

Content Guide

2015/16

New Zealand Health Survey



New Zealand Health Survey

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Introduction

This guide describes the content of the New Zealand Health Survey (NZHS) for the period 1 July 2015 to 30 June 2016. 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 2015/16 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. The survey questionnaire is conducted through face-to-face interviews, using computer-assisted personal interviewing (CAPI) software. Respondents are adults aged 15 years and older, as well as children aged 0 to 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 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 could be included within the long-term health conditions domain, and nutrition could be 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.

Almost all 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, waist circumference in respondents aged five years and older and blood pressure in respondents aged 15 years and older.

Module components

The module topics for adults and children in 2015/16 were:

- tobacco use, for adults aged 15 years and over
- child developmental health and wellbeing, for children aged under 15 years
- food security, for households with children aged under 15 years
- a clip-on module about rheumatic fever, for children and adults under 25 years.

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

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 – how does the respondent judge the completeness and relevance of what they remember?
- selection of response – how does the respondent then decide whether their answer fits and whether or not they actually want to provide that answer? (Tourangeau 1984; Eisenhower et al 1991)

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.

Respondents in cognitive testing are asked to respond to a short questionnaire, consisting of the questions to be cognitively tested, with filter/screening questions inserted to ensure good flow and to provide context to the questions of interest. The questionnaire itself is paper based, with researchers recording the question responses electronically into a spreadsheet template once the completed questionnaire has been returned. Respondents are supplied in advance with a set of show-cards to replicate the way in which questions would be asked in field and to test response options.

Interviewers 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.

Adult survey 2015/16

Computer-assisted telephone interviews (CATI) were conducted with 60 adults to test 17 new or modified questions included in the adult version of the NZHS. As one of the 2015/16 modules for adults aged 15 years and over was on tobacco use, 25 respondents were selected who identified as current or ex-smokers. The questions tested were either core questions that had been modified slightly, based on feedback or new questions specific to the tobacco module. After each question, a researcher conducted a cognitive interview on that question before moving to the next question.

Generally, questions were understood as intended.

Following cognitive testing, changes were made to several questions.

- Questions about the type of practice/clinic respondents used to access primary health care services were changed slightly to make them easier to understand.
- Response options for some questions on tobacco use were simplified.
- The question ‘How many times a day do you use an electronic cigarette?’ was removed because there are many ways this question could be interpreted given the variety of electronic cigarettes available.
- Additional information from Statistics New Zealand (1999, 2009) was added to core questions on income and number of rooms in the house to help the interviewers.

Child survey 2015/16

Computer-assisted telephone interviews (CATI) were conducted with 60 child respondents (ie, parents or caregivers responded on behalf of 60 children) to test four questions. These questions are usually included in each year’s questionnaire.

As a result of the 2015/16 survey, the three questions about what type of practice/clinic children used to access primary health care services were modified after cognitive testing to make them easier to understand, in the same way that the adult questions on this topic were modified.

The fourth question on attitudes to physical punishment of children was understood as intended.

Pilot testing

The main objectives of the pilot testing were to check:

- the flow of survey components (such as moving from the survey questions, to measuring respondents’ heights)
- questions with high non-response rates and long duration
- the questionnaire’s routing (that is, respondents are routed away from questions that do not apply to them) and edits
- the questionnaire can be completed within the allocated time
- the interviewer training and fieldwork materials are appropriately comprehensive
- the appropriateness of the introduction to and placement of the sexual identity question

- the implementation of the alcohol question split-sampling methodology, where a picture show-card was provided to half the respondents to help them estimate alcohol consumption in terms of standard drinks (see also ‘Health behaviours and risk factors’ in ‘Content of the New Zealand Health Survey’ below)
- how the new sampling methodology affected interviewers’ workload (see the *Methodology Report 2015/16: New Zealand Health Survey* or the *Sample Design from 2015/16: New Zealand Health Survey* for details of the new sampling methodology).

The questionnaire was tested on 100 respondents from different age, sex and ethnic groups.

The key changes resulting from the pilot test were:

- to add an introduction before the child self-complete module on developmental health and wellbeing to improve the flow of the questionnaire
- to allow interviewers to assume that a respondent’s household income is also over \$100,000 where that respondent says their individual income is over \$100,000 rather than ask them a redundant question
- to provide the interviewers with the show-card that helps respondents convert their after-tax weekly or fortnightly income to a before-tax annual income as a tooltip on their tablet
- to make minor improvements to the interviewer notes and training in the *Questionnaire Study Guide*.

Ethics approval

The Multi-region Ethics Committee (MEC) approved the NZHS 2015/16 (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
- Rheumatic fever clip-on (in the NZHS for three years, from 2014/15 to 2016/17)
- Health behaviours and risk factors
- Tobacco use (a module topic for adults and two module questions on child exposure to second-hand smoke in the child questionnaire)
- Child developmental health and wellbeing (a module topic in the child questionnaire), which included:
 - the Strengths and Difficulties Questionnaire (SDQ)
 - the Parents' Evaluation of Developmental Status (PEDS)
 - a question on the use of services for behavioural and developmental problems
 - five questions about parental stress
- Food security (a module topic for households with children in the adults questionnaire)
- 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.

In 2015/16, a question on the extent to which arthritis limited the respondent's usual activities was added to the core questions for adults with arthritis. Arthritis is a common cause of disability.

This section collects information on the prevalence of major long-term conditions (see Table 1) as well as treatments for these conditions.

Table 1: 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 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 the only comprehensive source of data on primary health care utilisation. Therefore a number of questions focus on consultations with general practitioners (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, oral health care services and visits with other health care workers.

In 2015/16, the adult questionnaire included two questions about what health checks and health discussions respondents had in the last 12 months at their usual medical centre. These questions were also included in the 2011/12 and 2013/14 NZHS, as well as earlier surveys.

The question topics are summarised in Table 2.

Table 2: Health service utilisation and patient experience

Health service setting	Adult and child topics
Usual primary health care provider	Type of service, timely access
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, ¹ patient experience / continuity of care
Medical specialists	Visits in last 12 months, patient experience / continuity of care
Oral health care workers	Visits in last 12 months, unmet need / barriers to access
Prescription medicines	Unmet need / barriers to access

Rheumatic fever clip-on

The purpose of the rheumatic fever questions is to:

- measure changes in access to and use of health services for sore throat management (including barriers)
- measure changes in awareness of seriousness and causes of rheumatic fever.

Sore throats are a common medical condition, and they are usually viral but not serious. In the New Zealand population, group A streptococcal (GAS) sore throats are considered to be the only clinically significant bacterial throat infection. Between 3 percent and 36 percent of sore throats are due to a GAS infection (Ebell et al 2000).

The treatment of GAS infections reduces the incidence of rheumatic fever. Within the New Zealand population, not all groups are at equal risk of developing acute rheumatic fever as a consequence of streptococcal throat infection. Māori and Pacific people between 3 and 45 years of age (particularly those between 3 and 14 years old) from lower socioeconomic areas have the highest rate of acute rheumatic fever in New Zealand.

There is a Better Public Services initiative to reduce the incidence of rheumatic fever by two-thirds, to 1.4 cases per 100,000 people, by June 2017. (The 2010/11 hospitalisation data show the annual rate as 4.2 cases per 100,000 people.) The Ministry aims to have no ethnic groups or geographical communities disadvantaged with higher rates of rheumatic fever.

The Ministry developed the questions on rheumatic fever to include in the NZHS for three years, between 2014/15 and 2016/17, to collect enough data to provide meaningful information for district health boards (DHBs) to use in developing rheumatic fever reduction programmes.

The questions were submitted to cognitive and pilot testing.

¹ Adapted from the Australian Patient Experience Survey. For more information, see www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4839.0.55.001Explanatory%20Notes12009?OpenDocument

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 2015/16 NZHS included changes in this section to the questions on drug use, alcohol use and attitudes to physical punishment of children.

The response option 'legal party pills' was removed from the question on drug use as legislation changes meant party pills are no longer legal.

Changes were made to two questions in the Alcohol Use Disorders Test (AUDIT) to align with the WHO recommendations (Babor et al 2001). Previously the two questions asked how many drinks containing alcohol were consumed on one occasion and how often six or more drinks were consumed, but they did not define how much alcohol made 'one drink'. The new versions of the two questions define 'one drink' as 'one standard drink' and use a picture show-card to clearly demonstrate how many standard drinks are in commonly consumed alcoholic drinks (based on a picture show-card from the Health Promotion Agency). In order to understand the impact of introducing the standard drinks picture show-card, half of the 2015/16 respondents received the picture show-card and half of the respondents had no picture show-card.

A new question on attitudes to physically punishing children was included this year to replace an existing question as it better fulfilled the purpose of measuring attitudes to physically punishing children. The new question on child discipline was based on a question used by the Office of the Children's Commissioner in 2008 but with different response options that were cognitively tested in 2015/16.

The topics included in the health behaviours and risk factors section are shown in Table 3.

Table 3: 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)
Tobacco use	Physical activity (sedentary behaviour)
Nutrition	Response to child's misbehaviour
Alcohol use	
Drug use	

Tobacco use

The 2015/16 NZHS included a module on tobacco use. Tobacco smoking has long been known to be a major cause of death and ill health. Smoking is the main cause of lung cancer and chronic obstructive pulmonary disease (COPD), and it is a primary risk factor for cardiovascular disease; cancers of the mouth, oesophagus, pharynx, larynx and more; and chronic diseases (Ministry of Health 2016).

In the adult questionnaire, the tobacco module was inserted into the health behaviours and risk factors section after the core questions on tobacco use. In the child questionnaire, two questions on exposure to second-hand smoke in the home and in the car they usually travel in were asked near the end of the child developmental health and wellbeing module.

The tobacco module questions were mostly taken from the 2009 New Zealand Tobacco Use Survey, the 2006/07 NZHS, the 2007 Australian National Drug Strategy Household Survey and England's Smoking Toolkit Study (STS). There are also some newly developed questions, such as questions on the use of electronic cigarettes. Some other information for the tobacco module questions came from the 2014 *Health and Lifestyle Survey* (HPA 2015). Most of the questions in this year's tobacco module were also included in the tobacco module in the 2012/13 NZHS.

The topics included in the tobacco module are shown in Table 4.

Table 4: Tobacco module

Adult	Child
Smoking age and quit attempts	Exposure to second-hand smoke
Cigarette type and source	
Smoking cessation programmes and services	
Second-hand smoke	
Electronic cigarettes	
Health care workers help to quit (ABC programme)	

Child developmental health and wellbeing

This topic area in the child questionnaire includes:

- the Strengths and Difficulties Questionnaire (SDQ)
- the Parent's Evaluation of Developmental Status (PEDS)
- a question on use of services for behavioural and developmental problems
- five questions about parental stress.

2015/16 is the third time specific instruments for monitoring children's development have been included in the NZHS (this module was also run in 2012/13 and 2014/15). The SDQ and PEDS are also used in New Zealand's B4 School Check programme, so including these instruments in the NZHS provides population norms.

Asking parents whether they have consulted a health professional about behavioural or developmental problems exhibited by their child helps identify the prevalence of unmet need in this area.

Parental stress deserves attention as it is an important factor in children's emotional and behavioural problems.

Strengths and Difficulties Questionnaire (SDQ)

The SDQ is a brief emotional and behavioural screening questionnaire developed specifically for use with children and adolescents. It is multi-informant, so it can be completed by parents, teachers or adolescents themselves (11- to 17-year-olds). In the NZHS, it is completed by the child's parent or caregiver.

The SDQ (Goodman 1997) consists of 25 questions and has five subscales: emotional symptoms, conduct problems, hyperactivity, peer problems and pro-social behaviour, as shown in Table 4 below. It has been used in over 40 countries and, in New Zealand, it has been a part of the B4 School Check programme for four-year-olds since 2009 and has been used as an outcome measure in mental health services. The SDQ was also included in the 2012/13 and 2014/15 NZHS. It has been validated internationally to screen for child and adolescent psychiatric disorders.

Table 5: SDQ questions

	Not true	Somewhat true	Certainly true
Emotional symptoms scale			
Often complains of headaches, stomach aches ...	0	1	2
Many worries, often seems worried	0	1	2
Often unhappy, downhearted or tearful	0	1	2
Nervous or clingy in new situations ...	0	1	2
Many fears, easily scared	0	1	2
Conduct problems scale			
Often has temper tantrums or hot tempers	0	1	2
Generally obedient, usually does what ...	2	1	0
Often fights with other children or bullies them	0	1	2
Often lies or cheats	0	1	2
Steals from home, school or elsewhere	0	1	2
Hyperactivity scale			
Restless, overactive, cannot stay still for long	0	1	2
Constantly fidgeting or squirming	0	1	2
Easily distracted, concentration wanders	0	1	2
Thinks things out before acting	2	1	0
Sees tasks through to the end, good attention span	2	1	0
Peer problems scale			
Rather solitary, tends to play alone	0	1	2
Has at least one good friend	2	1	0
Generally liked by other children	2	1	0
Picked on or bullied by other children	0	1	2
Gets on better with adults than with other children	0	1	2
Prosocial scale			
Considerate of other people's feelings	0	1	2
Shares readily with other children	0	1	2
Helpful if someone is hurt, upset or feeling ill	0	1	2
Kind to younger children	0	1	2
Often volunteers to help others	0	1	2

Scoring of SDQ

A total difficulties score can be calculated by totalling the first four deficit-focused scales, which can indicate the overall risk of mental health problems. Suggested scoring ranges are shown in Table 5. Approximately 10 percent of a community sample scores in the abnormal band on any given score, with a further 10 percent scoring in the borderline band (www.sdqinfo.org). Exact proportions vary according to country, age and gender.

Table 6: Scoring for the SDQ

SDQ score for parent-completed Australian version	Normal	Borderline	Abnormal
Total difficulties score	0–13	14–16	17–40
Emotional symptoms score	0–3	4	5–10
Conduct problems score	0–2	3	4–10
Hyperactivity score	0–5	6	7–10
Peer problems score	0–2	3	4–10
Prosocial behaviour score	6–10	5	0–4

Parents' Evaluation of Developmental Status (PEDS)

PEDS is an evidence-based method for detecting and addressing developmental and behavioural problems in children. The NZHS uses an adapted form of PEDS called Survey PEDS (Glascoe 2014). Survey PEDS is useful for population-based needs assessments rather than assessing the needs of individual children. It consists of nine questions that elicit parents' concerns about speech and language, motor development, behaviour, social skills, self-help skills, school skills, sensory problems (vision or hearing) and global cognitive functioning.

For more information, email peds.ccch@rch.org.au. Survey PEDS has also been included in the NZHS in 2012/13 and 2014/15.

Children can be categorised as being at high, moderate, low or no developmental risk based on the number of concerns and whether those concerns are predictive of developmental problems for children of that particular age. Children will be categorised as:

- high risk if they exhibit two or more concerns that are predictive
- moderate risk if they exhibit one concern that is predictive
- low risk if they exhibit at least one concern but none that are predictive
- no risk if they exhibit no concerns.

The licence holders (The Royal Children's Hospital Melbourne) request that a copy of all published papers and abstracts using Survey PEDS be provided to the Centre for Community Child Health at The Royal Children's Hospital Melbourne.

Parental stress

There are five questions in this section that ask the parent or caregiver how they felt while caring for their child and whether they have access to day-to-day emotional support for raising children. These questions are from the National Survey of America's Families (NSAF), 1997, where they showed good reliability and construct validity, and have been used in the United States National Study of Children's Health, 2007. They were also included in the 2012/13 and 2014/15 NZHSs.

Food security

This module includes the eight-item food security questionnaire developed by Winsome Parnell from the Department of Human Nutrition at the University of Otago. These questions measure the extent that New Zealand households have access to nutritionally adequate and safe foods. The questionnaire has internal and external validity (Parnell 2005) and has been used in the 2012/13 and 2014/15 NZHS, as well as:

- 1997 National Nutrition Survey
- 2002 National Children's Nutrition Survey
- 2008/09 New Zealand Adult Nutrition Survey.

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 6).

Table 7: 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 8).

Table 8: 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 and income), 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.

In 2015/16, this section included new questions on sexual identity and number of rooms in the household. The question on sexual identity was from the United Kingdom’s Office of National Statistics (Haseldon and Joloza 2009) and was included in the NZHS sexual and reproductive health module in 2014/15. A number of stakeholders requested that it be added to the core NZHS questionnaire. The question on number of rooms in the household follows, like many of the other questions in this section, the Statistics New Zealand model. It is an alternative measure of household crowding, which is comparable with other studies.

In 2015/16, the questions on income were changed based on Statistics New Zealand suggestions to improve response rates.

- The income questions were moved to improve the flow of the questionnaire.
- A showcard was developed to make it easier for respondents to estimate their annual personal income by showing the weekly and fortnightly equivalent of each annual income band.
- The number of response options (income bands) for household income was reduced to make the income questions easier to answer.

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. 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.

Blood pressure

High blood pressure (often referred to as hypertension) is a risk factor for ischaemic heart disease, stroke, hypertensive heart disease, kidney failure and dementia.

There are usually no symptoms associated with high blood pressure, so self-reporting will underestimate its prevalence. The best way to monitor population blood pressure is to take actual blood pressure measurements. By combining data on self-reported and measured high blood pressure, we can also estimate levels of hypertension awareness, treatment and control. Measurement of blood pressure in adults was introduced into the annual core content of the NZHS in 2012/13.

Measurements of blood pressure and heart rate are made using standardised protocol and an OMRON HEM-907 device, which automatically records heart rate, systolic and diastolic blood pressure three times, with a 1-minute pause between measurements.

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.

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