate ratio	
Men vs women	0.7 *
Māori vs non-Māori	1.1
Pacific vs non-Pacific	0.8 *
Asian vs non-Asian	0.5 *
Most vs least deprived	1.2



* There is a statistically significant difference between the two groups.

Practice nurses work within a general practice setting, providing a comprehensive range of primary health care services. They are a key part of the general practice team. Practice nurses focus on health promotion, disease prevention, wellness, first-point-of-contact care and disease management across a patient’s lifespan. They run screening and preventative programmes, such as immunisations, and have an important role in care coordination for patients and their families. In this report, the term ‘visited a practice nurse in the past 12 months’ only relates to visiting a practice nurse without seeing a GP at the same visit.

One in three adults (32%) reported visiting a practice nurse in the past 12 months, up from 29% in 2006/07.

Rates of visiting a practice nurse in the past 12 months varied by sex, age and ethnic group, as follows.²⁴

- Women were more likely to have visited a practice nurse in the past 12 months than men (the rates were 38% and 27% respectively). This sex difference was most pronounced for adults under 54 years of age.
- The proportion of adults who had visited a practice nurse in the past 12 months was greater for older adults than for younger adults. Over half of those aged 65 years and over had seen a practice nurse in the past 12 months. In contrast, between 19% and 26% of those aged under 45 years had visited a practice nurse in the past 12 months.
- Asian (15%) and Pacific (23%) adults had the lowest rates of having visited a practice nurse in the last 12 months. After adjusting for age and sex differences, Asian adults were half as likely as non-Asian adults, and Pacific adults were one-quarter as likely as non-Pacific adults, to have visited a practice nurse.

On average, adults visited a practice nurse (without seeing a GP at the same visit) less than once in the past 12 months (0.7 visits). However, older adults (65 years and over) had at least one practice nurse visit, on average, in the past 12 months.²⁴

²⁴ Results are available in the online tables accompanying this report.

One in nine adults had visited an after-hours medical centre in the past 12 months

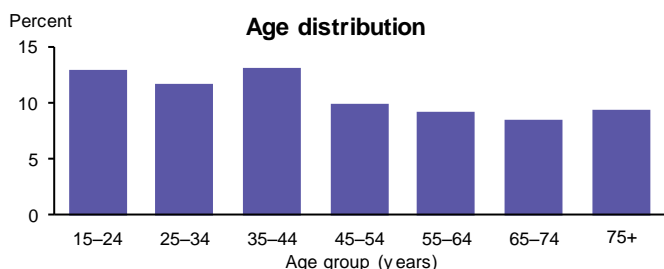
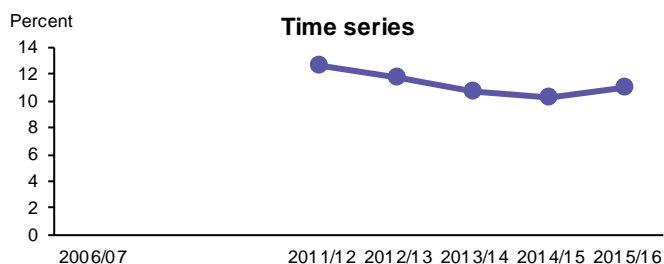
Box 20: Adults who had visited an after-hours medical centre in the past 12 months, 2015/16

The prevalence was **11.0%**
which is an estimated
410,000 adults

Adjusted rate ratio

Men vs women	0.8 *
Māori vs non-Māori	0.9
Pacific vs non-Pacific	1.2
Asian vs non-Asian	0.9
Most vs least deprived	0.6 *

* There is a statistically significant difference between the two groups.



After-hours medical centres provide primary health care outside usual business hours. DHBs are required to ensure that at least 95% of the enrolled population have access to after-hours care. The cost of care in after-hours medical centres is higher than it is for services during usual business hours, particularly for people who are not enrolled with a PHO.

One in nine adults (11%) had visited an after-hours medical centre in the past 12 months, down from 13% in 2011/12.

Rates of visiting an after-hours in the past 12 months declined with age. Thirteen percent of those aged 15–24 years had visited an after-hours medical centre in the past 12 months, compared with less than 10% of those aged 55 years and over.

Adults living in the most deprived areas were less likely to have visited an after-hours medical centre in the past 12 months (one in ten adults, 10%) compared with adults living in the least deprived areas (one in eight adults, 13%), after adjusting for age and sex differences.²⁵

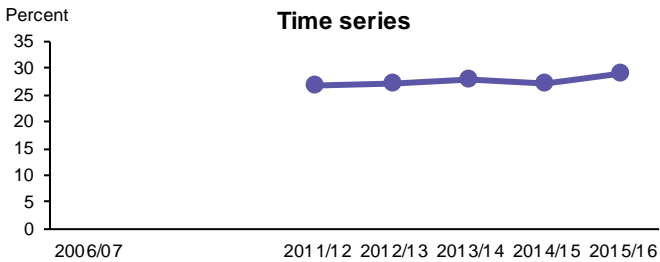
On average, adults visited an after-hours medical centre less than once in the past 12 months (0.2 visits).

²⁵ Results are available in the online tables accompanying this report.

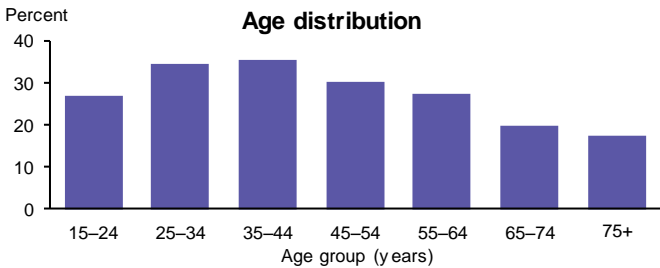
Rates of unmet need for primary health care were lowest for the over-65-year-olds

Box 21: Adults who have experienced one or more types of unmet need for primary health care in the past 12 months, 2015/16

The prevalence was **28.8%** which is an estimated **1,076,000 adults**



Adjusted rate ratio	
Men vs women	0.6 *
Māori vs non-Māori	1.4 *
Pacific vs non-Pacific	1.1
Asian vs non-Asian	0.7 *
Most vs least deprived	1.6 *



* There is a statistically significant difference between the two groups.

This indicator investigates whether adults had experienced any of the following five barriers to accessing primary health care in the past 12 months: unmet need for a GP due to cost; unmet need for an after-hours medical centre due to cost; unmet need for a GP due to lack of transport; unmet need for an after-hours medical centre due to lack of transport and inability to get an appointment at their usual medical centre within 24 hours.

Most adults were able to access primary health care when they needed to (ie, they had not experienced any of the five barriers listed above). However, 29% of adults reported one or more types of unmet need for primary health care in the past 12 months, up from 27% in 2011/12. The most common reasons for this unmet need were: being unable to get an appointment at their usual medical centre within 24 hours (18%), the cost of GP services (14%) and the cost of after-hours medical centres (7%).²⁶ These three most common reasons for unmet need are covered in more detail over the following three pages.

Rates of unmet need for primary health care in the past 12 months varied by sex, age, ethnic group and neighbourhood deprivation, as follows.²⁶

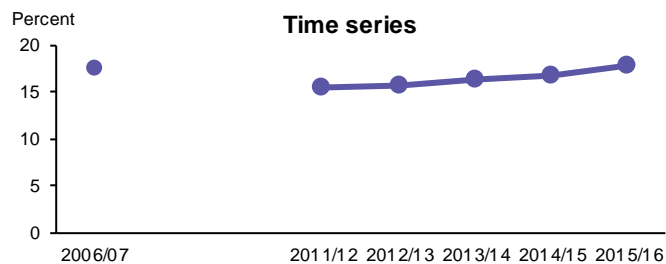
- Women (35%) had higher rates of unmet need than men (22%).
- About one in five adults aged 65 years and over had experienced an unmet need for primary health care, compared with about one in three adults aged 25–54 years.
- Nearly two in five Māori adults (39%) had an unmet need for primary health care, which was consistent with previous years (eg, 39% in 2011/12). The Māori rate was 1.4 times as high as the rate for non-Māori adults, after adjusting for age and sex differences. The rate was lowest in Asian adults: 23% of Asian adults had an unmet need for primary health care.
- Adults living in the most socioeconomically deprived areas had higher rates of unmet need in the past 12 months (36%) than those living in the least deprived areas (22%).

²⁶ Results are available in the online tables accompanying this report.

About one in five adults aged 25–64 years could not get an appointment at their usual medical centre within 24 hours

Box 22: Adults who were unable to get an appointment at their usual medical centre, within 24 hours, at any point in the past 12 months, 2015/16

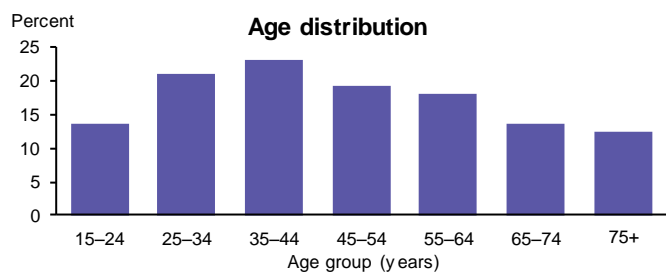
The prevalence was **17.8%**
which is an estimated
626,000 adults



Adjusted rate ratio

Men vs women	0.6 *
Māori vs non-Māori	1.2 *
Pacific vs non-Pacific	0.9
Asian vs non-Asian	0.8
Most vs least deprived	1.3 *

* There is a statistically significant difference between the two groups.



Timely access to care when it is needed is an important dimension of quality of health care.

This indicator is defined as whether there had been an occasion in the past 12 months when adults had wanted 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.

Eighteen percent of adults had been unable to get an appointment at their usual medical centre within 24 hours at some point in the past 12 months. The rate had declined from 18% in 2006/07 to 15% in 2011/12 but then increased steadily to 18% in 2015/16.

Women (22%) were more likely to have been unable to get an appointment than men (14%).²⁷

Rates of being unable to get an appointment peaked for those aged 25–64 years (prime working age), where about one in five had been unable to get an appointment within 24 hours. Among adults aged 55–64 years, the percentage who had been unable to get an appointment at their usual medical centre within 24 hours rose from 14% in 2006/07 to 18%.

Māori adults had the highest rate (21%) of being unable to get an appointment at their usual medical centre within 24 hours. Māori adults were 1.2 times more likely to be unable to get an appointment at their usual medical centre within 24 hours compared with non-Māori adults, after adjusting for age and sex differences.²⁷

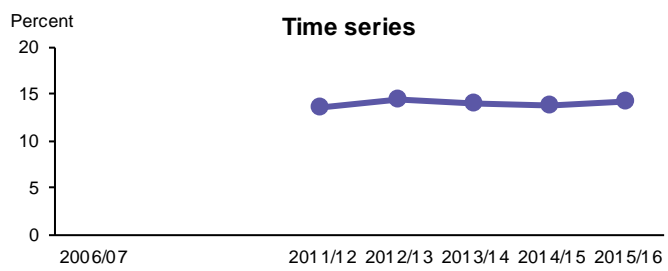
Adults living in the most socioeconomically deprived areas (18%) were 1.3 times more likely to be unable to get an appointment at their usual medical centre within 24 hours compared with adults living in the least deprived areas (15%), after adjusting for age, sex and ethnic differences.

²⁷ Results are available in the online tables accompanying this report.

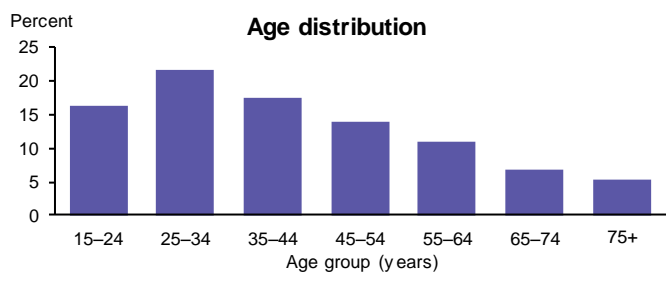
Cost prevented one in five adults living in the most socioeconomically deprived areas from visiting a GP

Box 23: Adults who did not visit a GP because of cost, at any point in the past 12 months, 2015/16

The prevalence was **14.3%** which is an estimated **533,000 adults**



Adjusted rate ratio	
Men vs women	0.6 *
Māori vs non-Māori	1.6 *
Pacific vs non-Pacific	1.4 *
Asian vs non-Asian	0.5 *
Most vs least deprived	2.1 *



* There is a statistically significant difference between the two groups.

All New Zealanders are eligible for reduced health care costs when they go to their usual medical centre. However, cost may still be a barrier to accessing primary health care.

In this report, the term ‘did not visit a GP due to cost’ means that there had been an occasion in the past 12 months when adults who had a medical problem did not visit a GP because of cost.

About 533,000 adults (14%) reported not visiting a GP due to cost in the past 12 months.

Rates of not visiting a GP due to cost varied by sex, age, ethnic group and neighbourhood deprivation, as follows.²⁸

- Women were almost twice as likely as men to not visit a GP due to cost, after adjusting for age differences (the rates were 18% and 10% respectively).
- Unmet need for GP visits due to cost peaked among those aged 25–44 years, at about one in five adults. Cost was much less likely to be a barrier for adults aged 65 years and over: less than 10% had experienced unmet need for this reason.
- More than one in five Māori (23%) and Pacific (21%) adults had not visited a GP due to cost. Māori and Pacific adults were more likely than non-Māori and non-Pacific adults respectively to not visit a GP due to cost, after adjusting for age and sex differences. Asian adults had the lowest rate of not visiting a GP due to cost: one in eleven (9%).
- Adults living in the most socioeconomically deprived areas were more than twice as likely as those living in the least deprived areas to not visit a GP due to cost, after adjusting for age, sex and ethnic differences. The rates were 20% and 9% respectively.

Another reason for not visiting a GP is a lack of transport, which was a barrier for 3.2% of adults in the past 12 months.²⁸ Lack of transport varied by deprivation; the rate was much higher for adults living in the most deprived areas (6.7%) than for those in the least deprived areas (0.9%).

²⁸ Results are available in the online tables accompanying this report.

Cost prevented seven percent of adults from visiting an after-hours medical centre in the past 12 months

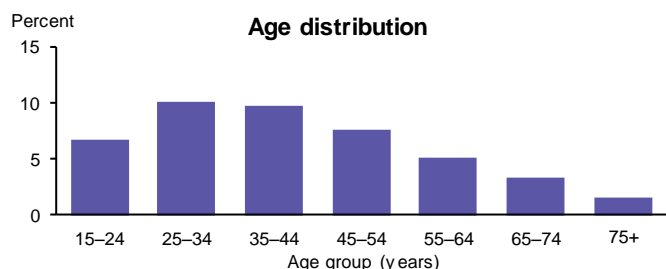
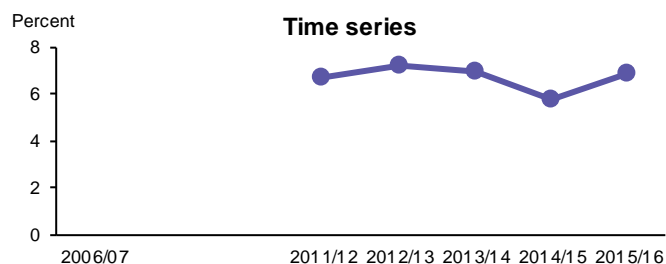
Box 24: Adults who did not visit an after-hours medical centre due to cost, at any point in the past 12 months, 2015/16

The prevalence was **6.9%**
which is an estimated
260,000 adults

Adjusted rate ratio

Men vs women	0.5 *
Māori vs non-Māori	1.9 *
Pacific vs non-Pacific	1.7 *
Asian vs non-Asian	0.7 *
Most vs least deprived	2.5 *

* There is a statistically significant difference between the two groups.



After-hours medical centres provide primary health care outside usual business hours (nights, weekends and public holidays). DHBs are required to ensure that at least 95% of their enrolled population have access to after-hours care. The cost of care in after-hours medical centres is higher than for health services provided during usual business hours, particularly for people who are not enrolled with a PHO.

This indicator focuses on whether there had been a time in the past 12 months when adults had a medical problem after hours but did not visit an after-hours medical centre due to cost.

About 260,000 adults (7%) had not visited an after-hours medical centre in the past 12 months due to cost.

Rates of being unable to visit an after-hours medical centre due to cost in the past 12 months varied by sex, age, ethnic group and neighbourhood deprivation, as follows.²⁹

- More women (8.9%) than men (4.9%) had not visited an after-hours centre due to cost.
- Younger adults were more likely not to have visited an after-hours centre due to cost: less than 5% of adults aged 65 years and over experienced this barrier at some point in the past 12 months, compared with 10% of young adults aged 25–44 years.
- One in eight Māori adults (13%) had not visited an after-hours centre due to cost. After adjusting for age and sex differences, the Māori rate was nearly double that of non-Māori adults. Only 5.5% of Asian adults had not visited an after-hours medical centre due to cost.
- Adults living in the most socioeconomically deprived areas (12%) were 2.5 times as likely not to have visited an after-hours medical centre due to cost as those living in the least deprived areas (5%), after adjusting for age, sex and ethnic differences.

Another reason for not visiting an after-hours medical centre is a lack of transport, which was a barrier for 1.3% of adults in the past 12 months.²⁹

²⁹ Results are available in the online tables accompanying this report.

Not filling a prescription due to cost was much more common in the most socioeconomically deprived areas

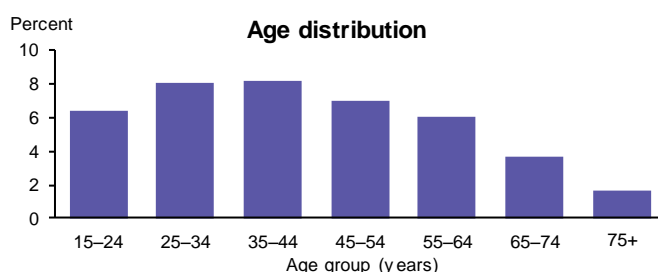
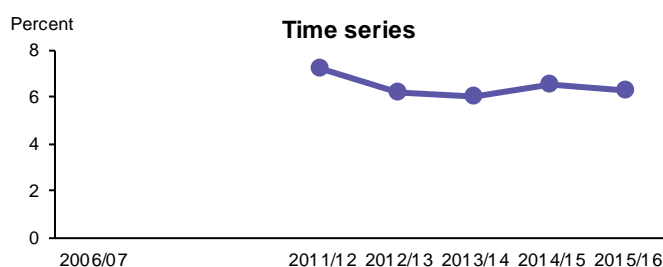
Box 25: Adults who had a prescription item that was not collected due to cost, at any point in the past 12 months, 2015/16

The prevalence was **6.3%**
which is an estimated
238,000 adults

Adjusted rate ratio

Men vs women	0.5 *
Māori vs non-Māori	2.7 *
Pacific vs non-Pacific	3.2 *
Asian vs non-Asian	0.4 *
Most vs least deprived	4.5 *

* There is a statistically significant difference between the two groups.



In New Zealand, most prescription medicines are subsidised under a co-payment system, so people pay a relatively small amount for each medication. The co-payment applies to the first 20 prescriptions per family per year. The co-payment for subsidised prescription items increased from \$3 to \$5 on 1 January 2013.

About 238,000 adults (6%) reported not collecting a prescription due to cost, down from 7% in 2011/12.

Rates of being unable to collect a prescription item due to cost in the past 12 months varied by sex, age, ethnic group and neighbourhood deprivation, as follows.³⁰

- More women than men had not collected a prescription due to cost at some point in the past 12 months (the rates were 8.3% and 4.3% respectively).
- Adults aged 25–44 years were more likely not to have collected a prescription due to cost (over 8%) than those aged 65 years and older (under 5%).
- Nineteen percent of Pacific adults and 15% of Māori adults had not collected a prescription due to cost. Pacific adults were 3.2 times as likely as non-Pacific adults and Māori adults were 2.7 times as likely as non-Māori adults not to have collected a prescription due to cost, after adjusting for age and sex differences. In contrast, only 3% of Asian adults were unable to fill a prescription due to cost at some point in the past 12 months.
- Adults living in the most socioeconomically deprived areas were 4.5 times as likely as adults living in the least deprived areas to have been unable to collect a prescription due to cost, after adjusting for age, sex and ethnic differences. The rates were 12.9% and 2.2% respectively.

³⁰ Results are available in the online tables accompanying this report.

The percentage of adults who had definite confidence and trust in their GP has decreased

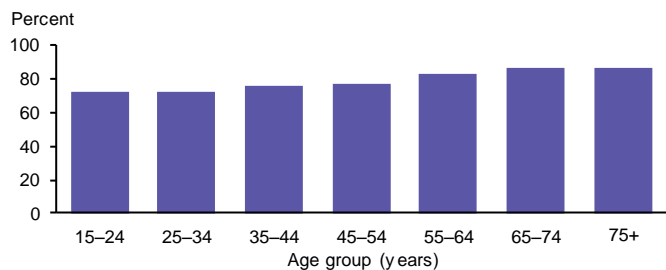
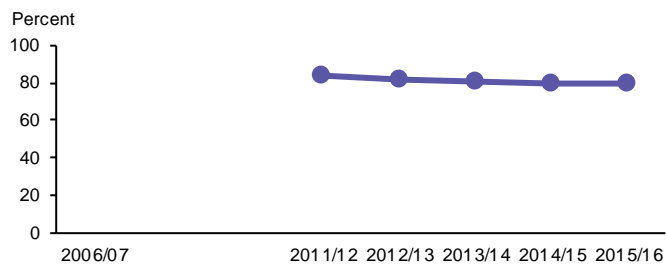
Box 26: Adults who definitely had confidence and trust in the GP they last visited (of those who had visited a GP in the past 3 months), 2015/16

The prevalence was **79.2%**
which is an estimated
1,438,000 adults

Adjusted rate ratio

Men vs women	1.0 *
Māori vs non-Māori	1.0
Pacific vs non-Pacific	1.0
Asian vs non-Asian	0.9 *
Most vs least deprived	0.9 *

* There is a statistically significant difference between the two groups.



A patient's experience of medical care is reflected in the confidence and trust they have in their GP. Being treated with dignity and respect, having their privacy protected and being given clear explanations of conditions and treatment are important elements of the patient's experience.

Interviewers asked adults who had visited a GP in the past three months, 'Did you have confidence and trust in the GP you saw? Yes, definitely / Yes, to some extent / No, not at all'. In this report, having 'confidence and trust' means definitely having confidence and trust.

Nearly eight in ten adults (79%) who had visited a GP in the previous three months had definite confidence and trust in their GP. However, definite confidence and trust in GPs has gradually decreased since 2011/12, when the rate was 84%. At the same time, adults who have some confidence and trust has increased from 14% in 2011/12 to 17% in 2015/16. Adults who have no confidence and trust at all in their GP has increased from 2.1% in 2011/12 to 3.4% in 2015/16.

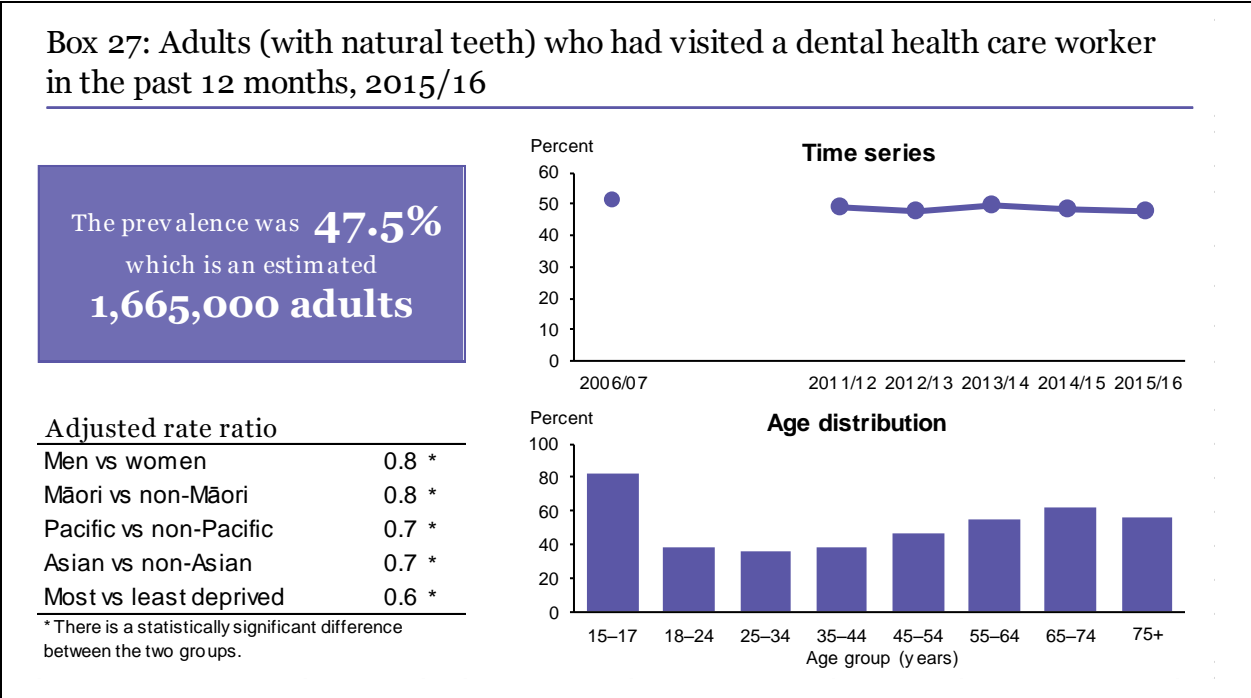
Women (77%) were less likely to have confidence and trust in their GPs than men (82%). Adults aged 65 years and over (86%) were more likely to have confidence and trust in the GP they last visited than those aged 15-44 years (under 76%). Young women had the least trust and confidence in their GPs; less than 70% of women aged 15-34 had confidence and trust in their GPs.³¹ Also, the proportion of Māori women who had definite trust and confidence in their GP had declined from 79.4% in 2011/12 to 70.0% in 2015/16. Across all these groups, there has been increases in some confidence and trust and changes in no trust are minimal.

The interviewers also asked how good the GP was at 'explaining your health conditions and treatments' and 'involving you in decisions about your care'. Most adults reported that their GP was 'very good or good' at explaining their health conditions and treatments (90%) and at involving them in decisions (87%).³¹ However, these rates have also decreased since 2011/12, when they were 93% and 90% for explaining and involving respectively. For both explaining and involving, an increasing percentage of adults are more likely to say 'neither good or bad' and the percentage who say 'poor or very poor' has not changed significantly.

³¹ Results are available in the online tables accompanying this report.

Oral health of adults

Almost half of all adults visited a dental health care worker in the past 12 months



Most adults pay for the full cost of their dental health services. However, there is a limited range of publicly funded oral health services available. These services include dental treatment required due to an accident or injury, dental treatment for people with medical conditions or disabilities that prevent them from accessing community-based dental care and emergency dental treatment to relieve pain or treat infections for eligible low-income adults. Youth up to their 18th birthday are entitled to free basic oral health services provided through contracted dental providers in the community (see page 69). Along with the New Zealand Dental Association, we recommend regular dental checks to keep teeth and gums healthy.

Forty-eight percent of all adults with natural teeth had visited a dental health care worker³² in the past 12 months, down from 52% in 2006/07. Visits to a dental health care worker, among adults with natural teeth, varied by sex, age, ethnic group and neighbourhood deprivation, as follows.³³

- Men were less likely than women to have visited a dental health care worker in the past 12 months (the rates are 43% and 52% respectively).
- The age group most likely to have visited a dental health care worker was 15- to 17-year-olds (they are offered free basic oral health services). In contrast, less than half of adults aged 18- to 54-years had visited a dental health care worker in the past 12 months.
- Relatively low rates of Pacific (32%), Asian (32%) and Māori (36%) adults had visited a dental health care worker. These rates remained lower than those for non-Pacific, non-Asian and non-Māori adults respectively, after adjusting for age and sex differences. In contrast, over half (53%) of European/Other adults had visited a dental health care worker.
- Only 34% of adults living in the most socioeconomically deprived areas had visited a dental health care worker in the past 12 months, compared with 58% in the least deprived areas.

³² The term ‘dental health care worker’ refers to dentists and other dental health care professionals, such as dental therapists and dental hygienists, as well as dental specialists, such as orthodontists.

³³ Results are available in the online tables accompanying this report.

Seven percent of adults had a tooth extracted in the past 12 months due to poor oral health

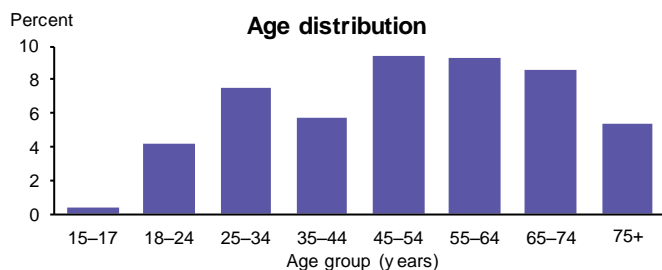
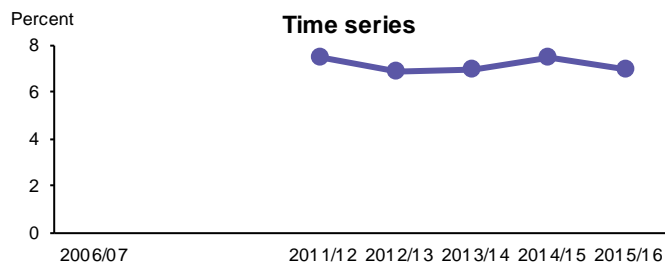
Box 28: Adults who had one or more of their teeth removed in the past 12 months, due to decay, infection or disease, 2015/16

The prevalence was **7.0%**
which is an estimated
262,000 adults

Adjusted rate ratio

Men vs women	1.1
Māori vs non-Māori	1.5 *
Pacific vs non-Pacific	2.0 *
Asian vs non-Asian	0.8
Most vs least deprived	1.5 *

* There is a statistically significant difference between the two groups.



Removal of a tooth because of tooth decay or an abscess, infection or gum disease is often the result of the person not seeking preventive or treatment services early enough. Tooth loss affects quality of life and is often an indicator of general poor health.

The survey asked if adult respondents had had a tooth removed in the past 12 months because of tooth decay, an abscess, infection or gum disease. The question excluded teeth lost for other reasons, such as injury, a crowded mouth or orthodontics.

About 262,000 adults (7%) had had one or more teeth removed in the past 12 months.

The proportion of adults who had a tooth removed in the past 12 months varied by age, ethnic group and neighbourhood deprivation, as follows.³⁴

- Only 3.1% of adults aged 15–24 years had had any teeth removed in the past 12 months; this figure was much lower than for older age groups.
- Twelve percent of Pacific adults and 9% of Māori adults had had one or more teeth removed in the past 12 months. Pacific adults were twice as likely and Māori adults were 1.5 times as likely to have had any teeth removed in the past 12 months as non-Pacific adults and non-Māori adults respectively, after adjusting for age and sex differences.
- Eight percent of adults living in the most deprived areas had had teeth removed in the past 12 months, compared with 6% of adults in the least deprived areas. Adults living in the most deprived areas were 1.5 times as likely to have had a tooth removed as those living in the least deprived areas, after adjusting for age, sex and ethnic differences.

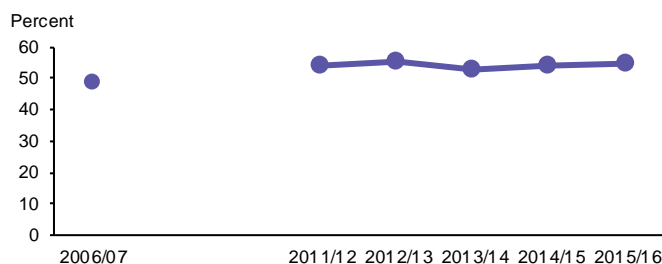
Furthermore, 6% of adults had had all their teeth removed.³⁴ Older adults were much more likely to have had all their teeth removed than younger age groups: less than 1% of adults aged under 45 years had all their teeth removed, compared with 18% of adults aged 65–74 years and 34% of adults aged over 75 years.

³⁴ Results are available in the online tables accompanying this report.

The majority of adults living in deprived areas only visited dental health care workers for dental problems or never at all

Box 29: Adults (with natural teeth) who never visit a dental health care worker, or only visit when they have dental problems, 2015/16

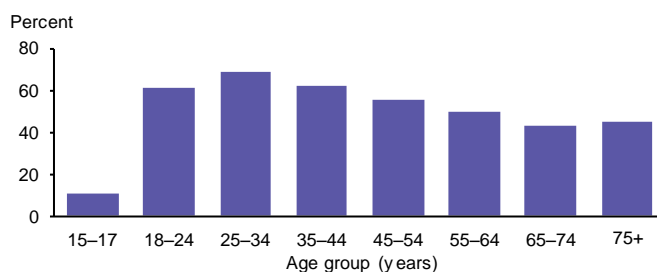
The prevalence was **54.5%**
which is an estimated
1,911,000 adults



Adjusted rate ratio

Men vs women	1.1 *
Māori vs non-Māori	1.4 *
Pacific vs non-Pacific	1.5 *
Asian vs non-Asian	1.3 *
Most vs least deprived	1.9 *

* There is a statistically significant difference between the two groups.



Through regular dental check-ups, dental health care workers³⁵ can detect early signs of oral disease and provide timely treatment and/or preventive measures.

Over half of adults with natural teeth (55%) reported never having visited a dental health care worker or only visiting for toothache or other dental problems.

In New Zealand, people under the age of 18 years have access to free basic dental services. The survey found that young adults aged 15–17 years were least likely to report only visiting dental health care workers for dental problems or never visiting (the rate was 11%).³⁶ In contrast, 61% of those aged 18–24 years reported having only visited dental health care workers for dental problems.

The percentage of adults (with natural teeth) visiting dental health care workers only for dental problems or never visiting varied by sex, age, ethnic group and area deprivation, as follows.³⁶

- Men (58%) were more likely to only visit for dental problems compared with women (51%).
- The majority of Pacific (81%), Māori (74%) and Asian (69%) adults only visited dental health care workers for dental problems. The rates were significantly higher for all three ethnicities after adjusting for age and sex differences.
- After adjusting for age, sex and ethnic differences, adults living in the most socioeconomically deprived areas (74%) were nearly twice as likely to only visit for dental problems as adults in the least deprived areas (38%).

For Māori and Pacific adults and adults living in the most deprived neighbourhoods, poorer access to oral health services, in the form of only visiting dental health care workers for dental health problems, was mirrored by poorer oral health outcomes, that is, a higher percentage of tooth extractions in the past year (see above).

³⁵ The term 'dental health care worker' refers to dentists and other dental health care workers, such as dental therapists and dental hygienists, as well as dental health specialists, such as orthodontists.

³⁶ Results are available in the online tables accompanying this report.

The health of New Zealand children

This section includes information on:

- key survey results for children (Table 7)
- key survey results for Māori children (Table 8)
- key survey results for Pacific children (Table 9)
- health status, health behaviours and risk factors of children
- health conditions of children
- children's access to health care
- oral health of children.

Table 7: Key survey results for children (aged 0–14 years, unless stated below)

Indicator	Percent 2015/16	Percent 2011/12	Percent 2006/07	Change since 2011/12	Change since 2006/07
Health status, health behaviours and risk factors					
Good or better parent-rated health	97.7	97.8	97.6	=	=
Solid food before four months of age (4 months–4 years)	7.4	7.9	10.9	=	▼
Breakfast eaten at home every day (2–14 years)	85.2	87.4	87.7	▼	▼
Fizzy drink 3+ times per week (2–14 years)	17.5	19.1	19.8	=	=
Obesity (2–14 years)	10.7	10.7	8.4	=	▲
Physical punishment in past 4 weeks	5.7	7.4	10.4	▼	▼
Health conditions					
Emotional and/or behavioural problems (diagnosed) (2–14 years)	4.3	3.3	1.8	=	▲
Asthma (medicated) (2–14 years)	16.6	14.0	14.9	▲	=
Access to health care					
GP visit in the past 12 months	76.2	73.9	79.2	▲	▼
Practice nurse (only) visit in the past 12 months	26.7	26.4	22.8	=	▲
After-hours medical centre visit in the past 12 months	25.7	21.5	.	▲	.
Experienced any unmet need for primary health care in the past 12 months	23.9	19.6	.	▲	.
Unable to get appointment at usual medical centre within 24 hours	17.6	13.5	.	▲	.
Unmet need for GP due to cost	4.5	4.7	.	=	.
Unmet need for after-hours due to cost	4.0	4.5	.	=	.
Unfilled prescription due to cost	3.8	6.6	.	▼	.
Definite confidence and trust in GP	79.9	82.8	.	=	.
Oral health					
Dental health care worker visit in the past 12 months (1–14 years)	82.6	78.6	75.7	▲	▲
Teeth removed due to decay in the past 12 months (1–14 years)	3.5	3.9	.	=	.
Key: ▲ Statistically significant increase ¹ = No statistically significant change					
▼ Statistically significant decrease ¹ . Data not available					
1 The significance (<i>p</i> -values) of differences between years is based on age-standardised rates.					

Table 8: Key survey results for Māori children (aged 0–14 years, unless stated below)

Indicator	Percent 2015/16	Percent 2011/12	Percent 2006/07	Change since 2011/12	Change since 2006/07
Health status, health behaviours and risk factors					
Good or better parent-rated health	96.8	96.7	97.5	=	=
Solid food before four months of age (4 months–4 years)	11.2	14.5	16.7	=	▼
Breakfast eaten at home every day (2–14 years)	79.9	82.4	83.7	=	▼
Fizzy drink 3+ times per week (2–14 years)	23.1	24.1	24.7	=	=
Obesity (2–14 years)	14.7	16.7	11.8	=	=
Physical punishment in past 4 weeks	9.4	9.8	13.9	=	▼
Health conditions					
Emotional and/or behavioural problems (diagnosed) (2–14 years)	4.0	3.3	1.9	=	▲
Asthma (medicated) (2–14 years)	24.0	18.8	20.3	▲	=
Access to health care					
GP visit in the past 12 months	75.8	73.5	80.1	=	▼
Practice nurse (only) visit in the past 12 months	26.9	24.2	24.6	=	=
After-hours medical centre visit in the past 12 months	23.3	20.7	.	=	.
Experienced any unmet need for primary health care in the past 12 months	28.1	27.0	.	=	.
Unable to get appointment at usual medical centre within 24 hours	18.6	17.1	.	=	.
Unmet need for GP due to cost	6.3	7.7	.	=	.
Unmet need for after-hours due to cost	6.4	8.4	.	=	.
Unfilled prescription due to cost	7.2	12.1	.	▼	.
Definite confidence and trust in GP	74.4	77.8	.	=	.
Oral health					
Dental health care worker visit in the past 12 months (1–14 years)	82.1	75.9	74.1	▲	▲
Teeth removed due to decay in the past 12 months (1–14 years)	5.0	5.5	.	=	.
Key: ▲ Statistically significant increase ¹ = No statistically significant change ▼ Statistically significant decrease ¹ . Data not available					
¹ The significance (<i>p</i> -values) of differences between years is based on age-standardised rates.					

Table 9: Key survey results for Pacific children (aged 0–14 years, unless stated below)

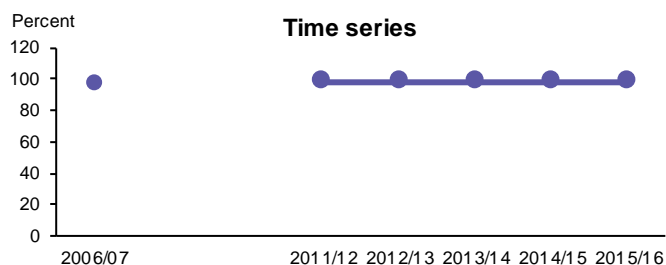
Indicator	Percent 2015/16	Percent 2011/12	Percent 2006/07	Change since 2011/12	Change since 2006/07
Health status, health behaviours and risk factors					
Good or better parent-rated health	97.4	98.0	97.9	=	=
Solid food before four months of age (4 months–4 years)	13.4	13.0	14.6	=	=
Breakfast eaten at home every day (2–14 years)	75.0	81.5	79.4	▼	=
Fizzy drink 3+ times per week (2–14 years)	30.6	25.7	24.2	=	=
Obesity (2–14 years)	29.8	25.0	23.1	=	▲
Physical punishment in past 4 weeks	9.5	9.8	16.8	=	▼
Health conditions					
Emotional and/or behavioural problems (diagnosed) (2–14 years)	1.4	1.7	0.4	=	=
Asthma (medicated) (2–14 years)	17.4	13.8	14.8	=	=
Access to health care					
GP visit in the past 12 months	76.3	78.0	83.4	=	▼
Practice nurse (only) visit in the past 12 months	22.6	18.1	18.9	=	=
After-hours medical centre visit in the past 12 months	23.7	21.1	.	=	.
Experienced any unmet need for primary health care in the past 12 months	26.2	26.1	.	=	.
Unable to get appointment at usual medical centre within 24 hours	14.8	15.6	.	=	.
Unmet need for GP due to cost	7.0	6.5	.	=	.
Unmet need for after-hours due to cost	6.2	7.8	.	=	.
Unfilled prescription due to cost	9.5	11.1	.	=	.
Definite confidence and trust in GP	74.9	78.9	.	=	.
Oral health					
Dental health care worker visit in the past 12 months (1–14 years)	75.8	72.8	69.2	=	▲
Teeth removed due to decay in the past 12 months (1–14 years)	7.1	5.8	.	=	.
Key: ▲ Statistically significant increase ¹ = No statistically significant change					
▼ Statistically significant decrease ¹ . Data not available					
1 The significance (<i>p</i> -values) of differences between years is based on age-standardised rates.					

Health status, health behaviours and risk factors of children

Almost all parents considered their children to be in good health

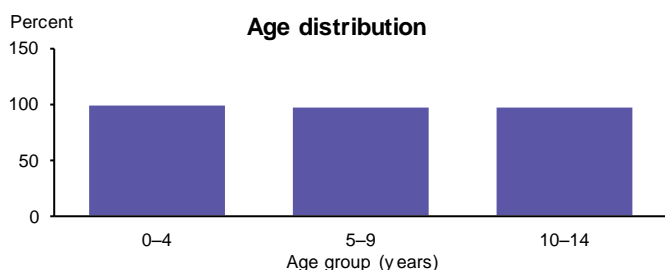
Box 30: Children with excellent, very good or good health, as rated by their parent, 2015/16

The prevalence was **97.7%**
which is an estimated
897,000 children



Adjusted rate ratio	
Boys vs girls	1.0
Māori vs non-Māori	1.0
Pacific vs non-Pacific	1.0
Asian vs non-Asian	1.0
Most vs least deprived	1.0 *

* There is a statistically significant difference between the two groups.



Interviewers asked the parents or primary caregivers of all children participating in the survey whether they considered their child's health to be 'excellent, very good, good, fair or poor'. In this report, 'good health' means good, very good or excellent health, as reported by a parent.

The majority of parents (97.7%) reported that their child was in good health. About 21,000 children's parents rated their child's health as fair or poor (2.3%). There has been no change in parent-rated child health status since 2006/07, when 97.6% of parents reported that their child was in good health.

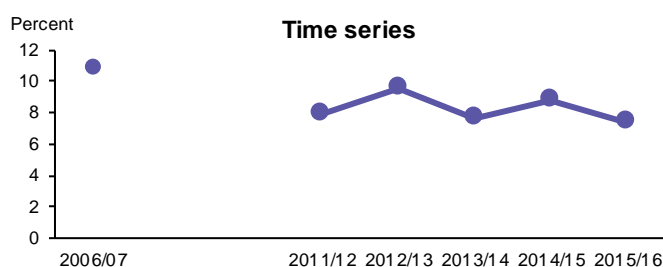
Parent-rated child health status was similar for all age groups. Parent-rated child health status did not differ by ethnic group, unlike adult self-rated health (see page 12).

Parents of children living in the most deprived areas were slightly less likely to report that their child was in good health (96%) than those living in the least deprived areas (99%). Parents of children living in the most deprived areas were more than five times as likely to report that their child was in fair or poor health, compared with parents living in the least deprived areas, after adjusting for age, sex and ethnic differences (4.0% and 0.7% respectively).

The percentage of Māori infants introduced to solid foods before four months of age has decreased

Box 31: Children aged four months to four years who were given solid foods before four months of age, 2015/16

The prevalence was **7.4%**
which is an estimated
21,000 children



Adjusted rate ratio

Boys vs girls	1.1
Māori vs non-Māori	1.9 *
Pacific vs non-Pacific	2.1 *
Asian vs non-Asian	0.3 *
Most vs least deprived	1.8

* There is a statistically significant difference between the two groups.

The Ministry's nutrition guidelines for infants and toddlers changed in 2008 to recommend exclusive breastfeeding until around the age of six months, when the infants show signs of being developmentally ready to start solids (Ministry of Health 2012). 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, 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.

The interviewers asked the parents or primary caregivers of children aged four months to four years at what age their child was first given solid food.

Only 7% of infants were given solid foods before four months of age, down from 11% in 2006/07.

One in nine Māori infants (11%) were given solid food before four months of age, representing an improvement on 2006/07 (when the rate was 17%).³⁷ After adjusting for age and sex differences, Māori infants were nearly twice as likely to have been given solid food before four months of age as non-Māori infants. In contrast, 2.2% of Asian infants were given solid food before four months of age.

³⁷ Results for Māori and Pacific children are provided in Tables 8 and 9 respectively at the beginning of this section.

Eighty-five percent of children ate breakfast at home every day in the past week

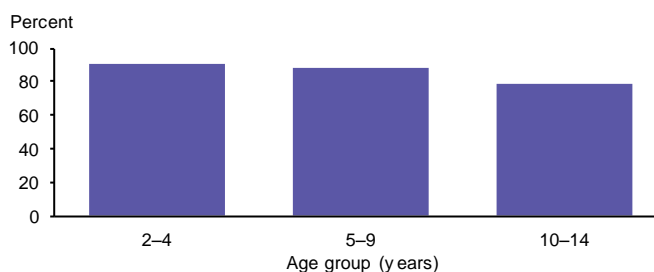
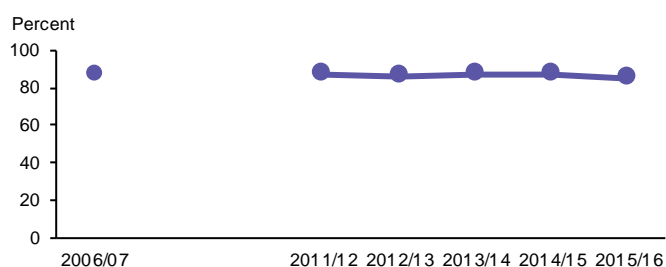
Box 32: Children aged 2–14 years who ate breakfast at home every day in the past week, 2015/16

The prevalence was **85.2%**
which is an estimated
676,000 children

Adjusted rate ratio

Boys vs girls	1.0
Māori vs non-Māori	0.9 *
Pacific vs non-Pacific	0.9 *
Asian vs non-Asian	1.0 *
Most vs least deprived	0.9 *

* There is a statistically significant difference between the two groups.



Eating breakfast at home every day is an indicator of a nutritious diet and healthy eating behaviours. The interviewers asked the parents or primary caregivers of children aged 2–14 years about their child’s consumption of breakfast at home in the past week.

This indicator focuses only on breakfast at home. Some children may be participating in breakfast in school programmes.

The majority of children aged 2–14 years (85%) had eaten breakfast at home every day in the past week, down from 87% in 2011/12 and 88% in 2006/07.

Children aged 10–14 years were less likely to have eaten breakfast at home every day than those under 10 years (the rates were 78% for 10–14 years, 88% for 5–9 years and 91% for 2–4 years).

Māori and Pacific children were less likely to eat breakfast at home each day than non-Māori and non-Pacific children respectively, after adjusting for age and sex differences. In contrast, Asian children were more likely to eat breakfast at home every day than non-Asian children, after adjusting for age and sex differences. About nine in ten Asian children (89%) ate breakfast at home every day.

Children living in the most socioeconomically deprived areas were less likely to eat breakfast at home every day than children living in the least deprived areas, after adjusting for age, sex and ethnic differences. The rates were 77% and 90%, respectively.

Children aged 2–4 years were less likely than older children to have drunk at least three fizzy drinks in the past week

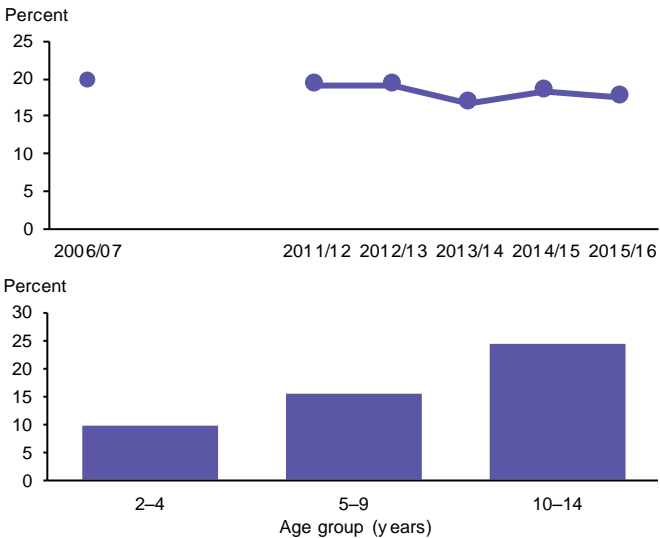
Box 33: Children aged 2–14 years who had fizzy drink three or more times in the past week, 2015/16

The prevalence was **17.5%** which is an estimated **138,000 children**

Adjusted rate ratio

Boys vs girls	1.3 *
Māori vs non-Māori	1.5 *
Pacific vs non-Pacific	1.9 *
Asian vs non-Asian	0.9
Most vs least deprived	3.5 *

* There is a statistically significant difference between the two groups.



There is increasing evidence that intake of free sugars leads to weight gain and tooth decay (WHO 2015). Sugary drinks, including fizzy drinks, are the main source of sugars in the diets of New Zealand children (Ministry of Health 2003). In addition, fizzy drinks contain acids that can dissolve tooth enamel, contributing to poor oral health (Ministry of Health 2015d).

The interviewers asked the parents or primary caregivers of children aged 2–14 years how many times their child had drunk a fizzy drink, such as cola or lemonade, in the past week. The respondents were directed to include energy drinks and diet fizzy drinks in their answers. Although fruit juices also contain large amounts of sugar, the relationship between fruit juice intake and weight gain in children is weak (Taylor et al 2005).

Seventeen percent of children had drunk at least three fizzy drinks in the past week. Māori children (23%) and Pacific children (31%) were more likely to have drunk at least three fizzy drinks in the past week than non-Māori and non-Pacific children respectively, after adjusting for age and sex differences.³⁸

Children living in the most socioeconomically deprived areas were 3.5 times more likely to have drunk at least three fizzy drinks in the past week than children living in the least deprived areas, after adjusting for age, sex and ethnic differences (the rates were 30% and 9% respectively).³⁸

The same ethnic and socioeconomic deprivation disparities were seen for food purchased from a fast food outlet or takeaway shop, such as fish and chips, burgers, fried chicken or pizza. Overall, 8% of children had eaten fast food as a meal or snack at least three times in the past week. In contrast, the rates were 17% for Pacific children, 14% for children living in the most deprived neighbourhoods and 12% for Māori children.

Children aged 2–4 years were less likely to have drunk fizzy drinks (10%) or to have eaten fast food (3.7%) at least three times in the past week than older children.

³⁸ Results for Māori and Pacific children are provided in Tables 8 and 9 respectively at the beginning of this section.

Child obesity rates have been stable since 2011/12

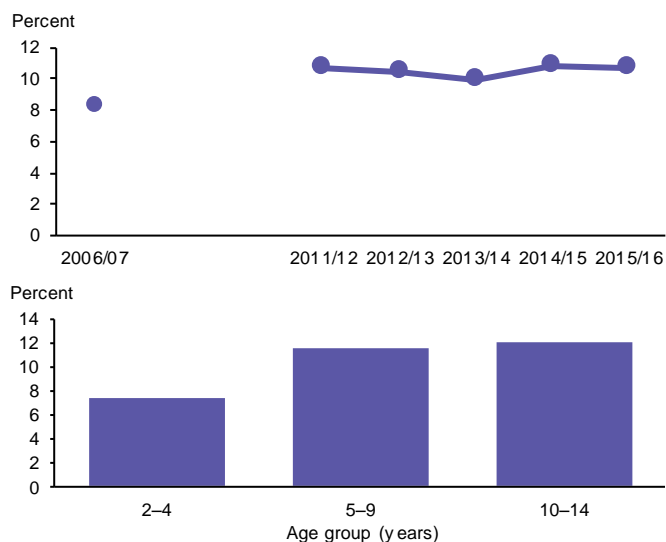
Box 34: Children aged 2–14 years who are obese, with a BMI equivalent to an adult BMI of 30 (or greater), 2015/16

The prevalence was **10.7%**
which is an estimated
85,000 children

Adjusted rate ratio

Boys vs girls	0.9
Māori vs non-Māori	1.6 *
Pacific vs non-Pacific	3.9 *
Asian vs non-Asian	0.7
Most vs least deprived	3.0 *

* There is a statistically significant difference between the two groups.



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

This report uses the revised International Obesity TaskForce (IOTF) BMI reference values to classify overweight and obese children and adolescents aged 2–14 years (Cole and Lobstein 2012). The IOTF cut-off points are sex- and age-specific and are designed to coincide with the World Health Organization’s adult BMI cut-off points at the age of 18 years. Interviewers measured respondents’ height and weight, from which BMI is calculated. Height and weight were measured for 91% of children aged 2–14 years.

One in nine children aged 2–14 years (11%) was obese. The child obesity rate has not changed significantly since 2011/12 (when it was 11%), although it has increased since 2006/07 (8%).³⁹

Pacific children were nearly four times as likely and Māori children 1.6 times as likely to be obese than non-Pacific and non-Māori children respectively, after adjusting for age and sex differences.

Twenty percent of children living in the most socioeconomically deprived areas were obese, compared with 4% living in the least deprived areas. Ten percent of children living in the most deprived areas were extremely obese (that is, in obese class 2 or 3, with a BMI equivalent to an adult BMI of 35.0 or more), compared with 1% living in the least deprived areas. The socioeconomic inequality was greater for extreme obesity rates (adjusted rate ratio of 5.5) than for obesity rates (adjusted rate ratio of 3.0). Half of all extremely obese children live in the most deprived fifth of New Zealand.

³⁹ Results are available in the online tables accompanying this report.

Child physical punishment rates continued to decline

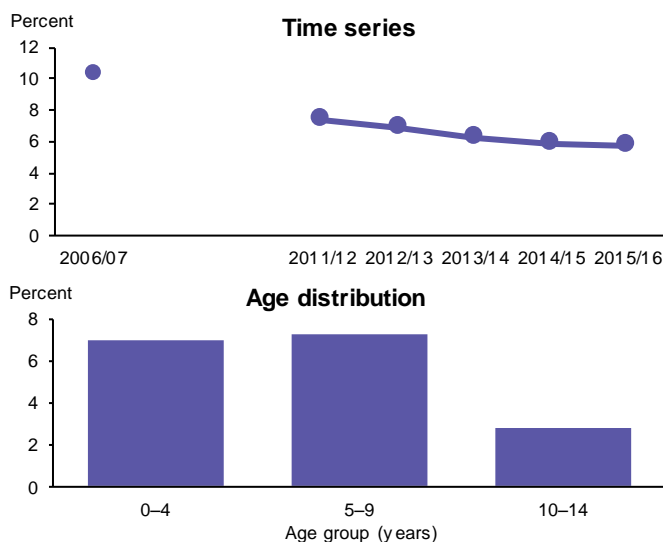
Box 35: Children who received physical punishment in the past 4 weeks, 2015/16

The prevalence was **5.7%**
which is an estimated
52,000 children

Adjusted rate ratio

Boys vs girls	1.1
Māori vs non-Māori	2.1 *
Pacific vs non-Pacific	1.9 *
Asian vs non-Asian	0.2 *
Most vs least deprived	3.0 *

* There is a statistically significant difference between the two groups.



Physical punishment is a predictor of negative developmental outcomes, including increased child aggression, antisocial behaviour, poorer cognitive development, poorer quality of parent–child relationships and mental health problems (Smith 2006). It is important to support parents and primary caregivers to use more positive methods of parenting. In 2007, the law was changed in New Zealand, making it illegal to physically punish children. The interviewers asked parents or primary caregivers if they had physically punished (such as smacked) their child in the past four weeks for misbehaviour.

Six percent of children were physically punished in the past four weeks, down from 10% in 2006/07.

The percentage of children who were physically punished in the past four weeks varied by age, ethnic group and neighbourhood deprivation, as follows.⁴⁰

- Young children were more likely to have been physically punished than older children (7% of children aged 0–9 years compared with 2.8% of children aged 10–14 years).
- Nine percent of both Māori and Pacific children had been physically punished in the past four weeks. Māori and Pacific children were about twice as likely to have been physically punished as non-Māori and non-Pacific children respectively, after adjusting for age and sex differences. In contrast, only 1.6% of Asian children had been physically punished.
- Children living in the most deprived areas were three times as likely to have been physically punished as those in the least deprived areas. Rates of physical punishment have decreased from 9.2% in 2006/07 to 2.4% for children in the least deprived areas but have not changed significantly for children in the most deprived areas (10% in 2015/16 and 13% in 2006/07).

According to the Youth 2012 survey, 14% of school children (majority aged 13–17 years) reported that they were hit or physically harmed in the past 12 months in their home by an adult (Clark et al 2013). The Youth 2012 survey found no significant change since 2001 in the percentage of children who witnessed an adult physically hurting a child in their own home in the past 12 months (16% in 2001 and 14% in 2012). The child-reported rates of violence in the Youth 2012 survey were higher than those reported by parents in this survey despite the younger age group in the survey. (Note: The surveys used different violence definitions.)

⁴⁰ Results are available in the online tables accompanying this report.

Health conditions of children

About 34,000 children had been diagnosed with emotional and/or behavioural problems at some time in their lives

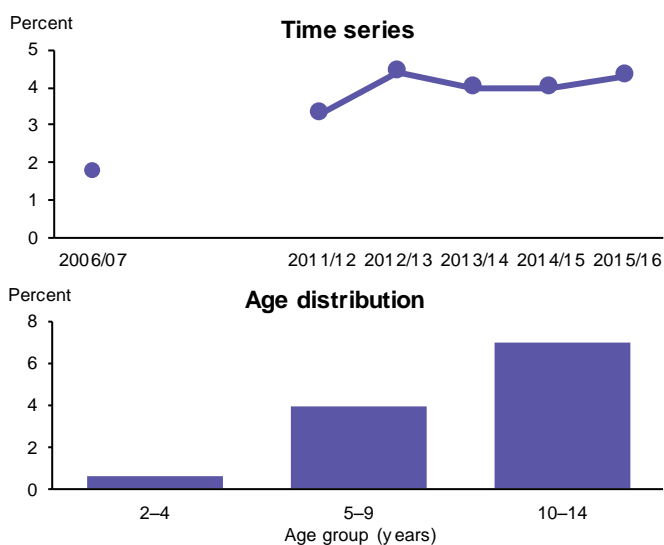
Box 36: Children aged 2–14 years diagnosed with emotional and/or behavioural problems (depression, anxiety disorder, ADD and/or ADHD), 2015/16

The prevalence was **4.3%**
which is an estimated
34,000 children

Adjusted rate ratio

Boys vs girls	1.2
Māori vs non-Māori	0.9
Pacific vs non-Pacific	0.3 *
Asian vs non-Asian	0.1 *
Most vs least deprived	0.8

* There is a statistically significant difference between the two groups.



In this report, ‘emotional and/or behavioural problems’ refers to depression, an anxiety disorder, and/or attention deficit and hyperactivity disorder (ADHD, previously known as attention deficit disorder or ADD). Interviewers recorded children as having been diagnosed with emotional and/or behavioural problems if their parents indicated that they had been told by a doctor at some time in their child’s life that the child had one of the above conditions.

About 34,000 children (4.3%) aged 2–14 years had been diagnosed with emotional and/or behavioural problems at some time in their life, up from 1.8% in 2006/07. The number of children diagnosed with emotional and/or behavioural problems has more than doubled since 2006/07, when it was about 14,000 children.

The percentage of children with diagnosed emotional and/or behavioural problems increased with age, from 0.6% of those aged 2–4 years to 7.0% of those aged 10–14 years.

Pacific and Asian children were less likely to have been diagnosed with emotional and/or behavioural problems than non-Pacific and non-Asian children respectively, after adjusting for age and sex differences. The rates were 1.4% for Pacific children and 0.5% for Asian children.

The most common types of emotional and behavioural problems were anxiety disorder (2.7%), followed by ADHD (1.8%) and depression (0.3%).⁴¹ Boys were more likely to have ADHD than girls (with rates of 2.7% and 0.8% respectively).

The online data tables include statistics on autism spectrum disorder (ASD, including Asperger syndrome), which is a pervasive developmental disorder typified by emotional and behavioural problems. About one in a hundred children (1.4%) had ASD.⁴¹

⁴¹ Results are available in the online tables accompanying this report.

Nearly one-quarter of Māori children had asthma (medicated)

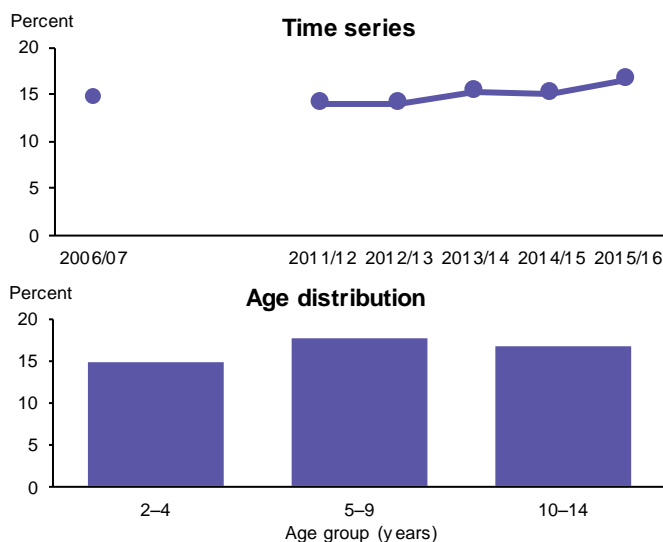
Box 37: Children aged 2–14 years diagnosed with asthma and currently taking medication for this condition, 2015/16

The prevalence was **16.6%**
which is an estimated
132,000 children

Adjusted rate ratio

Boys vs girls	1.3 *
Māori vs non-Māori	1.7 *
Pacific vs non-Pacific	1.1
Asian vs non-Asian	0.7 *
Most vs least deprived	1.5 *

* There is a statistically significant difference between the two groups.



Asthma is one of the three leading causes of potentially avoidable hospitalisations among children (aged 0–4 years) in New Zealand (Craig et al 2013).

This asthma (medicated) indicator focuses on children aged 2–14 years who have been told by a doctor that they have asthma and who currently take medication to treat it. They may be taking medication daily to prevent symptoms or only when needed to relieve symptoms.

About 132,000 children aged 2–14 years (17%) had asthma (medicated); up from 14% in 2011/12.

Boys were 1.3 times as likely as girls to have asthma (medicated); the rates were 18% and 15% respectively.

Nearly one-quarter of Māori children (24%) had asthma (medicated).⁴² After adjusting for age and sex differences, Māori children were 1.7 times as likely to have asthma (medicated) as non-Māori children.

One in five children living in the most deprived areas (22%) had asthma (medicated), compared with 15% of children living in the least deprived areas. Children living in the most deprived areas were 1.5 times more likely to have asthma (medicated) than children living in the least deprived areas.

Asthma (medicated) was more common in children than in adults (the rates were 17% and 11% respectively). Among adults, women were more likely to have asthma (medicated). This is a reversal of the sex trends seen in children, where boys are more likely to have asthma than girls. For more information on asthma in adults, see page 33.

⁴² Results for Māori and Pacific children are provided in Tables 8 and 9 respectively at the beginning of this section.

Children's access to health care

Four in five children had their last GP visit for free

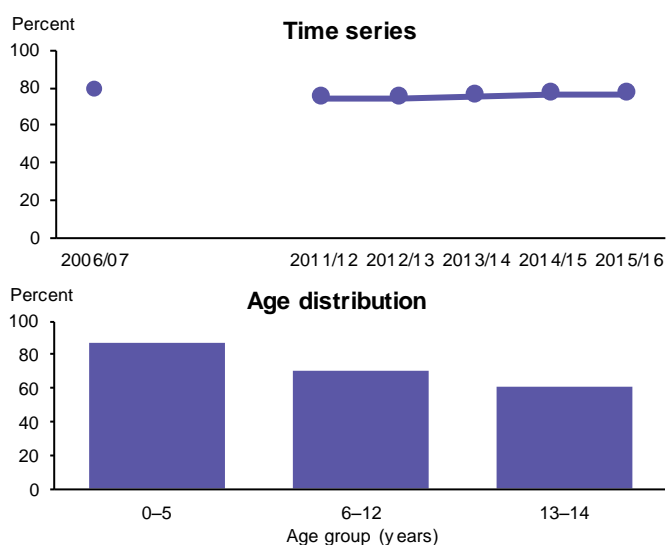
Box 38: Children who had visited a GP in the past 12 months, 2015/16

The prevalence was **76.2%**
which is an estimated
700,000 children

Adjusted rate ratio

Boys vs girls	1.0
Māori vs non-Māori	1.0
Pacific vs non-Pacific	1.0
Asian vs non-Asian	1.0
Most vs least deprived	1.0

* There is a statistically significant difference between the two groups.



As at July 2016, about 97% of children (0.9 million) under 15 years of age were enrolled with a PHO funded by their local DHB to provide general practice and other primary health care services. The Ministry provides additional funding to encourage free GP consultations for children under 13 years of age (the Zero Fees for Under 6s initiative started in January 2008 and was extended to Zero Fees for Under 13s in July 2015). As at July 2016, over 99% of children aged 0–5 years and over 99% of children aged 6–12 years were enrolled at a general practice that has committed to providing free visits for children during the daytime.

This indicator reports on the percentage of children aged 0–14 years who had visited a GP at their usual medical centre, or somewhere else, in the past 12 months. For age group analyses, children aged 6–12 years have been grouped together, to reflect the increase in levels of subsidies in place for this group from July 2015. The 2015/16 data (July 2014–June 2016 because the survey question asked for information about the previous 12 months) includes both GP visits before the funding change and GP visits after the funding change.

Three in four children (76%) had visited a GP in the past 12 months. Children younger than six years were more likely to have visited a GP in the past 12 months than older children (the rates were 87% for 0–5 years, 71% for 6–12 years and 61% for 13–14 years). There was little or no variation in the percentage of children who visited a GP by sex, ethnic group or neighbourhood deprivation level.

On average, children visited a GP 3.0 times in the past 12 months. The younger the child, the more visits they made (4.1 for 0–5 years, 2.3 for 6–12 years and 2.0 for 13–14 years).⁴³

A greater percentage of children received their last GP visit (anywhere) free in 2015/16 (82%) than in any previous year of the survey (rates ranged from 42% in 2006/07 to 57% in 2014/15).⁴³ Children aged 6–12 years are of particular interest because Zero Fees for Under 13s was introduced in July 2015. For three-quarters of children aged 6–12 years (77%), their last visit to a GP was free, up from one-quarter in 2014/15 (26%).

⁴³ Results are available in the online tables accompanying this report.

More than four in five children had their last visit with a practice nurse only for free

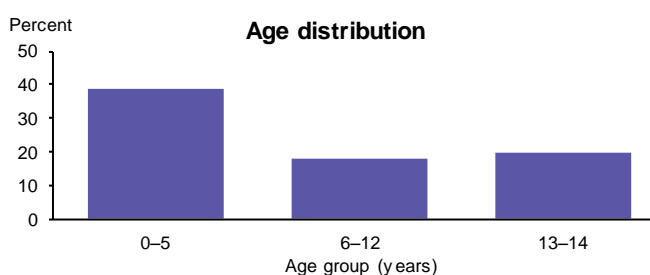
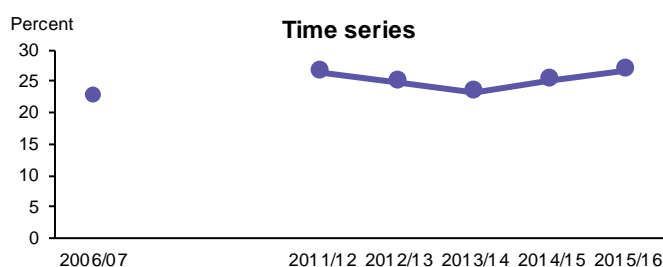
Box 39: Children who had visited a practice nurse in the past 12 months without seeing a GP at the same visit, 2015/16

The prevalence was **26.7%**
which is an estimated
246,000 children

Adjusted rate ratio

Boys vs girls	0.9 *
Māori vs non-Māori	1.0
Pacific vs non-Pacific	0.8
Asian vs non-Asian	0.7 *
Most vs least deprived	0.8

* There is a statistically significant difference between the two groups.



Practice nurses work within a general practice setting, providing a comprehensive range of primary health care services. They are a key part of the general practice team. Practice nurses focus on health promotion, disease prevention, wellness, first-point-of-contact care and disease management across a patient's lifespan. They run screening and preventative programmes, such as immunisations, and have an important role in care coordination for patients and their families. As with GP visits, the Ministry provides additional funding to encourage free practice nurse consultations for children under 13 years old (part of the Zero Fees for Under 13s initiative).

More than one in four children (27%) had visited a practice nurse during the past 12 months without seeing a GP at the same visit.

Children younger than six years were much more likely than older children to have visited a practice nurse in the past 12 months without seeing a GP at the same visit (the rates were 39% for 0-5 years, 18% for 6-12 years and 20% for 13-14 years).

About one in five Asian children (20%) had visited a practice nurse in the past 12 months without seeing a GP at the same visit.⁴⁴ Asian children were less likely to have visited a practice nurse than non-Asian children, after adjusting for age and sex differences.

On average, children had visited a practice nurse without seeing a GP at the same visit 0.5 times in the past 12 months. The younger the child, the more visits they made: on average, children aged 0-5 years made 0.7 visits, compared with 0.4 visits for children aged 6-12 and 13-14 years.⁴⁴

For most children (84%) who visited a practice nurse without seeing a GP at the same visit in 2015/16, their last visit was free. This proportion was higher for children under six years (95%).⁴⁴

⁴⁴ Results are available in the online tables accompanying this report.

Two-thirds of children had their last visit to an after-hours medical centre for free

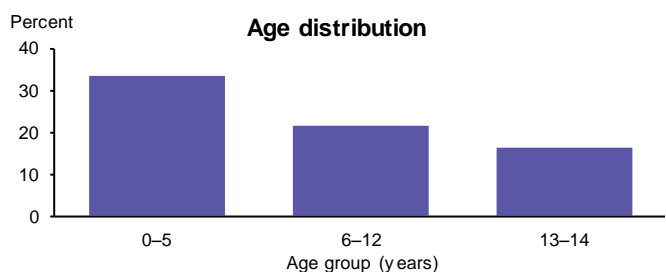
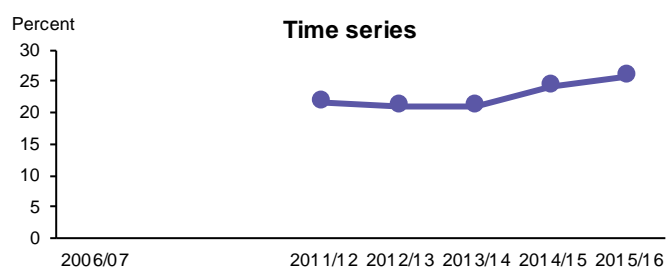
Box 40: Children who had visited an after-hours medical centre in the past 12 months, 2015/16

The prevalence was **25.7%**
which is an estimated
236,000 children

Adjusted rate ratio

Boys vs girls	1.0
Māori vs non-Māori	0.9 *
Pacific vs non-Pacific	0.9
Asian vs non-Asian	1.1
Most vs least deprived	0.7 *

* There is a statistically significant difference between the two groups.



After-hours medical centres provide primary health care outside usual business hours. Their cost of care is higher than it is for services during usual business hours, particularly for people who are not enrolled with a PHO. The Ministry introduced funding to encourage free access to after-hours medical centres for children under six in July 2012 and, in July 2015, this was extended to children under 13.

About 236,000 children (26%) had visited an after-hours medical centre in the past 12 months.

Children aged under six years were more likely than older children to have visited an after-hours medical centre in the past 12 months (the rates were 33% for 0–5 years, 22% for 6–12 years and 16% for 13–14 years). The rates for under sixes and children aged 6–12 years having visited an after-hours medical centre in the past 12 months have increased (across the period 2011/12–2013/14, the rate for under sixes was 28% and the rate for children aged 6–12 years was 17%).⁴⁵

Children living in the most deprived areas were less likely than children living in the least deprived areas to have visited an after-hours medical centre in the past 12 months, after adjusting for age, sex and ethnic differences. The rates were 22% and 31% respectively.

The last after-hours visit was free for 67% of those children who had visited an after-hours medical centre in the past 12 months, up from 55% in 2014/15.[‡] Children under six years were the age group most likely to have had their last after-hours visit free; the rate was 84%, up from 38% in 2011/12. Children aged 6–12 years are of particular interest because Zero Fees for Under 13s was introduced in July 2015. Half of children aged 6–12 years (52%) had their last after-hours visit free, up from 18% in 2014/15.

⁴⁵ Results are available in the online tables accompanying this report.

Nearly one-quarter of children experienced one or more types of unmet need for primary health care in the past 12 months

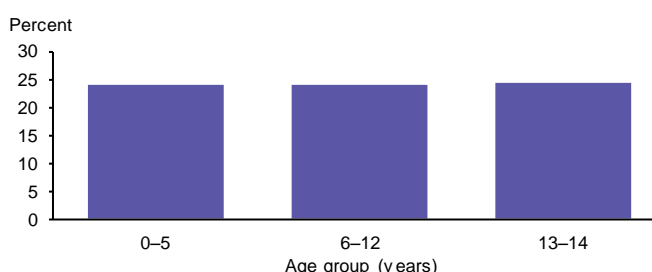
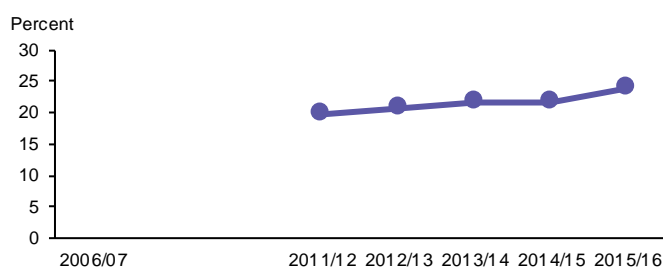
Box 41: Children who have experienced one or more types of unmet need for primary health care, at any point in the past 12 months, 2015/16

The prevalence was **23.9%**
which is an estimated
220,000 children

Adjusted rate ratio

Boys vs girls	0.9
Māori vs non-Māori	1.3 *
Pacific vs non-Pacific	1.1
Asian vs non-Asian	0.9
Most vs least deprived	1.0

* There is a statistically significant difference between the two groups.



Even though access to primary health care services is free for children under 13 years almost everywhere in New Zealand, some children experience unmet need for primary health care. To reduce the effect of cost on accessing primary health care services, the Zero Fees for Under 13s initiative supports general practices to provide free primary health care to children under 13 years old at any time.

This indicator investigates whether children had experienced any of the following six barriers to accessing primary health care services in the past 12 months: unmet need for a GP due to cost; unmet need for an after-hours centre due to cost; unmet need for a GP due to lack of transport; unmet need for an after-hours centre due to lack of transport; unmet need for a GP due to lack of childcare for other children and inability to get an appointment at their usual medical centre within 24 hours.

Nearly one-quarter of children (24%) experienced one or more types of unmet need for primary health care at some point in the past 12 months, up from 20% in 2011/12. This unmet need was due to:

- inability to get an appointment within 24 hours (17.6%)
- the cost of GP services (4.5%)
- the cost of after-hours medical centres (4.0%)
- lack of child care (2.9%)
- lack of transport to a GP (2.8%)
- lack of transport to an after-hours medical centre (1.3%).⁴⁶

Twenty-eight percent of Māori children were unable to access primary health care when they needed it. Māori children were 1.3 times more likely not to have accessed primary health care when they needed it than non-Māori children, after adjusting for age and sex differences.⁴⁶

⁴⁶ Results are available in the online tables accompanying this report.

The percentage of children unable to get an appointment at their usual medical centre within 24 hours over the past 12 months increased

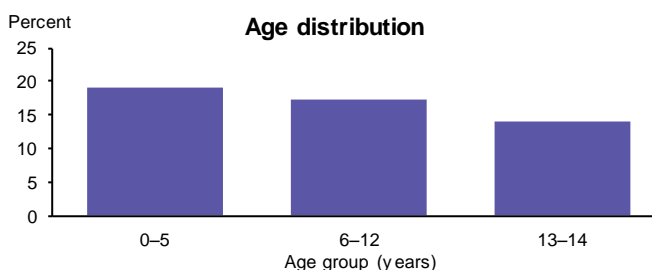
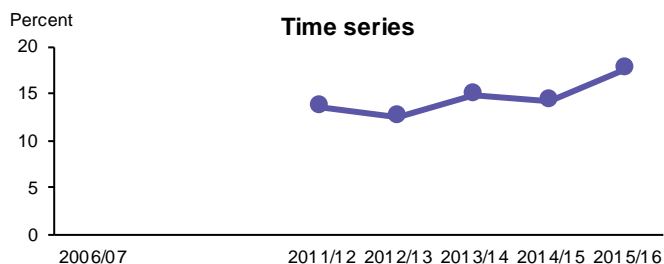
Box 42: Children who were unable to get an appointment at their usual medical centre within 24 hours, at any point in the past 12 months, 2015/16

The prevalence was **17.6%**
which is an estimated
158,000 children

Adjusted rate ratio

Boys vs girls	0.9
Māori vs non-Māori	1.1
Pacific vs non-Pacific	0.8
Asian vs non-Asian	1.0
Most vs least deprived	0.8

* There is a statistically significant difference between the two groups.



Timely access to care when it is needed is an important dimension of the quality of health care.

The interviewers asked parents or primary caregivers whether there had been a time in the past 12 months when they had 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. The parents of about 158,000 children (18%) said 'yes', up from 13% in 2011/12.

The increase in children being unable to get an appointment at their usual medical centre within 24 hours was seen across all age groups. The rates were:

- 19% of children aged 0–5 years, up from 17% in 2011/12 (not a significant increase)
- 17% of children aged 6–12 years, up from 12% in 2011/12
- 14% of children aged 13–14 years, up from 8% in 2011/12.

There were no significant differences by sex, ethnicity or socioeconomic deprivation in the percentage of children who were unable to get an appointment at their usual medical centre within 24 hours.

Fewer than 1 in 20 children were unable to visit a GP due to cost at some time in the past 12 months

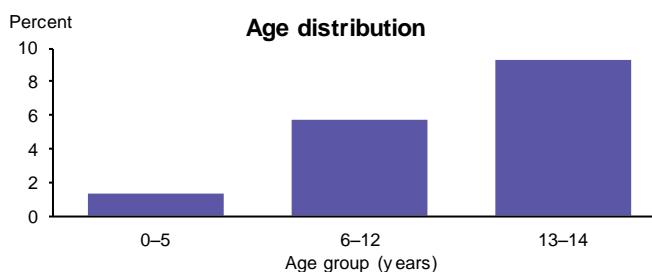
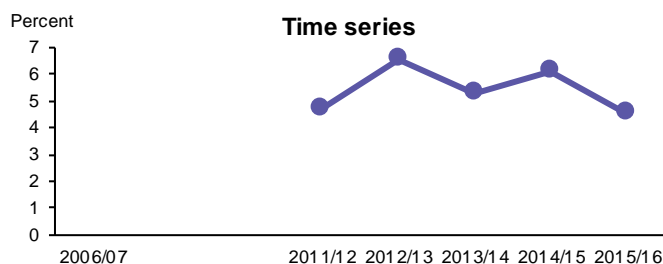
Box 43: Children who did not visit a GP because of cost, at any point in the past 12 months, 2015/16

The prevalence was **4.5%**
which is an estimated
41,000 children

Adjusted rate ratio

Boys vs girls	0.9
Māori vs non-Māori	1.7 *
Pacific vs non-Pacific	1.7 *
Asian vs non-Asian	0.7
Most vs least deprived	1.2

* There is a statistically significant difference between the two groups.



This indicator focuses on whether there had been an occasion in the past 12 months when a child had a medical problem, but their parents did not take them to a GP because of cost.

About 41,000 children (4.5%) had not visited a GP due to cost in the past 12 months.

Very few children younger than six years (1.4%) had an unmet need for GP services due to cost, down from 2.6% in 2011/12. This finding reflects higher subsidies for children in this age group.⁴⁷ One in twenty children aged 6–12 years (5.8%) had not visited a GP due to cost in the past 12 months, and this was not significantly different to previous years. About half of the recall period for the survey was before Zero Fees for Under 13s was introduced, because respondents are asked to recall instances in the past year. Next year's data will be from an entire recall period after Zero Fees for Under 13s was introduced.

Seven percent of Pacific children and 6% of Māori children had not visited a GP due to cost in the past 12 months.⁴⁸ Pacific and Māori children were 1.7 times more likely than non-Pacific and non-Māori children respectively to not have visited a GP due to cost, after adjusting for age and sex differences.

Other reasons for not visiting a GP include: a lack of child care for other children, which was a barrier for 2.9% of children in the past 12 months, and a lack of transport (2.8%).⁴⁷

Lack of child care varied by ethnicity; the rate was higher for Pacific (5.5%) and Māori children (4.8%).

Lack of transport varied by deprivation; the rate was much higher for children living in the most deprived areas (6.7%) than for those in the least deprived areas (0.2%). Lack of transport also varied by ethnicity; the rate was higher for Pacific (7.4%) and Māori children (5.3%).

⁴⁷ Results are available in the online tables accompanying this report.

⁴⁸ Results for Māori and Pacific children are provided in Tables 8 and 9 respectively at the beginning of this section.

Six percent of Māori and Pacific children did not visit an after-hours medical centre due to cost in the past 12 months

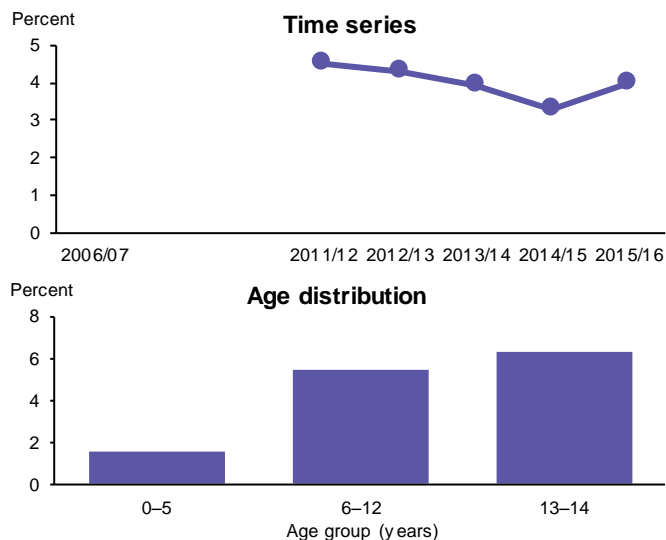
Box 44: Children who did not visit an after-hours medical centre due to cost, at any point in the past 12 months, 2015/16

The prevalence was **4.0%**
which is an estimated
36,000 children

Adjusted rate ratio

Boys vs girls	1.0
Māori vs non-Māori	2.1 *
Pacific vs non-Pacific	1.7 *
Asian vs non-Asian	0.2 *
Most vs least deprived	1.6

* There is a statistically significant difference between the two groups.



The Zero Fees for Under 6s scheme includes free after-hours access to GP services and was expanded to include children under 13 from July 2015. About half of the recall period for the 2015/16 survey was before Zero Fees for Under 13s was introduced, because respondents were asked to recall instances in the previous year. Most children (98% of children aged 0–5 years and 97% of children aged 6–12 years) have access to free after-hours visits within a reasonable travel time (60 minutes) based on DHB reported coverage.

This indicator focuses on whether there had been an occasion in the past 12 months when a child had a medical problem outside regular office hours, but their parents or primary caregiver did not take them to an after-hours medical centre because of cost.

About 36,000 children (4.0%) had not visited an after-hours medical centre due to cost at some time in the past 12 months. Unmet need for after-hours services was much less common in children compared with adults (for whom the rate was 6.9%; see page 42 for more information).

Children aged under six years old were less likely than older children to have not visited an after-hours medical centre due to cost in the past 12 months (the rates were: 1.6% for 0–5 years, 5.4% for 6–12 years and 6.3% for 13–14 years). For under sixes, the rate of not visiting an after-hours medical centre has decreased, down from 3.9% in 2011/12.

Six percent of Māori and Pacific children did not visit an after-hours medical centre due to cost in the past 12 months.⁴⁹ In contrast, only 0.7% of Asian children had not visited an after-hours medical centre due to cost at some time in the past 12 months. Asian children were five times less likely than non-Asian children to not have visited an after-hours medical centre due to cost in the past 12 months, after adjusting for age and sex differences.

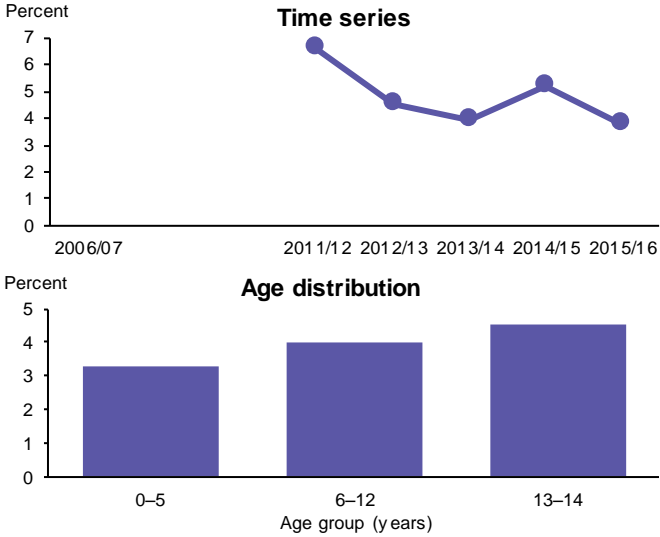
Another reason for not visiting an after-hours medical centre is lack of transport, which was a barrier for 1.3% of children in the past 12 months. Lack of transport varied by ethnicity; the rate was higher for Pacific (4.3%) and Māori children (2.6%) and lower for Asian children (0.1%).

⁴⁹ Results for Māori and Pacific children are provided in Tables 8 and 9 respectively at the beginning of this section.

Fewer than 2 in 50 children missed out on a prescription due to cost in the past 12 months

Box 45: Children who had a prescription item that was not collected due to cost, at any point in the past 12 months, 2015/16

The prevalence was **3.8%** which is an estimated **34,000 children**



Adjusted rate ratio	
Boys vs girls	1.0
Māori vs non-Māori	2.8 *
Pacific vs non-Pacific	3.3 *
Asian vs non-Asian	0.2 *
Most vs least deprived	5.6 *

* There is a statistically significant difference between the two groups.

Most prescription medicines are subsidised in New Zealand so people pay a relatively small amount for each medication. The co-payment applies to the first 20 prescriptions per family per year. The co-payment for subsidised prescription items increased from \$3 to \$5 on 1 January 2013 for those aged six years and over, with free prescriptions for under sixes. Since 1 July 2015, free prescriptions have been extended to children under 13 years old.

About half of the recall period for the 2015/16 survey was before the Zero Fees for Under 13s initiative was introduced. The interviewers asked parents whether there had been a time in the past 12 months when they had been given a prescription for their child but had not collected one or more items because of cost. ‘The past 12 months’ could be anytime between July 2014 and June 2016, depending on when the parent was interviewed, so the 2015/16 data includes both prescriptions before the funding change and prescriptions after the funding change.

About 34,000 children (3.8%) had a prescription that was not collected due to cost, down from 6.6% in 2011/12.⁵⁰ The rate for children aged 6–12 years is 4.0%, down from 6.4% in 2011/12.

Parents of Pacific (9.5%) and Māori children (7.2%) were more likely than parents of non-Pacific and non-Māori children respectively to not have collected a prescription for their child due to cost, after adjusting for age and sex differences.⁵⁰ In contrast, Asian children (0.8%) were less likely than non-Asian children to have had an uncollected prescription due to cost.

Parents of children living in the most socioeconomically deprived areas (8.8%) were 5.6 times as likely to not have collected a prescription for their child due to cost, compared with parents of children living in the least deprived areas (1.5%). This disparity remained after adjusting for age, sex and ethnic differences.

⁵⁰ Results are available in the online tables accompanying this report.

Cost prevented a smaller percentage of parents of children (3.8%) than of adults (6.3%, see page 43) from collecting prescriptions.

Eight in ten parents had confidence and trust in their child's GP

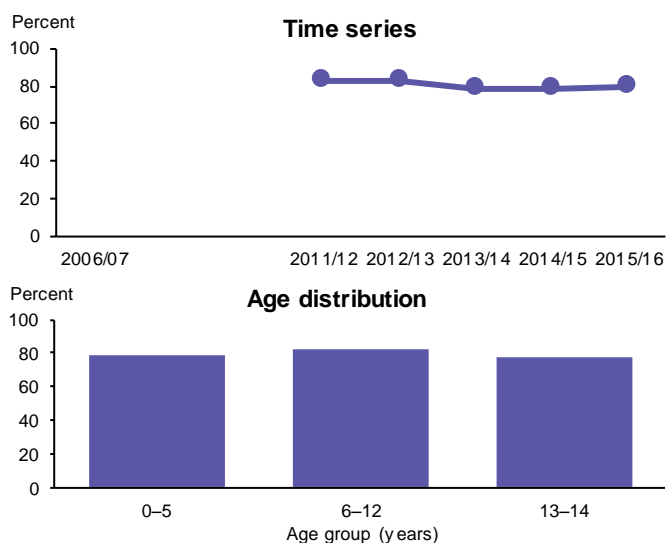
Box 46: Parents who definitely had confidence and trust in the GP their child last visited (of those who had visited a GP in the past 3 months), 2015/16

The prevalence was **79.9%**
which is an estimated
325,000 children

Adjusted rate ratio

Boys vs girls	1.0
Māori vs non-Māori	0.9 *
Pacific vs non-Pacific	0.9
Asian vs non-Asian	1.0
Most vs least deprived	0.9 *

* There is a statistically significant difference between the two groups.



As outlined in the adult section, a patient's experience of medical care is reflected in the confidence and trust they have in their GP. Being treated with dignity and respect, having their privacy protected and being given a clear explanation of conditions and treatment are important elements of the patient's experience.

The interviewers asked parents or primary caregivers of children who had visited a GP in the past three months, 'Did you have confidence and trust in the GP [child's name] saw? Yes, definitely / Yes, to some extent / No, not at all'. In this report, having 'confidence and trust' means definitely having confidence and trust in the GP last visited.

Eight in ten (80%) parents had confidence and trust in the GP who their child last visited.⁵¹

Three in four parents of Māori children (74%) had confidence and trust in the GP who their child last visited.⁵² Parents of Māori children were less likely to have confidence and trust in their GPs compared with parents of non-Māori, after adjusting for age and sex differences.

Seventy-seven percent of parents of children living in the most deprived areas had confidence and trust in the GP that their child last visited, compared with 89% of parents of children in the least deprived areas. Parents of children living in the most deprived areas were less likely to have confidence and trust in their GPs compared with those living in the least deprived areas.

Parents were also asked: "Thinking about [Name's] last visit to a GP, how good was the doctor at explaining [Name's] health conditions and treatments in a way that you could understand?"

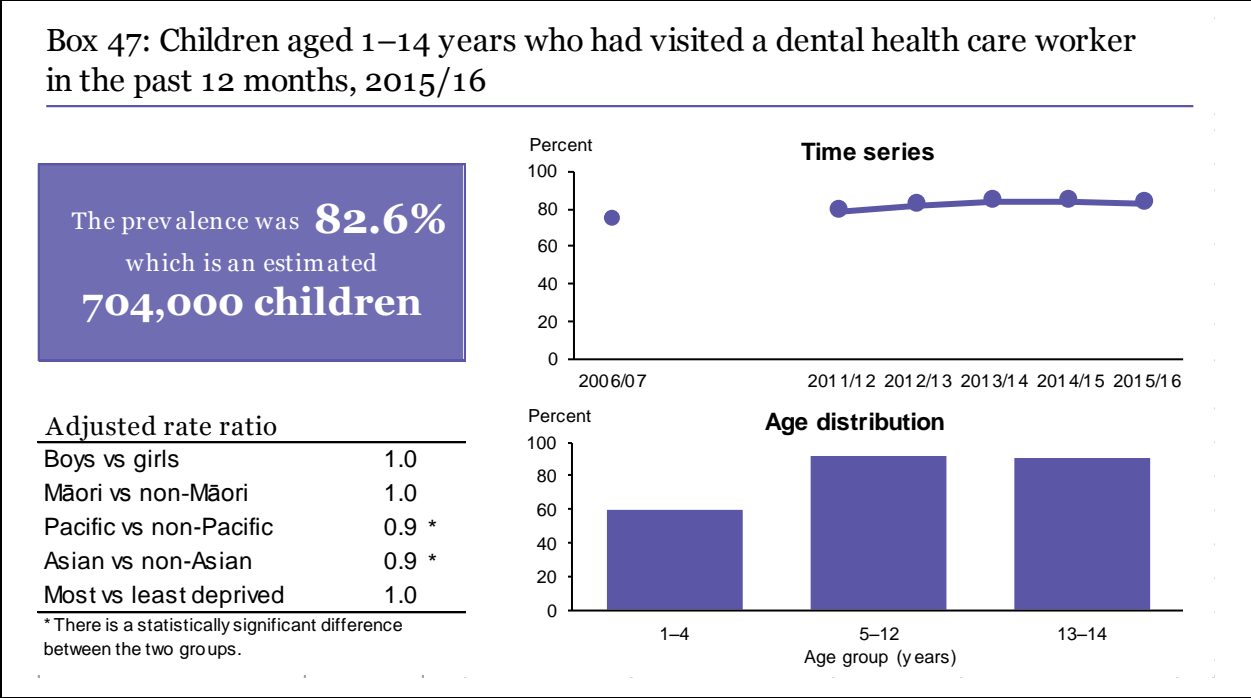
⁵¹ Results are available in the online tables accompanying this report.

⁵² Results for Māori and Pacific children are provided in Tables 8 and 9 respectively at the beginning of this section.

Nine in ten parents (89%) said that their child’s GP was very good or good at explaining their child’s health conditions and treatments.⁵¹ Again, parents of Māori children were less likely to report that their child’s GP was very good or good at providing such explanations, compared with parents of non-Māori, after adjusting for age and sex differences.

Oral health of children

The proportion of children who have visited a dental health care worker has increased



If children have regular dental visits, a dental health care worker⁵³ is more likely to detect oral health problems early. Dental health care workers can also apply timely preventive measures and treatments to maintain and improve oral health.

New Zealand publicly funds basic oral health services for children from birth until their 18th birthday. The majority of dental services for children up to school year 8 (age 12–13 years) is provided by dental therapists within the Community Oral Health Service provided by DHBs. Dental services for adolescents from school year 9 until their 18th birthday are mainly provided by dentists contracted by DHBs under the nationally standardised Combined Dental Agreement.

Eighty-three percent of children visited a dental health care worker in the past 12 months, up from 76% in 2006/07.

Since 2006/07, rates of visiting dental health care workers have improved for all child population groups discussed in this report (girls and boys, the three age groups and the four ethnic groups).⁵⁴ Māori children had a larger relative increase than other ethnicities; 82% of Māori children had visited a dental health care worker in the past 12 months, up from 74% in 2006/07.

⁵³ The term ‘dental health care worker’ refers to dentists and other dental health care workers, such as dental therapists and dental hygienists, as well as dental health specialists, such as orthodontists.

⁵⁴ Refer to online tables accompanying this report for more detailed results.

Children aged 1–4 years were much less likely to have visited a dental health care worker in the past 12 months (60%) than children of school age.

Asian and Pacific children were less likely to have visited a dental health care worker in the past 12 months than non-Asian and non-Pacific children respectively, after adjusting for age and sex.

About 29,000 children had teeth extracted due to decay in the past 12 months

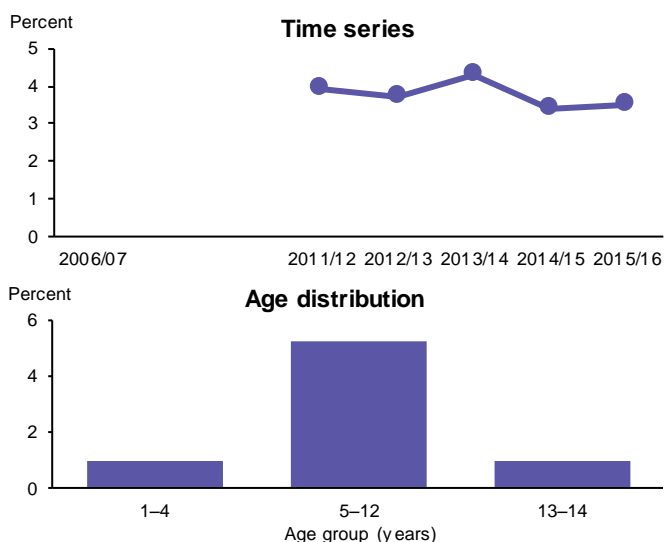
Box 48: Children aged 1–14 years who had one or more of their teeth removed in the past 12 months, due to decay, infection or disease, 2015/16

The prevalence was **3.5%**
which is an estimated
29,000 children

Adjusted rate ratio

Boys vs girls	1.0
Māori vs non-Māori	1.7 *
Pacific vs non-Pacific	2.5 *
Asian vs non-Asian	0.5
Most vs least deprived	2.4 *

* There is a statistically significant difference between the two groups.



Tooth decay is the most common disease of childhood and one of the three leading causes of potentially avoidable hospitalisations among children (aged 0–4 years) in New Zealand (Craig et al 2013). When a child presents with irreversible tooth decay, the aim is to provide care and treatment to enable the child to be free of pain, infection and disease. Sometimes this aim is best achieved by filling or extracting the tooth.

The interviewers asked parents or primary caregivers of children aged 1–14 years if their children had had one or more teeth (primary or permanent) removed due to decay, abscess or infection in the last 12 months. Note that this excludes teeth lost for other reasons, such as injury, crowded mouth or orthodontics.

Parents of about 29,000 children (3.5%) reported that their child had had one or more teeth removed due to decay, abscess or infection in the past 12 months.

One in twenty children (5.2%) aged 5–12 years had had a tooth removed the past 12 months, compared with only 1.0% of those aged 1–4 years.

Pacific children (7%) were 2.5 times as likely to have had a tooth extracted in the past 12 months as non-Pacific children. Māori children (5%) were 1.7 times as likely to have had a tooth extracted in the past 12 months as non-Māori children, after adjusting for age and sex differences.⁵⁵

⁵⁵ Results for Māori and Pacific children are provided in Tables 7 and 8 at the beginning of this section.

One in twenty children living in the most deprived areas (5.8%) had had teeth removed in the past 12 months, compared with 1.3% of children in the least deprived areas. Children living in the most deprived areas were 2.4 times as likely to have had a tooth removed as those living in the least deprived areas, after adjusting for age, sex and ethnic differences.

References

- Atkinson J, Salmond C, Crampton P. 2014. *NZDep2013 Index of Deprivation*. Wellington: Department of Public Health, University of Otago.
- Babor T, Higgins-Biddle J, Saunders J, et al. 2001. *AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for use in primary health care (2nd edition)*. Geneva: World Health Organization.
- Ball J, Stanley J, Wilson N, et al. 2016. Smoking prevalence in New Zealand from 1996–2015. *New Zealand Medical Journal* 129: 11–222.
- Clark TC, Fleming T, Bullen P, et al. 2013. *Youth'12 Overview: The health and wellbeing of New Zealand secondary school students in 2012*. Auckland: The University of Auckland.
- Cole T, Lobstein T. 2012. Extended international (IOTF) body mass index cut-offs for thinness, overweight and obesity. *Pediatric Obesity* 7(4): 284–94.
- Craig E, Adams J, Oben G, et al. 2013. *The Health Status of Children and Young People in New Zealand*. Dunedin: New Zealand Child and Youth Epidemiology Service, University of Otago. URL: <http://hdl.handle.net/10523/6129> (accessed 1 December 2016)
- Global BMI Mortality Collaboration. 2016. Body-mass index and all-cause mortality: Individual-participant-data meta-analysis of 239 prospective studies in four continents. *Lancet* 388: 776–86.
- Harris R, Cormack, D, Tobias M, et al. 2011. The pervasive effects of racism: Experiences of racial discrimination in New Zealand over time and associations with multiple health domains. *Social Science & Medicine* 12: 408–15.
- Hayes L, Barry G. 2002. Sampling variability of the Kunst-Mackenbach relative index of inequality. *Journal of Epidemiology and Community Health* 56: 762–5.
- Idler EL, Benyamini Y. 1997. Self-rated health and mortality: a review of twenty-seven community studies. *Journal of Health Social Behavior* 38: 21–37.
- Kessler R, Barker P, Colpe L, et al. 2003. Screening for serious mental illness in the general population. *Archives of General Psychiatry* 60(2): 184–9.
- Ministry of Health. 2003. *NZ Food NZ Children: Key results of the 2002 National Children's Nutrition Survey*. Wellington: Ministry of Health.
- Ministry of Health. 2010. *Tobacco Use in New Zealand: Key findings from the 2009 New Zealand Tobacco Use Survey*. Wellington: Ministry of Health.
- Ministry of Health. 2012. *Food and Nutrition Guidelines for Health Infants and Toddlers (Aged 0–2): A background paper – Partially revised December 2012*. Wellington: Ministry of Health.
- Ministry of Health. 2013. *Cardiovascular Disease Risk Assessment (Updated 2013): New Zealand Primary Care Handbook 2012*. Wellington: Ministry of Health.
- Ministry of Health. 2015a. *Eating and Activity Guidelines for New Zealand Adults*. Wellington: Ministry of Health.
- Ministry of Health. 2015b. *Statement of Intent 2015 to 2019*. Wellington: Ministry of Health.
- Ministry of Health. 2015c. *Mortality and Demographic Data 2012*. Wellington: Ministry of Health.

Ministry of Health. 2015d. Food and drinks for healthy teeth. URL: www.health.govt.nz/your-health/healthy-living/teeth-and-gums/keep-your-smile-looking-good-easy/food-and-drinks-healthy-teeth (accessed 7 November 2016).

Ministry of Health. 2016a. *Sample Design from 2015/16: New Zealand Health Survey*. Wellington: Ministry of Health.

Ministry of Health. 2016b. *Methodology Report 2015/16: New Zealand Health Survey*. Wellington: Ministry of Health.

Ministry of Health. 2016c. *Indicator Interpretation Guide 2015/16: New Zealand Health Survey*. Wellington: Ministry of Health.

Ministry of Health. 2016d. *Content Guide 2015/16: New Zealand Health Survey*. Wellington: Ministry of Health.

Ministry of Health. 2016e. *Health Loss in New Zealand 1990–2013*. Wellington: Ministry of Health.

Smith A. 2006. The state of research on the effects of physical punishment. *Social Policy Journal of New Zealand* 27: 114–27.

Statistics New Zealand. 2016. *Alcohol Available for Consumption: Year ended December 2015*. Wellington: Statistics New Zealand.

Taylor R, Scragg R, Quigley R. 2005. *Do sugary drinks contribute to obesity in children? A report prepared by the Scientific Committee of the Agencies for Nutrition Action*. Wellington: Agencies for Nutrition Action.

Tobias M, Cavana R, Bloomfield A. 2010. Application of a system dynamics model to inform investment in smoking cessation services in New Zealand. *American Journal of Public Health* 100(7): 1274–81.

Tobias M, Cheung J. 2001. *Inhaling Inequality: Tobacco's contribution to health inequality in New Zealand*. Ministry of Health: Wellington.

WHO. 2013. *Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020*. Geneva: World Health Organization.

WHO. 2014. *Global Status Report on Alcohol and Health 2014*. Geneva: World Health Organization.

WHO. 2015. *Guideline: Sugars intake for adults and children*. Geneva: World Health Organization.

Appendix 1: Definitions and statistical methods

This section gives some key information to aid interpretation of the survey results. For more details about the survey methodology, see the *Methodology Report 2015/16: New Zealand Health Survey* (Ministry of Health 2016b) and *Indicator Interpretation Guide 2015/16: New Zealand Health Survey* (Ministry of Health 2016c).

Total response ethnicity

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

Adjusted rate ratios

This report uses adjusted rate ratios to compare the results for different population groups.

Rate ratios are used for comparing:

- males and females
- Māori and non-Māori (for the total population, males and females)
- Pacific and non-Pacific (for the total population, males and females)
- Asian and non-Asian (for the total population, males and females)
- people living in the most and the least socioeconomically deprived areas.

Total response ethnicity is used to present prevalences by ethnic group. This means that ethnic comparisons are presented to enable Māori to be compared with non-Māori, Pacific with non-Pacific and Asian with non-Asian groups. This means that all respondents who identified as Māori are included in the Māori group, while all other respondents are included in the non-Māori group. Similar groups are formed for Pacific and Asian ethnic comparisons.

Rate ratios can be interpreted in the following way.

- A rate ratio of 1 means that there is no difference in prevalence between the group of interest (eg, men) and the reference group (eg, women).
- A rate ratio above 1 means that the prevalence is higher for the group of interest than for the reference group.
- A rate ratio below 1 means that the prevalence is lower for the group of interest than for the reference group.

The rate ratios presented in this report have been adjusted for other demographic factors that may be influencing (confounding) the comparison, such as age, sex and ethnic group.

- The sex comparison is adjusted for age differences.
- Ethnic comparisons are adjusted for age and sex differences.
- Socioeconomic deprivation comparisons are adjusted for age, sex and ethnic differences.

Adjusting for potentially confounding factors makes comparisons more accurate and meaningful because the adjustment removes the effect of these confounding factors.

Neighbourhood deprivation

Neighbourhood deprivation refers to the New Zealand Index of Deprivation 2013 (NZDep2013), which measures the level of socioeconomic deprivation for each neighbourhood (Primary Sampling Unit, PSU) according to a combination of the following 2013 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 (Atkinson et al 2014).

In the neighbourhood deprivation comparisons, the rate ratio refers to the **relative index of inequality** (Hayes and Barry 2002). This measure is used instead of simply comparing the most deprived quintile with the least deprived quintile and is calculated by first using data from all quintiles to calculate a line of best fit (regression line), adjusted for age, sex and ethnic differences. The points on the regression line corresponding to the most and least deprived areas are used to calculate the rate ratio that is presented in this report. This method has the advantage of using data from all the NZDep2013 quintiles to give an overall test for trend (gradient) by neighbourhood deprivation rather than only using the data from quintiles 1 and 5.

Results are representative of the total adult or child population

All results presented in this report are weighted so that they represent the total population of either adults (15 years and above) or children (0–14 years). For some child indicators, the age group is a subset of the 0–14 years age group.

Percentages refer to unadjusted values

Any percentage given in the text refers to the **unadjusted prevalence**; that is, the percentage of people affected in the population group of interest.

Statistical significance

Statistical significance is measured at the 5% significance level (that is, a *p*-value less than 0.05). If needed, a statistical test (a *t*-test) is carried out to confirm that the finding was statistically significant. Due to the large number of results included in this report, some results identified as significant could be chance findings.

Time trends

The prevalence estimates used in this report reflect the actual (unadjusted) percentage of the population affected in each time period. However, the significance (*p*-values) of differences between years has been adjusted for differences in the age structures of the underlying populations over time.

Linear regression

The term 'regression' refers to a statistical technique that allows one variable to be predicted from other variables. The simplest regression equation is $y = a + bx$, where *y* is the outcome variable, *x* is the predictor variable, *a* is the intercept (the expected value of the outcome variable when the predictor variable is 0), and *b* is the slope (the average difference in the outcome variable when comparing observations whose predictor values differ by one unit).

Absolute and relative differences

Differences in rates can be measured on an absolute or a relative scale. Absolute change refers to the change in the rate in percentage points (ie, the rate in period 1 minus the rate in period 2). Relative change refers to the change in the rate in percentage terms (ie, the absolute change as a percentage of the value in period 1).

For example, if the rate for an indicator declines from 20% in period 1 to 16% in period 2, then the relative change is 4 percentage points (20 – 16) and the relative change is 20% (4/20 x 100).

Survey results show associations rather than cause-and-effect relationships

This survey presents a snapshot of the health of New Zealand adults and 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 factor occurred first.

For example, if the survey finds that a particular condition is more common in people 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 assume that the respondents could accurately recall previous events (such as a diagnosis by a doctor). Also, many indicators in this report are about **diagnosed** conditions, and not everyone with a particular condition will have had it diagnosed by a doctor.

The amount of error will vary from indicator to indicator, depending on a number of factors, including the respondent's age. Respondents may also over-report good behaviours or under-report risk behaviours based on what they consider to be socially desirable.

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 self-reported information because the interviewers can apply consistent measurement techniques to all respondents using standardised measuring tools.