

Northern Sydney Central Coast Community Health Survey

Profile of Cardiovascular Disease and Associated Risk Factors:

Analysis of Telephone Survey 2010



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Abbreviations

AHS	Area Health Service
BMI	Body Mass Index
CATI	Computer Aided Telephone Interview
COPD	Chronic Obstructive Pulmonary Disease
CC	Central Coast
CHS	Community Health Survey
CVD	Cardiovascular Disease
ERP	Estimated Resident Population
HK	Hornsby Ku-ring-gai
HSA	Health Service Area
HVRF	Hunter Valley Research Foundation
K10	Kessler 10
NB	Northern Beaches
NSR	North Shore Ryde
NSCCH	Northern Sydney Central Coast Health
NSW	New South Wales
TIA	Transient Ischaemic Attack
kg	kilogram
m	metre
Suppl.	Supplementary

EXECUTIVE SUMMARY

From June 2010 to January 2011, 3,246 residents of the Northern Sydney and Central Coast areas took part in a telephone health survey. Questions covered the health priority areas of cardiovascular disease, respiratory disease, diabetes and psychological distress, as well as associated risk factors. Questions and methods were similar to that of the NSW Health Adult Population Health Survey.

Results are reported for each of the four health areas that comprised the Northern Sydney Central Coast Area Health Service that existed at the time of the survey in 2010: Central Coast, Hornsby Ku-ring-gai, Northern Beaches, and North Shore/Ryde. Matching results for the 2006 Northern Sydney Central Coast Community Health survey are presented in the same format (p. v).

Health Related Behaviours

Health behaviours directly influence preventable illness and death throughout adulthood.

Rates of sufficient physical activity remain low, ranging from 51% to 63%. The proportion of the population reporting as current smokers has declined since 2006, ranging from 5% to 13% in 2010. Over this time, more homes were reported as smoke free. Only about half the population reported a sufficient intake of fruit (range from 49% to 57%). The proportion of people having a sufficient intake of vegetables has doubled since 2006. However, intake remains low with a reported range in 2010 from 14% to 19% in 2010.

Psychological Distress

Psychological distress is a mental health indicator and psychosocial risk factor for cardiovascular disease. It can have a major impact on the ability of people to work, study, and manage their daily routines. In 2010, rates of 'high or very high' psychological distress ranged from 7% to 10%. More adults in the Central Coast and North Shore/ Ryde health services reported higher levels of 'high or very high' distress. This is fairly consistent with reported rates for the 2006 survey.

Health Status

Health status provides self-reported prevalence of doctor diagnosed chronic disease with an emphasis on cardiovascular disease and its associated risk factors. Some key findings were:

- The proportion of people with hypertension varied across health service areas ranging from 19% to 28% in 2010. There was an increased reporting of hypertension in North Shore/ Ryde since 2006.
- Self-reported high cholesterol ranged from 21% to 27% with increased reporting for Central Coast and Hornsby Ku-ring-gai since 2006.
- The Central Coast reported a higher proportion of obese adults than the NSW State average (22% and 19% respectively); Northern Sydney areas reported lower rates than the State average (12-14%).
- Since 2006, self-reported diabetes increased for the Central Coast by about 2%, from 8% to 10%; the Northern Sydney areas were lower, with the prevalence of diabetes ranging from 4.7 to 5.5%.
- All health service areas reported increases in COPD or emphysema since 2006; and reported increased asthma, especially in the North Shore /Ryde area.

Table 1. Comparison of cardiovascular disease risk factors for the 2006 and 2010 Community Health Surveys, by health service. Sex and age weighted population estimates (%) and 95% confidence intervals.

Topic	Issue	Area	2006 (%)	2010 (%)
Health Related Behaviours	Sufficient physical activity	CC	51.2 (±3.4)	50.9 (±3.7)
		HK	52.3 (±4.9)	51.9 (±4.7)
		NB	56.1 (±5.4)	63.0 (±5.2)
		NSR	65.8 (±4.2)	53.2 (±5.0)
		CC	19.9 (±2.8)	12.5 (±2.5)
	Current daily smoker	HK	7.5 (±2.7)	5.3 (±2.5)
		NB	12.5 (±3.5)	5.7 (±3.1)
		NSR	9.7 (±2.9)	6.1 (±2.4)
		CC	85.6 (±2.5)	91.4 (±2.1)
	Smoke free home	HK	92.0 (±2.8)	97.9 (±1.1)
		NB	89.4 (±3.3)	95.1 (±2.1)
		NSR	91.8 (±2.6)	92.7 (±2.8)
		CC	48.6 (±3.4)	48.9 (±3.7)
	Sufficient fruit	HK	53.0 (±4.9)	54.4 (±4.8)
		NB	45.6 (±5.4)	56.5 (±5.8)
		NSR	47.3 (±4.5)	55.5 (±4.9)
		CC	10.2 (±1.9)	19.1 (±2.7)
	Sufficient vegetables	HK	8.3 (±2.6)	19.2 (±3.7)
		NB	5.8 (±2.2)	14.3 (±3.1)
		NSR	8.9 (±2.6)	18.1 (±3.8)

Topic	Issue	Area	2006 (%)	2010 (%)
Psychological Distress	High psychological distress	CC	7.1 (±1.7)	6.9 (±1.8)
		HK	6.5 (±2.5)	5.0 (±2.6)
		NB	4.5 (±2.2)	5.9 (±2.6)
		NSR	7.5 (±2.5)	5.4 (±2.2)
		CC	2.5 (±1.1)	2.8 (±1.2)
	Very high psychological distress	HK	1.2 (±0.9)	2.3 (±1.8)
		NB	2.4 (±2.1)	1.9 (±2.1)
		NSR	2.3 (±1.5)	3.2 (±2.1)

Topic	Issue	Area	2006 (%)	2010 (%)
Health Status	Hypertension	CC	27.2 (±2.8)	27.8 (±2.9)
		HK	25.1 (±4.0)	23.2 (±3.4)
		NB	23.1 (±4.2)	19.7 (±3.5)
		NSR	18.9 (±3.1)	22.2 (±3.4)
	Hyperlipidaemia	CC	22.2 (±2.6)	26.6 (±2.9)
		HK	20.5 (±3.7)	25.1 (±3.6)
		NB	22.3 (±4.1)	21.0 (±3.6)
		NSR	20.5 (±3.4)	21.7 (±3.4)
	Overweight (self-reported BMI)	CC	36.8 (±3.3)	33.9 (±3.5)
		HK	35.0 (±4.7)	27.5 (±4.0)
		NB	32.7 (±5.0)	32.1 (±5.4)
		NSR	27.1 (±3.9)	30.9 (±4.4)
	Obese (self-reported BMI)	CC	17.5 (±2.5)	22.4 (±3.0)
		HK	8.8 (±2.6)	14.4 (±3.2)
		NB	11.1 (±3.3)	12.0 (±3.3)
		NSR	10.5 (±2.9)	12.1 (±3.1)
	Overweight (self-perceived)	CC	46.8 (±3.4)	42.6 (±3.6)
		HK	36.3 (±4.6)	38.1 (±4.5)
		NB	32.5 (±4.9)	38.3 (±5.6)
		NSR	32.3 (±4.2)	37.4 (±4.6)
	Stroke/Transient Ischaemic Attack	CC	4.3 (±1.1)	4.2 (±1.1)
		HK	1.9 (±1.4)	2.4 (±0.9)
		NB	2.5 (±1.3)	2.5 (±1.2)
		NSR	2.0 (±1.2)	2.4 (±0.8)
	Diabetes	CC	7.9 (±1.6)	10.0 (±1.9)
		HK	7.1 (±2.4)	4.7 (±1.5)
		NB	5.4 (±2.0)	4.7 (±1.6)
		NSR	5.1 (±1.7)	5.5 (±1.9)
	Emphysema	CC	2.2 (±0.8)	2.6 (±0.9)
		HK	0.8 (±0.7)	1.1 (±0.7)
		NB	0.6 (±0.6)	1.1 (±0.7)
		NSR	0.5 (±0.5)	0.8 (±0.5)
	COPD or Emphysema	CC	2.9 (±0.9)	3.2 (±1.0)
		HK	1.0 (±0.7)	1.5 (±0.8)
		NB	1.3 (±0.9)	1.4 (±0.7)
		NSR	1.0 (±0.8)	1.2 (±0.6)
	Asthma	CC	17.8 (±2.6)	21.7 (±3.2)
		HK	15.0 (±3.6)	16.8 (±3.7)
		NB	14.0 (±4.2)	19.9 (±4.6)
		NSR	14.4 (±3.2)	20.9 (±4.2)

INTRODUCTION

The 2010 Northern Sydney Central Coast Health (NSCCH) Community Health Survey provides local prevalence data for the priority areas of cardiovascular disease, respiratory disease, diabetes and mental health, as well as risk factors for those diseases. This survey builds on the foundations of prior studies conducted in 2002 and 2006, and allows for some trend monitoring, particularly with the 2006 NSCCH Community Health Study [1]. The data can help inform health promotion activities and service planning.

The Hunter Valley Research Foundation (HVRF) was contracted to conduct the telephone survey of residents 18 years and over. Telephone calls for the Central Coast part of the survey were made between June 2010 and September 2010. Telephone calls for the Northern Sydney part of the survey were made between July 2010 and January 2011.

In 2010 the Northern Sydney Central Coast Health area was divided into four health service areas: Central Coast (CC), Hornsby Ku-ring-gai (HK), Northern Beaches (NB) and North Shore/ Ryde (NSR). Data for this survey are reported for each of the four areas. Previous health areas comprised Central Coast, the same area as the Central Coast health service area, and Northern Sydney, which comprised the three health service areas of Hornsby Ku-ring-gai, Northern Beaches and North Shore/ Ryde.

This report provides a summary of findings for the 2010 Community Health Survey relating to three key risk factor areas: health related behaviours, psychosocial risk factors (psychological distress), and health status of people living within the Northern Sydney Central Coast area. Some special interest topics included in the telephone survey are not covered in this report. These include immunisation rates for self-reported and provider confirmed influenza H1N1 (swine flu) and pneumococcal disease, the built environment, active travel, and pet ownership and associated health. These findings will be reported in subsequent reports.

Table 1 (p. v) compares results of the 2006 and 2010 telephone surveys.

Methodology

The complete methodology is provided in Appendix 1. The Hunter Valley Research Foundation conducted the survey using a computer aided telephone interviewing (CATI) system which guides trained interviewers through the introduction, subject selection and interview. A random digit dialling sample was randomly selected from the four health service areas [2].

The survey questions (Appendix 2) were adapted from the NSW Health Adult Population Health Survey, an ongoing survey of the health of people of New South Wales (NSW) which uses the CATI method.

Sampling Strategy

We aimed to interview 4,000 adult residents 18 years or more. Sampling was stratified so that 50% of respondents were aged 65 years or more, in order to fulfil the requirements of the immunisation component of the survey. Required cell counts were then adjusted to reflect the relative proportions of the populations in each of the four health service areas as shown in Table 2.

Table 2. Proposed cell counts by age group and health service, n= 4000 adult residents, CHS 2010					
Age group (years)	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/ Ryde	Total
18-64	513	463	427	597	2000
≥65	639	460	411	490	2000
Total	1152	923	838	1087	4000

Reaching the age targets and the proportional numbers required for each geographical area proved difficult and time intensive (see Appendix 1) and a decision was made to reduce the total number

of Northern Sydney interviews. Completed interviews were received from 3,246 respondents - 1,200 Central Coast and 2,046 Northern Sydney health service residents. The revised distribution to meet the sampling frame is given in Suppl. Table 1, p34.

Table 3 shows the actual distribution of respondents for the 2010 survey.

Table 3. Actual population distribution by age and health service, n=3,246, CHS 2010					
Age group (years)	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/ Ryde	Total
18-64	520	371	326	444	1661
≥65	680	298	282	325	1585
Total	1200	669	608	769	3246

Telephone surveys often undersample young adults. In addition, this survey deliberately oversampled the 65 years and over, to improve precision of immunisation coverage. Therefore to generate population estimates we calculated 'sex x five year age group' weights for each health service area. The 'age and sex' population distribution of respondents by health service areas is provided in Suppl. Table 2, p34.

Weighting

The weighting process effectively converts the age and sex profile of the sample to that of the Estimated Resident Population (ERP). Weights for each geographical area (Suppl. Table 3, p35) in each sex/age group strata were calculated as number in population / number in sample. Weights were applied to questions which were answered by the whole survey population.

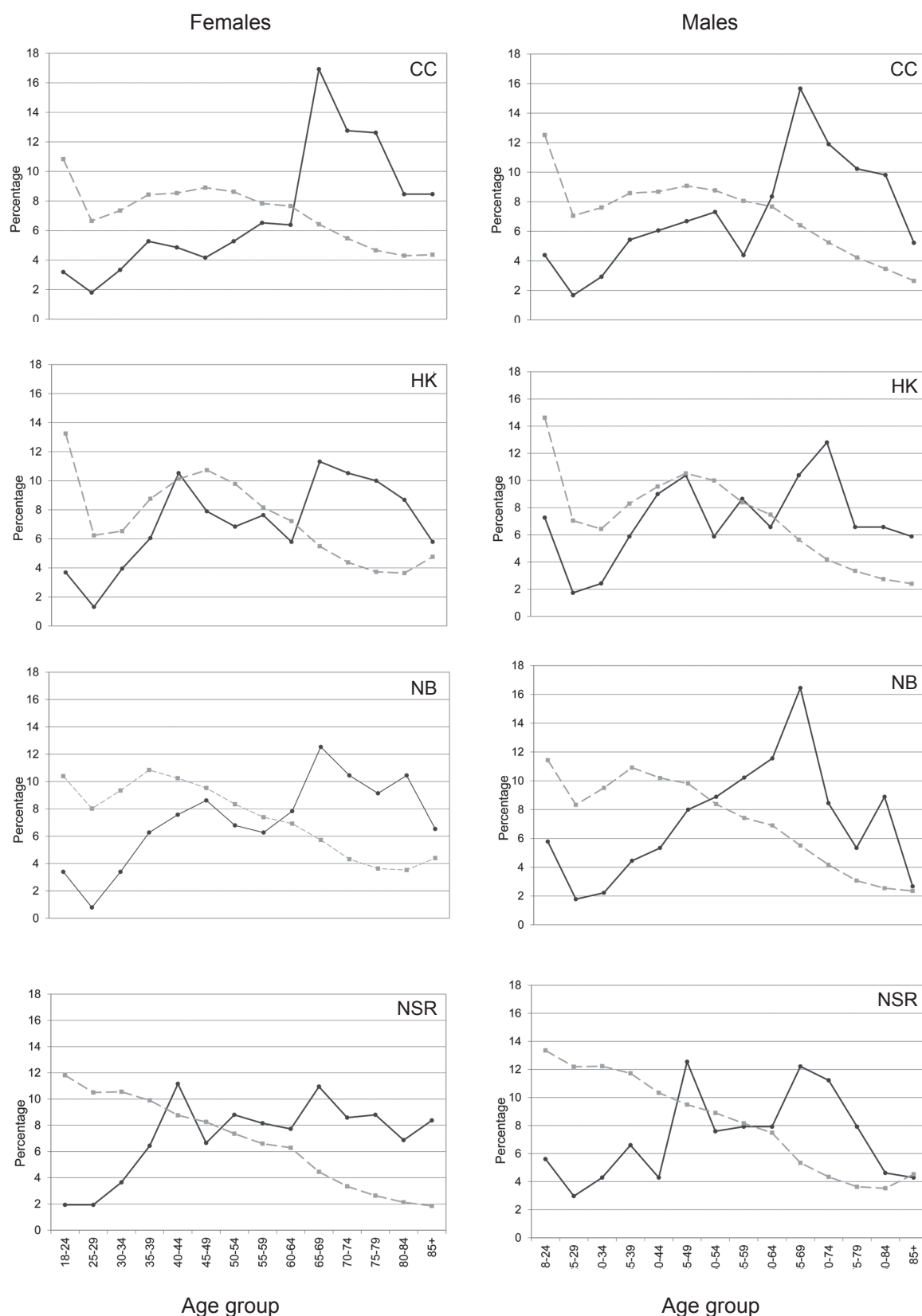
Age and Sex

Figure 1 compares the age/sex of the survey population to the ERP [3]. In each health service, the younger age groups 18-40 years were undersampled and older age groups ≥65 years were oversampled.

Sample Size and Response Rate

The overall response rate was 72.8% - 76.8% for the Central Coast and 70.7% for Northern Sydney areas [2].

Figure 1. Sample representativeness by 5 year age groups and sex for the four health service areas at June 2010



The sex – age breakdown of each area is presented in a separate graph with —●— representing the survey sample and —■— representing the estimated population for the health service area calculated as at June 2010 (ABS data). CC=Central Coast, HK=Hornsby Ku-ring-gai, NSR=North Shore/Ryde, NB=Northern Beaches.

Format of this Report

The Community Health Survey results are reported under three key headings:

1. Health related behaviours – risk factors for chronic lifestyle diseases that are under the direct control of individuals e.g. choosing to smoke or participate in physical activity.
 2. Psychological distress – a mental health indicator and psychosocial risk factor for cardiovascular disease. The Kessler 10 is used to measure non-specific psychological distress.
 3. Health status – prevalence of health conditions (cardiovascular disease, respiratory disease, diabetes) within the community. Health status was based on answers to the question “have you ever been told by a doctor or at a hospital that you have ...” (refer to Appendix 2: Telephone Survey Questions, 2010).
- All data are based on self-reported information.
 - Weighted proportion (%) data is provided unless otherwise stated.
 - Error bars represent 95% confidence limits.
 - Supplementary tables (pp.34-40) include:
 - raw prevalence data for all reported health conditions.
 - demographic data for NSCCH survey respondents.
 - Comparisons are made with the NSW Adult Health Population Health Surveys for 2008 and 2009. The 2008 and 2009 State surveys provide estimates for the Area Health Services that existed at the time of the NSCCH 2010 survey. The State survey targets adults 16 years and over.

1. HEALTH RELATED BEHAVIOURS

Physical Activity

Adequate physical activity is defined as a total of at least 150 minutes per week over 5 separate occasions. The total minutes were calculated by adding minutes in the last week spent walking continuously for at least 10 minutes, plus minutes doing moderate physical activity, plus 2 x the number of minutes doing vigorous physical activity [4].

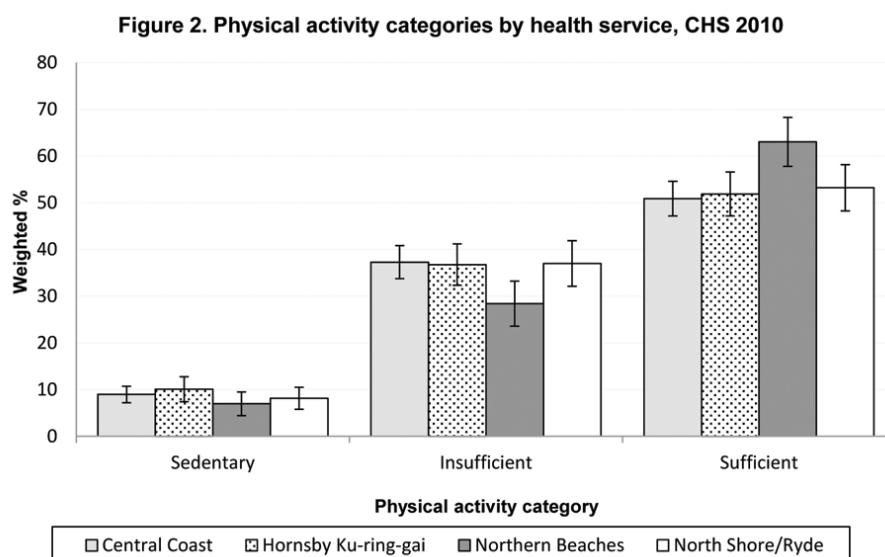
Physical activity is an important factor in maintaining good health. People with adequate physical activity have lower rates of preventable morbidity and mortality than those who are physically inactive. Physical inactivity was responsible for 6.6% of the total burden of disease and injury in Australia in 2003 with ischaemic heart disease, type 2 diabetes and stroke accounting for more than four-fifths of this burden [5].

To maintain good health, the national physical activity guidelines for adults recommend at least 30 minutes of moderate activity on most, and preferably all, days of the week. This includes brisk walking, dancing, swimming, or cycling, which can be undertaken in shorter bursts such as 3 lots of 10 minutes [6].

In 2009, the NSW Adult Population Health Survey reported just over one-half (55.2%) of the adult population undertook adequate levels of physical activity [4].

Fig. 2 & Table 4 show a higher proportion of Northern Beaches respondents reporting sufficient physical activity than respondents of the other health areas. Respondents were classified as 'sedentary' if they reported no physical activity during the previous week and 'insufficiently active' if they reported some activity, but not enough to be classified as sufficiently active. They were classified as 'sufficiently active' if they reported a total of at least 150 minutes over at least 5 separate occasions.

In 2010, Northern Beaches area reported the highest rate of sufficient physical activity. In 2006, North Shore/Ryde respondents reported the highest rate of sufficient physical activity. Rates of sufficient physical activity remain low across health service areas, ranging from 51% to 63%.



	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Sedentary	9.0 (7.2 - 10.7)	10.1 (7.4 - 12.8)	7.0 (4.4 - 9.5)	8.1 (5.8 - 10.5)
Insufficient	37.3 (33.7 - 40.8)	36.8 (32.3 - 41.2)	28.4 (23.6 - 33.2)	37.0 (32.1 - 41.9)
Sufficient	50.9 (47.2 - 54.6)	51.9 (47.2 - 56.6)	63.0 (57.8 - 68.3)	53.2 (48.3 - 58.2)

Smoking

Tobacco smoking was responsible for 7.8% of the total burden of disease and injury in Australia in 2003, with lung cancer, chronic obstructive pulmonary disease (COPD), and ischaemic heart disease accounting for more than three-quarters of this burden [5]. The total social costs of tobacco use in Australia were estimated to be \$31.5 billion in 2004-05 with tangible costs of \$12 billion [7].

In the 2009 NSW Adult Population Health Survey, 13.5% of adults reported current daily smoking, 3.7% smoked occasionally, 24.3% had smoked in the past, 10.7% had tried smoking a few times but never smoked regularly, and 47.8% had never smoked [4].

Of the health service areas, Central Coast had the highest proportion of smokers and ex-smokers, and Hornsby Ku-ring-gai had the highest proportion of those who had never smoked (Fig 3 & Table 5). This reflects the socioeconomic status of the areas. Variations in smoking rates among health areas reflect the distribution of underlying social determinants of health. Smoking rates are known to increase with increasing socioeconomic disadvantage.

All areas reported a lower proportion of smokers in 2010 compared with 2006. Current daily smoking ranged from 5% to 13% in 2010.

Figure 3. Current smoking status by health service, CHS 2010

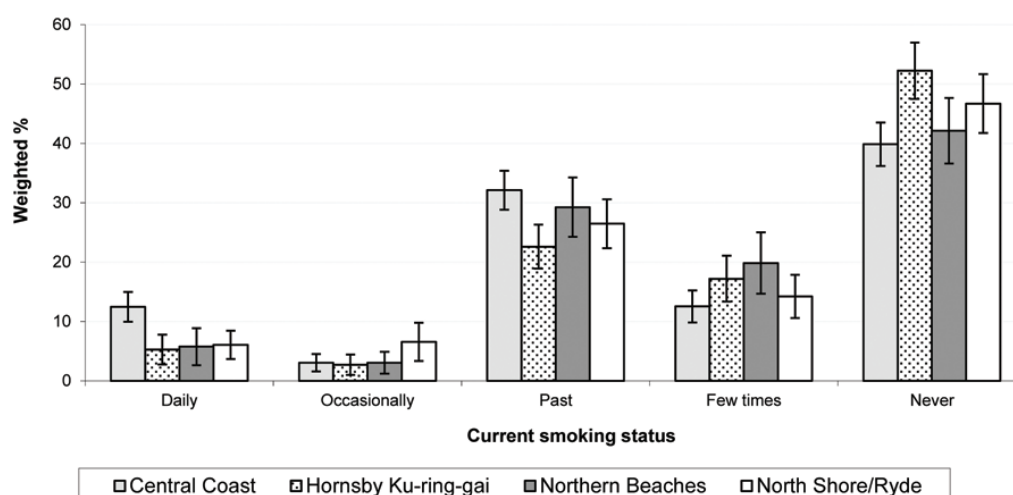


Table 5. Estimated population proportion (95%CI) for current tobacco smoking status by health service, CHS 2010

	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Daily	12.5 (9.9 - 15.0)	5.3 (2.8 - 7.8)	5.7 (2.6 - 8.9)	6.1 (3.6 - 8.5)
Occasionally	3.0 (1.6 - 4.5)	2.7 (1.0 - 4.4)	3.0 (1.2 - 4.9)	6.6 (3.3 - 9.8)
Past but not now	32.1 (28.8 - 35.4)	22.6 (18.9 - 26.3)	29.3 (24.3 - 34.2)	26.5 (22.3 - 30.6)
Few times	12.5 (9.8 - 15.2)	17.2 (13.3 - 21.1)	19.8 (14.7 - 25.0)	14.2 (10.6 - 17.9)
Never	39.8 (36.2 - 43.5)	52.2 (47.5 - 57.0)	42.1 (36.6 - 47.7)	46.7 (41.8 - 51.7)

Smoking in the home

In NSW in 2009, 91.9% of adults lived in homes that were smoke-free, 3.7% lived in homes where people occasionally smoked, and 4.5% lived in homes where people frequently smoked [4].

In 2010, Central Coast had a slightly smaller proportion of smoke-free homes and a correspondingly slightly higher proportion of homes where smoking frequently occurred (Fig 4 & Table 6).

All health service areas reported a higher proportion of smoke-free homes when compared with 2006.

Figure 4. Exposure to tobacco smoke in homes by health service, CHS 2010

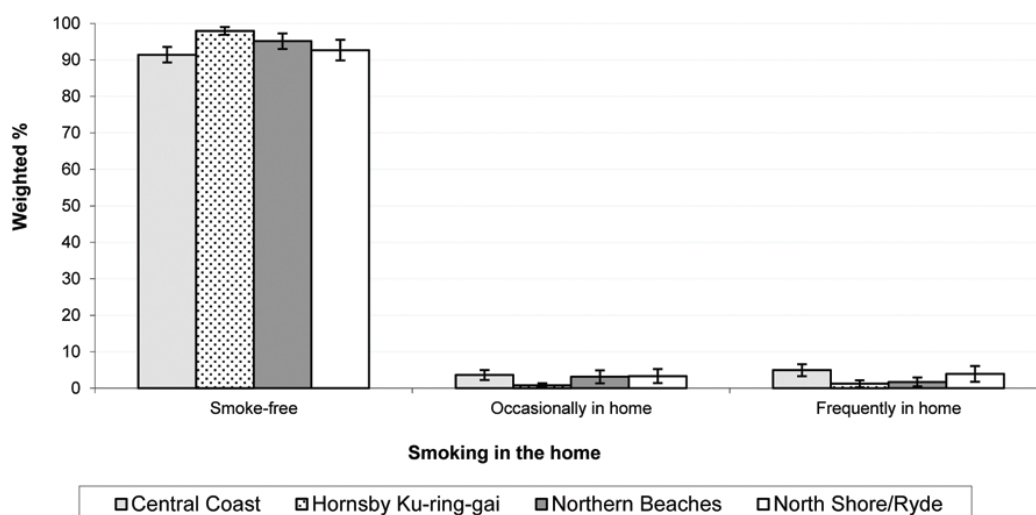


Table 6. Estimated population proportion (95% CI) for tobacco smoke at home categories by health service, CHS 2010

	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Smoke-free	91.4 (89.3 - 93.5)	97.9 (96.9 - 99.0)	95.1 (93.0 - 97.3)	92.7 (89.8 - 95.5)
Occasional in home	3.6 (2.2 - 5.0)	0.8 (0.3 - 1.3)	3.1 (1.4 - 4.9)	3.3 (1.4 - 5.2)
Frequently in home	5.0 (3.3 - 6.6)	1.2 (0.3 - 2.2)	1.7 (0.5 - 2.9)	3.9 (1.7 - 6.1)

Nutrition

Dietary factors contribute to health and disease, as protective influences or as risk factors, including coronary heart disease, some cancers, type-2 diabetes, overweight and obesity, osteoporosis, dental caries, gall bladder disease, and diverticular disease [8].

Most population groups eat less than the recommended amounts of fruit (2 serves a day) and vegetables (5 serves a day) [9].

In 2009 in NSW, 56.8% of the adult population ate sufficient fruit, and 10.4% ate sufficient vegetables, per day [4]. 'Sufficient' is defined as two serves of fruit per day and five serves of vegetables per day. One serve is ½ cup cooked or 1 cup raw vegetables or 1 cup of salad vegetables; or 1 medium piece or 2 small pieces of fruit or 1 cup of diced pieces (not juice).

Fig. 5 & Table 7 show the proportion of respondents consuming sufficient fruit and vegetables by health service area. These two categories are not mutually exclusive.

The proportion of people having a sufficient intake of vegetables has doubled since 2006. A higher proportion of Northern Beaches and North Shore/Ryde respondents reported eating sufficient fruit when compared with 2006. However, in 2010, intake remains low with only around half the NSCC population reporting sufficient fruit (range from 49% to 57%) and about 20% reporting sufficient vegetable intake (from 14% to 19%).

Figure 5. Sufficient serves of fruit and vegetable by health service, CHS 2010

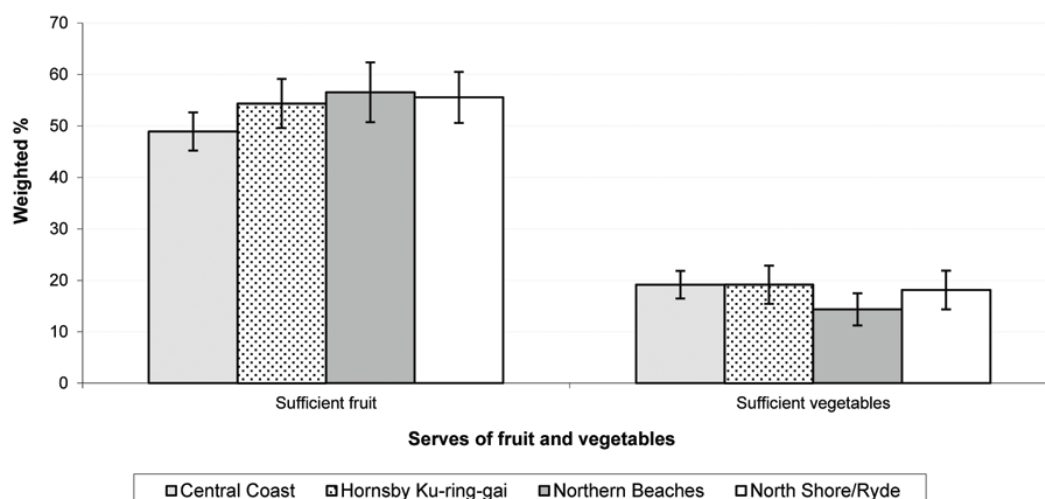


Table 7. Estimated population proportion (95% CI) of sufficient serves of fruit and vegetables by health service, CHS 2010

	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Sufficient fruit	48.9 (45.2 - 52.6)	54.4 (49.6 - 59.1)	56.5 (50.7 - 62.4)	55.5 (50.6 - 60.5)
Sufficient veg	19.1 (16.5 - 21.8)	19.2 (15.4 - 22.9)	14.3 (11.2 - 17.5)	18.1 (14.4 - 21.9)

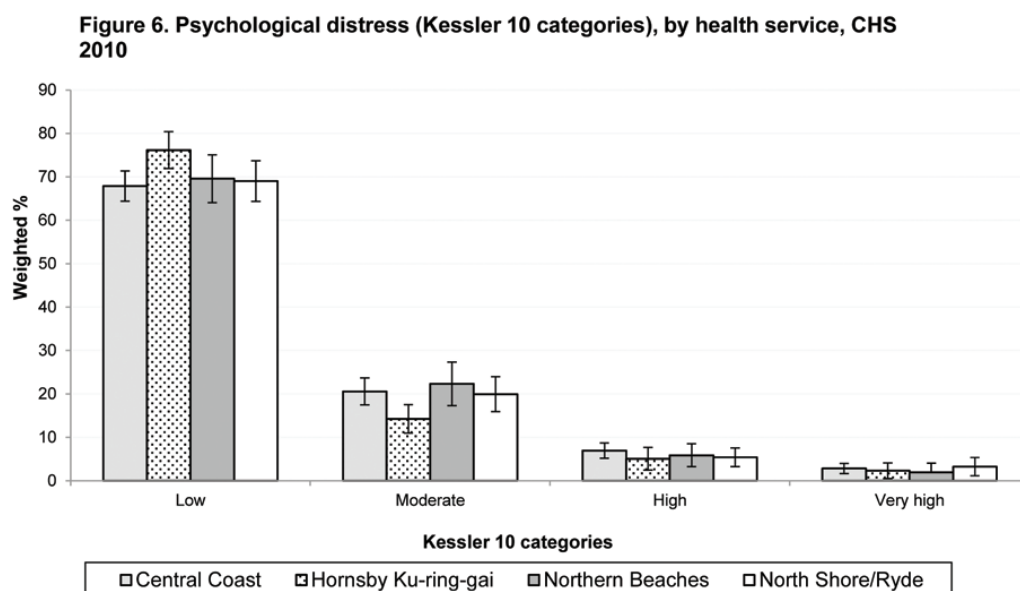
2. PSYCHOLOGICAL DISTRESS

Psychological Distress using the Kessler 10 (K10)

Psychological distress has a major effect on the ability of people to work, study, and manage their day-to-day activities. The mental health of respondents was surveyed using the 10-item Kessler 10 (K10). The K10 measures non-specific psychological distress based on questions about the level of nervousness, agitation, psychological fatigue and depression, in the most recent four week period [4].

In 2009 in NSW, 67.2 % of adults had low levels of psychological distress, 21.3% had moderate levels, 8.1% had high levels, and 3.4% had very high levels [4].

Most respondents across the Northern Sydney and Central Coast health service areas reported low psychological distress (Fig 6 & Table 8). More adults in the Central Coast and North Shore/ Ryde health services had higher levels of 'high or very high' distress (9.8%CC, 7.4%HK, 7.8%NB, 8.6%NSR). This is fairly consistent with reported rates for 2006 for all categories and across health services.



	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/ Ryde
Low	67.9 (64.4 - 71.3)	76.2 (71.9 - 80.4)	69.6 (64.1 - 75.0)	69.0 (64.4 - 73.7)
Moderate	20.6 (17.5 - 23.7)	14.3 (11.0 - 17.6)	22.3 (17.3 - 27.4)	19.9 (15.9 - 24.0)
High	6.9 (5.2 - 8.7)	5.0 (2.4 - 7.7)	5.9 (3.2 - 8.5)	5.4 (3.2 - 7.5)
Very high	2.8 (1.7 - 4.0)	2.3 (0.5 - 4.1)	1.9 (1.9 - 4.0)	3.2 (1.1 - 5.4)

3. HEALTH STATUS

Among the spectrum of cardiovascular disease (CVD), the four types responsible for the most deaths in NSW are coronary heart disease (or ischaemic heart disease), stroke (or cerebrovascular disease), heart failure, and peripheral vascular disease [10].

CVD can currently be considered Australia's most costly disease. It is the most expensive disease group in Australia, costing about \$5.9 billion in 2004–05 with just over half of this money spent on patients admitted to hospital. Nearly 50,000 deaths were attributed to CVD in Australia in 2008. It was responsible for more deaths than any other disease group—34% of the total. It also imposes a burden of disease, measured in terms of disability and premature death, second only to cancer. CVD accounted for about 18% of the overall burden of disease in Australia in 2003, with coronary heart disease and stroke contributing over 80% of this burden [11].

Chronic conditions covered by this report include hypertension, hyperlipidaemia, overweight and obesity, previous stroke/transient ischaemic attack (TIA), diabetes, chronic obstructive pulmonary disease (COPD) and asthma.

Hypertension

Hypertension is a major risk factor for coronary heart disease, stroke, heart failure, peripheral vascular disease and renal failure. The risk of disease increases as the level of blood pressure increases. It is estimated that high blood pressure contributed 7.6% to the burden of disease and injury in Australia in 2003 [5, 10].

The 2008 NSW Adult Population Health Survey reported 23.5 % of adults had ever been told by a doctor or hospital they had high blood pressure [10].

In 2010, the proportion of hypertension varied across health service areas ranging from 19% to 28% with Northern Beaches reporting the lowest rate, and Central Coast the highest (Fig. 7 & Table 9). There was an increase reporting of hypertension in North Shore/ Ryde since 2006. This excludes respondents reporting high blood pressure temporarily or during pregnancy.

Figure 7. Proportion of respondents reporting hypertension by health service, CHS 2010

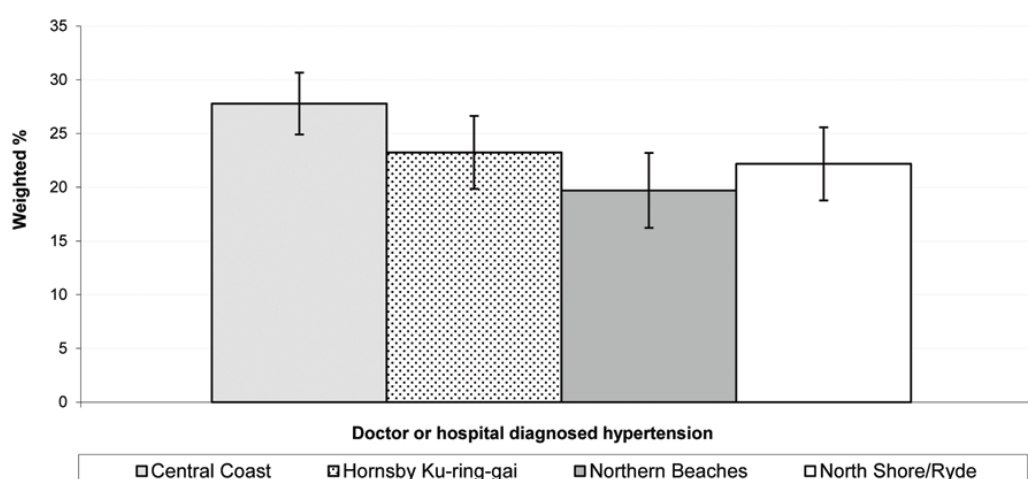


Table 9. Estimated population proportion (95% CI) of respondents with self-reported hypertension by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/ Ryde
Hypertension	27.8 (24.9 - 30.7)	23.2 (19.8 - 26.6)	19.7 (16.2 - 23.2)	22.2 (18.8 - 25.6)

Hyperlipidaemia

High blood cholesterol is a precursor for coronary heart disease and for some types of stroke. High levels of cholesterol in the blood can contribute to atherosclerosis which can cause heart attacks, angina, or stroke [10]. High blood cholesterol was responsible for 6.2% of the total burden of disease and injury in Australia in 2003 [5, 10].

IN 2008 in NSW, just over one-quarter (26.7%) of adults had ever been told by a doctor or hospital they had high cholesterol [10].

Across the health services, approximately 24% of respondents had at some time been told by a doctor or hospital that they had high blood cholesterol. Central Coast and Hornsby Ku-ring-gai reported higher levels of cholesterol than Northern Beaches and North Shore /Ryde (Fig. 8 & Table 10).

Self-reported high cholesterol ranged from 21% to 27% with increased reporting in Central Coast and Hornsby Ku-ring-gai respondents since 2006. Reporting for Northern Beaches and North Shore/Ryde has remained similar to 2006.

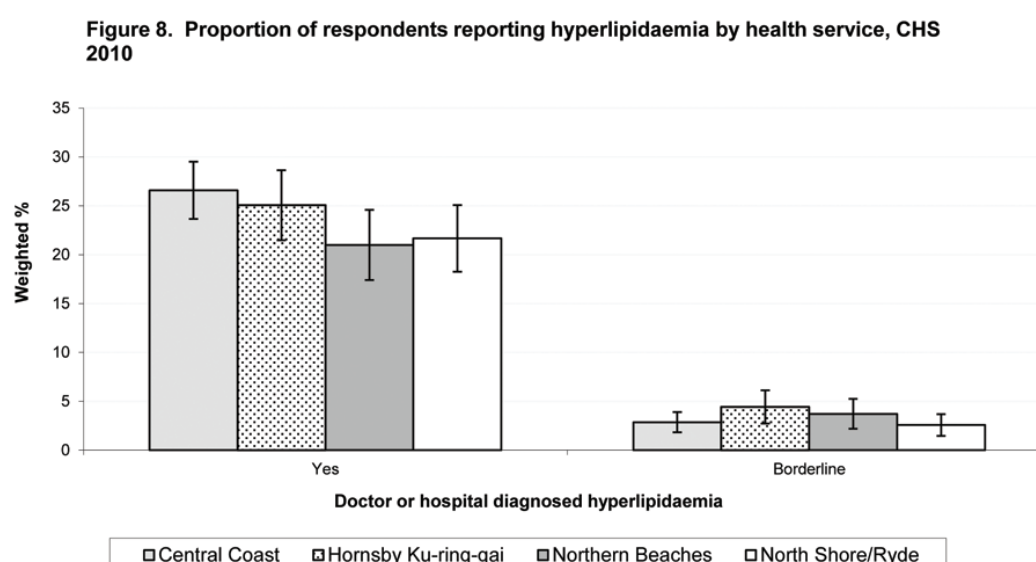


Table 10. Estimated population proportion (95% CI) of respondents reporting hyperlipidaemia by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Yes - High	26.6 (23.6 - 29.5)	25.1 (21.5 - 28.6)	21.0 (17.4 - 24.6)	21.7 (18.3 - 25.1)
Borderline	2.9 (1.8 - 3.9)	4.4 (2.7 - 6.1)	3.7 (2.2 - 5.2)	2.6 (1.5 - 3.7)

Overweight and obesity

The health problems and consequences of obesity are many and varied, including musculo-skeletal problems, cardiovascular disease, some cancers, sleep apnoea, and hypertension. Many of these are often preventable through a healthy and active lifestyle. Obesity is strongly linked to type 2 diabetes and is identified as one of the National Health Priority Areas [4, 12]. Overweight and obesity was responsible for 7.5% of the total burden of disease and injury in Australia in 2003 [5].

Using self-reported height and weight, a self-reported Body Mass Index (BMI) is calculated by dividing a person's weight (kilograms) by their height (metres) squared i.e. kg/m^2 . BMI is classified into 4 categories - underweight ($\text{BMI} < 18.5$), acceptable or ideal weight ($\text{BMI} \geq 18.5$ and < 25), overweight ($\text{BMI} \geq 25$ and < 30), and obese ($\text{BMI} \geq 30$) [4].

The validity of self-reported height and weight has been investigated in adult populations. While many studies have observed a high correlation between BMI calculated from self-reported and measured height and weight, there is evidence that self-reported height and weight is not as exact a measure. While caution is advised when interpreting BMI calculated from self-reported height and weight, it is still useful for ongoing surveillance of population health [4].

In 2009 in NSW, 2.5 % of adults were considered underweight, 45% were healthy (acceptable) weight, 33.1% were overweight, and 19.4% were obese [4].

In the 2010 NSCC Community Health Survey, self-reported height and weight was used to calculate self-report BMI. Respondents were also asked whether they considered themselves to be underweight, acceptable weight, or overweight (perceived weight).

Self-reported height and weight

The Central Coast continues to have a higher proportion of people who are overweight or obese compared with Northern Sydney areas (Fig. 9 & Table 11).

The proportion of overweight adults for Northern Sydney Central Coast hovered around the 2009 NSW state average (31% and 33% respectively). The Central Coast reported a higher proportion of obese adults than the State average (22% and 19% respectively); Northern Sydney areas reported lower rates than the State average [4].

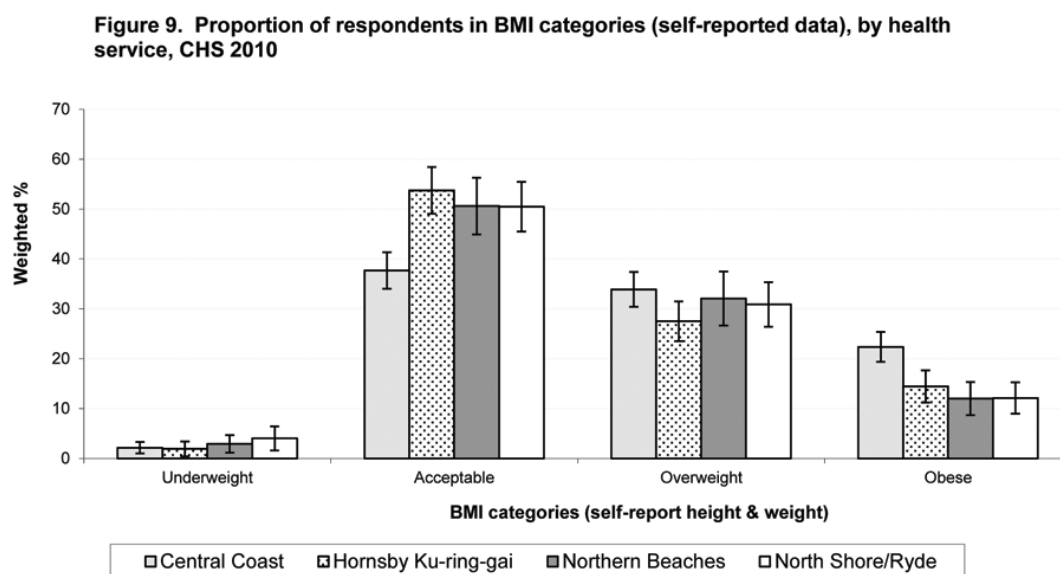


Table 11. Estimated population proportion (95% CI) for respondents in Body Mass Index categories from self-reported data, by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Underweight	2.1 (1.0 – 3.3)	1.9 (0.4 - 3.4)	2.9 (1.2 - 4.7)	4.0 (1.6 - 6.4)
Acceptable	37.7 (34.0 - 41.3)	53.7 (49.1 - 58.4)	50.6 (44.9 - 56.3)	50.5 (45.5 - 55.4)
Overweight	33.9 (30.4 - 37.4)	27.5 (23.5 - 31.5)	32.1 (26.6 - 37.5)	30.9 (26.4 - 35.3)
Obese	22.4 (19.3 - 25.4)	14.4 (11.2 - 17.6)	12.0 (8.7 - 15.3)	12.1 (9.0 - 15.3)

Perceived weight

Most respondents considered themselves to be of acceptable weight. Across health service areas, respondents were more likely to fall in the overweight or obese categories than the underweight category (Fig. 10 & Table 12).

Figure 10. Self-perceived weight by health service, CHS 2010

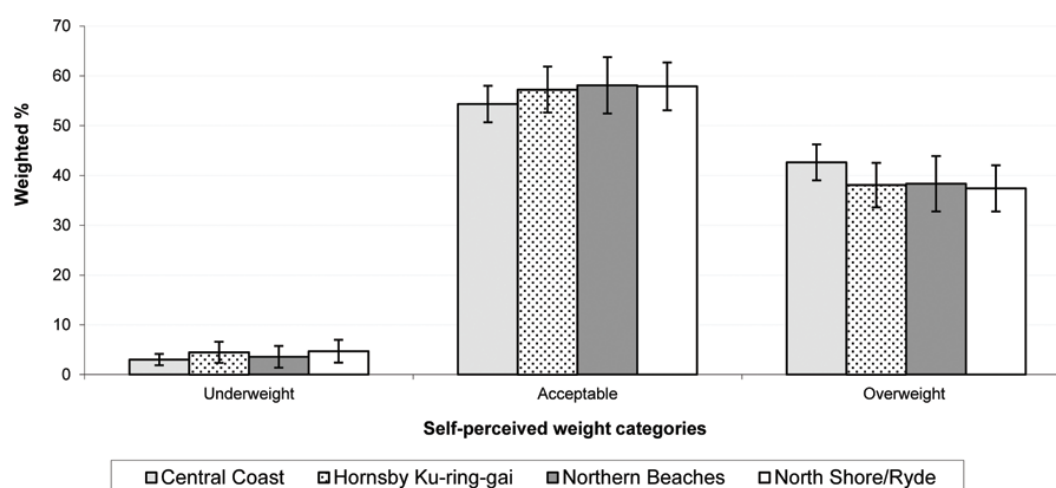


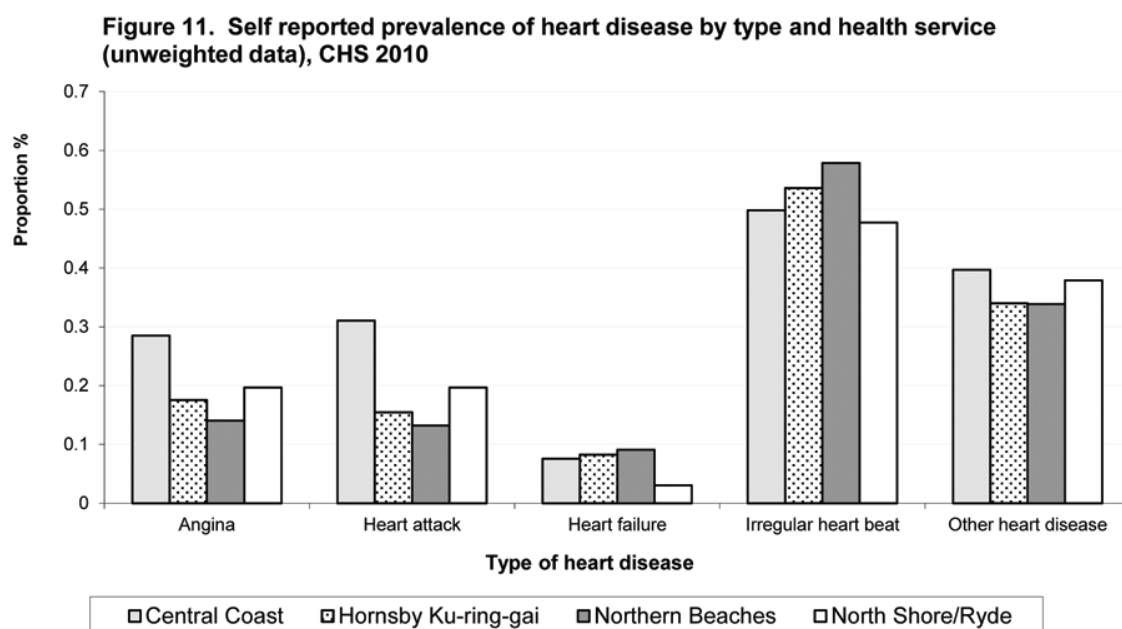
Table 12. Estimated population proportion (95% CI) of self-perceived weight by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Underweight	3.0 (2.4 - 6.6)	4.5 (2.4 - 6.6)	3.6 (1.4 - 5.8)	4.7 (2.4 - 7.0)
Acceptable	54.3 (50.7 - 58.0)	57.2 (52.6 - 61.9)	58.1 (52.5 - 63.8)	57.9 (53.1 - 62.7)
Overweight	42.6 (39.0 - 46.2)	38.1 (33.6 - 42.5)	38.3 (32.8 - 43.9)	37.4 (32.8 - 42.0)

Previous Cardiovascular Disease

Figure 11 and Suppl. Table 18 (p38) report unweighted data for type of heart disease reported by respondents. Since respondents could have more than one condition, the totals could be greater than 100%.

Respondents were asked whether they had ever been told by a doctor or at a hospital that they had heart disease or a heart condition. Those reporting heart disease or a heart condition were asked what type.

Central Coast respondents reported a higher proportion of previous CVD than those from the Northern Sydney areas. Central Coast respondents reported a higher proportion with previous angina and heart attack than in the Northern Sydney area. Northern Beaches had the highest proportion of people reporting irregular heartbeat.



Previous Stroke / Transient Ischaemic Attack

Stroke can produce a range of effects from minor impairment of motor function to catastrophic neurological impairment, and can be fatal. Transient ischaemic attack (TIA), has similar symptoms to a stroke but is reversible, usually caused by a temporary blockage of the blood supply to the brain and often lasting only a few minutes [13].

Fig. 12 & Table 13 show Central Coast respondents report a higher proportion with previous stroke or TIA when compared with the Northern Sydney areas. This is not very different from data for 2006.

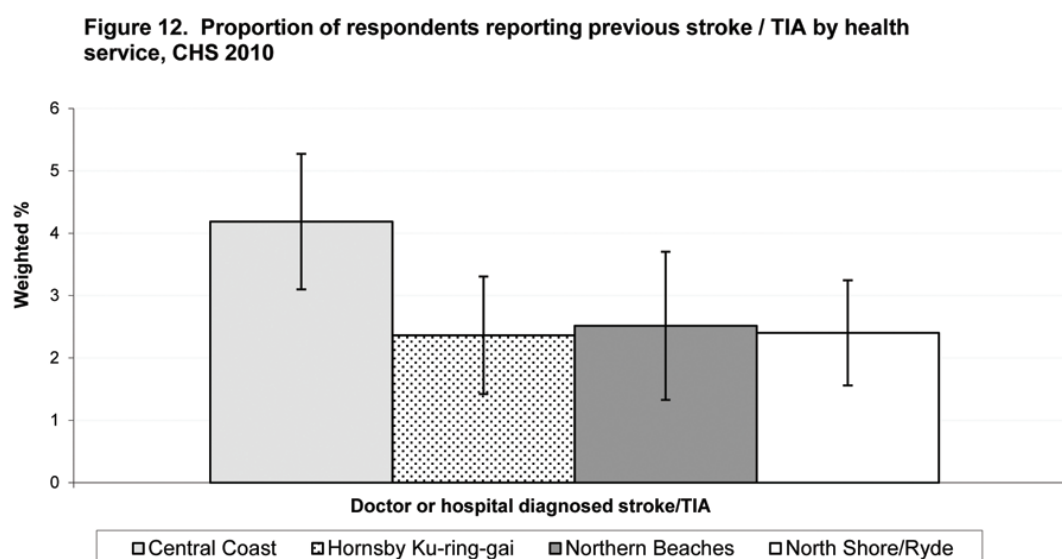


Table 13. Estimated population proportion (95% CI) of respondents reporting previous stroke or TIA, by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Stroke / TIA	4.2 (3.1 – 5.3)	2.4 (1.4 - 3.3)	2.5 (1.3 - 3.7)	2.4 (1.6 - 3.2)

Diabetes

Diabetes is a chronic disease characterised by high blood glucose levels, resulting from the body either not producing insulin or not using insulin properly. There are three main forms of diabetes - type 1 (insulin dependent) which occurs when the pancreas no longer produces insulin, type 2 (non-insulin dependent) which occurs when the pancreas is not producing enough insulin and the insulin it produces is not working effectively, and gestational diabetes, which occurs in pregnancy and often resolves after the birth. Type 2 diabetes accounts for up to 90% of all cases of diabetes [4].

Diabetes is a National Priority Health Area and was estimated to account for 5.5% of the overall burden of disease and injury in Australia in 2003 with type 2 diabetes accounting for 92% of this burden [14]. Results of the AusDiab study in 1999-2000 [15] estimated that 7.5% of the Australian population aged 25 years or more had diabetes, and about 50% of those were unaware of it.

In NSW, in 2009, 8.2 % of adults had ever been told by a doctor or hospital that they had diabetes or high blood glucose. The NSW Health Survey Program reported a significantly lower proportion of adults in the Northern Sydney & Central Coast Area Health Service (6.3 %) had ever been told by a doctor or hospital they had diabetes or high blood glucose, compared with the overall adult population [4].

As shown in Fig. 13 & Table 14, the 2010 NSCC Community Health Survey reported higher prevalence of diabetes in the Central Coast, followed by North Shore/ Ryde. Compared with 2006 data, the proportion of Central Coast respondents reporting diabetes has increased by about 2% (i.e. 7.9% to 10%), while remaining about the same for the North Shore/Ryde area (Table 1). Decreased reporting is seen in Hornsby Ku-ring-gai and Northern Beaches.

Figure 13. Proportion of respondents reporting diabetes by health service, CHS 2010

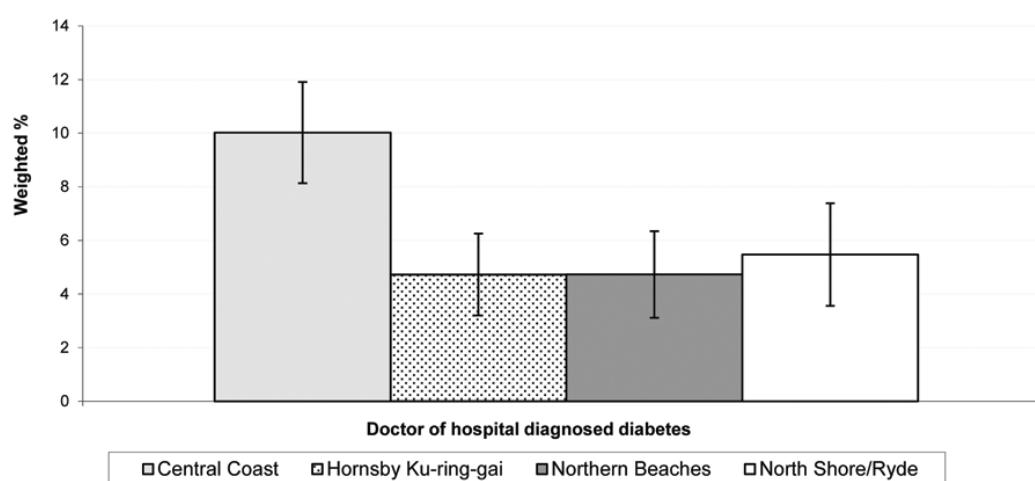


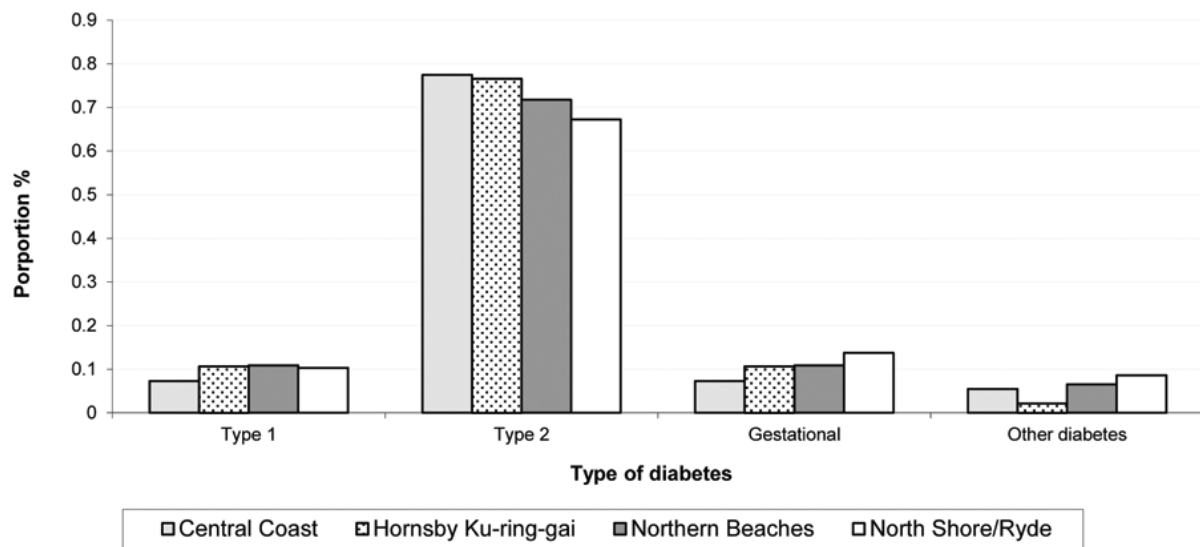
Table 14. Estimated population proportion (95% CI) of respondents reporting diabetes by health service, CHS 2010

	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Diabetes	10.0(8.1-11.9)	4.7(3.2-6.3)	4.7(3.1-6.3)	5.5(3.6-7.4)

Respondents were asked whether they had ever been told by a doctor or at a hospital that they had diabetes. Those reporting diabetes were asked what type.

Figure 14 and Suppl. Table 21 (p39) report unweighted data for type of diabetes. Of the self-reported diabetes respondents, a higher proportion of Central Coast and Hornsby Ku-ring-gai respondents are classified as type 2 diabetes.

Figure 14. Self-reported type of diabetes for respondents with a history of diabetes (unweighted data), by health service, CHS 2010



Chronic Obstructive Pulmonary Disease (COPD)

COPD limits airflow to the lungs. The spectrum of COPD includes emphysema and chronic bronchitis. The main risk factor for COPD is tobacco smoking. The prevalence of COPD can be difficult to estimate.

The current definitions of COPD and asthma overlap. An important distinguishing feature is that COPD develops over many years and mostly affects middle and older aged people while asthma affects people of all ages [16]. Respondents were asked whether they had ever been told by a doctor or at a hospital that they had emphysema and whether they had ever been told that they had COPD (Appendix 2, p24).

Fig. 15 & Table 15 show the population proportions of respondents with emphysema, and Fig. 16. & Table 16 show those reporting either COPD or emphysema. In both, Central Coast respondents report a higher prevalence than other health service areas, which might be expected given the higher rate of current and past tobacco smokers in this health service area.

The proportion of respondents in all health service areas reporting emphysema only, or 'either COPD or emphysema', have increased compared with the 2006 survey.

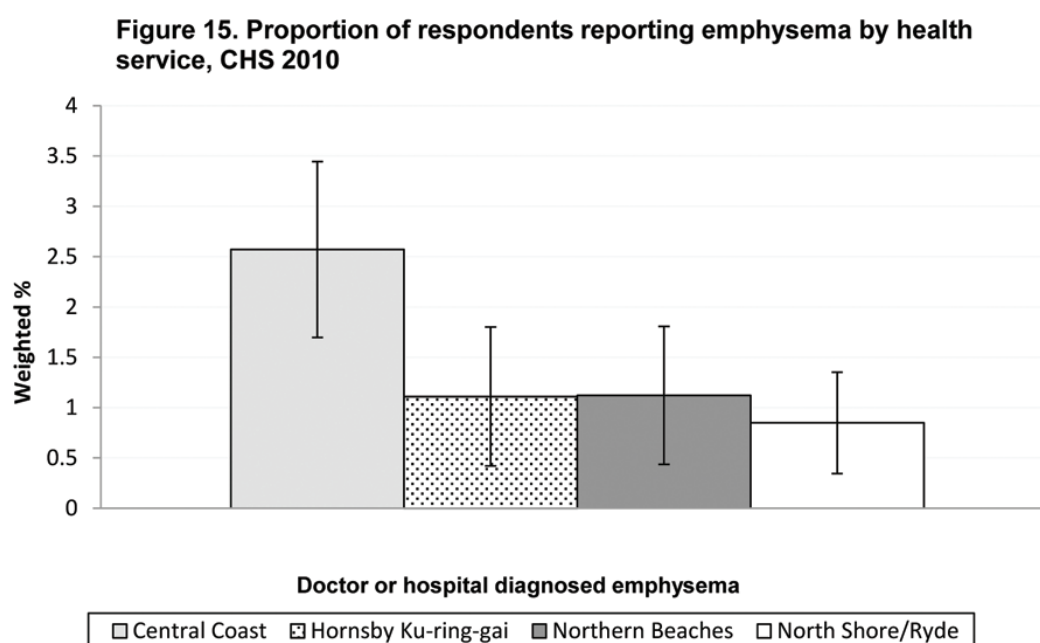


Table 15. Estimated population proportion (95% CI) of respondents reporting emphysema by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Emphysema	2.6 (1.7-3.4)	1.1 (0.4-1.8)	1.1 (0.4-1.8)	0.8 (0.3-1.4)

Figure 16. Proportion of respondents reporting either COPD or emphysema by health service, CHS 2010

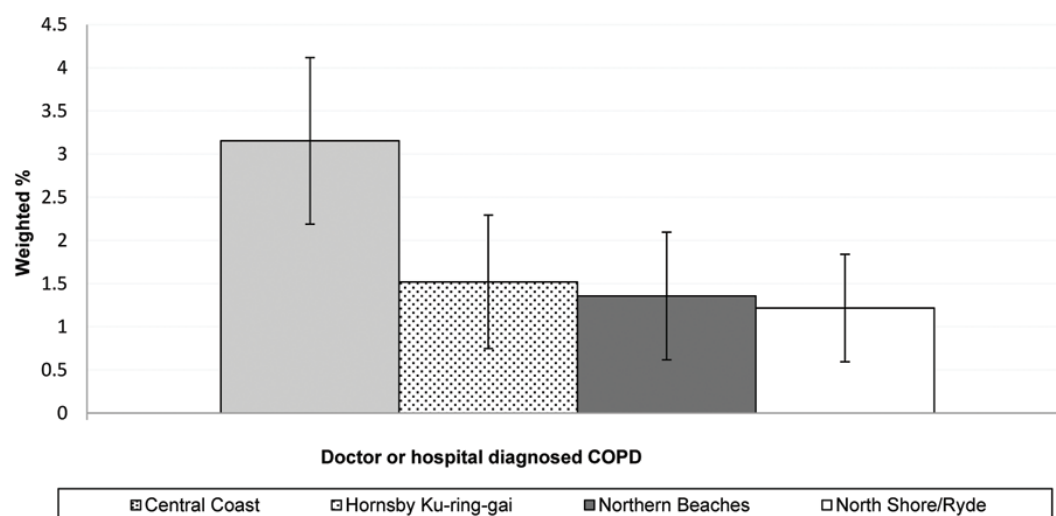


Table 16. Estimated population proportion (95% CI) of respondents reporting either COPD or emphysema by health service, CHS 2010

	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
COPD or Emphysema	3.2(2.2-4.1)	1.5(0.7-2.3)	1.4(0.6-2.1)	1.2(0.6-1.8)

Asthma

Asthma is a chronic inflammatory disorder of the airways in which, in response to a wide range of triggers, the airways narrow too much and too easily, resulting in episodes of wheeze, chest tightness, and shortness of breath [4]. Asthma was estimated to account for 2.4% of the burden of disease in Australia in 2003 [17]. It remains a significant health problem in Australia, with prevalence rates high by international standards.

In 2009 in NSW, 19.6% of adults had ever been told by a doctor or hospital they had asthma [4].

Across the health services, about 20% of respondents have been diagnosed with asthma at some point in their lives (Fig. 17 & Table 17). Since 2006, the proportion of respondents reporting asthma has increased in all areas, with the largest increase in North Shore /Ryde and the smallest increase in Hornsby Ku-ring-gai.

Figure 17. Proportion of respondents reporting asthma by health service, CHS 2010

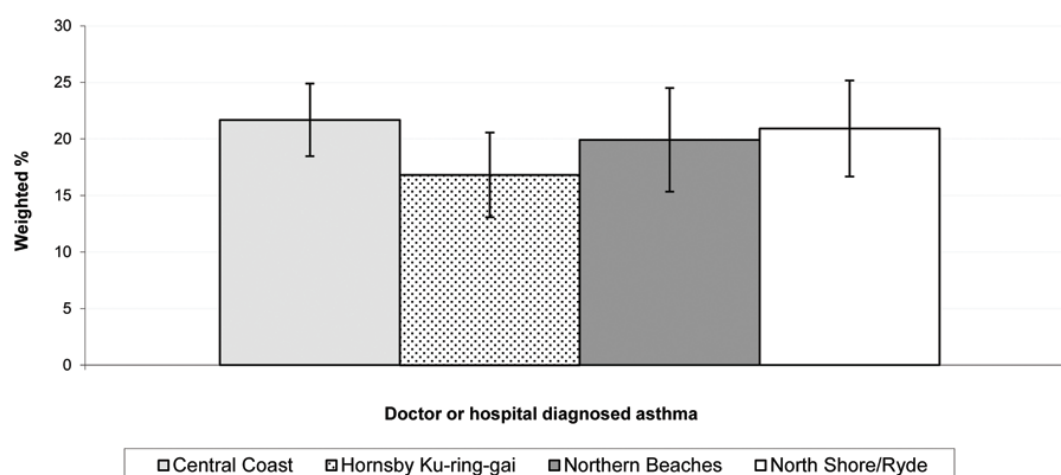


Table 17. Estimated population proportion (95% CI) of respondents reporting asthma by health service, CHS 2010

	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Asthma	21.7(18.5 – 24.9)	16.8(13.1-20.6)	19.9(15.3-24.5)	20.9(16.7-25.2)

APPENDICES

APPENDIX 1: METHODOLOGY

The Hunter Valley Research Foundation (HVRF), a private, non-profit regional research organisation, was contracted to conduct the telephone survey of residents 18 years and over. Telephone calls for the Central Coast part of the survey were made between June 2010 and September 2010. Telephone calls for the Northern Sydney part of the survey were made between July 2010 and January 2011.

The survey was conducted by the HVRF using a computer aided telephone interviewing (CATI) system to guide trained interviewers through the introduction, subject selection and interview.

The telephone survey

The telephone survey (Appendix 2) asked questions about self-reported prevalence of diagnoses of, and risk factors for, cardiovascular disease, cerebrovascular disease, psychological distress, hypertension, hyperlipidaemia, overweight and obesity, diabetes, chronic obstructive pulmonary disease (COPD) and asthma. The questions were mostly adapted from the NSW Health Adult Population Health Survey, an ongoing survey of the health of people of New South Wales which uses the CATI method.

The HVRF recommended changes to the wording to improve the flow and function of the survey in a telephone environment, and advised on the duration of question sequences to shorten the average interview length. A pilot study was conducted to further test the survey in a CATI environment. The three-phase pilot consisted of 30 completed interviews. This resulted in minor modification to both the wording and flow of the questionnaire [2].

Interviewers

All interviewers had CATI interviewing experience, particularly with community and population health surveys. Interviewers attended a training session prior to data collection and received a training manual addressing survey methodology. The interviewers were able to practise with the CATI survey prior to commencement of data collection [2].

Random respondent selection and recruitment

The random digit dialling seed sample was randomly selected from the four health service areas: Central Coast, Hornsby Ku-ring-gai, Northern Beaches, and North Shore/Ryde. A randomised number sample was generated by changing terminal digits and the numbers were matched with business databases to delete listed business numbers [2]. The sample included landline numbers only.

In the initial telephone contact, the number of eligible respondents in the household (18 years and over) was ascertained, and the age of the person answering the phone relative to the other householders. A respondent was randomly selected based on age position within the household (e.g. third eldest), or birthday (e.g. the last birthday) where the person refused to provide the number of eligible respondents. Once selected, the respondent could not be substituted by another household member [2].

CATI contact attempts

Attempts at contacting each respondent were usually made between the hours of 9 am and 8 pm Eastern Standard Time, Monday to Friday. A minimum of 6 call attempts were made to each household to establish contact. Once contact had been made, at least another 5 attempts were made to speak to the respondent to obtain either a completed interview or a refusal. A maximum of three messages, which included a contact number, were left on the household answering machine at various point of contact. During the survey, appointments were made if the respondent was unable to complete the interview when contacted by an interviewer. However, if this did not suit the respondent, another time was arranged. Where the participant may not be available to undertake the 15-20 minute interview, a callback was arranged at a time to suit the participant [2].

Letters and Information Sheets

A letter and information sheet was available for people wanting to confirm the legitimacy of the survey (Appendix 3). This information was also posted on the Northern Sydney Central Coast Health website. Where people requested a letter or visited the website, follow-up contact was made within 2 weeks to confirm participation. Participants could choose to answer the survey without receiving the letter, and were reassured that withdrawal from the survey at any point would not affect their relationship with Northern Sydney Central Coast Area Health Service.

Exclusion

Because the survey was only conducted in English, respondents who could not complete the survey in this language were excluded.

Sampling Strategy

The initial target was a total of 4000 adult residents, 18 years or more. Sampling was stratified so that 50% of respondents were aged 65 years or more, in order to fulfil the requirements of the immunisation component of the survey. Required cell counts were then adjusted to reflect the relative proportions of the populations in each of the four health service areas as shown in Table 2 (p1).

Reaching the age targets and the proportional numbers required for each geographical area proved difficult. Targeting the smaller, older age group meant more calls to ineligible households (i.e. no householder over 65). It was also time consuming for the HVRF to identify the health service area of the randomly generated numbers. The over-65's have a higher incidence of disability making it hard for them to complete interviews. These issues impacted on the timeliness and cost of the survey and it was decided to reduce the total number of Northern Sydney interviews. Completed interviews were received from 3,246 respondents - 1,200 Central Coast and 2,046 Northern Sydney health service areas. The revised distribution to meet the sampling frame is given in Suppl. Table 1, p34. The actual distribution of respondents for the 2010 survey is given in Table 3, p2.

Telephone surveys often undersample young adults. In addition, this survey deliberately oversampled those 65 years and over. Therefore to generate population estimates we calculated 'sex x five year age group' weights for each health service area. The population distribution of respondents in different age and sex categories is provided in Suppl. Table 2, p34.

Weighting

Weighted proportion (%) data is given for each health service, and error bars represent 95% confidence limits. Raw prevalence data is presented in Supplementary Tables pp36-40.

A comparison of the age/sex of the survey population to the estimated resident population (ABS, 2010) is presented in Figure 1. In each health service, younger age groups 18-40 years were undersampled and older age groups ≥65 years were oversampled.

The weighting process effectively converts the age and sex profile of the sample to that of the estimated resident population. Weights for each geographical area (Suppl. Table 3, p35) in each sex/age group strata were calculated as follows:

$$\text{Weight} = \frac{\text{Number in population}}{\text{Number in sample}}$$

Weights were applied to questions which were answered by the whole survey population.

Sample Size and Response Rate

The overall response rate was 73% - 77% for the Central Coast and 71% for Northern Sydney areas. These rates were similar to the 2006 Community Health Study - 74% overall: 76% Central Coast and 72% Northern Sydney area.

APPENDIX 2: TELEPHONE SURVEY QUESTIONS, 2010

HYPERTENSION

Q1. Have you ever been told by a doctor or at a hospital that you have high blood pressure, which is sometimes called hypertension? [DO NOT READ OPTIONS]

- 1. Yes
- 2. No
- 3. Yes, but only during pregnancy
- 4. Yes, but only temporarily
- 8. Don't Know
- 9. Refused

HYPERLIPIDAEMIA

Q2. Have you ever been told by a doctor or at a hospital that you have high cholesterol? [DO NOT READ OPTIONS]

- 1. Yes
- 2. No
- 7. Borderline
- 8. Don't Know
- 9. Refused

HEART DISEASE AND STROKE

Now I would like to ask you about heart disease and stroke.

Q3. Have you ever been told by a doctor or at a hospital that you have heart disease or a heart condition?

- 1. Yes
- 2. No
- 8. Don't Know
- 9. Refused

Q4. What type of heart disease do you have? [READ OPTIONS, MULTIPLE RESPONSE]

- 1. Yes
- 2. No
- 8. Don't Know
- 9. Refused

Angina

Heart attack (myocardial infarction)

Heart failure

Irregular heart beat (incl. SVT, atrial fibrillation, bundle branch block)

Other [NO DETAILS REQUIRED]

Q5. Have you ever been told by a doctor or at a hospital that you have had a stroke or TIA (transient ischaemic attack or warning sign of a stroke)?

- 1. Yes
- 2. No
- 8. Don't Know
- 9. Refused

DIABETES

The next few questions are about diabetes. Diabetes is a disease where there is too much sugar in the blood.

Q6. Have you ever been told by a doctor or at a hospital that you have diabetes?

- 1. Yes
- 2. No
- 8. Don't Know
- 9. Refused

Q7. What type of diabetes were you told you had?

- 1. Type 1 [INSULIN Dependent Diabetes Mellitus]
- 2. Type 2 [NON-INSULIN Dependent Diabetes Mellitus]
- 3. Gestational (Diabetes in pregnancy)
- 88. Don't Know
- 99. Refused

[TYPE IN DESCRIPTION IF RESPONDENT UNSURE ABOUT TYPE]

ASTHMA

The next few questions are about asthma.

Q8. Have you ever been told by a doctor or at a hospital that you have asthma?

- 1. Yes
- 2. No
- 8. Don't Know
- 9. Refused

COPD

Q9. Have you ever been told by a doctor or hospital that you have: [READ ITEMS]

- 1. Yes
- 2. No
- 8. Don't Know
- 9. Refused
- # Emphysema
- # Chronic Obstructive Pulmonary Disease (COPD)

FOOD

The next few questions are about food.

Q10. How many serves of vegetables do you usually eat each day?

One serve is ½ cup cooked or 1 cup raw vegetables or 1 cup of salad vegetables.

[SERVES PER DAY]

- 77. Never Eat
- 88. Don't Know
- 99. Refused

If respondent USUALLY eats less than 1 serve per day Enter weekly value

[SERVES PER WEEK]

- 88. Don't Know
 - 99. Refused
- [INTERVIEWER: ONLY USE ONE RESPONSE FIELD]

Q11. How many serves of fruit do you usually eat each day?

A serve is 1 medium piece or 2 small pieces of fruit or 1 cup of diced pieces.] [NOT JUICE.]

[SERVES PER DAY]

77. Never Eat

88. Don't Know

If respondent USUALLY eats less than 1 serve per day Enter weekly value

[SERVES PER WEEK]

88. Don't Know

99. Refused

[INTERVIEWER: ONLY USE ONE RESPONSE FIELD]

PHYSICAL ACTIVITY

The next few questions are about physical activity

Q12. In the last week, how many times have you walked continuously for at least 10 minutes for recreation or exercise or to get to or from places?

[Number of times]

88. Don't Know - USE ONLY AS AN ABSOLUTE LAST RESORT

Q13. What do you estimate was the total time you spent walking in this way IN THE LAST WEEK?

Hours [888. Don't Know]

Minutes [88. Don't Know]

This next question does not include household chores or gardening.

Q14. In the last week, how many times did you do any vigorous physical activity which made you breathe harder or puff and pant? (e.g. football, tennis, squash, athletics, cycling, jogging, gym, swimming etc.)

[Number of times]

88. Don't Know - USE AS ABSOLUTE LAST RESORT

Q15. What do you estimate was the total time you spent doing this vigorous physical activity IN THE LAST WEEK?

Hours [888. Don't Know]

Minutes [88. Don't Know]

This next question does not include household chores or gardening.

Q16. In the last week, how many times did you do any other more moderate physical activity that you haven't already mentioned? (e.g. lawn bowls, golf, tai chi)

[Number of times]

88. Don't Know - USE AS ABSOLUTE LAST RESORT]

Q17. What do you estimate was the total time you spent doing these activities IN THE LAST WEEK?

Hours [888. Don't Know]

Minutes [88. Don't Know]

OVERWEIGHT AND OBESITY

The next few questions are about height and weight

Q18. How tall are you without shoes?

Feet [88. Don't Know; 99. Refused]

Inches [888. Don't know; 999. Refused] or

Centimetres [888. Don't know; 999. Refused]

Q19. How much do you weigh without clothes or shoes?

Stones [88. Don't Know; 99. Refused]

Pounds [888. Don't know; 999. Refused]OR

Kilograms [888. Don't know; 999. Refused]

Q20. Do you consider yourself to be: [READ OUT ITEMS]?

1. Underweight
2. Overweight
3. Acceptable weight
8. Don't Know
9. Refused

SMOKING

The next few questions are about tobacco smoking. This includes cigarettes, cigars and pipes.

Q21. Which of the following best describes your smoking status? [READ ITEMS]

1. I smoke daily
2. I smoke occasionally
3. I don't smoke now but I used to
4. I've tried it a few times but never smoked regularly
5. I've never smoked
8. Don't Know
9. Refused

Q22. Which of the following best describes your home situation regarding smoking?
[READ OPTIONS AS PRESENTED]

1. My home is smoke free
2. People occasionally smoke in the house
3. People frequently smoke in the house
8. Don't Know
9. Refused

PSYCHOLOGICAL DISTRESS (K10)

The next few questions are about how you feel about your life.

Q23. In the last four weeks, about how often did you feel tired out for no good reasons?
[READ SCALE]

1. All of the time
2. Most of the time
3. Some of the time
4. A little of the time
5. None of the time
8. Don't Know
9. Refused

Q24. In the last four weeks, about how often did you feel nervous?
[READ SCALE PER Q30, IF NECESSARY]

Q25. In the last four weeks, about how often did you feel so nervous that nothing could calm you down?
[READ SCALE AGAIN IF NECESSARY]

Q26. In the last four weeks, about how often did you feel hopeless?
[READ SCALE AGAIN IF NECESSARY]

Q27. In the last four weeks, about how often did you feel restless or fidgety?

[READ SCALE AGAIN IF NECESSARY]

Q28. In the last four weeks, about how often did you feel so restless that you could not sit still?

[READ SCALE AGAIN IF NECESSARY]

Q29. In the last four weeks, about how often did you feel depressed?

[READ SCALE]

Q30. In the last four weeks, about how often did you feel that everything was an effort?

[READ SCALE AGAIN IF NECESSARY]

Q31. In the last four weeks, about how often did you feel so sad that nothing could cheer you up?

[READ SCALE]

Q32. In the last four weeks, about how often did you feel worthless?

[READ SCALE AGAIN IF NECESSARY]

DEMOGRAPHICS

Q33. Which country were you born in?

- | | |
|-------------------------|-----------------------|
| 1. AUSTRALIA | 13. Korea |
| 2. China (excl. Taiwan) | 14. Lebanon |
| 3. Cyprus | 15. Malaysia |
| 4. Egypt | 16. Malta |
| 5. Fiji | 17. New Zealand |
| 6. Germany | 18. Philippines |
| 7. Greece | 19. Portugal |
| 8. Hong Kong | 20. South Africa |
| 9. India | 21. UK and Ireland |
| 10. Indonesia/Timor | 22. USA |
| 11. Italy | 23. Viet Nam |
| 12. Japan | 24. Former Yugoslavia |

[TYPE IN OTHER RESPONSES - 88. DON'T KNOW - 99. REFUSED]

Q34. What language do you usually speak at home? [By home we mean where you live]

- | | |
|--------------------------------------|-----------------|
| 1. English | 15. Italian |
| 2. Arabic (incl Lebanese, Egyptian) | 16. Japanese |
| 3. Cambodian (Khmer) | 17. Korean |
| 4. Chinese (incl Mandarin/Cantonese) | 18. Macedonia |
| 5. Croatian | 19. Maltese |
| 6. Dutch | 20. Polish |
| 7. Fijian | 21. Portugese |
| 8. Filipino languages (incl Tagalog) | 22. Russian |
| 9. French | 23. Serbian |
| 10. German | 24. Spanish |
| 11. Greek | 25. Thai |
| 12. Hindi | 26. Turkish |
| 13. Hungarian | 27. Vietnamese. |
| 14. Indonesian/Malay | |

[TYPE IN OTHER - 88. OTHER 99. REFUSED]

Q35. What is the highest level of education you have completed? [DO NOT READ - PROMPT IF NECESSARY]

1. Never attended school
2. Completed primary school
3. Some high school
4. Completed school certificate/intermediate/year 10/4th form
5. Complete HSC/Leaving/Year 12/6th form
6. TAFE Certificate or Diploma
7. University, CAE or some other tertiary institute degree or higher

[TYPE IN OTHER RESPONSES - 99. REFUSED]

Q36. What is your approximate FAMILY INCOME before tax and other deductions? That's the total for you, your partner and your children if they live at home. [READ OUT THE CATEGORIES, CLARIFY: before tax, super, health insurance etc. deducted]

1. Less than \$10,000
2. \$10,000-\$20,000
3. \$20,000-\$40,000
4. \$40,000-\$60,000
5. \$60,000-\$80,000
6. More than \$80,000
8. DON'T KNOW
9. REFUSED

APPENDIX 3: LETTER OF INTRODUCTION AND FAQ

31st May 2010

Dear Householder

Northern Sydney Central Coast Community Health Study 2010

I am writing to tell you about an important study that is being conducted by Northern Sydney Central Coast Public Health Unit. The main aim of the study is to learn more about the cardiovascular (heart) health of adults living in the Northern Sydney and Central Coast areas, and the factors that affect heart health. We will also ask questions about other common illnesses like diabetes and respiratory disorders.

We will be interviewing approximately 4,000 residents by telephone. Your telephone number has been randomly selected to take part in this study. A trained telephone interviewer has contacted you to invite a member of your household to participate. The interviewer is employed by the Hunter Valley Research Foundation, which is a non-profit organisation contracted to conduct the telephone survey.

The telephone interview will take around 15 minutes. If you are unable to be interviewed at the time our interviewer calls back, they can arrange a time convenient to you to call back. Interviews are conducted during the daytime and in the evening, as well as on weekends.

Please be assured that your answers to the survey questions will remain confidential. The results will not be used in any way in which they can be associated with your name and address. We hope that you can help us in our study, however, we understand that you may not wish to participate. If this is the case, simply let the interviewer know and we will remove your household from our contact list.

Please find enclosed an Information Sheet with answers to important questions about the Community Health Study. If you have any further questions regarding the telephone interview please contact [Name] the Survey Supervisor, on freecall [Number].

Thank you in advance for your help with the survey.

Yours faithfully

Dr Peter Lewis

Area Director Public Health

APPENDIX 3: LETTER OF INTRODUCTION AND FAQ (CONT.)

Community Health Study 2010: Q&A

How did you choose my telephone number?

Your number was chosen at random from all of the possible telephone numbers in your local area, similar to a Lotto draw.

When will the interviewer ring me?

Interviewers will call between 9.00am and 8.30pm on weekdays or on a Saturday. If you are busy when they ring, they will be happy to phone back at a time convenient to you.

What types of questions will be asked?

The questions in the survey cover chronic health conditions such as cardiovascular (heart) disease, diabetes, and respiratory disorders. It covers common risk factors for these conditions such as nutrition, smoking, physical inactivity and psychological distress. Two other important health issues include adult vaccination, and how our neighbourhood environment influences health. There will also be some basic questions about age, occupation and language spoken at home. People are more at risk of cardiovascular (heart) disease if they:

- have high blood cholesterol
- smoke
- are physically inactive
- have high blood pressure
- have poor nutrition
- are overweight

Do I have to answer all of the questions?

We would really appreciate your help with this important survey, however, your participation is voluntary and you are free to withdraw from the survey at any time. If you do choose to participate, you don't have to answer all of the questions in the survey. Some of the questions are of a personal nature, if you feel uncomfortable with any question, you can just tell the interviewer and they will move on to the next question.

How long will it take?

The whole survey will take around 15 minutes for most people. It may take a little longer for people who have a heart disease or one of the risk factors for heart disease.

Will the information I give be kept confidential?

Please be assured that your answers to the survey questions will remain confidential. The results will not be used in any way in which they can be associated with your household's name, address or phone number. Reports that are written as a result of the survey will refer to groups of people, not individuals e.g. 25% of men reported that they were smokers.

Will the study results be available to me?

The overall findings of the study will be made available on the Northern Sydney Central Coast Public Health Unit website, go to the general website at www.nscchealth.nsw.gov.au/ in 2011.

Any Questions?

If you have any further questions regarding the telephone interview you may contact [Name] the Telephone Survey Supervisor, on freecall [Number]. Should you have any questions in relation to this Community Health Study, please contact [Name] [Position] or [Name] [Area Director] at the Northern Sydney Central Coast Public Health Unit, Ourimbah Office on [Number]. This project has been approved by the Harbour Ethics Committee of Northern Sydney Central Coast Health. If you have any concerns about the way this study is conducted or wish to make a complaint, you can contact the Ethics Research Office on [Number] and quote [Number].

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SUPPLEMENTARY TABLES

Suppl. Table 1. Required cell counts under sampling strategy given final respondent count, n=3,246

Age group (Years)	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde	Total
18-64	417	375	347	484	1623
≥65	518	373	334	398	1623
Total	935	748	681	882	3246

Suppl. Table 2. Age and sex population distribution of people surveyed by health service, CHS 2010

Health Service Area								
	Central Coast		Hornsby Ku-ring-gai		Northern Beaches		North Shore/Ryde	
Age Group	Males	Females	Males	Females	Males	Females	Males	Females
18-24	21	23	21	14	13	13	17	9
25-29	8	13	5	5	4	3	9	9
30-34	14	24	7	15	5	13	13	17
35-39	26	38	17	23	10	24	20	30
40-44	29	35	26	40	12	29	13	52
45-49	32	30	30	30	18	33	38	31
50-54	35	38	17	26	20	26	23	41
55-59	21	47	25	29	23	24	24	38
60-64	40	46	19	22	26	30	24	36
65-69	75	122	30	43	37	48	37	51
70-74	57	92	37	40	19	40	34	40
75-79	49	91	19	38	12	35	24	41
80-84	47	61	19	33	20	40	14	32
85+	25	61	17	22	6	25	13	39
Total	479	721	289	380	225	383	303	466
HSA Totals	1200		669		608		769	
AHS Totals	1200		2046					
Survey Total	3246							

Suppl. Table 3. Weighting factors applied to each age and sex cell of people surveyed, by health service, CHS 2010								
Health Service Area								
	Central Coast		Hornsby Ku-ring-gai		Northern Beaches		North Shore/Ryde	
Age Group	Males	Females	Males	Females	Males	Females	Males	Females
18-24	21	23	21	14	13	13	17	9
25-29	8	13	5	5	4	3	9	9
30-34	14	24	7	15	5	13	13	17
35-39	26	38	17	23	10	24	20	30
40-44	29	35	26	40	12	29	13	52
45-49	32	30	30	30	18	33	38	31
50-54	35	38	17	26	20	26	23	41
55-59	21	47	25	29	23	24	24	38
60-64	40	46	19	22	26	30	24	36
65-69	75	122	30	43	37	48	37	51
70-74	57	92	37	40	19	40	34	40
75-79	49	91	19	38	12	35	24	41
80-84	47	61	19	33	20	40	14	32
85+	25	61	17	22	6	25	13	39
Total	479	721	289	380	225	383	303	466

Demographics of Survey Sample

Suppl. Table 4. Highest education level achieved (unweighted %) by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
University (tertiary or higher)	16.6	47.8	33.8	49.2
TAFE (certificate/diploma)	22.9	20.5	25.8	20.7
HSC/Leaving/Yr12	12.7	14.8	15.5	11.1
School Certificate/Yr10	30.8	13.6	19.1	13.8
Some High School	13.8	2.7	4.6	3.8
Primary School	2.9	0.5	1.2	1.2
Never attended	0.0	0.0	0.0	0.3
Refused	0.3	0.2	0.0	0.1
Total	100.0	100.1	100.0	100.2

Suppl. Table 5. Family income (unweighted %) by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
<\$20,000	28.2	10.3	15.8	13.5
\$20,000-\$40,000	19.8	10.8	9.9	9.5
\$40,000-\$60,000	11.2	9.4	9.7	9.1
\$60,000-\$80,000	7.7	9.1	7.9	8.5
>\$80,000	14.8	39.5	36.5	41.1
Don't Know	14.2	11.8	13.2	11.1
Refused	4.1	9.1	7.1	7.3
Total	100.0	100.0	100.1	100.1

Suppl. Table 6. Country of birth (unweighted %) by health service, CHS 2010							
Central Coast		Hornsby Ku-ring-gai		Northern Beaches		North Shore/Ryde	
Birth Country	%	Birth Country	%	Birth Country	%	Birth Country	%
Australia	81.3	Australia	67.6	Australia	70.6	Australia	65.3
UK & Ireland	9.4	UK & Ireland	10.2	UK & Ireland	13.8	UK & Ireland	9.0
New Zealand	2.0	South Africa	2.2	South Africa	1.5	New Zealand	3.0
Netherlands	0.8	New Zealand	2.1	New Zealand	1.3	China (Excl Taiwan)	2.2
South Africa	0.6	Hong Kong	2.1	USA	1.0	India	1.6
India	0.4	China (Excl Taiwan)	1.9	Netherlands	0.8	Hong Kong	1.2
Other	5.4	Other	14.3	Other	11.0	Other	17.8

Suppl. Table 7. Language spoken at home (unweighted %) by health service, CHS 2010							
Central Coast		Hornsby Ku-ring-gai		Northern Beaches		North Shore/Ryde	
Language	%	Language	%	Language	%	Language	%
English	97.8	English	93.3	English	96.5	English	91.9
Spanish	0.3	Chinese	2.8	Chinese	0.8	Chinese	3.3
Dutch	0.2	Dutch	0.4	Japanese	0.3	Japanese	0.5
Other	1.8	Filipino	0.4	German	0.3	Hindi	0.4
		Other	3.0	Farsi	0.3	Indonesian/Malay	0.4
				Other	1.6	Other	3.5

Note the following supplemental tables (tables 8 to 23) provide raw counts of respondents. 'Not Stated' refers to respondents who answered 'not known' or 'refused'.

Suppl. Table 8. No. of respondents in physical activity categories by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Sedentary	149	85	62	83
Insufficiently active	490	268	197	277
Sufficiently active	523	304	332	391
Not stated	38	12	17	18
Total	1200	669	608	769

Suppl. Table 9. No. of respondents in current tobacco smoking categories by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Smokes daily	117	25	30	37
Smokes occasionally	24	12	15	25
Not now but past	448	180	206	246
Tried a few times	119	94	88	95
Never	491	358	269	366
Not stated	1	0	0	0
Total	1200	669	608	769

Suppl. Table 10. No. of respondents in tobacco smoking in homes categories by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Smoke-free home	1098	650	577	724
Occasional in home	49	10	20	20
Frequently in home	53	9	11	24
Not stated	0	0	0	1
Total	1200	669	608	769

Suppl. Table 11. No. of respondents in nutrition category – fruit, by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Sufficient fruit	615	386	363	450
Not stated	0	0	0	0
Total	1200	669	608	769

Suppl. Table 12. No. of respondents in nutrition category – vegetables, by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Sufficient veg.	265	131	119	164
Not stated	0	0	0	0
Total	1200	669	608	769

Suppl. Table 13. No. of respondents in psychological distress (Kessler 10) categories by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Low	830	528	451	547
Moderate	229	96	110	139
High	79	21	35	43
Very high	31	9	7	18
Not Stated	31	15	5	22
Total	1200	669	608	769

Suppl. Table 14. No. of respondents doctor or hospital diagnosed with hypertension by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Yes	507	242	212	273
No	657	409	373	472
Yes, temporarily	24	13	16	17
Yes, pregnancy only	9	4	7	6
Not stated	3	1	0	1
Total	1200	669	608	769

Suppl. Table 15. No. of respondents doctor or hospital diagnosed with hyperlipidaemia by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Yes	443	229	200	250
No	708	407	373	486
Borderline	44	32	34	30
Not stated	5	1	1	3
Total	1200	669	608	769

Suppl. Table 16. No. of respondents in self-perceived weight categories by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Underweight	42	31	17	27
Acceptable	627	363	344	417
Overweight	530	273	247	325
Not stated	1	2	0	0
Total	1200	669	608	769

Suppl. Table 17. No. of respondents in BMI categories (self-report height & weight) by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Underweight	24	13	18	25
Acceptable	418	334	285	356
Overweight	419	197	194	258
Obese	277	101	86	99
Not stated	62	24	25	31
Total	1200	669	608	769

Suppl. Table 18. No. of respondents with doctor or hospital diagnosed heart disease, and type, by health service, CHS 2010 (unweighted counts)				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Angina	79	17	17	26
Heart attack	86	15	16	26
Heart failure	21	8	11	4
Irregular heart beat	138	52	70	63
Other heart disease	110	33	41	50
Not stated	1	1	1	0
Total with CVD	277	97	121	132
Proportion with CVD	23%	14%	20%	17%

Respondents could have more than one condition - the totals could be greater than 100%.

Suppl. Table 19. No. of respondents with doctor or hospital diagnosed previous stroke / TIA by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Yes	89	30	27	38
Not stated	3	2	1	1
Total	1200	669	608	769

Suppl. Table 20. No. of respondents with doctor or hospital diagnosed diabetes by health service, CHS 2010 (unweighted counts)				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Yes	164	47	46	58
Not stated	5	2	0	0
Total	1200	669	608	769

Suppl. Table 21. No. of respondents with doctor or hospital diagnosed diabetes, and type, by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Type 1	12	5	5	6
Type 2	127	36	33	39
Gestational	12	5	5	8
Other	9	1	3	5
Not stated	4	0	0	0
Total	164	47	46	58

Suppl. Table 22. No. of respondents with doctor or hospital diagnosed emphysema and/or COPD by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/Ryde
Emphysema	50	12	12	12
Not stated	0	1	1	6
COPD	31	9	5	8
Not stated	7	2	4	1
Total	1200	669	608	769

Suppl. Table 23. No. of respondents with doctor or hospital diagnosed asthma by health service, CHS 2010				
	Central Coast	Hornsby Ku-ring-gai	Northern Beaches	North Shore/ Ryde
Yes	225	105	107	141
Not stated	6	0	3	1
Total	1200	669	608	769

