MINISTRY OF HEALTH
MANATŪ HAUORA

New Zealand Government

# Content Guide 2017/18

## New Zealand Health Survey

New Zealand Health Survey

**Released 2018** **health.govt.nz**

Citation: Ministry of Health. 2018. *Content Guide 2017/18: New Zealand Health Survey*. Wellington: Ministry of Health.

Published in November 2018
by the Ministry of Health
PO Box 5013, Wellington 6140, New Zealand

ISBN 978-1-98-856814-0 (online)
HP 6964

This document is available at health.govt.nz

# Authors

This report was compiled by the New Zealand Health Survey team in the Health and Disability Intelligence Group, Ministry of Health. Contributors include Chloe Lynch and Bridget Murphy.

# Contents



**List of tables**

# Introduction

This guide describes the content of the New Zealand Health Survey (NZHS) for the period 1 July 2017 to 30 June 2018. It also briefly outlines the history of the NZHS and its development into a continuous survey, describes the process for developing the adult and child questionnaires for 2017/18 and provides an overview of each section of the survey. The questionnaires are available with this report on the Ministry of Health's (the Ministry's) website: www.health.govt.nz

## Background

The NZHS was first undertaken in 1992/93, with further surveys taking place in 1996/97, 2002/03 and 2006/07. The Ministry's wider health survey programme included surveys on adult and child nutrition; tobacco, alcohol and drug use; mental health; and oral health. From 2011, the Ministry integrated the NZHS and these other surveys from its wider survey programme into a single survey, which is now in continuous operation. The rationale for this change is detailed in *The New Zealand Health Survey: Objectives and topic areas* (Ministry of Health 2010).

As a signatory to the *Protocols of Official Statistics* (Statistics New Zealand 1998), the Ministry employs best-practice survey techniques to extract high-quality information from the NZHS. Where possible, the Ministry uses standard frameworks and classifications so that data from the NZHS can be integrated with data from other sources.

## Survey design and methodology

The target population for the survey is New Zealand's usually resident population of all ages and including those living in non-private accommodation. The NZHS sample is selected using a stratified, multi-stage area design. Most of the survey questionnaire is conducted through face-to-face interviews, using computer-assisted personal interviewing (CAPI) software. Some parts of the survey are self-completed by respondents, because of the potentially sensitive nature of the questions. Respondents are adults aged 15 years and older, as well as children aged 0–14 years, who are interviewed through their parent or legal guardian acting as a proxy respondent. The NZHS sample design and methodology will be published online alongside this report, on the Ministry's website: www.health.govt.nz

## Goal and objectives

### Goal

The goal of the NZHS is to support the formulation and evaluation of health policy by providing timely, reliable and relevant health information that cannot be collected more efficiently from other sources. The information covers population health, health risk and protective factors, as well as health service utilisation.

## Objectives

To achieve this goal, 13 high-level objectives have been identified for the NZHS. These are to:

1. monitor the physical and mental health of New Zealanders and the prevalence of selected long-term health conditions
2. monitor the prevalence of risk and protective factors associated with these long-term health conditions
3. monitor the use of health services, and patient experience with these services, including access to the services
4. monitor trends in health-related characteristics, including health status, risk and protective factors, and health service utilisation
5. monitor health status and health-related factors that influence social wellbeing outcomes
6. examine differences between population groups, as defined by age, sex, ethnicity and socioeconomic position
7. provide a means for collecting data quickly and efficiently in order to address emerging issues related to the health of the population
8. enable follow-up surveys of at-risk populations or patient groups identified from the NZHS as necessary to address specific information needs
9. measure key health outcomes before and after a policy change or intervention
10. facilitate links to routine administrative data collections to create new health statistics and address wider information needs
11. provide data for researchers and health statistics for the general public
12. allow New Zealand data to be compared with international health statistics
13. evaluate methods and tools to improve the survey's quality, including implementing objective tests to capture information that is not accessible under the self-report process, such as measuring blood pressure.

# Information domains

To meet the high-level objectives of the NZHS, particularly the first six listed above, detailed information is collected across nine information areas or domains. These nine domains are:

1. health status
2. long-term health conditions
3. behaviours and risk factors (including tobacco, alcohol and drug use)
4. nutrition
5. mental health
6. oral health
7. health service utilisation
8. patient experience
9. sociodemographics.

There is crossover between some domains. For example, aspects of mental health and oral health are included within the long-term health conditions domain, and nutrition is included within the behaviours and risk factors domain.

# Questionnaire components

The NZHS includes a set of questions drawn from each of the nine information domains. These 'core' questions remain the same each year. They make up about half of the survey questions. The NZHS also includes questions that examine a topic in more depth. These 'module' questions change each year and make up the other half of the survey questions.

Because of its size and importance, the behaviours and risk factors domain has been split into a number of modules, including physical activity, tobacco use, alcohol consumption, drug use, problem gambling and sexual and reproductive health. Some modules may run concurrently (eg, tobacco, drugs and alcohol use ran together in the 2012/13 survey).

The continuous nature of the survey also makes it possible to incorporate shorter (one- to three-minute) 'clip-on' modules. These clip-on modules may address an urgent emerging issue or an important topic where policy development or monitoring requires additional information that can be obtained through a small number of questions.

# Process for developing the New Zealand Health Survey

The Ministry's Health and Disability Intelligence Group developed the adult and child questionnaires for the NZHS in consultation with key internal stakeholders (eg, policy groups) and external stakeholders (eg, technical experts and data users).

## Core component

The NZHS aims to maintain continuity with previous surveys so that time trends can be analysed. To facilitate this approach, the 2006/07 NZHS was used as a 'question bank'; that is, where possible, the wording of the core questions, response options, show-cards and interviewer prompts from the 2006/07 NZHS has been retained in subsequent surveys.

Topics for inclusion in the core component of the NZHS were based on those outlined in *The New Zealand Health Survey: Objectives and topic areas* (Ministry of Health 2010). The following four criteria were used to determine the topics that would be included each year as core components.

- Impact – the topic has a large impact on health, health policy or health care costs.
- Measurability – the topic lends itself to robust measurement, including high reliability and validity and responsiveness to change.
- Disaggregation – the data that can be collected on the topic can be analysed by social group or region.
- International comparability – the topic lends itself to meaningful international benchmarking.

Priority was given to questions that related to key indicators or outputs and could be used to monitor important health-related time trends. Results on an indicator or output that were included in *A Portrait of Health: Key results of the 2006/07 New Zealand Health Survey* (Ministry of Health 2008) were considered to be important.

Most of the questions selected for the core component of the survey were from the 2006/07 NZHS. The 2006/07 NZHS included a number of questions from validated instruments, such as the Medical Outcomes Study Short Form (SF-36) and the Alcohol Use Disorders Identification Test (AUDIT). For the NZHS core, the SF-36 was replaced by the SF-12, to minimise interview time. Most other questions selected for the NZHS core occurred in at least one previous survey (1992/93, 1996/97 and/or 2002/03).

The need to sustain time series makes it more difficult to update and improve core questions and to add new core questions. Where needed, questions will generally be improved when a topic area covered by a core question is reviewed in depth during the development of a related module.

The core component of the NZHS includes measuring height and weight in respondents aged two years and older, and waist circumference in respondents aged five years and older.

# Module components

The module topics in the 2017/18 NZHS are:

- health service utilisation and patient experience, for adults and children
- understanding health and health care, for adults.

Details of question development are explained in 'Content of the New Zealand Health Survey' below.

All the module topics for the continuous NZHS until 2017/18 are summarised in Table 1.

**Table 1: New Zealand Health Survey module topics, 2011/12–2017/18**

| Year of NZHS | Child module topic(s) | Adult module topic(s) |
|---|---|---|
| 2011/12 | Health service utilisation and patient experience | Health service utilisation and patient experience<br>Problem gambling<br>Racial discrimination |
| 2012/13 | Child development<br>Food security<br>Exposure to second-hand smoke | Alcohol use<br>Tobacco use<br>Drug use |
| 2013/14 | Long-term conditions<br>Health status<br>Disability status<br>Living standards<br>Housing quality<br>Exposure to second-hand smoke | Long-term conditions<br>Health status<br>Disability status<br>Living standards<br>Housing quality |
| 2014/15 | Child development<br>Food security<br>Rheumatic fever | Sexual and reproductive health<br>Biomedical tests<br>Rheumatic fever (under 25 years) |
| 2015/16 | Child development<br>Food security<br>Exposure to second-hand smoke<br>Rheumatic fever | Tobacco use<br>Rheumatic fever (under 25 years) |
| 2016/17 | Behavioural and developmental problems<br>Rheumatic fever | Mental health and substance use<br>Rheumatic fever (under 25 years)<br>Racial discrimination |
| 2017/18 | Health service utilisation and patient experience | Health service utilisation and patient experience<br>Understanding health and health care |

# Cognitive testing

Cognitive testing helps ensure questions are understood as intended and that response options are appropriate. The cognitive testing process includes:

- comprehension – how does the respondent understand the question?
- recall – what knowledge or memory does the respondent select that is relevant to the subject matter?
- judgement and selection – how does the respondent judge what they remember and formulate a response?

Initially new or changed questions are cognitively tested with colleagues as respondents. Then a smaller number of questions are prioritised for cognitive testing with relevant populations (demographic variety, extreme cases, etc). CBG Health Research Limited, an Auckland-based independent public health research provider, carries out this second stage of cognitive testing.

Researchers investigate whether the questions are working as intended and whether the respondents have access to all the information needed to answer the questions accurately.

Respondents in cognitive testing are invited to comment on:

- question flow/sequencing
- level of engagement/satisfaction with the questions
- problems/issues with the questionnaire.

For the 2017/18 NZHS cognitive testing, the questions were administered using computer-assisted telephone interviewing (CATI). Respondents received show-cards either by email or post. After asking each survey question, a researcher conducted a cognitive interview on that question before moving to the next question.

Because the 2017/18 NZHS included a module on health service utilisation and patient experience, with several new questions about primary health care, half of the sample recruited were regular users of primary health care services. This half of the sample were adult and child respondents who reported in the 2015/16 NZHS that they had seen a general practitioner (GP) in the last three months, had seen a GP at least three times in the last 12 months and had agreed to be re-contacted for further research. The other half of the sample were adult and child respondents recruited via the survey providers' existing professional and personal networks.

## Adult survey 2017/18

Researchers conducted interviews with 60 adults aged 15 years and over to test 29 new or modified questions included in the adult survey.

Generally, the questions were understood as intended. Following cognitive testing, changes were made to several questions. The key changes are listed below.

- There were wording changes to several questions to make it clearer what the respondent should include. For example, in a new question about how often the respondent visits a pharmacy, a statement was added indicating that the visit could be for any reason and prompting respondents to include visits made for other people.
- In a new question asking what type of toothpaste the respondent usually used, the wording included a prompt for the respondent to look at the show-card. Cognitive testing showed that the show-card was often vital to selecting an answer.
- The recall period for a question asking where the respondent had tried to get health information or advice from was changed from three months to twelve months. This was because some respondents found it easier to answer with the longer recall period.

## Child survey 2017/18

Researchers conducted interviews with 60 parents/caregivers of 60 children aged 0–14 years to test five questions.

The child survey questions tested were mostly about visits to the usual medical centre. Following cognitive testing, the same changes were made to the child questions as were made to the adult questions.

# Pilot testing

The main objectives of the pilot testing were to:

- ensure that the questionnaires performed as expected, with all routing, edits and consistency checks working correctly
- determine the average duration for each element of the questionnaire as well as the survey process overall
- identify and explore questions with high non-response rates and 'other' response rates
- evaluate whether the training provided was comprehensive and fully prepared the interviewers to work on the project
- evaluate how respondents engaged with the survey
- evaluate the introduction of new innovations such as electronic show-cards and dataset route cleaning
- determine consent rates for audio recording of interviews and evaluate associated risks
- analyse completion rates for the self-complete section of the adult survey
- assess the placement of the drugs question in the self-complete section of the adult survey
- assess the impact of removing the blood pressure measurement from the adult survey on the overall measurement rates
- determine consent rates for audio recording interviews and evaluate associated risks.

Researchers tested the questionnaires on 150 respondents from different age, sex and ethnic groups. The respondents were recruited via the usual NZHS respondent selection process.

The key changes resulting from the pilot test were as follows.

- The Health Literacy Questionnaire (HLQ)[1] questions were changed from being interviewer administered (face-to-face) to being self-completed. Part way through the pilot it was identified that the HLQ questions were problematic for interviewers to administer because:
  - questions were phrased in the first person
  - some items seemed repetitive, causing respondents to disengage
  - some respondents appeared to be providing socially desirable responses
  - some respondents were explaining their answers, making the survey take longer.

  It was decided to continue the rest of the pilot study with the respondents completing the questions themselves, and in this mode, the questions performed better.
- Several questions were removed from the final adult survey because the overall interview duration was too long. Because of the long interviews, there was a decrease in respondent satisfaction ratings from the previous survey years. Questions that were removed following the pilot included:
  - 14 HLQ items (covering three of the nine HLQ scales)
  - four patient experience questions about visits to pharmacies that had a high rate of 'doesn't apply' responses
  - a question asking what the GP could have done better in the respondent's last GP visit (removed because it is more difficult to analyse open-ended text responses)

[1] See 'Understanding health and health care' for more information on the HLQ.

- a question asking how confident the respondent felt in managing their own health (removed because the concept is somewhat covered in the HLQ)
- a question asking where the respondent has got information or advice about healthy eating from (removed because this question was less associated with the module topic).

# Ethics approval

The Multi-region Ethics Committee (MEC) approved the NZHS 2017/18 (Multi-region Ethics Committee Reference: MEC/10/10/103).

# Content of the New Zealand Health Survey

The adult and child questionnaires included the following sections, which are core to the questionnaires unless noted otherwise.

- Long-term health conditions
- Health service utilisation and patient experience (a core and module topic for adults and children)
- Understanding health and health care (a module for adults)
- Health behaviours and risk factors
- Health status
- Sociodemographics
- Anthropometric measurements
- Permission details after completing the survey.

## Long-term health conditions

Long-term health conditions cover any ongoing or recurring health problem, including a physical or mental illness, which has a significant impact on a person's life and/or the lives of family, whānau or other carers. Such conditions are generally not cured once acquired. For the purposes of monitoring population health, a long-term health condition is defined in the NZHS as a health condition that has lasted, or is expected to last, for more than six months and is based on a respondent's self-report of what a doctor told them.

This section collects information on the prevalence of major long-term conditions (see Table 2) as well as treatments for these conditions.

In the 2017/18 NZHS, a self-rated oral health question was included for adults and children aged 1–14 years, asking them to rate the health of their teeth or mouth. This question was also included in the 2009 New Zealand Oral Health Survey and the 2013/14 NZHS long-term conditions module.

**Table 2: Long-term health conditions**

| Adult | Child |
|---|---|
| Heart disease | Asthma |
| Stroke | Eczema |
| Diabetes | Diabetes |
| Asthma | Rheumatic heart disease |
| Arthritis | Autism spectrum disorder |
| Mental health conditions | Depression |
| Chronic pain | Anxiety disorder |
| Oral health | Attention deficit disorder or attention deficit hyperactivity disorder |
| | Oral health |

# Health service utilisation and patient experience

The use of appropriate and effective health care services is an important determinant of population health. Areas of interest for the NZHS include the frequency of health care contact; the range and comprehensiveness of health services; their accessibility, availability and affordability; and the continuity and coordination of care they provide.

Patient experience includes the processes or events that occur (or do not occur) in the course of a specific episode of care. It addresses the interpersonal aspects of care: the interaction between health professionals and health care users. Examples include communication skills, the building of trust, the discussion and explanation of symptoms and the involvement of patients in decisions about their own treatment and care.

The NZHS focuses on health service utilisation and patient experience in the primary health care setting, which is often people's first point of contact with the health system. Nearly all New Zealanders (over 90 percent) have a primary health care provider, and the NZHS provides a comprehensive source of data on primary health care utilisation. Therefore a number of questions focus on consultations with GPs and primary health care nurses. To reduce recall bias, the time period of interest for many of the patient experience questions relates to primary health care visits that occurred in the previous three months.

Questions are also included about the use of and experience with after-hours and emergency department (ED) services. These questions use a 12-month recall period to capture a sufficient number of contacts with these services.

Information on the use of secondary- and tertiary-level health services (public and private hospitals and medical specialists) can generally be captured in more detail from administrative databases and surveys administered immediately following a patient's contact with these services. Therefore, the NZHS collects only a subset of questions on service utilisation and patient experiences related to secondary- and tertiary-level health services.

A small number of questions are also included on prescriptions, dental health care services and visits with other health care workers.

Many of the health service utilisation and patient experience questions originally come from international surveys, such as the United Kingdom's GP Patient Survey, the Commonwealth Fund International Health Policy Survey and Australian patient experience surveys.

In the 2017/18 NZHS, there were some changes to the questions about visits to primary health care nurses. In the survey, the term 'practice nurse' was replaced with 'nurse at GP clinic or medical centre' in case 'practice' could be misinterpreted to mean a nurse who is not fully qualified. New questions were added about primary health care nurse visits that were completed as part of a GP consultation (including seeing the nurse before or after seeing the GP). These questions were also included in the 2006/07 NZHS.

Questions about whether the usual medical centre was informed after the respondent's visit to an after-hours medical centre, ED or a medical specialist were removed from the 2017/18 NZHS because many respondents were unaware whether their usual medical centre was informed or not.

The question topics included in the core component of the NZHS are summarised in Table 3. Most of the topics listed were included in both the adult and child survey, but some were in the adult survey only.

**Table 3: Health service utilisation and patient experience – core components**

| Health service setting | Topics |
|---|---|
| Usual primary health care provider | Type of service, timely access, health checks, health discussions |
| General practitioners | Visits in last 12 months, visit cost, patient experience, unmet need / barriers to access |
| Primary health care nurses | Visits in last 12 months, visit cost |
| Other health care workers | Visits in last 12 months |
| After-hours medical services | Visits in last 12 months, visit cost, patient experience, unmet need / barriers to access |
| Hospitals | Visits in last 12 months |
| Emergency departments | Visits in last 12 months, reason for last visit, patient experience / continuity of care |
| Medical specialists | Visits in last 12 months, patient experience / continuity of care |
| Dental health care workers | Visits in last 12 months, unmet need / barriers to access |
| Prescription medicines | Unmet need / barriers to access |

A module on health service utilisation and patient experience was included in the 2017/18 NZHS, expanding on the content in the core component. For this section, core and module questions are interwoven to maintain the flow of the survey.

## Module questions on health service utilisation and patient experience

Many of the questions from the 2011/12 NZHS module on health service utilisation and patient experience were repeated in the 2017/18 module. Measuring key patient experience indicators (eg, trust and confidence, rated quality of care) across a range of health service settings over time provides insight into whether the quality of health care delivery is changing.

The patient experience information collected in the NZHS is intended to complement the information collected by the New Zealand Health Quality and Safety Commission's Primary Care Patient Experience Survey. The two surveys use different methodologies. The NZHS provides patient experience measures from a sample that is representative of the New Zealand population but uses longer recall periods.

Patient experience questions about visits to pharmacies and dental health care services were added for the 2017/18 NZHS module. Patient experience in these settings were not collected previously in the NZHS, but including them provides a wider perspective on people's experiences with the health system. The module also includes new questions about pharmacy utilisation, including how often people visit a pharmacy and what they got from the pharmacy. In New Zealand, there is limited information about pharmacy visits even though pharmacies are often the part of the health system that people have the easiest access to (Ministry of Health 2016).

For the patient experience questions, images of the particular health service setting were displayed on the electronic show-cards (eg, an image of a GP with a patient is displayed for the GP patient experience questions). The images were included with the aim of increasing

respondent engagement, making the questions feel less repetitive and clearly differentiating the health services that are being asked about.

Other new questions were developed for the 2017/18 NZHS module, in consultation with stakeholders, focusing on the themes in the New Zealand Health Strategy (Minister of Health 2016). These questions are intended to identify ways in which the health system could be improved. For example, there were new questions about:

- the convenience of the respondent's usual medical centre's opening hours and what opening hours would be preferred (based on questions in the University of Cambridge General Practice Assessment Questionnaire (GPAQ) – for more information see www.phpc.cam.ac.uk/gpaq)
- how respondents contacted their usual medical centre (eg, by phone, email, text, an online service or a patient portal)
- whether staff at the respondent's usual medical centre have given the respondent enough information to help them manage their own health concerns
- whether staff at the respondent's usual medical centre seem to work well together
- whether the respondent experiences any barriers to accessing a GP, such as owing money to a medical centre or having difficulty taking time off work. This is an extension of the barriers to access collected in the NZHS core component.

# Understanding health and health care

The New Zealand Health Strategy highlights the importance of 'making New Zealanders "health smart"; that is, they can get and understand the information they need to manage their care' (Minister of Health, 2016).

A module on understanding health and health care was included in the 2017/18 NZHS for adults. The module included questions from the HLQ and a new question asking respondents where they had tried to get health information and advice from in the last 12 months. Results from the module will help identify the health literacy needs of different population groups in New Zealand and areas of the health system where the demands placed on people could be reduced.

The HLQ consists of 44 items that cover the concept of health literacy across nine distinct scales. The HLQ has been validated in a range of settings (Osborne et al 2013). Two scales were included in the Danish National Health Survey in 2013 (Bo et al 2014).

For the 2017/18 NZHS, six of the nine HLQ scales (30 items) were included. The pilot study included all nine scales, but the overall NZHS duration was too long. The six scales included in the final survey were selected because they are highest priority to stakeholders and did not include the items that respondents found most difficult to understand and answer during the pilot study. The six HLQ scales included in the 2017/18 NZHS were:

- having sufficient information to manage my health
- actively managing my health
- having social support for health
- being able to engage actively with health care providers
- navigating the health care system
- understanding health information enough to know what to do.

The HLQ questions in the NZHS are self-completed by respondents using computer-assisted self-interviewing (CASI), but if the respondent is unable or unwilling to use a computer, then the interviewer can administer the questions. Because there are strict protocols for using translations of the HLQ and it is difficult to programme multiple language translations into the survey's software, respondents who are completing the rest of the interview with the use of a

translator are not asked the HLQ questions in the NZHS. This is a limitation of the study because respondents who don't speak English are likely to be excluded.

### HLQ scoring

Items in some HLQ scales have four response options and are scored 1–4 (strongly disagree to strongly agree). Other scales have items with five response options and are scored 1–5 (cannot do or always difficult to always easy).

A score is derived for each of the HLQ scales. These scale scores are the mean average of the responses provided for items within the scale and can be used to assess patterns of health literacy between population sub-groups.

# Health behaviours and risk factors

Health behaviours and risk factors can have a direct or indirect impact on health and wellbeing. For example, smoking has a direct impact on health, while education has an indirect impact by informing and influencing our ability to make better health choices. Health behaviours that have a negative effect on health are referred to as risk factors (eg, smoking), while health behaviours that have a positive effect on health are referred to as protective factors (eg, eating healthy foods such as vegetables and fruit).

Monitoring trends in exposure to risk and protective factors informs the development and evaluation of health policy, especially policy related to health promotion, disease prevention and primary health care. The measurement of risk and protective factors is part of the internationally recognised minimum standards for health surveys. These standards, developed by the World Health Organization (WHO), comprise the STEPwise approach to surveillance of risk factors for non-communicable diseases (STEPS) (WHO 2005).

The core health risk and protective factor questions are based on a subset of questions from the 2006/07 NZHS, some of which were also included in earlier surveys. This provides important time-series information on topics such as smoking.

The questions about alcohol use come from the Alcohol Use Disorders Test (AUDIT). The AUDIT is a 10-item questionnaire that covers three aspects of alcohol use: alcohol consumption, dependence and adverse consequences. A score of eight or more indicates a hazardous drinking pattern. A respondent can reach a score of eight from the alcohol consumption items of the questionnaire alone, for example, by drinking six or more drinks on one occasion, twice a week (Babor et al 2001).

In 2015/16, two alcohol questions were changed in the AUDIT section of the NZHS.
Before 2015/16, the NZHS 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 (which, in New Zealand, is 10 g pure alcohol), with illustrations of standard drinks in local beverages. Thus, for the 2015/16 survey, the two AUDIT alcohol consumption questions were changed from 'drinks' to 'standard drinks' and included a show-card 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, the NZHS only uses the standard drinks show-card version of AUDIT, creating a break in the time series.

The 2016/17 NZHS included two new questions about screen time for children aged 2–14 years. The Ministry developed these questions to measure the amount of time children spend watching television or looking at a screen (excluding time spent looking at screens at school or for homework). From 2017/18, the questions about screen time will also be asked for children aged 6 months to 2 years to measure screen time in the younger age group as well.

The 2017/18 NZHS also included new questions in the core component on sleep, teeth brushing and use of electronic cigarettes.

Getting enough quality sleep is important for brain functioning, emotional wellbeing and physical health. The 2017/18 NZHS for adults and children asked how much sleep the respondent usually gets in a 24-hour period. This question originally came from the United States' National Health Interview Survey and was also included in the 2013/14 NZHS long-term conditions module. For the 2017/18 NZHS, an interviewer note was added to ensure interviewers use a consistent method of rounding to a whole number.

The Ministry recommends brushing teeth twice a day with standard fluoride toothpaste. The 2017/18 NZHS for adults and children asked how often the respondent brushes their teeth and the type of toothpaste they usually use. The show-card for the question on type of toothpaste used included pictures to help respondents differentiate between categories, particularly between standard and low-fluoride toothpaste. Similar questions on teeth brushing were included in the 2013/14 NZHS long-term conditions module.

Electronic cigarettes have the potential to improve public health. It is therefore important to monitor their uptake in New Zealand. The 2017/18 NZHS included questions asking adults whether they have ever tried an electronic cigarette and how often they now use them. These questions were also included in the 2015/16 NZHS tobacco use module.

In the 2017/18 NZHS, the question about drug use was changed from interviewer administered to self-completed to encourage more honest responses. Respondents whose interview is being conducted with cognitive or language assistance from a family member, caregiver or one of their friends were not asked this question. This is to ensure these confidential responses were not revealed to people with whom the respondent has a personal relationship. The question was also moved to later in the survey so that the self-complete questions were asked together.

The topics included in the health behaviours and risk factors section are shown in Table 4.

**Table 4: Health behaviours and risk factors**

| Adult | Child |
|---|---|
| High blood pressure | Perceptions of child's weight |
| High blood cholesterol | Infant feeding |
| Physical activity | Nutrition (dietary habits) |
| Sleep | Physical activity (sedentary behaviour) |
| Teeth brushing | Sleep |
| Tobacco use | Teeth brushing |
| Electronic cigarette use | Response to child's misbehaviour |
| Nutrition | |
| Alcohol use | |
| Drug use | |

# Health status

Monitoring the health status of the population provides useful information to evaluate the performance of the health system, identify unmet need for health services, evaluate the impact of the determinants of health and uncover health problems that require further investigation.

Self-reported health measures are based on an individual's own perception of their health status and functioning. These measures provide an alternative source of data to objective measures of health, such as hospital rates and disease prevalence.

The WHO defines a 'health state' as a multi-dimensional attribute of an individual that indicates his or her level of functioning across all important physiological, psychological and psychosocial dimensions of life. The relevant dimensions are those defined in the International Classification of Functioning, Disability and Health (WHO 2001).

Various survey instruments have been developed to assess these dimensions. For adults, instruments included in the core NZHS are the Medical Outcomes Study Short Form version 2.0 (SF-12) (Ware et al 1998) and the Kessler 10-item Psychological Distress Scale (K10) (Andrews and Slade 2001).

The SF-12 is an internationally validated instrument comprising a subset of the SF-36 questions included in the NZHS since 1996/97. The SF-12 includes at least one item for all eight SF-36 domains: physical functioning, role limitation (physical), bodily pain, general health perceptions, vitality, social functioning, role limitation (emotional) and mental health.

The SF-12 is considered to be an appropriate substitute for the SF-36 when a briefer instrument is required and the summary scales are of interest. The SF-12 physical component summary scale and a mental health component summary scale have been shown to explain approximately 90 percent of the variance in the SF-36 summary scales (Ware et al 1996). An analysis of the 2006/07 NZHS showed that the correlation between the SF-12 and SF-36 was 0.95 for the physical summary scales and 0.93 for the mental summary scales.

### SF-12 scoring

Responses to each of the SF-12 items are scored and expressed on a scale of 0–100 for each of the eight health domains. Interpretation of the SF-12 is based on the mean average scores (see Table 5).

**Table 5: Scoring for the SF-12**

| Code | Domain | Low score interpretation | High score interpretation |
|---|---|---|---|
| PF | Physical functioning | Limited a lot in performing all physical activities, including self-care, due to health | Performs all types of physical activities, including the most vigorous, without limitations due to health |
| RP | Role limitation – physical | Limited a lot in work or other daily activities as a result of physical health | No problems with work or other daily activities as a result of physical health |
| BP | Bodily pain | Very severe and extremely limiting bodily pain | No pain or limitations due to pain |
| GH | General health perceptions | Evaluates own health as poor and believes it is likely to get worse | Evaluates own health as excellent |
| VT | Vitality | Feels tired and worn out all of the time | Feels full of energy all of the time |
| SF | Social functioning | Extreme and frequent interference with normal social activities due to physical or emotional problems | Performs normal social activities without interference due to physical or emotional problems |
| RE | Role limitation – emotional | Problems with work or other daily activities as a result of emotional problems | No problems with work or other daily activities as a result of emotional problems |
| MH | Mental health | Has feelings of nervousness and depression all the time | Feels peaceful, happy and calm all the time |

### K10 scoring

The K10 is an internationally validated instrument for measuring non-specific psychological distress in a population, and scores of 12 or more on the K10 are strongly correlated with having an anxiety or depressive disorder (Kessler et al 2003).

The K10 was included for the first time in the 2006/07 NZHS.

Each question in the K10 has five possible responses: ‘all of the time’, ‘most of the time’, ‘some of the time’, ‘a little of the time’ or ‘none of the time’. For the NZHS, the response to each question was coded to allow scoring as follows: ‘all of the time’ was set to 4; ‘most of the time’ was set to 3; ‘some of the time’ was set to 2; ‘a little of the time’ was set to 1; ‘none of the time’ was set to 0; and all other values were set to missing. The possible range of scores is 0–40, with higher scores indicating higher psychological distress.

For NZHS reporting, psychological distress means having high or very high levels of psychological distress on the K10 scale, that is, a score of 12 or more (see Table 6).

**Table 6: Scoring for the K10**

| Score | Interpretation |
|---|---|
| 0–5 | None or low psychological distress |
| 6–11 | Moderate psychological distress |
| 12–19 | High psychological distress |
| 20–40 | Very high psychological distress |

# Sociodemographics

Health status, health risks and health service utilisation are strongly influenced by socioeconomic, cultural and demographic forces. Understanding the sociodemographic structure of a population is essential for interpreting survey data and using this evidence to inform policy.

Statistics New Zealand has developed standard sociodemographic questions for use in all household social surveys that are part of the official statistics system. The sociodemographic domain in the NZHS closely follows the Statistics New Zealand model, including questions from the New Zealand Census of Population and Dwellings and the New Zealand General Social Survey (NZGSS). In addition to self-reported variables (eg, age, sex, ethnicity, education, employment status, income, housing and household composition), the NZHS records variables derived from the census area unit/ primary sampling unit of the household (eg, area deprivation and rurality). Questions on health insurance are also included in the sociodemographic section of the adult questionnaire.

A question on sexual identity was added in the 2015/16 NZHS. This question is self-completed by the respondent because of its sensitive nature. From 2016/17, the sexual identity question was not asked for respondents whose interview was being conducted with cognitive or language assistance from a family member, caregiver or one of their friends. This was to ensure these confidential responses were not revealed to people with whom the respondent has a personal relationship.

# Anthropometric measurements

The WHO STEPS approach to monitoring chronic diseases and their risk factors covers three levels of data collection:

- Step 1 – questionnaires
- Step 2 – physical measurements (eg, height, weight, blood pressure)
- Step 3 – biomedical measurements (eg, blood and urine samples).

The NZHS questionnaires have always collected data on chronic diseases and their risk factors. Up until 2002/03, physical and biochemical measurements were only included in nutrition surveys, but these objective measurements have gradually been added to the NZHS.

The measurement of adults' body size was added to the NZHS core content in 2002/03 and extended to include children in 2006/07. The measurement of adults' blood pressure was added to the NZHS core content in 2012/13 and may be extended to children in the future.

Information on blood pressure was not collected in the 2017/18 NZHS because the results at a national leave have not been changing much over time and the time taken to complete the measurement could be utilised in other areas of the survey. Adults' blood pressure will be collected again in the 2018/19 NZHS.

Biomedical measurements (adults only) were included as a module in the 2014/15 NZHS.

### Body size

A healthy body size is recognised as being important for good health and wellbeing. There is strong evidence that obese children and adults are at greater risk of short- and long-term health consequences (WHO 2000).

Self-reporting height and weight is unreliable compared with measuring these factors (Gorber et al 2007). Overall, people underestimate their weight and overestimate their height (resulting in a lower BMI), and they are more likely to do so if they are overweight or obese.

For the NZHS, height and weight are measured for respondents from the age of two years and over, and waist measurements are taken for respondents from the age of five years and over. Measurements are not taken for pregnant women. Measurements are collected following a standardised protocol and using the same professional anthropometric equipment as for the 2011/12 NZHS – apart from the introduction of laser height measurement in 2012/13.

Data on height and weight are used to calculate body mass index (BMI), which is used to classify people as underweight, a healthy weight, overweight and obese according to international cut-off points. BMI cut-offs points are intended to identify people or populations at increased risk of health conditions, such as type 2 diabetes, associated with increasing BMI rather than being a measure of body fat.

# Permission details after completing the survey

At the end of the interview, the interviewer seeks the respondent's permission for:

- the survey supervisor to contact them again for audit purposes
- NZHS researchers to contact them again within the next two years about the possibility of answering other health-related questions of importance to the Ministry
- combining their survey data with other health information already routinely collected by the Ministry – the respondent would sign a separate consent form to authorise their consent to this data being linked.

Respondents are also asked if they were a Christchurch resident at the time of the 22 February 2011 earthquake, to assist with monitoring the earthquake's impact on population health.

# References


Andrews G, Slade T. 2001. Interpreting scores on the Kessler Psychological Distress Scale (K10). *Australian and New Zealand Journal of Public Health* 25: 494–7.

Babor T, Higgins-Biddle J, Saunders J, et al. 2001. *AUDIT: The Alcohol Use Disorders Identification Test: Guidelines for use in primary care*. Geneva: World Health Organization.

Bo A, Friis K, Osborne R, et al. 2014. National indicators of health literacy: ability to understand health information and to engage actively with healthcare providers - a population-based survey among Danish adults. *BMC Public Health* 14(1), 1–12.

Gorber SC, Tremblay M, Moher D, et al. 2007. A comparison of direct vs self-report measures for assessing height, weight and body mass index: a systematic review. *Obesity Reviews* 8: 307–26.

Kessler RC, Barker PR, Colpe LJ, et al. 2003. Screening for serious mental illness in the general population. *Archives of General Psychiatry* 60(2): 184–9.

Minister of Health. 2016. *New Zealand Health Strategy: Future direction*. Wellington: Ministry of Health.

Ministry of Health. 2008. *A Portrait of Health: Key results of the 2006/07 New Zealand Health Survey*. Wellington: Ministry of Health.

Ministry of Health. 2010. *The New Zealand Health Survey: Objectives and topic areas*. Wellington: Ministry of Health.

Ministry of Health. 2016. *Pharmacy Action Plan 2016 to 2020*. Wellington: Ministry of Health.

Osborne RH, Batterham R, Elsworth GR, et al. 2013. The grounded theory, psychometric development and initial validation of the Health Literacy Questionnaire (HLQ). *BMC Public Health*. 13: 658.

Statistics New Zealand. 1998. *Protocols of Official Statistics*. Wellington: Statistics New Zealand.

Ware J, Kosinski M, Keller S. 1996. A 12-Item Short-Form Health Survey: construction of scales and preliminary tests of reliability and validity. *Medical Care* 34(3): 220–33.

Ware J, Kosinski M, Keller S. 1998. *SF-12: How to score the SF-12 physical and mental health summary scales*. 3rd edition. Lincoln (RI): QualityMetric Incorporated.

WHO. 2000. *Obesity: Preventing and managing the global epidemic*. Geneva: World Health Organization. URL: www.who.int/nutrition/publications/obesity/WHO_TRS_894/en/ (accessed 13 May 2014).

WHO. 2001. *International Classification of Functioning, Disability and Health (ICF)*. Geneva: World Health Organization. URL: www.who.int/classifications/icf/icf_more/en/ (accessed 27 June 2016).

WHO. 2005. *STEPwise approach to Surveillance (STEPS)*. Geneva: World Health Organization. URL: www.who.int/ncd_surveillance/steps/en (accessed 14 October 2016).