

2018 Health and Lifestyles Survey

Methodology Report

March 2019

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LIST OF ACRONYMS

CBG	CBG Health Research Ltd, the research provider for the HLS
DEFF	Design Effect
HLS	Health and Lifestyles Survey
HPA	Health Promotion Agency
MHWS	Mental Health and Wellbeing Survey
HSC	Health Sponsorship Council
PAF	NZ Post Postal Address File
PCG	Parent/caregiver
PPS	Probability Proportional to Size
PSU	Primary Sampling Units

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Thanks to CBG Health Research Ltd for conducting the pilot, testing the questionnaire and undertaking the 2018 HLS fieldwork and to the interviewers who worked so diligently to collect the data.

The survey was managed by Sarah Rendall (HPA), with the support of Denise Grealish (HPA).

This report was written by Thewaporn (Wa) Thimasarn-Anwar, Sarah Rendall (HPA), and Neil Tee (CBG Health Research Ltd). It was reviewed internally by Denise Grealish (HPA).

EXECUTIVE SUMMARY

The following table provides a summary of the key methodological elements of the HLS 2018.

Overview	Nationwide, face-to-face interviews
Objective	<p>To measure progress against HPA's existing programme plans and to provide quality measures for Statement of Intent reporting requirements</p> <p>To monitor short, medium and long-term societal changes in attitudes, knowledge and behaviours, and track changes in views about the social desirability and acceptability of various measures of tobacco control, minimising gambling harm, nutrition and physical activity, alcohol, sun safety, immunisation and mental health</p>
Target population	Adults aged 15 years and over living in permanent private dwellings ¹ in New Zealand. Some of these participants also included parents/caregivers (PCGs) of 5 to 16-year-olds
Sample composition	General adults sample and PCGs of 5 to 16-year-olds
Frequency	Every two years since 2008
Primary sampling unit (PSU)	<p>Using census data, meshblocks with 10 or more dwellings were included in the sampling frame. The meshblocks were grouped into two categories:</p> <ul style="list-style-type: none"> • Pacific dense meshblock (20% or more of Pacific ethnicity live in the area) • Other meshblock (more or less general population)
Sampling method	Multi-stage sampling: meshblock selection, household selection, and individual selection
Interview period	2 May to 10 October 2018
Sample size	Adults: 2,725; PCGs: 827
Unweighted response rates	Adults: 75%; PCGs: 81%

¹ Excluded caravans, cabin and tents in a motor camp and boats.

1. INTRODUCTION

The HLS is a two-yearly monitor of the health behaviours and attitudes of New Zealanders, first carried out in 2008. It has two components — a survey of adults aged 15 years and over and a survey of parents and caregivers of 5 to 16-year-olds. The HLS is managed by the HPA. HPA's mission is to inspire all New Zealanders to lead healthier lives by leading and delivering programmes to promote health and wellbeing. These programme areas include alcohol, minimising gambling harm, health education, mental health, immunisation, nutrition and physical activity, tobacco and skin cancer prevention.

This report details the procedures and protocols followed to ensure the HLS produces high quality, robust data.

Specific report results can be accessed at <https://www.hpa.org.nz/our-work/research/publications> .

1.1 BACKGROUND

Prior to 2008, the Health Sponsorship Council (HSC)² undertook a number of different surveys to benchmark and monitor changes in New Zealanders' knowledge, attitudes and behaviour in response to its social marketing and health promotion programmes, and community-level activities in the health sector. These included Smokefree/Auahi Kore Monitor, 2006/07 Gaming and Betting Activities Survey, New Zealand Children's Food and Drinks Survey, and Sun Protection Triennial Survey. These monitors focused on adults, although the Gaming and Betting Activities Survey, the Children's Food and Drink Survey and the Sun Protection Triennial Survey also interviewed young people in the target age group for that particular programme.

In 2007, HSC reviewed the adult surveys and combined the majority of these into a single survey — the HLS — covering attitudes and behaviours toward alcohol, tobacco control, sun safety, minimising gambling harm, nutrition and physical activity, mental health and immunisation.

1.2 OBJECTIVES OF THE HLS

The objectives of the HLS are to monitor short, medium and long-term societal changes in attitudes, knowledge and behaviours, and track changes in views about the social desirability and acceptability of various measures of tobacco control, minimising gambling harm, nutrition and physical activity, alcohol, sun safety, immunisation and mental health.

1.3 ETHICAL CONSIDERATION

The 2018 HLS was approved by the New Zealand Ethics Committee. Participants took part in the survey voluntarily, which was clearly explained to potential participants in initial communications on HPA's website and verbally by the interviewer. Confidentiality of all information provided by respondents in the interviews was assured by the Privacy Act 1993. The final datasets stored as

² HSC and the Alcohol Advisory Council (ALAC) merged in 2012 to form HPA.

electronic records contain no identification of the participating respondents and responses can only be analysed as overall or grouped data.

2. POPULATION AND FRAME

2.1 TARGET POPULATION

The target population was the usually resident civilian population aged 15 years and over living in permanent private dwellings in New Zealand. The size of the target population for the adult survey was 3,940,780 individuals (the May 2018 estimated resident population aged 15 years and over from Statistics New Zealand — Stats NZ).

For reasons of practicality and cost-effectiveness, the target population is defined to include only permanent private dwellings, so temporary private dwellings are excluded, including caravans, cabins and tents in a motor camp, and boats. The target population also excludes non-private dwellings. Examples of non-private dwellings are hotels, motels, guest houses, boarding houses, homes for the elderly, hostels, motor camps, hospitals, barracks and prisons.

People were eligible to be included at their usual residence only. If they were temporarily visiting a household that was selected into the HLS they were not eligible for selection as part of that household. This process ensured that double counting was not possible.

People who were usually resident in a private dwelling in New Zealand, but who were temporarily overseas for some of the survey period, were included in the target population. In the majority of cases these individuals had a chance of being selected in the survey, as the survey provider made up to 10 calls to selected households in the sample over the survey period.

2.2 SURVEY POPULATION

Households were only included if they were in meshblocks with 10 or more occupied dwellings (according to the 2013 New Zealand Census of Population and Dwellings). It means that a fraction of households (2.13%) that were part of the defined target population were excluded from the survey population. This could introduce a selection bias to the survey results. However, the issues have been accounted for in the final estimates via the survey weights. Also, due to the small number of households omitted, any possible bias is likely to be limited.

2.3 SAMPLING FRAME

The 2013 New Zealand Census meshblocks data were used as the area-based sampling frame and were treated as primary sampling units (PSU). Meshblocks are the smallest geographical measure used by Stats NZ. They vary in size from a city block to a large rural area and are used to make up other geographical measures in New Zealand (Stats NZ, 2014a). The sampling frame comprised 37,527 meshblocks that had 10 or more dwellings (Stats NZ, 2014a). A sample of 350 meshblocks were selected from this frame. Addresses for households in the selected meshblocks (from the New Zealand Post Postal Address File — PAF) were used as a frame from which a

sample of dwellings was selected. One eligible adult and/or one PCG (if any) was then selected from each selected dwelling.

3. SAMPLE DESIGN

The 2018 HLS was designed to be a nationally representative survey. It was conducted using a complex survey design, where different people had different probabilities of being selected to participate in the survey. The complex design was used for a variety of reasons including reducing interviewer travel costs by ensuring the sample was geographically clustered and ensuring all sub-populations of interest had a sufficient sample size to provide reliable statistics.

3.1 RATIONALE FOR THE SAMPLE DESIGN

A primary consideration in the sample design of the HLS was the need for sufficient sample sizes of Māori, Pacific peoples, people of European/Other ethnicities, as well as low socio-economic status groups and current smokers. The main groups of interest were adults aged 15 years and over, and parents and caregivers of 5 to 16-year-old children. The challenge for the sampling methodology was to arrive at a sample that could:

- provide national, projectable figures
- use a survey method with higher (face-to-face) rather than lower (phone, mail, web) public participation
- deliver 2,500 interviews with adults aged 15 years and over, including 450 interviews with Māori, 300 with Pacific peoples and 250 with Asian peoples
- deliver 800 interviews from PCGs of 5 to 16-year-olds, including interviews with 200 Māori, 200 Pacific peoples and 100 Asian peoples
- provide the minimum design effect for the overall sample and specific target groups within the budget for the survey.

Complex designs have two main features that affect the precision of statistics coming from the survey:

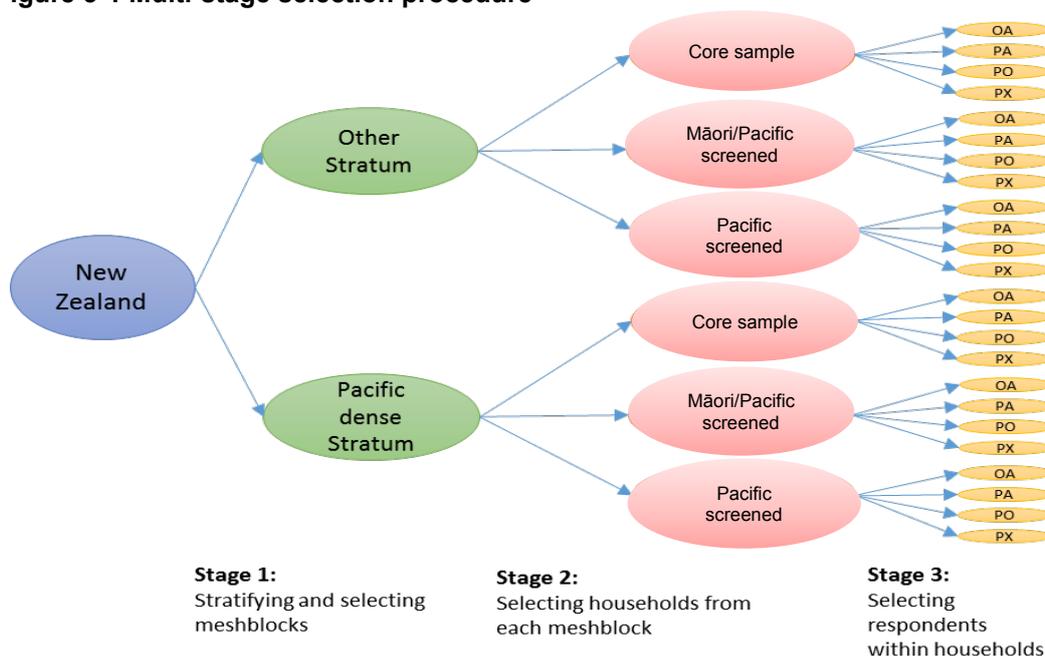
- *Different people have a different chance of selection.* This was captured in the 'weight', which is the number of people that each survey respondent represents in the target population. In the 2018 HLS, Māori and Pacific peoples had lower weights than other people to reflect the fact that these groups had an increased chance of selection in the sample relative to simple random sampling. Sampling of one adult per household also led to different weights, because adults in larger households received a larger weight. The selection weight for adult participants who were selected for the PCG sample was adjusted to account for their increased chance of selection in the adult sample.

- *The sample was 'clustered'.* In the HLS a sample of meshblocks was selected, and then a sample of households was selected from each meshblock. If the households in the sample were shown on a map of New Zealand, they would appear clumped. Clustering made the survey more cost effective.

3.2 SAMPLE SELECTION PROCEDURE

The survey used a three-stage selection procedure. As illustrated in Figure 3-1 below this was: stratifying and selecting meshblocks; selecting households from each meshblock; and selecting an individual from within each household to complete the questionnaire.

Figure 3-1 Multi-stage selection procedure



Note: OA = adults questionnaire only PX = PCG questionnaire only PO = adult and PCG questionnaires were completed by the same person PA = adult and PCG questionnaires were completed by different person from the same household.

Stage 1: Stratifying and selecting meshblocks

Meshblocks from the 2013 New Zealand Census were used as part of an area-based sampling frame. Based on 2013 Census data, 37,527 eligible meshblocks met the 2018 HLS selection criteria. The meshblocks were grouped into two strata — the Pacific-dense stratum and Other stratum.

The Pacific-dense stratum comprised meshblocks where at least 20% of the dwellings in the meshblock contained at least one person of Pacific ethnicity in the 2013 Census. The Other stratum comprised all other remaining meshblocks within the sampling frame.

Meshblocks vary considerably in size and were, therefore, selected by a probability proportional to size (PPS) design within each stratum. The size measure was the number of occupied dwellings in the meshblock according to the 2013 Census. This means that larger meshblocks had an increased chance of selection in the design. In total, 350 meshblocks were drawn, with 56 selected from within the Pacific stratum and 294 selected from the Other stratum.

Stage 2: Selecting households within meshblocks

Within each selected meshblock, some households were screened for people within the sub-populations of interest (Māori and Pacific peoples) and some households were not screened (Table 3-1). Households were classified into three categories on the basis of screening (as can be seen in Figure 3-1):

Table 3-1 Screening procedures

Sample	Screening procedures
Core	Households that were not screened and where anyone 15 years and over was eligible to participate
Māori/Pacific screened	Where screening took place and both Māori and Pacific peoples were eligible to participate
Pacific screened	Where screening took place and only Pacific peoples were eligible to participate

The number of households selected in each of these three samples was determined before interviewers went to field, using the sample targets. This system enables the targets to be filled by giving some people a higher chance of being selected into the study.

As the number of households selected in each of the sample types had been specified prior to the fieldwork, Pacific peoples would be eligible to participate from all three sample types (core, Māori/Pacific screened, and Pacific screened). Māori people would be eligible to participate in the survey if they lived in a household selected into either the core sample or Māori/Pacific screened sample. All other people would be eligible to participate only in the core sample households.

Figure 3-2: Example of how households was selected into the core sample



As presented in Figure 3-2, households in the core sample were selected by a systematic procedure of beginning at a random dwelling pre-allocated within the meshblock and selecting

every k^{th} house. The skip, k , is determined by the number of dwellings in the meshblock and it was defined as the ratio of the pre-determined number of households in the core sample for a particular meshblock and the total number of households in that meshblock. In the example meshblock in Figure 3-2, there are 50 houses with 10 houses selected for the core sample, so the skip is 5. On average, 10 households per meshblock were selected into the core sample, with a maximum of 15.

Up to 22 of the dwellings in between the core houses were then selected as the screened sample. In up to 14 of these 22 dwellings, both Māori and Pacific peoples were eligible to be sampled. In the remaining eight dwellings only Pacific peoples were eligible to be sampled. There was no substitution of households or respondents if the selected household or respondent was not contactable or was unavailable.

The HLS's time in field (May to October 2018) overlapped with another HPA monitor, the Mental Health and Wellbeing Survey (MHWS), which had the same methodology for meshblock selection (the first selecting stage). This resulted in two meshblocks being chosen for both surveys in 2018. The use of household selection described above would have resulted in the same household being selected into both HLS and MHWS. This could increase the chance of a household declining to be involved in one or both surveys. To avoid this issue, panel selection was implemented in the two meshblocks using the following steps.

First the addresses were sorted by street name and house number. This ordered list of houses were then given a number from 1 to total number of households in the meshblock. The households were then assigned to a panel. The number of panels was pre-determined by proportions of screened households desired (core, Māori and Pacific). Households were assigned to a panel using the formula below, where the remainder was the panel number.

$$\text{Remainder} = \frac{\text{assigned household number in meshblock}}{\text{number of panels}}$$

To illustrate this, a hypothetical example is provided in Table 3-2. Panels were randomly assigned to survey groups in the HLS and MHWS. In the HLS these were Core, Māori/Pacific screened and Pacific screened. As the shared HLS and MHWS meshblocks were small, sample size was sacrificed to ensure that no households were selected for both surveys.

Table 3-2 Hypothetical example of how panel selection was calculated

Order	Address	Remainder	Assigned panel
1	1 Abbey Road	$1 \div 2^* = 0$ (Remainder 1)	1
2	2 Abbey Road	$2 \div 2 = 1$ (Remainder 0)	0
3	1 Bachelour Avenue	$3 \div 2 = 1$ (Remainder 1)	1
4	2 Bachelour Avenue	$4 \div 2 = 2$ (Remainder 0)	0
5	3 Bachelour Avenue	$5 \div 2 = 2$ (Remainder 1)	1
6	1 Cuba Street	$6 \div 2 = 3$ (Remainder 0)	0
7	2 Cuba Street	$7 \div 2 = 3$ (Remainder 1)	1
8	1 Daily Road	$8 \div 2 = 4$ (Remainder 0)	0
9	2 Daily Road	$9 \div 2 = 4$ (Remainder 1)	1
10	3 Daily Road	$10 \div 2 = 5$ (Remainder 0)	0

Note: * the pre-determined number of panel for this example is 2.

Stage 3: Select respondents within households

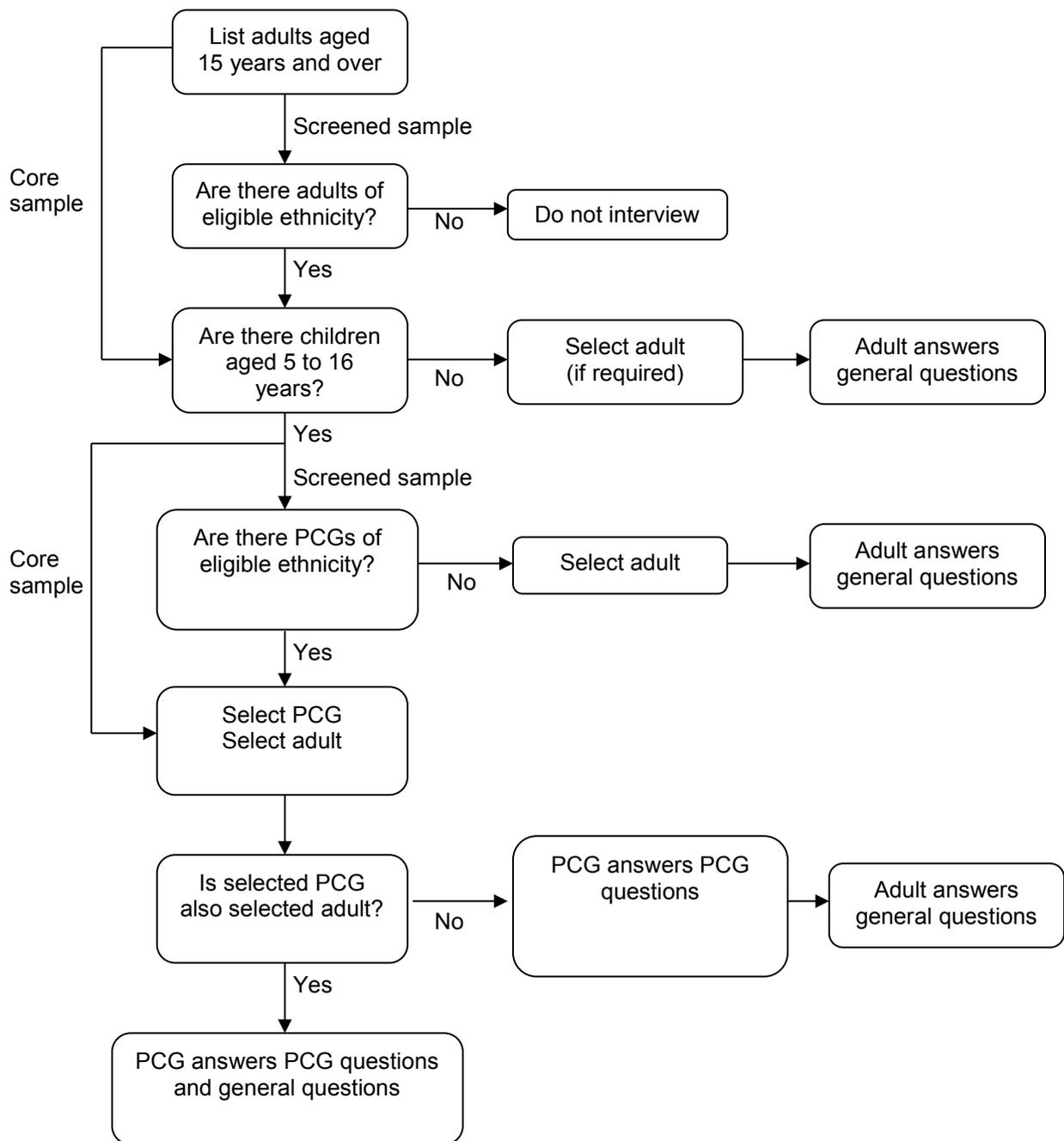
One PCG was selected for the PCG survey (the PCG sample), and one adult was selected for the adult survey for each household.

The procedure for selecting respondents in the 'core' and 'screened' households was essentially the same. Figure 3-3 shows that, within each household, all eligible adults and parents who were aged 15 years and over and usually resided at that dwelling were identified. One adult and one parent (if there were any) were then selected from the lists of those who were eligible.

In the screened samples, the interviewer explained to the householder that they needed to first check if anyone was eligible to take part. They then asked the person to identify all the ethnic groups that the usually-resident occupants aged 15 years and over identified with. The interviewer coded from a list consisting of NZ European, Māori, Pacific Islander, Fijian Indian, Chinese, Indian and Other (specify). Initially, the interviewer only recorded these details at the household-level, ie, they did not record the ethnic groups of each occupant.

If Māori and/or Pacific was ticked in a Māori and Pacific screened household, or Pacific was ticked in a Pacific screened household, then the interviewer was prompted to record the initials, age and sex of each occupant aged 15 years and over. Each person was also coded as either Māori, Pacific or Other for the purposes of respondent selection. In households screened for Pacific peoples only, ethnicity was prioritised as Pacific, Māori or Other. If there were no occupants of eligible ethnicity, the interviewer explained that the household was not eligible and no survey took place.

Figure 3-3: Diagram of the 2018 HLS respondent selection process within the household



For the core sample, within each household, all eligible adults who were aged 15 years and over and usually resided at that dwelling were identified. The initials, age and sex details of eligible respondents were obtained from the person who answered the door. The interviewer then enquired about the presence of children aged between 5 and 16 years, and the respondent selection was performed.

3.3 SELECTION OUTCOMES

There were four combinations of PCG and adult interviews conducted in each household — ‘adults only’ (OA), ‘combined’ (PO), ‘parent and adult’ (PA) and ‘PCG only’ (PX) (see Figure 3-1, Stage 3).

If there were no 5 to 16-year-old children living in the household, and the household was included as part of the adult sample (which occurred approximately 50% of the time), then one adult was selected from all of the adults in the household. This outcome was classified as **'adults only' (OA)**.

If there were 5 to 16-year-old children living in the household, then one PCG was selected from the list of PCGs in the household to participate in the PCG survey. In these cases, a person in the household was also selected for the adult survey. There are three different outcomes in these households.

After the PCG was selected, that same person could be selected to complete the adult interview as well. This meant that in some households a single person was interviewed as part of the PCG sample and as part of the adult sample. In order to reduce the number of dwellings in which two interviews were required, the probability of selection of the person who was selected for the PCG interview to be selected for the adult interview as well was double that of the other adults in the household. The situation where the same person was selected to do both the PCG interview and the adult interview was classified as **'combined' (PO)**.

- Sometimes, the person who was selected for the PCG interview was not selected for the adult interview. In this case, another adult in the house was selected for the adult interview and there were two people interviewed in the same house; the adult and the PCG. This outcome was classified as **'parent and adult' (PA)**.
- In 66 cases, only a PCG interview was completed in a house. This situation occurred when a person is selected for the PCG interview but the person who was selected for the adult interview refuses to participate, so only a PCG interview takes place. This outcome was classified as **'PCG only' (PX)**.

Overall, 3,007 individuals were interviewed, with 2,180 completing an adult only interview, 282 completing a PCG only interview and 545 completing both an adult and a PCG interview. This gives 2,725 people who completed the general questionnaire and 827 people completed the PCG interview. Table 3-3 summarises the selection outcome and resulting interview types.

Table 3-3: Selection outcome and resulting interview type for the 2018 HLS

Interview type	Selection outcome				Total
	OA	PA	PO	PX	
PCG	0	219	0	63	282
Adult	1,961	219	0	0	2,180
Combined adult/PCG	0	0	545	0	545
Total	1,961	438	545	63	3,007

3.4 DESIGN EFFECT

The net effect of a complex design can be measured by the design effect (DEFF). The DEFF is commonly used across household surveys to evaluate the effect of the survey design on estimates calculated from survey data (see for example: Gibson, Beegle, De Weerd, & Friedman, 2015; Lotz et al., 2016; Groves & Heeringa, 2006). It is important to consider the DEFF because the underlying assumption of most statistical tests is that the data are equivalent to a simple random sample with a 100% response rate. However, for the reasons outlined in Section 3.1, the HLS used a complex survey design.

The DEFF is the ratio of the variance (a measure of precision) of an estimate achieved by a complex design relative to the variance of the same estimate that would be achieved by a simple random sample of the same size. The closer the DEFF is to 1, the closer the design is to simple random sampling. DEFFs of between 2 and 4 are typical in population health surveys, which means the variance is larger than would have been obtained using a simple random sample. A complex design like that used in the 2018 HLS is less precise than a simple random sample with the same sample size, but is much more precise than could be achieved by a simple random sample with the same budget.

Nevertheless, DEFFs should not be too large. On the one hand, it is appropriate for weights to vary across the sample, otherwise it would not be possible for Māori and Pacific peoples to have an increased chance of selection in the sample. On the other hand, if the variation in weights is too extreme, the DEFF will be very large, and this would be counterproductive for all statistics, even for Māori and other sub-population groups. The methods to sample sub-populations for the 2018 HLS were used to ensure the sample design was appropriate for achieving adequate precision for national and sub-population estimates within the survey budget.

The DEFFs are different for each statistic. Table 3-4 presents the design effects for a key indicator from each programme area. These are calculated by dividing the actual variance of the sample proportion by the variance assuming simple random sampling without replacement, with the same sample size $\left(\frac{\text{proportion} \times (1 - \text{proportion})}{\text{sample size}}\right)$.

Table 3-4: Design effects for four key indicators from the 2018 HLS for each sample, by ethnic group

Indicator	Ethnic group	Adult sample	PCG sample
Current smoker	Māori	2.31	1.95
	Pacific	1.65	2.12
	Asian	3.19	2.02
	European/Other	2.73	1.26
	Total	2.90	2.16
Drink in the last year	Māori	2.22	-
	Pacific	2.56	-
	Asian	1.91	-
	European/Other	2.09	-
	Total	2.50	-
Participated in any gambling activity in the past 12 months*	Māori	2.90	-
	Pacific	2.69	-
	Asian	2.00	-
	European/Other	2.06	-
	Total	2.65	-

* The PCG sample was not asked any questions from the gambling section of the questionnaire.

4. QUESTIONNAIRE CONTENT

For each HLS survey year, the content of the questionnaire was reviewed and updated to see if it is still relevant and fit for purpose. HPA worked with the fieldwork provider to analyse duration data and respondent feedback from 2016. The gambling section was the largest section in the 2016 questionnaire (80 questions) and had increased in size with each iteration of the survey. It was decided to reduce the number of questions in this section by almost half, as well as to cut questions from other sections, in order to reduce the overall survey duration.

The 2018 HLS questionnaire was informed by advice from HPA staff working in the specific programme areas, external researchers working in the specific topic areas, as well as other surveys. Table 4-1 outlines the topic areas covered by the questionnaire. It should be emphasised that the PCG sample was not eligible to respond to the gambling section. Some of the tobacco questions were taken from the International Tobacco Control Policy Evaluation Project (ITC; 2017) and had been featured in the ITC New Zealand Survey. The full details of show-card and questionnaire, which also details changes made from the 2016, survey are available from <https://www.hpa.org.nz/our-work/research/publications>.

Table 4-1: Summarised content of the 2018 HLS questionnaire

Programme area	Information domains	Output details
All	Demographics	<ul style="list-style-type: none"> • Age, sex, ethnicity (of adult, and child if applicable) • Sexual identity • For those not born in New Zealand, the year of arrival • Employment status • Highest qualification • Household income • Household composition
	Re-contact	<ul style="list-style-type: none"> • Respondents were asked if they would consent to be re-contacted to participate in further HPA research in the next five years. Details from the re-contact question responses have been kept separately from the main dataset to maintain confidentiality
Lifestyle	Sedentary behaviour	<ul style="list-style-type: none"> • Time spent watching television • Internet and social media use
	Transport	<ul style="list-style-type: none"> • Mode of transport to main weekly activity
	Neighbourhood	<ul style="list-style-type: none"> • Safety of local neighbourhood (for children)
Tobacco control	Tobacco control-related demographics	<ul style="list-style-type: none"> • Smoking status • Stages of nicotine addiction • Heavy smoking index • Products used • Smoking around children in the home and cars (for children)
	Quitting	<ul style="list-style-type: none"> • Time since stopping smoking • Quit attempts • Resources used
	Exposure	<ul style="list-style-type: none"> • Packaging • Warning labels
	Knowledge	<ul style="list-style-type: none"> • Knowledge of how many adult smokers there are in New Zealand • Knowledge of government smoking rates reduction by 2025
	Attitudes	<ul style="list-style-type: none"> • Attitudes towards smoking in a cars and public dining areas • Attitude towards regulation of cigarette or tobacco sales
	E-cigarettes and vaping devices	<ul style="list-style-type: none"> • Usage and attitudes towards use • Helpfulness in assisting to quit smoking tobacco
	Marijuana	<ul style="list-style-type: none"> • Usage
Gambling harm	Gambling harm-related demographics	<ul style="list-style-type: none"> • Participation in gambling activity - nature and frequency of this participation • Personal gambling harm (Problem Gambling Severity Index)

Programme area	Information domains	Output details
	Exposure	<ul style="list-style-type: none"> • Gambling advertising • Gambling harm of a significant other • Household gambling harm • More time or money spent on gambling than wanted (self and other) • Support service usage • Gambling activity promotion • Self-monitoring of gambling behaviour
	Awareness	<ul style="list-style-type: none"> • Gambling harm help service advertising • Gambling harm help service cost • Legal requirements of gaming machine venues
	Attitudes	<ul style="list-style-type: none"> • Social undesirability of gambling activities • Gaming machines in bars/clubs • Concern towards level of gambling in community
Sun safety	Sun protection-related demographics	<ul style="list-style-type: none"> • Skin type (of adult, and child if applicable)
	Sun protection behaviour	<ul style="list-style-type: none"> • Use of sun protection behaviours (of adult, and child if applicable) • Exposure to information at pharmacies or medical centres • Advice from doctor or nurse about skin cancer • Tanning behaviour • Skin checks
	Incidence of sunburn	<ul style="list-style-type: none"> • Incidence of mild and extreme sunburn last summer (of adult, and child if applicable)
	Campaign monitoring	<ul style="list-style-type: none"> • Recognition and understanding of the Sun Protection Alert
Alcohol	Alcohol-related demographics	<ul style="list-style-type: none"> • Drinking status • Risky drinking • Past week drinking patterns
	Quitting	<ul style="list-style-type: none"> • Advice, information, or help about cutting back • Attempts to cut back and methods used
	Attitudes to regulation changes	<ul style="list-style-type: none"> • Hours • Minimum price • Advertising, promotion and sponsorship
	Social supply	<ul style="list-style-type: none"> • Supply of alcohol to someone under 18 years
Healthy eating	Fruit and vegetables	<ul style="list-style-type: none"> • Fruit and vegetable intake (by adult and child)

Programme area	Information domains	Output details
	Healthy eating behaviour	<ul style="list-style-type: none"> • Main meal preparation and child involvement • Main meal eaten together or with a device in use • Main meal eaten outside of home • Cooking methods • Meal planning
	Shopping patterns	<ul style="list-style-type: none"> • Weekly spend on food and drinks from supermarket-type locations, green grocer, fruit and vegetable shops or markets, farmers' markets, cafes, bars, restaurants, takeaway outlets, food courts, and from convenience-type locations • Purchase drivers • Food labelling
Physical activity	Physical activity behaviour	<ul style="list-style-type: none"> • Time spent playing/practising sport or other exercise activities outside of school hours (for children)
Other HPA areas	Immunisation	<ul style="list-style-type: none"> • Child vaccination history • Reasons for not vaccinating • Concerns about recommended childhood vaccines • Sources of immunisation information • Level of confidence in vaccines • Immunisation during pregnancy
	Mental health, wellbeing and connectedness	<ul style="list-style-type: none"> • Psychological distress screening • Support services for depression • Mental health stigma and discrimination • Wellbeing and connectedness • Cultural identity
	General health	<ul style="list-style-type: none"> • Oral health (for children) • Self-reported health status • Primary healthcare • Internet use for health information

5. DATA COLLECTION

Interviews were predominantly conducted in respondents' homes, although the interview could be completed at another location at the request of the respondent (eg their workplace). Interviewers entered responses directly into laptop computers, with some questions being completed by the respondents independently. Showcards with predetermined response categories were used to assist respondents where appropriate. Full detail of the showcards is publically available at <https://www.hpa.org.nz/our-work/research/publications>.

5.1 INTERVIEWER TRAINING

Thirty-four interviewers were trained to deliver the survey in-field. Interviewers were trained over a two-week period which consisted of remote learning and face-to-face in-field assessment. Training

covered both sampling procedures and questionnaire administration. Practice interviews were conducted by each interviewer as part of this training. Online training modules were developed, which contained both generic CBG training material as well as material specific to the administration of the HLS.

5.2 ENUMERATION

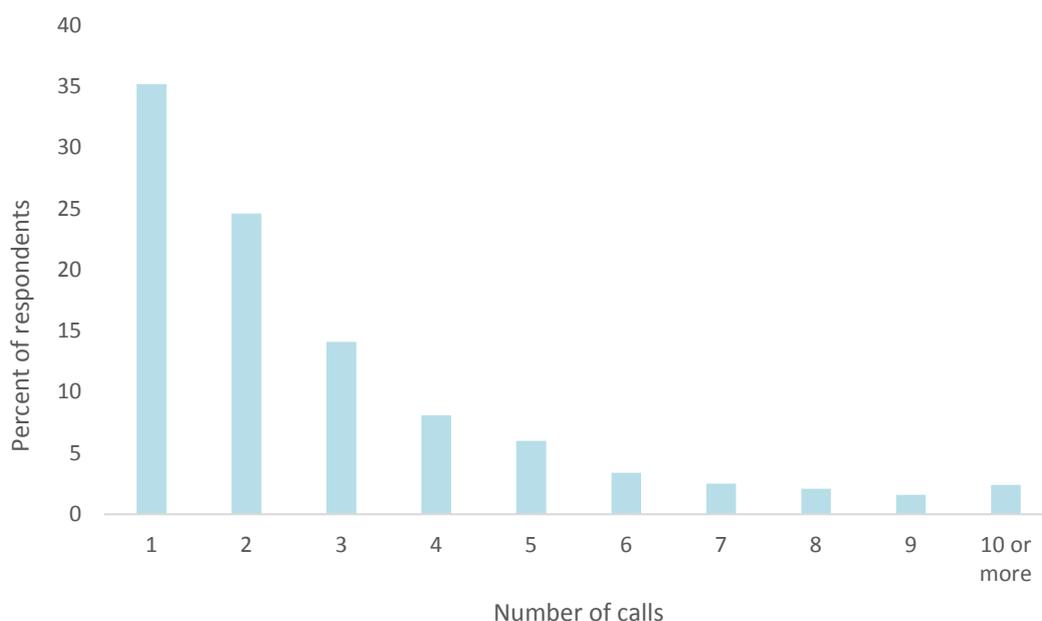
Households were pre-selected from meshblocks for inclusion in the survey using the PAF. Each meshblock was re-enumerated when the interviewer first visited, in order to record new dwellings built and those removed since the last pre-Census enumeration and release of the PAF. The details of the new dwellings were entered into CBG's 'Sample Manager' software while the interviewer was in the field, allowing these households to be included in the random selection process for the meshblock.

5.3 CALL PATTERN

A 'call' refers to one visit on one day during a particular time period. Up to 10 calls to each sampled dwelling were made at different times of the day and on different days of the week, before accepting that a dwelling was a non-contact. Calls were recorded as unique events only if they were made at least two hours apart. Calls were spread out over the duration of the fieldwork. Six calls were made in the survey month in which the meshblock was issued. If no contact had been achieved by this point, there was a pause with no attempted contact with the dwelling for one to two weeks, before attempting four more calls.

For 94% of households, the first (or only) interview took place within seven calls (Figure 5-1) below.

Figure 5-1: Proportion of households agreeing to first interview, by number of calls, 2018 HLS



'Closed' meshblocks which contained non-responding households. These were defined as households where no contact had been established or the selected respondent was unable to take

part at that time but did not refuse to participate. These were revisited during a mop-up phase in an effort to secure participation.

5.4 PERFORMANCE AND QUALITY CONTROL

Interviewers were monitored by CBG management by:

- in-field assessment to ensure survey protocols were being followed correctly
- examination of individual performance metrics and exploration of strategies to improve these if necessary
- checking of a random selection of completed interviews by phoning respondents to confirm the interview was completed according to survey protocols and to collect satisfaction ratings.

Participants were also left with feedback postcards that they could use to send feedback directly to CBG, anonymously if they chose. In addition, CBG operated a toll-free survey helpline that participants could call if they had any questions about the survey or wanted to provide feedback. The results of these quality checks were communicated to the individual interviewers on a regular basis throughout the fieldwork period, with additional training and mentoring provided where required.

5.5 INFORMED CONSENT

The 2018 HLS was voluntary. Consent was obtained without coercion and no incentive was offered. Selected households were mailed an invitation letter and information leaflet prior to the interviewer's first visit. Participants selected for the survey were presented with a copy of these documents as part of the informed consent process. Participants were asked to sign an electronic consent form and were given a copy of the consent form to keep. The consent form included a request for an interpreter if required (in a range of different languages, including New Zealand Sign Language), and the option was available to match respondents and interviewers by ethnicity and/or gender, although this was rarely requested.

The information brochure was available on HPA's website for respondents to view and is provided in the Appendix

5.6 PILOT

A pilot survey involving 100 respondents and five interviewers was completed between 10 and 25 March 2018. The pilot was designed to mimic the main study in order to test:

- the duration of each survey type and the sections within
- that the questionnaire loaded into the CAPI software performed as expected and electronic sample management behaved as expected
- wording of new questions and how respondents understood them

- flow of the questionnaire
- that questions would provide useful information
- that interviewer training was appropriate and adequately prepared them for fieldwork
- that interviewer materials and resources were fit for purpose.

The survey design and sampling method had already been successfully used for the 2008, 2010, 2012, 2014, and 2016 HLS. The pilot sample was not random, as people were selected to represent the different mix of ethnic groups, age groups and geographic locations likely to be included in the main survey (a purposive sample). Once the pilot was reviewed, a number of questions were removed from the questionnaire, or further refined.

5.7 FIELD DATES

Interviews for the main survey were conducted between 2 May and 10 October 2018.

5.8 RESPONDENT BURDEN

The following strategies were used to minimise the burden on respondents. Interviewers:

- sought interviews by appointment rather than requesting immediate participation
- reduced the number of dwellings where two interviews were required, by increasing the probability of the randomly selected PCG also being the randomly selected adult
- used showcards wherever possible to assist answering
- invited open-ended answers to enable respondents to feel they could express themselves, rather than being simply an information source
- ensured that no households were approached about both the HLS and MHWS surveys. This was done using panel selection for households within the two meshblocks selected for both surveys
- made an effort to reduce respondent burden, compared with previous iterations of the survey, a number of questions were removed for the 2018 survey (Table 5-1). This resulted in a mean duration of 33 minutes for the adult interview and 24 minutes for the PCG interview. Where the PCG was also the selected adult, therefore, answering both sets of questions, the mean duration was 36 minutes. Two interviews were conducted in 219 dwellings, one with a PCG and one with another adult. In these dwellings, the combined average interview duration was 57 minutes³. The overall interview duration and the break down by each section is presented in Table 5-1 and Figure 5-2. These times are the CAPI times and include all question modules. They do not include the time spent in a household before or after the interview was conducted.

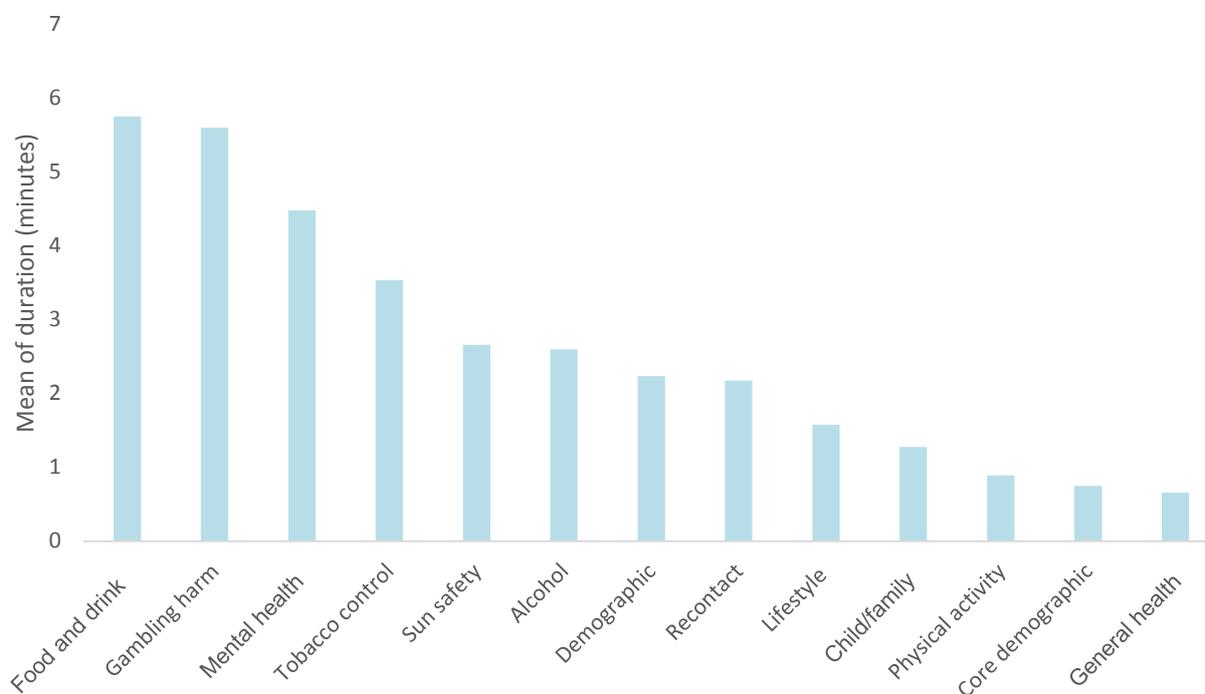
³ In 2016, the mean adult duration was 53 minutes, PCG was 48 minutes, combined adult/PCG survey was 65 minutes, and where two surveys were completed in the same dwelling, the combined average duration was 136 minutes.

Table 5-1: Number of questions and interview duration

	2006/07	2008	2010	2012	2014	2016	2018
Core demographics	-	11	10	10	10	14	11
Lifestyle factors	-	-	-	9	13	9	6
Tobacco	-	90	46	39	54	54	29
Minimising gambling harm	125	39	132	61	107	107	65
Skin cancer prevention	-	113	28	23	18	20	16
Alcohol	-	-	10	17	18	25	26
Food and drinks	-	15	65	71	67	52	31
Physical activity	-	-	-	14	23	11	2
Child/family health	-	-	-	-	-	36	11
Mental health	-	-	-	-	-	33	33
General health	-	-	8	-	-	8	4
Other	-	-	-	30	59	-	-
Demographics	7	23	25	26	28	34	17
Total	132	291	324	300	397	403	251
% Change from previous survey	-	+220%	+11%	-7%	+32%	+2%	-38%
<i>Duration adult (minutes)</i>	-	-	49	50	54	53	33
<i>Duration PCG (minutes)</i>	-	-	42	43	57	48	24
<i>Duration combined (minutes)</i>	-	-	56	56	73	65	36

Note – (dash) indicates data is not available

Figure 5-2 Interview duration for each section



6. SAMPLE SIZES

The target number of interviews for the adult and PCG samples were met overall and for all sub-groups, with the exception of the Asian PCG target. Table 6-1 shows the interviews achieved in the 2018 HLS, for the adult sample and the PCG sample, broken down by total ethnicity.

Table 6-1 : Interview target achievement for the 2018 HLS

	Target	Achieved	Proportion of target
Adult sample	2,500	2,725	109%
Māori	450	563	125%
Pacific	300	507	169%
Asian	250	263	105%
Other	1,500	1,751	117%
PCG	800	827	103%
Māori	200	236	118%
Pacific	200	246	123%
Asian	100	80	80%
Other	300	394	131%

Table 6-2 to Table 6-5 show the 2018 HLS actual sample sizes and the weighted counts by gender, age, ethnicity and NZDep2013 quintile for the adult and PCG samples. Note that the PCG sample was only selection weighted, while the adult sample was selection weighted and benchmarked to the New Zealand population.

Table 6-2: Sample size by gender

Gender	Adult		PCG	
	Actual	Weighted	Actual	Weighted
Male	1,050	1,331	250	327
Female	1,675	1,394	577	500
Total	2,725	2,725	827	827

Table 6-3: Sample size by ethnic group and gender

Prioritised ethnic group	Gender	Adult		PCG	
		Actual	Weighted	Actual	Weighted
Māori	Male	201	170	64	67
	Female	362	187	172	104
Pacific	Male	164	76	63	26
	Female	306	80	168	45
Asian	Male	114	201	32	50
	Female	131	209	43	59
European/Other	Male	571	883	91	185
	Female	876	919	194	292

Table 6-4: Sample size by age group and gender

Age group	Gender	Adult		PCG	
		Actual	Weighted	Actual	Weighted
15-24 years	Male	85	240	10	5
	Female	168	225	28	21
25-34 years	Male	179	246	50	39
	Female	297	246	161	138
35-44 years	Male	160	196	94	143
	Female	302	211	216	183
45-54 years	Male	167	212	65	99
	Female	258	229	131	132
55-64 years	Male	175	178	31	40
	Female	259	207	41	25
65+ years	Male	284	258	-	-
	Female	391	278	-	-

Table 6-5: Sample size by NZDep2013 group and gender

NZDep2013 group	Gender	Adult		PCG	
		Actual	Weighted	Actual	Weighted
Low (least deprived)	Male	245	434	64	145
	Female	365	445	104	175
Mid	Male	370	517	81	100
	Female	606	564	172	178
High (most deprived)	Male	429	380	105	82
	Female	699	385	301	147

7. METHOD OF CALCULATING RESPONSE RATES

The response rate is a measure of how many people, from those selected to take part in the survey, actually participated. The response rate reflects the proportion of people interviewed from those who were selected for the sample, and describes the success of the study in terms of achieving cooperation from the population being measured. A high response rate suggests the survey results are more representative of the target population.

The response rate for a PPS survey is calculated according to internationally approved standards (RR3 in The American Association for Public Opinion Research (2016) and the “full response rate” in Lynn et.al, (2001)). The formula is:

$$RR_i = \frac{a_i}{a_i + d_i + e_i}$$

Where e_i is the estimated number of eligibles from the instances of eligibility not established.

$$e_i = c_i \times \frac{a_i + d_i}{a_i + d_i + b_i}$$

The letters in the formula correspond to the various categories of outcomes from the call attempts of the interviewers. The subscript 'i' refers to the *i*th PSU (meshblock).

The same response rate formula and estimation of the number of eligibles were also used in the New Zealand Health Survey, the New Zealand Crime and Safety Survey, and the New Zealand Alcohol and Drug Use Survey, among others.

Table 7-1: Response rate calculation components

Category	Outcomes
Interviews (a_i)	Interviews
Not eligible (b_i)	Not Eligible
Eligibility not established (c_i)	No Reply, Access Denied, Screened Household Refusal, Screened Household Language Issues, Not Visited, Other
Eligible non-response (d_i)	Respondent Refusal, Not Available, Core Household Refusal, Core Household Language Issues, Partial

The outcomes for all dwellings visited are detailed in the following table:

Table 7-2: Outcomes for all dwellings visited

Outcome	Code	Outcome Description	Adult number	PCG number	Adult category	PCG category
Interview	I	Survey fully completed	2,725	827	Interviews (a_i)	Interviews (a_i)
Not Eligible	NE	No eligible respondent in the dwelling	5,710		Not eligible (b_i)	Not eligible (b_i)
Not Occupied (Vacant)	V	Dwelling determined as vacant following all call-back attempts	450		Out of frame	Out of frame
Not a Dwelling/Empty Section	NDE	Selected address is not a residential dwelling or is an empty section	326			

Outcome	Code	Outcome Description	Adult number	PCG number	Adult category	PCG category
No Reply	NR	Dwelling occupied, but no reply following all call-back attempts	222		Eligibility not established (c_i)	Eligibility not established (c_i)
Screened Household Language Issues	SL	Household members cannot understand the surveyor or any of the translated materials	0			
Not Visited	NV	Address not visited	0			
Other	OTH	Call back, danger, dogs etc.	56			
Screened Household Refusal	SHR	Decline received by someone on behalf of the whole household for a screened household before screening has taken place	101			
Core Household Refusal	CHR	Decline received by someone on behalf of the whole household for a core household	465		Eligible non-response (d_i)	Eligible non-response (d_i)
Core Household Language Issues	CL	Household members cannot understand the surveyor or any of the translated materials	35			
Respondent Refusal	RR	Decline by an individual respondent after they have been selected	24	3		
Not Available	NA	Respondent selected but not available to complete an interview	248	87		
Partial	P	Interview only partially completed	20	11		
Selected Dwellings			10,462			

Unweighted response rates are calculated using the raw counts and reflect the success of the survey in terms of being able to get people selected to participate, whereas weighted response rates take probability of selection into account and reflect the success of the survey in terms of the population being measured. The unweighted and weighted response rates would be the same in the case where every person selected for the survey has the same probability of selection. In the HLS, the need to oversample some groups led to people having different chances of selection and, consequently, there was a difference in the weighted and unweighted response rate calculations.

7.1 UNWEIGHTED RESPONSE RATE

The unweighted response rate is calculated at the meshblock level first. The result is then averaged using a weighting of the estimated number of eligible respondents selected. Vacant dwellings and selected addresses that turn out not to contain a private dwelling (eg, empty sections, businesses) are considered 'out of frame' and are not included in the calculations.

7.2 WEIGHTED RESPONSE RATE

The weighted response rate was calculated for each of the sample components (core, Māori/Pacific screened and Pacific screened in both the Other stratum and the Pacific stratum). The weighting variables applied to each PSU of the relevant component were the inverse of the probability of the PSU selection within the component sample frame and the inverse of the probability of the dwelling selection within the PSU. The product of these two variables was applied to the estimate of the eligible dwellings within the PSU. The overall response rate within each component was calculated as the average of the PSU response rates, weighted by the estimated number of eligibles within each PSU. The overall weighted response rate is the average of the component response rate, weighted by the total of the weighted estimated eligibles within each component. The weight applied to the estimated eligibles within each PSU, in this case, is the inverse of the probability of the PSU selection within the component sample frame.

8. ACHIEVED RESPONSE RATES

As can be seen in Table 8-1 the overall unweighted response rates for the 2018 HLS are 75% for the adult sample and 81% for the PCG sample. The weighted response rates are 68% for the adult sample and 69% for the PCG sample.

The response rate for 2018 HLS for adult samples and for PCGs compared with all previous HLS surveys' response rates are presented in Table 8-1. In previous years, call outcomes have been categorised differently. For example, in 2014, Not Occupied and Not a Dwelling/Empty Section were categorised as Not eligible and all household refusals were categorised as Eligible non-response. However, this change in categorisation has not resulted in a big difference in response rate. Using the 2014 categorisation, the 2018 HLS adult sample unweighted response rate is 74%.

Table 8-1: HLS response rates

Year	Unweighted response rate	
	Adult	PCG
2008	64%	63%
2010	56%	55%
2012	83%	84%
2014	68%	67%
2016	75%	80%
2018	75%	81%

9. DATA PROCESSING

9.1 DATA CAPTURE

Questionnaire responses were entered directly onto interviewers' laptops. As interviewing progressed, completed interviews were uploaded to CBG's data server, from where they were compiled for inspection, coding and editing. Interviews were uploaded to the server by each interviewer on every day they were active in the field. Different types of questions were used in the 2018 HLS. Single-response closed-ended questions, which a respondent can only give one response to, were coded as is. Some questions allowed for multiple responses. For these questions all responses were retained, with each response shown as a separate variable on the data file. Open-ended questions were used extensively. For these, the interviewer keyed in the verbal answers, as near as possible to the respondent's spoken words. Coding of these was then done by HPA's data processing team.

9.2 CODING

Coding of open-ended questions was undertaken by initially collating answers given by respondents to each open-ended question. These answers were examined jointly by the researcher and a data specialist to search for recurring points or themes. Each recurring point/theme was identified as a code. All answers falling sufficiently close to that point/theme ie, differing only in the words the person used to describe it, were assigned to that code. Note that where an open-ended question was sourced from a prior HPA survey, the code frame used previously was also used for the 2018 HLS when appropriate, to enable comparisons between the surveys. Questions with an "Other, please specify" code were treated in the same way as open-ended questions. In this case, the number of original codes was extended to accommodate any further recurring answers. In some instances, interviewers tend to put into "Other, please specify" an answer that fits into one of the pre-coded categories. In this case, the answer was assigned that code. All open-ended responses have been retained, to inform any further review of the code frames used.

9.3 SECURITY OF INFORMATION

Any information collected in the survey that could be used to identify individuals has been treated as strictly confidential. Data were transferred from interviewers' laptops in an encrypted format to head office at CBG by a secure internet upload facility.

Names and addresses of people and households who participated in the survey were stored separately from the response data at all stages of data collection and transmission.

9.4 CREATION OF DERIVED VARIABLES

For comparison purposes (in data analysis), a number of derived variables have been created for the 2018 HLS dataset. These included prioritised ethnicity groups, smoking status, gambling type,

neighbourhood socio-economic deprivation, household equivalised income and household equivalised expenditure on food and drinks.

Ethnicity

In the HLS, respondents had the opportunity to select as many ethnic groups as they identified with. The ethnicity groups of interest in the analysis of the HLS were; Māori, Pacific, Asian and European/Other. In the 2018 HLS, participants predominately identified with one of these four ethnic groups ($n = 2,587$, 86%). Three hundred and eighty-three participants (13%) identified with two ethnic groups and a small number identified with three or more ethnic groups ($n = 32$, 1%). Meanwhile, five people (0.2%) did not select any ethnic option and these were assigned to the European/Other group in data analyses.

Both total-response and prioritised ethnicity has been used in the HLS. Total-response ethnicity refers to whether or not a respondent identified with an ethnic group. A single respondent may fit into more than one total-response ethnicity group.

Prioritised ethnicity is where each respondent is allocated to a single ethnic group, in the prioritised order of Māori, Pacific, Asian, European/Other. For example, if someone identified as being both Chinese and Māori, their prioritised ethnicity is Māori for the purpose of analysis. The way that the ethnicity data is prioritised means that the group of prioritised European/Other effectively refers to non-Māori, non-Pacific and non-Asian people. Prioritisation is a method outlined in the Ethnicity Data Protocols for the Health and Disability Sector as a useful method for grouping people into independent ethnic groups for analysis (Ministry of Health, 2004).

Smoking status

The definitions used for smoking status are as follows:

- *Never smoker*: has never smoked tobacco.
- *Past experimental*: has ever smoked tobacco, but never started smoking regularly.
- *Current smoker*: has ever smoked tobacco, and now smokes at least once a month or more often.
- *Recent/past quitter*: has ever smoked tobacco, but has now stopped smoking.

Gambling type

Gambling types are often classified into two categories, those where winnings can be immediately 'reinvested' and those where they cannot. The former referred to as 'continuous' and the latter 'non-continuous' (Abbott & Volberg, 1996). For the HLS these two groupings were combined with frequency in the same way they were presented for the 2006/07 Gaming and Betting Activities Survey (National Research Bureau, 2007):

- *Non gamblers*: did not participate in any gambling activities in the previous 12 months.
- *Infrequent gamblers*: participated in any gambling activities less often than once a week in the previous 12 months.

- *Frequent, non-continuous gamblers*: participated weekly or more often in non-continuous forms of gambling in the previous 12 months. Non-continuous forms of gambling include lottery games, going to casino evenings/buying raffle tickets for fundraising, participating in sweepstakes, making bets with family/friends and other gambling activities.
- *Frequent, continuous gamblers*: participated weekly or more often in continuous forms of gambling in the previous 12 months. Continuous forms of gambling include playing electronic gaming (pokie) machines, betting on horse or dog races, or sports events, table games at casinos, housie and bingo, mobile phone games for money, online activities for money or prizes through an overseas website.

Problem Gambling Severity Index

Problem Gambling Severity Index (PGSI; Ferris & Wynne, 2001) is a nine-item scale that is used to assess people's experiences of gambling-related harm in the last 12 months. An example of an item on the questionnaire is: "Thinking about the last 12 months, how often have you bet more than you could really afford to lose?". Participants rated themselves on a four-point scale from 0 (never) to 3 (almost always).

Response values from each participant were added to calculate the total score and 'refused' or 'don't know' was coded as 'never' (0). Possible scores range from 0 to 27 with higher scores being indicative of greater problem gambling.

Neighbourhood socioeconomic deprivation

The New Zealand Index of Socioeconomic Deprivation 2013 (NZDep2013) has been linked to the 2018 HLS as a measure of neighbourhood socioeconomic deprivation and a proxy for individual socioeconomic position. A series of factors from the 2013 Census was used to create the New Zealand NZDep2013, with a decile value calculated for each meshblock (Atkinson, Salmond & Crampton, 2014). These factors were receiving a means-tested benefit, low household income, not owning the home you live in, single-parent family, unemployment, no school qualifications, household overcrowding, no access to internet at home and no access to a car. For some analyses of the 2018 HLS, these deciles have been grouped, so that deciles 1 to 3 are referred to as low deprivation, 4 to 7 as moderate (or mid) deprivation, and 8 to 10 as high deprivation.

Where NZDep2013 was missing for a meshblock, the deprivation index was estimated from the Census Area Unit containing the meshblock.

Household equivalised income

To measure household income, respondents were asked to choose an income range that represented their total household income from all sources before tax in the previous 12 months. However, household income by itself is not always an accurate measure of living standards as, for example, a two-person household with a total household income of \$100,000 is likely to be quite different in many characteristics from that of a six-person household with a total household income of \$100,000. Therefore, equivalised household income was derived using the revised Jensen Index (Jensen, 1988). The revised Jensen Index is a recognised equivalisation index used within New Zealand (Blakely, 2002; Ministry of Health, 2010), which takes into account the number of adults,

the number of children (younger than 18-years-old) and the ages of the children living in the household.

Income was calculated as the mid-point of the band the respondent selected. If the respondent did not provide a band, but another person in the household was also interviewed and did provide a band (ie, different adults were interviewed for the PCG and the adult sample), then the band selected by the other person in the household was used. If the respondent selected the band 'Over \$250,000', then \$275,000 was used as the household income. Some respondents did not give an answer using the narrower bands first provided to them, so were asked the question again using wider income bands. If these respondents selected the wider band of '\$100,000-\$250,000', their income was calculated as \$150,000 based on the mean of the mid-points of the three narrower bands between \$100,000 and \$250,000. Household income was divided by the formula developed by Jensen (1988, p. 13):

$$\frac{[(\text{number of adults aged 18+}) + (w_1 \times \text{number of children}) + (w_2 \times \text{the sum of the ages of all the children})]^u}{2^u}$$

Where $w_1 = 0.460697$, $w_2 = 0.0283848$ and $u = 0.621488$. The mid-points of the ranges provided for the children's ages were used in this equation. Equivalised household income was then divided into tertiles (ie, three equal groups, of low, medium and high) for use in some analyses.

10. WEIGHTING AND POST SURVEY ADJUSTMENTS

Most national surveys have complex survey designs, where different groups have different probabilities of being selected in the survey (refer to Section 3 for details of the survey design). To ensure no group is under or over-represented in estimates from a survey, a method of calculating estimates that reflects the sample design must be used.

Estimation weights are used to achieve this, and can be thought of as the number of people in the population represented by a given survey participant. A weight is calculated for every respondent and these weights are used to calculate estimates of population totals (counts), averages, and proportions. Typically, members of groups who have a lower chance of selection are assigned a higher weight, so that these groups are not under-represented in estimates. Conversely, groups with a higher chance of selection (eg, Māori and Pacific populations who are included in the booster samples) receive lower weights. Also, groups that have a lower response rate (eg, older men) are usually assigned a higher weight so that these groups are correctly represented in all estimates from the survey.

Weights are designed to:

- reflect the probabilities of selection of each respondent
- make use of external population benchmarks (typically obtained from a population census) to correct for any discrepancies between the sample and the population benchmarks. This improves the precision of estimates and reduces bias due to non-response.

The weights for 2018 HLS were constructed on the basis of sampling methods which were addressed in Section 3 and were computed in accordance with current guidance from experts in surveys (see for examples: Force, 2010; Kalton & Flores-Cervantes, 2003; Pike, 2008). The data weighting was performed in Stata, version 13, using five settings; Sampling units, Strata, Sampling weight, Post-strata and Post-stratum weight. These are summarised in Table 10-1.

The following section goes through how the variables used in the weighting are derived, how the weighting is applied, and how the weighing is used to calculate survey estimates.

Table 10-1: Weight variables used in the 2018 HLS

Survey data setting in Stata	Description
Sampling units	An identification of the meshblock where the respondent was interviewed, the smallest geographical unit based on the 2013 New Zealand Census.
Strata	A categorical variable that is composed of the Pacific and Others stratum.
Sampling weight	The inverse probability of a participant to be selected to participate in the survey. This was adjusted for the response rate and under-coverage of meshblocks.
Post-strata*	An identifier of age, gender and ethnicity grouping, also called benchmark groups.
Post-stratum weight*	The New Zealand estimated resident population for each post-strata group.

* Post-stratification was applied to the adult sample only.

10.1 SAMPLING UNITS

The identification number of meshblocks from 2013 census was treated as the sampling unit variable. Based on the 2013 census data there were 37,527 eligible meshblocks that met the HLS selection criterions (discussed in Section 2.3) and 350 were selected into the survey.

10.2 STRATA

The 350 selected meshblocks were grouped into two strata, namely the Pacific-dense stratum (containing meshblocks where at least 20% of the households are Pacific), and Other (all other meshblocks).

The survey stratification was set in Stata using a categorical variable that flagged meshblocks in the Pacific-dense stratum and meshblocks in the Others stratum.

10.3 SAMPLING WEIGHT

The sampling weights were calculated in a series of stages to compensate for unequal selection probabilities and adjusted for non-response. The 2018 HLS sampling weight was defined as the inverse probability of the meshblock being selected into the sample, multiplied by dwelling selection probability, and multiplied by the respondent selection probability:

$$\textit{Selection weight} = \frac{1}{P(\textit{meshblock}) \times P(\textit{dwelling}) \times P(\textit{respondent})}$$

This reflects the three-stage sampling procedure described in Section 3.2. The three components of the sampling weight are the probability of meshblock selection, probability of dwelling selection and, finally, the probability of the respondent being selected from within the household. The details of these probabilities are provided as follows:

Stage 1: Meshblock selection

The 2018 HLS comprised two strata — Pacific-dense and Others. For each stratum, the probability of a meshblock being selected into the survey was defined as:

$$P(\textit{meshblock}) = \left[\frac{\textit{Number of selected meshblocks in the stratum}}{\textit{Total number of meshblocks in the stratum}} \right] \times \frac{\left[\frac{\textit{Number of dwellings in the meshblock}}{\textit{Total number of dwellings in all NZ meshblocks in the stratum}} \right]}{\left[\frac{\textit{Total number of dwellings in all NZ meshblocks in the stratum}}{\textit{Total number of dwellings in all NZ meshblocks in the stratum}} \right]}$$

The number of dwellings in each meshblock was obtained from the 2013 Census.

For the 2018 HLS, the number of selected meshblocks was 80 in the Pacific stratum and 420 in the Others stratum. The total number of dwellings in all New Zealand meshblocks (not only the selected meshblocks) was 111,429 for the Pacific stratum and 1,417,863 for the Others stratum.

Stage 2: Household selection

Because of screening, different households in each meshblock have different probabilities of being selected into the sample. There are three screening components:

- Core (COR), where anyone aged 15 years and over is eligible to be selected.
- Screened Māori and Pacific (SMP), where people of either Māori or Pacific ethnicities are eligible to be selected.
- Screened Pacific (SPI), where only people of Pacific ethnicity are eligible to be selected.

This means that a European person could only be selected into the sample if they live in a core household, a Māori person could be selected into the sample if they live in either a screened Māori or core house, and a Pacific person could be selected no matter which screening component their house is in. The number of houses selected for each component is determined before the interviewer goes into field.

The probability of a dwelling being selected into the study depends on the ethnicity of the respondent and is defined as:

$$P(\text{dwelling}) = \frac{[\text{Number of dwellings where respondent would be eligible for selection}]}{[\text{Total number of dwellings in the meshblock}]}$$

Explicitly, the probabilities of dwelling selection for respondents of Pacific, Māori and Other/Asian/European ethnicities are as follows.

For Pacific respondents:

$$P(\text{dwelling}) = \frac{[\text{Total number of selected dwellings (COR + SMP + SPI) in the meshblock}]}{[\text{Total number of dwellings in the meshblock}]}$$

For Māori respondents:

$$P(\text{dwelling}) = \frac{[\text{Number of COR and SMP dwellings in the meshblock}]}{[\text{Total number of dwellings in the meshblock}]}$$

For Other/Asian/European respondents:

$$P(\text{dwelling}) = \frac{[\text{Number of COR dwellings in the meshblock}]}{[\text{Total number of dwellings in the meshblock}]}$$

For households in meshblocks that were selected for both the HLS and MHWS the panels gave the following dwelling selection probabilities.

For Pacific respondents

$$P(\text{dwelling}) = \frac{[\text{Total number of panels selected for HLS}]}{[\text{Total number of panels in the meshblock}]}$$

For Māori respondents

$$P(\text{dwelling}) = \frac{[\text{Total number of Core and Māori or Pacific panels selected for HLS}]}{[\text{Total number of panels in the meshblock}]}$$

For Other/Asian/European respondents

$$P(\text{dwelling}) = \frac{[\text{Total number of Core panels selected for HLS}]}{[\text{Total number of panels in the meshblock}]}$$

Stage 3: Respondent selection

One adult and one parent (if there were any) were selected from the lists of those who were eligible in each household. First a PCG was selected if there were children living in the house, and then an adult was selected for the adult survey. Sometimes the same respondent completed both

the adult and the PCG survey, and sometimes the two surveys were completed by two different people in the same household.

PCG selection

If there were 5 to 16-year-old children living in the household, then one PCG was selected from the list of all the PCGs in the household to do the PCG interview. The probability of being selected into the PCG sample was equal for all of the parents in the house.

$$P(PCG\ respondent) = \frac{1}{\text{Number of parents in the household}}$$

Adult selection

1. Adult only (AO)

If there were no 5 to 16-year-old children living in the household, then one adult was selected from all of the adults in the household. Each adult in the household had the same probability of being selected into the adult sample:

$$P(\text{Adult respondent}_{OA}) = \frac{1}{\text{Total number of adults in the household}}$$

2. Combined (PO)

If there were 5 to 16-year-old children living in the household, after the PCG was selected for the PCG sample, that same person could be selected to complete the adult interview as well. This meant that in some households a single person was interviewed as part of the PCG sample and as part of the adult sample.

In order to reduce the number of dwellings where two interviews were required, the probability of selection of the person who was selected for the PCG interview to be selected for the adult interview as well was double that of the other adults in the household. Replacement of that individual back into the list of adults in the house means that the total number of adults in the particular household was increased by one.

$$P(\text{Adult respondent}_{PO}) = \frac{2}{\text{Total number of adults in the household} + 1}$$

3. Parent and Adult (PA)

Sometimes, the person who was selected for the PCG interview was not selected for the adult interview. In this case, another adult in the house was selected for the adult interview and there were two people interviewed in the same house — the adult and the PCG. PCGs were also eligible to complete adult survey. As for the PO outcome above, the respondent who was selected for the

PCG interview had their name entered into the list of adults twice, so the total number of adults in the household has been increased by one.

$$P(\text{Adult respondent}_{PA}) = \frac{1}{\text{Total number of adults in the household} + 1}$$

Stage 4: Checking for extreme weights

The selection weight for each participant was then checked for an extreme weight using the formula below:

$$\text{Median} + 6 \times (Q_3 - Q_1)$$

Where Q_1 and Q_3 are the 25th and 75th percentiles of the selection weight respectively.

Any value that exceeded the threshold was considered extreme. As a result, 13 extreme weights were detected. These values were mainly caused by the use of dated 2013 census count of dwellings. The problem was more noticeable for those meshblocks with too much growth. For example, the number of households in a meshblock recorded in the 2013 census was 30 households, and the actual number of households in 2018 observed by an interviewer in the same meshblock was 213 households. That is, for this particular meshblock the growth was more than seven times from 2013 to 2018. Using the more recent household count data could potentially minimise this issue. Nevertheless, to the best of our knowledge, the 2013 census count of dwellings was the most updated available at the time when the survey was conducted.

The extreme weight is a common issue in survey weighting procedures. One way of dealing with this is to trim it. Trimming the extreme values weight can substantially reduce the overall variation in weights. This consequently increases the reported precision of the estimates. For that reason, the 13 extreme weights were replaced by the threshold value. This method is commonly used in complex survey internationally (see for example Chowdhury, Khare, & Wolter, 2007).

10.4 NON-RESPONSE ADJUSTMENT

Each selection weight was adjusted using the response rate of the meshblock the respondent was selected from. This adjustment was done to compensate for any non-response bias that may have arisen from people refusing to participate in the survey. The adjustment was made by dividing the selection weight by the response rate (see Section 7 for details on the response rate). Applying this adjustment at the meshblock level accounted for any bias that may have arisen due to differences at the area level (eg, differing levels of deprivation in different meshblocks). The adjustment was done using the following formula:

$$\text{Response rate modified selection weight} = \frac{\text{selection weight}}{\text{response rate for meshblock}}$$

10.5 BENCHMARKING

Adult sample

Benchmarking is a post-stratification adjustment that ensures the proportion of particular groups in the sample match the proportions in the population. Benchmarking refers to an adjustment of the data to ensure they are representative of the New Zealand population after selection weights have been applied. The 2018 HLS adult sample was benchmarked using the following:

- a) Gender (male and female).
- b) Prioritised ethnicity (Māori, Pacific, Asian and European/Other).
- c) Age group (15 to 24 years, 25 to 34 years, 35 to 44 years, 45 to 54 years and 55 and over).

Age, gender and ethnicity were included because these variables are related to health behaviour and to non-response and were a key output classification for the survey. In total, there are 40 gender/age/ethnicity groups.

The survey is designed to represent the resident population of New Zealand aged over 15 years. The most recent New Zealand Census was conducted in March 2013, but since then the demographics of the New Zealand population have changed (Stats NZ, 2014b). Therefore, the 2018 estimated resident population was used as the reference population. Projections produced by Stats NZ, according to assumptions specified by the Ministry of Health, were used to benchmark the population. The size of the target population was 3,772,995 individuals.

The magnitude of the post-stratification adjustment for each benchmark group was calculated as the ratio of the 'expected' population (the estimated resident population) to the 'observed' population (the sum of the response rate and under-coverage adjusted selection weights for each benchmark group). The adjustment ranged from 0.87 to 4.63. The full list of benchmark adjustments for the adult sample is presented in Table 10-2.

Table 10-2: Benchmark adjustments for the 2018 HLS adult sample

Age group	Māori		Pacific		Asian		European/Other	
	Male	Female	Male	Female	Male	Female	Male	Female
15-24	4.63	1.42	2.26	1.74	1.96	3.85	3.57	1.21
25-34	1.84	1.21	1.55	1.11	1.22	1.15	2.60	1.36
35-44	1.89	1.09	1.36	0.88	1.41	1.62	1.49	1.03
45-54	1.55	1.43	1.49	0.91	1.16	2.00	1.94	1.28
55+	0.93	1.21	1.23	0.91	3.46	1.37	1.30	1.12

PCG sample

Because there are no published population figures of PCGs that uses the HLS definition of a PCG (a regular parent or caregiver of a child aged 5 to 16 years, who usually lives in the household), post-stratification weighting was not applied to the PCG sample.

10.6 REPLICATE WEIGHTS

Standard errors are a measure of the precision of an estimate and replicate weights are a method for obtaining standard errors for any weighted estimate. Replicate weights were necessary for the HLS because its complex survey design meant that basic variance estimation methods, which assume simple random sampling, could not be used.

To remove bias in the estimate from any particular PSU 'delete-a-group' jackknife was used. This means that the estimate is first calculated from a sample of all respondents except those in a PSU, and then this calculation is repeated excluding a different PSU each time. The standard error of the population estimate is based on the variation of the replicate estimates.

An advantage of using jackknife was that it makes no assumptions about the shape of the underlying probability distribution. Another advantage was that the selection weight (adjusted for non-response) and post-stratification weight (benchmarking) can be incorporated into the replicate weights. Analysing data using jackknife does have some disadvantages as suggested by Abdi & Williams (2010). The jackknife method requires that the observations are independent of each other. When the independence assumption is violated, the jackknife underestimates the variance in the dataset, which makes the data look more reliable than they actually are. The HLS satisfies this assumption because all observations are independent.

The jackknife replicate weights were implemented in the 2018 HLS as part of the survey estimation procedures in the Stata version 15 statistical software package. For technical information on replicate variance estimation in surveys, see Rao and Wu (1988) and Shao and Tu (1995).

11. SURVEY ESTIMATES

Proportions

The proportion of the population who belong to a particular group (eg, the proportion of the population who smoke daily) is estimated by calculating the sum of the weights for the respondents in the group, divided by the sum of the weights of all respondents.

Proportions within population groups

The proportion of people in a population group who belong to a subgroup (eg, the proportion of Māori who smoke daily) is estimated by calculating the sum of the weights for the respondents in the subgroup (Māori who smoke daily), divided by the sum of the weights for the respondents in the population group (Māori).

Totals (population estimated count)

Multiply the weighted proportion by the population size. For example, for the number of daily smokers in the New Zealand population, multiply the weighted proportion of daily smokers by the population size (3,940,780 in 2018).

Averages (means)

The population averages (eg, the average number of gambling activities participated in by New Zealand adults) are estimated by calculating the sum, over all respondents, of the weight multiplied by the variable of interest divided by the sum of the weights.

Averages within population groups

Sometimes the average within a group is of interest (eg, the average estimate of the number of smokers in New Zealand among males). The estimate is given by calculating the sum, over respondents, in the group of the weight multiplied by the variable of interest, divided by the sum of the weights of respondents in the group.

Suppression due to small numbers

To ensure the survey data presented are reliable and that the confidentiality of the participants is protected, data are only presented when there are at least 30 respondents in the denominator (the population group being analysed). This ensures that no participant can be identified from the results.

Confidence intervals

Ninety-five percent confidence intervals have been used to represent the sample error for estimates. A 95% confidence interval means there is a 95% chance the true value of the estimate (if the whole population was sampled) lies between the lower and upper confidence interval values. Differences between estimates are said to be 'statistically significant' when the confidence intervals for each rate do not overlap. However, even when there are overlapping confidence intervals the difference between the groups can be statistically significant. Any differences between two variables where the confidence intervals overlapped were tested using the most appropriate statistical test for that data. The significance of many different statistical tests is represented by a probability value, or *p*-value. If a *p*-value is below 0.05, then it indicates that there is strong evidence for rejecting the null hypothesis, and that a significant difference exists.

12. ACCESSING DATA

The HPA confidential microdata including the HLS is potentially available for statistical purposes to researchers working within academic institutions, government agencies and the wider health sector, subject to certain conditions. The results obtained from the HLS can be accessed via publication page or a data explorer tools.

12.1 KUPE DATA EXPLORER

Users can explore results from the HLS at <http://kupe.hpa.org.nz>. Kupe provides a snapshot of New Zealanders' views and experiences across a range of subject areas for each survey year. Where possible, data were compared to see time trends across years. The first phase of this project was launched in December 2018. It contained findings from 2012, 2014 and 2016 HLSs. Further results from the 2018 HLS and data from previous HLSs (2006/07, 2008, and 2010) are planned to be added to the tool.

12.2 TOBACCO CONTROL DATA REPOSITORY

To see an overview of smoking prevalence, we gather New Zealand's tobacco control data in one location (www.tcddata.org.nz). The sources of data are the Census data, Youth Insight Survey, and HLSs. Key indicators from the HLSs include smoking status and quitting attempts.

12.3 PUBLICATIONS

In Facts are information sheets highlighting interesting points from specific research. *In Facts* are designed to meet the needs of researchers, academics and people working in the health sector. *In Fact* reports using data from the 2008, 2010, 2012, 2014, 2016 HLS are available on the HPA website at: <https://www.hpa.org.nz/our-work/research/publications>.

Further publications and reports using 2018 HLS data are planned and will be available from the same location.

12.4 ACCESS TO CONFIDENTIAL MICRODATA

The analyses presented in HPA publications are only a small proportion of those that could be undertaken. Confidentialised microdata from the 2018 HLS may be available in 2019 for approved researchers to use for specific research projects. The microdata will have all identifying information about individuals removed and will be modified to protect individual information. Approval will be subject to certain criteria, terms and conditions and the researcher's organisation will have to sign an access agreement with HPA. Contact HPA for more information email: research@hpa.org.nz.

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APPENDIX: MATERIALS PROVIDED TO PARTICIPANTS

Letters of invitation



Level 16 | 101 The Terrace | Wellington 6011
PO Box 2142 | Wellington 6140 | New Zealand

[date]

[address]

[address]

[address]

Dear Householder

I would like to invite your household to take part in the sixth New Zealand Health and Lifestyles Survey.

Every two years over 3,000 people take part in the survey and your household has been randomly chosen to take part this year.

This survey collects vital information needed to monitor the health and lifestyles of the nation. It asks about New Zealanders' views and experiences of a number of health and lifestyle topics, including food and drink, smoking, gambling, immunisation, mental health and being out in the sun. The enclosed leaflet gives more information about the survey.

In the next few weeks, [interviewer name], an interviewer from CBG Health Research will visit your address to invite your household to take part. They will be wearing an identification badge. The interviewer will explain more about the survey and they will be able to answer any questions that you might have. If they visit at a time that does not suit you, please let them know and they will arrange to visit at a better time.

If you have questions or would prefer to arrange a time for the interviewer to visit you, please do not hesitate to call the survey helpline between 8.30am and 9pm seven days per week on 0800 478 783, or email info@cbg.co.nz. Alternatively, txt 'SURVEY' + your name + address to 875 and a representative will call you to arrange a time (txts cost 20c).

We rely on the goodwill and voluntary cooperation of those invited to take part to make the survey a success. All information provided as part of the survey is confidential.

Please share this information with other members of your household.

Thank you in advance for your help with this important work.

Charles Sullivan
Manager Research





Level 16 | 101 The Terrace | Wellington 6011
PO Box 2142 | Wellington 6140 | New Zealand

[date]

[address]

[address]

[address]

Dear Householder

I would like to inform you that someone from your household might be invited to take part in the sixth New Zealand Health and Lifestyles Survey.

Every two years over 3,000 people take part in the survey and your household has been randomly chosen to take part this year.

This survey collects vital information needed to monitor the health and lifestyles of the nation. It asks about New Zealanders' views and experiences of a number of health and lifestyle topics, including food and drink, smoking, gambling, immunisation, mental health and being out in the sun. The enclosed leaflet gives more information about the survey.

In the next few weeks, [interviewer's name], an interviewer from CBG Health Research Limited, will visit your address and may invite your household to take part. They will be wearing an identification badge. The interviewer will explain more about the survey and they will be able to answer any questions that you might have. If they visit at a time that does not suit you, please let them know and they will arrange to visit at a better time.

If you have questions or would prefer to arrange a time for the interviewer to visit you, please do not hesitate to call the survey helpline between 8.30am and 9pm seven days per week on 0800 478 783, or email info@cbg.co.nz. Alternatively, txt 'SURVEY' + your name + address to 875 and a representative will call you to arrange a time (txts cost 20c).

We rely on the goodwill and voluntary cooperation of those invited to take part to make the survey a success. All information provided as part of the survey is confidential.

Please share this information with other members of your household.

Thank you in advance for your help with this important work.

Charles Sullivan
Manager Research



Pamphlet accompanying letter of invitation



Who is carrying out the survey?
CBG Health Research Ltd, an independent New Zealand research company, is carrying out the survey for the Health Promotion Agency.

The Health and Lifestyles Survey has been reviewed by a New Zealand ethics committee.

When we visit
If you are out when we visit, we would still like to interview someone in your household for the 2018 Health and Lifestyles Survey.

Our interviewer will visit again shortly to arrange a time that suits you. If you prefer, you can call the survey helpline on **0800 478 783**, or email **info@cbg.co.nz**, to arrange a time that suits you. Alternatively, **txt 'SURVEY' + your name + address to 875** and a representative will call you to arrange a time (texts cost 20c).

Your rights...
If you have any questions about your rights as a participant in this survey you can contact an independent health and disability advocate for free advice.
Telephone **0800 555 050** or email **advocacy@hdc.org.nz**

More information
If you want to know more about this survey, please call CBG Health Research on **0800 478 783** or visit the Health Promotion Agency's website at **hpa.org.nz**

We appreciate your help.

The Health Promotion Agency is a Crown Entity that leads and delivers innovative, high quality and cost-effective programmes and activities that promote health, wellbeing and healthy lifestyles and prevent disease, illness and injury. The Health Promotion Agency also enables environments that support health and wellbeing and healthy lifestyles and reduce personal, social and economic harm.

For more information visit hpa.org.nz

Improve New Zealanders' health
Take part in the
2018 Health and Lifestyles Survey

A nationwide survey for the Health Promotion Agency





What is the Health and Lifestyles Survey?

This survey is about New Zealanders' views and experiences of a number of health and lifestyle topics, including food and drink, smoking, gambling, immunisation, mental health and being out in the sun.

This is the sixth Health and Lifestyles Survey – similar surveys have been conducted every two years since 2008.

Why should I take part?

Your views and experiences are important. Even if you have not taken part in any of the activities we are asking people about, your answers will help identify any changes in people's views and experiences since the last survey in 2016.

This survey is voluntary, however we really appreciate your participation.

What will the information be used for?

The survey will help the Health Promotion Agency, and others like the Ministry of Health, to develop advice, information and practical ways to help New Zealand adults and children live healthy lifestyles.

How are people chosen to take part?

Addresses throughout New Zealand are randomly selected. One person (aged 15 years and over) from your household may be randomly chosen by the interviewer and asked to take part in the survey. If there are children in your household, we may ask a second person to take part as well (also aged 15 years and over) because the views of parents and caregivers are of particular interest to us. More than 3000 people will take part in this survey.

Where and when will I be interviewed?

In your own home, by an interviewer wearing photo identification. The interview will take up to one hour. If you are busy when the interviewer visits, please ask them to come back at a day and time that suits you.

What sort of questions will I be asked?

You will be asked questions on different health and lifestyle topics. If you don't want to answer a question, you don't have to; just tell the interviewer.

If you are a parent or caregiver, you may also be asked questions about these health topics for one of the children you look after.

Can I have an interpreter?

Yes, if you would like an interpreter for any language, including New Zealand Sign Language, please let your interviewer know or call the free survey information line 0800 478 783.

What happens to my answers?

Your information will always be kept confidential and is protected by the Privacy Act 1993. No person's name or address is connected to the answers they give. Everyone's answers will be grouped to report on the survey results.

Where can I find out about the results from the survey?

Some of the results will be available from late 2018 on the Health Promotion Agency website - hpa.org.nz.

Thank you for your time.

Thank you card

Provided to all participants following the interview.



Thank you

for participating in
the 2018 Health and
Lifestyles Survey

Support options

If you would like further information or advice about any of the health topics covered in this survey, you can contact a helpline or support organisation. Some that may be useful to you are listed below:

Helplines

Alcohol and Drug Helpline	0800 787 797
Anxiety Helpline	0800 269 4389
Depression Helpline	0800 111 757
Gambling Helpline	0800 654 655
Healthline	0800 611 116
Lifeline	0800 543 354
Quitline (<i>smoking cessation help</i>)	0800 778 778
Suicide Crisis Helpline	0508 828 865

Help for children and young people

Youthline 0800 376 633, free text 234 or email talk@youthline.co.nz	What's Up 0800 942 8787 5 to 18-year-olds. Phone counselling is available Monday to Friday, 1pm–10pm and weekends, 3pm–10pm. Online chat is available 7pm–10pm daily.
The Lowdown thelowdown.co.nz or email team@thelowdown.co.nz or free text 5626	Kidsline 0800 54 37 54 aimed at up to 14-years-old 4pm to 6pm weekdays.

Help for parents, family and friends

Skylight 0800 299 100 for support through trauma, loss and grief 9am-5pm weekdays.	Supporting Families In Mental Illness 0800 732 825 for families and whānau supporting a loved one who has a mental illness.
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