Victorian Population Health Survey report 2008

Selected findings

A Victorian Government initiative

Victoria The Place To Be

Victorian Population Health Survey 2008

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Foreword

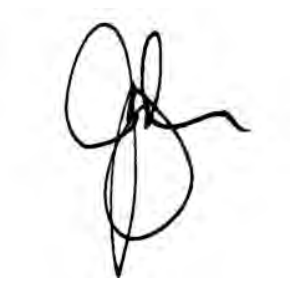
The Victorian Population Health Survey is an important component of the population health surveillance capacity of Victoria's Department of Health. This surveillance program was initiated by the Department in 1998 and the first survey of adult Victorians was conducted in 2001.

The survey is based on core question modules that are critical to informing decisions about public health priorities. Its findings fill a significant void in the accessible data needed to ensure public health programs are relevant and responsive to current and emerging health issues. This year, for the first time, the survey reports data at the local government area (LGA) level. For local governments developing municipal public health plans, this information will be invaluable.

The eighth in the annual series, this report contains the key findings from the Victorian Population Health Survey 2008. It presents information on health and lifestyle, including asthma, diabetes, alcohol and tobacco consumption, fruit and vegetable consumption, physical activity, adult obesity, mental health, selected chronic diseases, social inequalities in health and social networks.

The value of these survey data is increasing over time as it becomes possible to comment on trends for selected survey estimates. As our population ages, the number of people with a chronic disease is expected to rise, greatly affecting the health and wellbeing of the population. The survey findings give us important insights into the determinants of chronic disease and how we might better target public health interventions.

The survey series is an ongoing source of quality information on the health of Victorians. The latest data from the 2008 survey continue to underpin our public health efforts, especially in controlling chronic diseases.



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Introduction

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Introduction

What's new?

- The sample size for the Victorian Population Health Survey was expanded to 34,168 respondents in 2008, so information could be analysed and presented at the local government area level.
- Estimates have been age standardised throughout the report to eliminate the effect that differences in age structure may have on estimates from different population groups.
- Notes to the tables and figures indicate the statistical significance of differences between estimates. Significance has been determined by comparing 95 per cent confidence intervals and testing trends over time using ordinary least squares regression.
- The reliability of estimates has been determined using relative standard errors, and the tables and figures indicate the degree of reliability.

How to interpret a table

- Time trends tables: estimates are presented for each year in which the survey was run where exactly the same question has been asked each time. Where a question about a health topic has changed over time, the period reported reflects the period from when the question change occurred. Ordinary least squares regression was used to test trends over time.
- Other tables: individual estimates have been compared to the total Victorian estimate. Where subgroups of the population are presented (for example, males and females), the estimates have been compared to the total Victorian estimate for that population subgroup (all Victorian males, all Victorian females). The significance of differences in estimates has been determined by comparing the 95 per cent confidence intervals of the estimates.

About the survey

The Victorian Population Health Survey is an important component of the population health surveillance capacity of the Department of Health. The annual survey series is an ongoing source of quality information on the health of Victorians.

The aim of the survey is to provide quality, timely indicators of population health that directly apply to evidence-based policy development and strategic planning across the department and the wider community. The survey is based on core question modules that are critical to informing decisions about public health priorities. It fills a significant void in the accessible data needed to ensure public health programs are relevant and responsive to current and emerging health issues.

About this report

The first chapter, 'Health and lifestyle', contains information on the prevalence of major risk-taking behaviours across the Victorian population, including the prevalence of smoking, fruit and vegetable intake, alcohol consumption, levels of physical activity and selected health and screening checks. This information is vital for targeting public health interventions and evaluating outcomes.

The report includes a chapter on self-reporting on health and selected chronic diseases, as well as separate chapters on body weight, asthma and diabetes, which are the subject of public health programs in Victoria and nationwide. These data complement the department's Victorian Burden of Disease Study and Victorian Ambulatory Care Sensitive Conditions Study, and identify aspects of prevention that are amenable to public health intervention.

The report also contains a chapter on mental health, examining levels of psychological distress, levels of psychological distress by selected health indicators, and whether a person sought help from a professional for a mental health-related problem in the preceding year.

Last are a chapter covering social inequalities in health, which identifies health differences between selected social groups in Victoria, and a chapter titled 'Connections with others', which presents information on levels of social support, community participation, social attitudes and social capital.

Methods

The Victorian Population Health Survey has been conducted each year since 2001, and previously was based on a sample of 7500 adults aged 18 years and over, randomly selected from households from each of the eight Department of Health regions in the state. In 2008, computer-assisted telephone interviewing was undertaken between August and December, and the sample was expanded to 34,168 and taken at the local government area level (LGA).

The following box explains how local governments can use the LGA-level data.

How is local government involved in public health?

The Victorian Government has long developed policy, programs and resources that encourage preventive health practices across all levels of government, non-government agencies and the private sector and it has further committed to preventive health through the *Public Health and Wellbeing Act 2008*. This Act requires all government departments and levels of government in Victoria to be responsible for public health and wellbeing. This approach is necessary, because the environment in which we live influences many of the factors that affect our health and wellbeing.

Our state focus on strong preventative action is mirrored nationally. From 2009, the Council of Australian Governments (COAG) has committed to a six year program of investment in prevention through the National Partnership Agreement on Preventive Health. The program focuses on healthy workers, healthy children and healthy communities. The recently released National Preventative Health Strategy highlights that such a prevention focus will avoid hundreds of thousands of premature deaths and reduce the strain on the health system. So what does this mean for local government? The program involves the funding of ongoing prevention activities but has a significant emphasis on new preventive health initiatives. In particular, the initiatives represent a major preventive health investment.

How can this survey help local government?

Local government is ideally placed to develop local policies and influence actions related to key health determinants. It can encourage physical activity and social networks, for example, by its work in a range of areas, including transport, roads, parks, land use, housing and urban planning, recreation and cultural activities, and the creation of safe public places. And now, because the Victorian Population Health Survey data are available at the local government area level, councils can confidently plan for public health and wellbeing. With the *Public Health and Wellbeing Act 2008* strengthening the role of local government in municipal public health and wellbeing planning, local level planners can use the survey data to produce and evaluate evidence-informed plans.

Municipal public health and wellbeing planning is likely to be increasingly effective in promoting public health and wellbeing as policies and planning practices across government, non-government and business sectors evolve in line with the intentions of the *Public Health and Wellbeing Act 2008*. As part of its support for municipal public health and wellbeing planning, Victoria's Department of Health will assist councils to use the survey data to set and evaluate their planning priorities.

The Department of Health reviewed the survey content and gave priority to new and emerging issues, areas with high demand for information, and areas in which a public health response is likely to be effective in improving health or reducing inequalities in health. Chapter 1 presents further detail on the survey methods.

Summary of findings

Fruit intake

Almost half (47.4 per cent) of all persons surveyed met the recommended minimum daily intake levels for fruit (three or more serves for those aged 18 years and two or more serves for those aged 19 years and over) (table 1.1).

Vegetable intake

Less than one in 10 adults (7.9 per cent) in 2008 met the recommended minimum daily intake for vegetables (four or more serves for those aged 18 years and five or more serves for those aged 19 years and over).

Alcohol intake

The proportion of males and females drinking alcohol at levels for short-term risk of harm did not vary significantly over the period 2002–2008. In 2008, approximately 13.6 per cent of males and 6.9 per cent of females reported drinking alcohol weekly at levels for short-term risk.

Smoking

Approximately one in five adults aged 18 years or over (19.1 per cent) were current smokers in 2008, down from a high of 24.1 per cent in 2001.

Physical activity

The proportion of persons undertaking adequate physical activity (measured in both sufficient time and sessions) to meet the national guidelines, was 60.3 per cent in 2008. This figure has not changed significantly since 2002.

Self-reported health

The proportion of persons reporting their health as excellent, very good or good was 81.5 per cent in 2008. This figure did not change significantly over the period 2005–2008.

Body weight

Measures of height and weight were collected for the first time in 2002 to calculate body mass index. The proportion of persons categorised as overweight or obese according to their body mass index increased from 45.1 per cent in 2002 to 48.6 per cent in 2008.

Asthma

The prevalence of current asthma (experienced asthma symptoms in the previous 12 months) among adults was 10.7 per cent in 2008, down from 12.1 per cent in 2001.

Diabetes

The prevalence of type 2 diabetes was 4.8 per cent for all Victorians in 2008. Although the prevalence of type 2 diabetes did not change significantly between 2005 and 2008 for females, there was an increase in prevalence for males.

Psychological distress

The proportion of persons with very high levels of psychological stress, as determined using the Kessler 10 measure of psychological distress, remained steady at 2–4 per cent over the period 2001–2008.

Health checks and screening

In 2008, more than three quarters (79.5 per cent) of all persons surveyed reported having had their blood pressure checked, more than half (56.5 per cent) reported having had a blood cholesterol test and more than half (52.2 per cent) reported having had a blood glucose test, in the past two years.

More than a quarter (29.4 per cent) of all persons aged 50 years and over reported having had a test to detect bowel cancer in the past two years.

Among the female population, aged 20–69 years, almost three quarters (71.1 per cent) reported having had a Pap smear in the past two years.

Among the female population, aged 50–69 years, more than three quarters (75.9 per cent) reported having had a mammogram in the past two years.

Connections with others

In 2008, almost one in three persons aged 18 years and over (32.4 per cent) reported having helped out a local group as a volunteer and more than half (52.9 per cent) had attended a local community event in the past six months. Most persons could get help from friends, family or neighbours when needed.

More than three out of four persons (76.2 per cent) felt multiculturalism made life in their area better, 81.5 per cent felt valued by society and 74.0 per cent felt they had an opportunity to have a say on issues that were important to them.

Social inequalities in health

The proportion of persons who ran out of food at least once in the previous 12 months and could not afford to buy more increased between 2005 (4.6 per cent) and 2008 (5.6 per cent).

The proportion of persons unable to raise $2000 within two days in an emergency decreased from 16.4 per cent in 2002 to 11.5 per cent in 2008.

Table 1.1: Health and lifestyle of adult(a) Victorians, selected findings, 2001–2008

Lifestyle behaviours	2001	2002	2003	2004	2005	2006	2007	2008	Measure
	Per cent								
Fruit intake	..	54.5	49.8	51.4	49.9	46.3	45.2	47.4	Proportion meeting recommended daily intake levels
Vegetable intake	..	12.3	11.5	7.0	9.6	10.1	7.8	7.9	
Alcohol intake - Males	..	14.2	14.2	16.0	13.1	14.4	13.6	13.6	Proportion drinking weekly at levels for short term risk of harm
Alcohol intake - Females	..	6.1	6.3	7.2	6.6	6.3	6.8	6.9	
Smoking	24.1	23.9	22.1	22.0	20.5	20.4	19.9	19.1	Proportion of current smokers
Physical activity	..	..	..	..	63.6	63.5	62.5	60.3	Adequate physical activity - sufficient time and sessions
Health Status									
Self rated health	..	..	..	..	82.2	84.3	83.6	81.5	Proportion reporting excellent/very good/good health
Obesity/overweight	..	45.1	45.2	46.4	47.8	47.4	48.2	48.6	Proportion of persons obese/overweight according to Body Mass Index
Asthma	12.1	12.6	11.6	10.4	11.3	10.6	10.4	10.7	Proportion experienced asthma symptoms in last 12 months (current asthma)
Diabetes	..	..	..	..	3.8	4.0	4.1	4.8	Proportion diagnosed with type 2 diabetes
Psychological distress	4.0	2.7	2.6	3.4	3.2	2.8	2.4	3.1	Proportion having very high psychological distress scores (>=30)
Health checks and screening									
Blood pressure check	79.3	79.5	77.2	79.0	79.1	78.1	78.6	79.5	
Cholesterol checks	46.2	47.3	48.7	50.0	50.8	50.5	52.7	56.5	Proportion of persons aged 18 years and over who had a test in the past two years
Blood sugar test	45.2	44.3	46.6	47.1	47.3	47.4	48.9	52.2	
Bowel screen	..	..	..	..	..	25.6	27.6	29.4	Proportion of persons aged 50 years and over who had a test in the past two years
Cervical screen	..	..	..	..	..	..	..	71.1	Proportion of females aged 20–69 years having a test in the past two years
Breast screen	..	..	..	..	..	..	..	75.9	Proportion of females aged 50–69 years who had a test in the past two years
Social networks and participation									
Attended a local community event in the past six months	..	..	52.2	49.4	53.9	52.9	51.3	52.9	
Member of a sports group	..	28.4	28.2	29.3	27.2	27.0	26.0	26.0	
Member of a church group	..	18.8	18.0	18.9	18.2	16.5	16.6	16.4	Proportion of persons aged 18 years and over
Member of a school group	..	14.7	14.3	15.4	15.3	12.7	11.6	11.2	
Member of community or action group	..	25.1	21.8	20.8	19.6	20.0	18.5	19.0	
Member of a professional group or academic society	..	21.1	21.6	21.2	23.0	22.0	22.0	22.5	

Table 1.1: Health and lifestyle of adult(a) Victorians, selected findings, 2001–2008 (continued)

Lifestyle behaviours	2001	2002	2003	2004	2005	2006	2007	2008	Measure
	Per cent								
Social networks and participation (continued)									
Help out a local group as a volunteer	31.9	33.4	34.0	31.0	34.9	33.5	35.1	32.4	
Can get help from friends when needed	94.2	94.0	94.2	93.2	93.1	94.4	94.1	94.3	
Can get help from family when needed	92.6	92.8	94.1	92.9	93.3	92.4	92.2	92.2	
Can get help from neighbours when needed	77.8	71.7	71.2	67.7	71.3	71.3	70.4	71.6	Proportion of aggregated responses 'Yes definitely' and 'Sometimes'
Feel multiculturalism makes life in area better	85.5	86.6	85.6	85.5	79.7	74.9	76.1	76.2	
Feel valued by society	78.4	83.8	85.1	79.4	82.5	81.1	82.7	81.5	
Feel they have an opportunity to have a say on issues that are important to them	70.0	73.4	74.8	72.3	72.6	72.7	73.3	74.0	
Social inequalities in health									
Ran out of food at least once in past 12 months and couldn't afford to buy more	..	..	..	..	4.6	4.9	5.1	5.6	Proportion of persons aged 18 years and over
Unable to raise $2,000 in two days in an emergency	..	16.4	15.7	14.7	12.8	10.6	10.0	11.5	

(a) Aged 18 years and over unless otherwise specified

.. Not available

Data are age standardised to the 2006 Victorian population.

For the Victorian Population Health Survey 2008, each one of the 169 interviewers spoke to more than 40 people every day of the survey. It was the Victorian Government's largest ever health survey, asking more than 34,000 Victorians from 79 local government areas about their health and wellbeing.

'My most amazing interview was with a woman who had to hang up because she had gone into labour while answering my questions. I wish I knew if the baby was a boy or a girl!'

Interviewer 87

'A respondent who stands out for me was an on-the-ball 85-year-old woman, who got up each morning, drank a glass of water and then cycled 20 kilometres! Funnily enough, I've now started to drink water in the mornings and to cycle to and from work!'

Interviewer 92

'I interviewed the oldest respondent, who was 96 years old. He took his time, but he answered every question. I often wonder how he's going.'

Interviewer 141

'My calls were real glimpses into the day-to-day lives of Victorians, like the farmer who answered the phone half way through delivering a calf. I learnt a lot about who lives in my state, in my city, in my neighbourhood.'

Interviewer 23

'So many people were expressive of their AFL football allegiances, saying things such as 'go Pies' at the end of a call. And when asked about being part of a sporting club, they made a point of wanting to be put down as a member of their respective football clubs.'

Interviewer 7

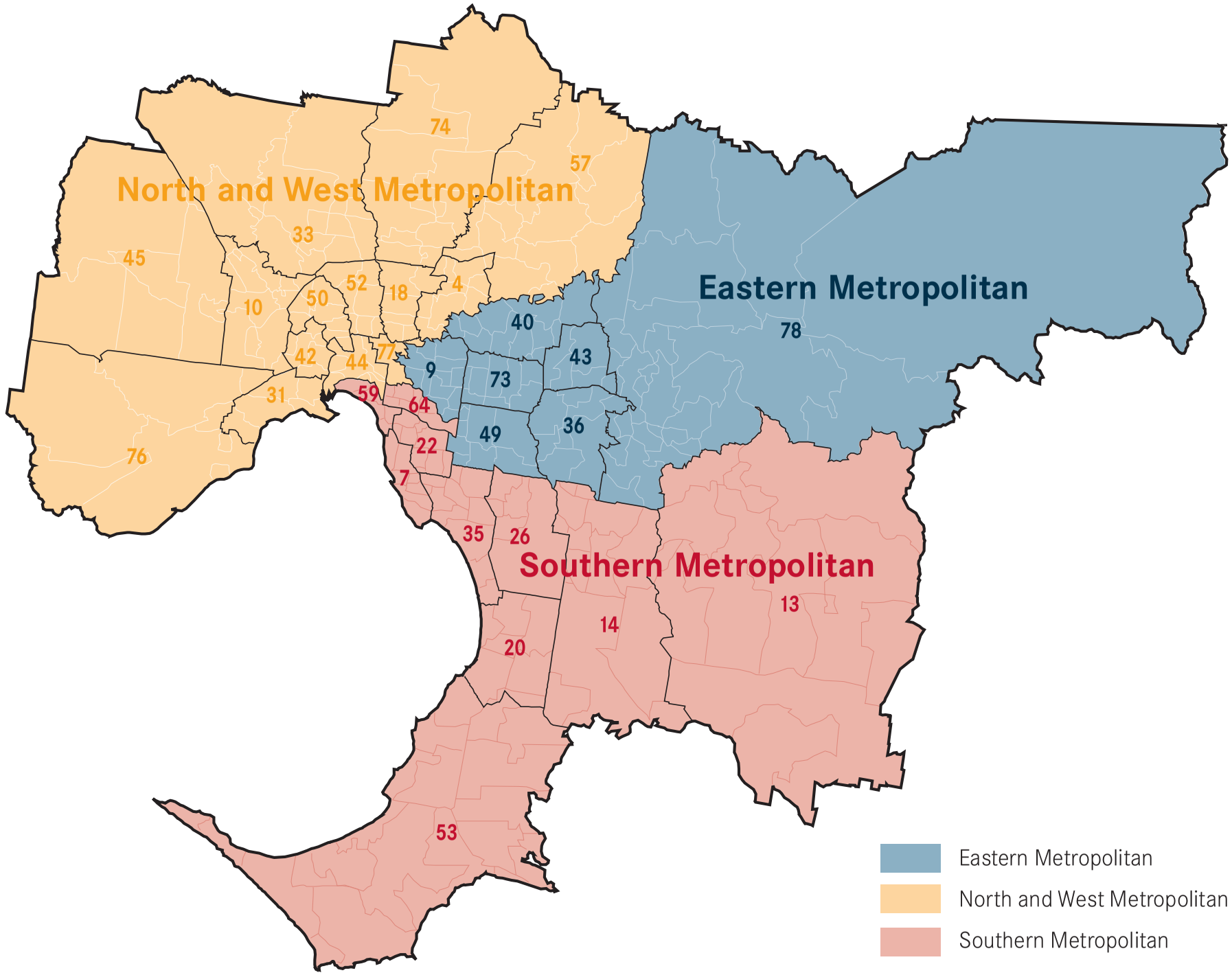
'I spoke to a lovely older lady who lived in a town of about 30 people. One of her friends had done the survey, and when she received our letter, she had her husband help her move the couch near the phone so she could last the 15 minutes of the interview. After random selection of household members her husband was selected for the interview. She was really disappointed.'

Interviewer 108

'One woman I spoke to was involved in every group possible, so she was really busy. But she had specifically set aside 15 minutes for us. She took every question seriously, making sure answers were correct by using her calculator for some questions. Then we got to the demographics, and I discovered she had 10 children!'

Interviewer 82

Figure 1.1: Metropolitan LGAs by Department of Health regions



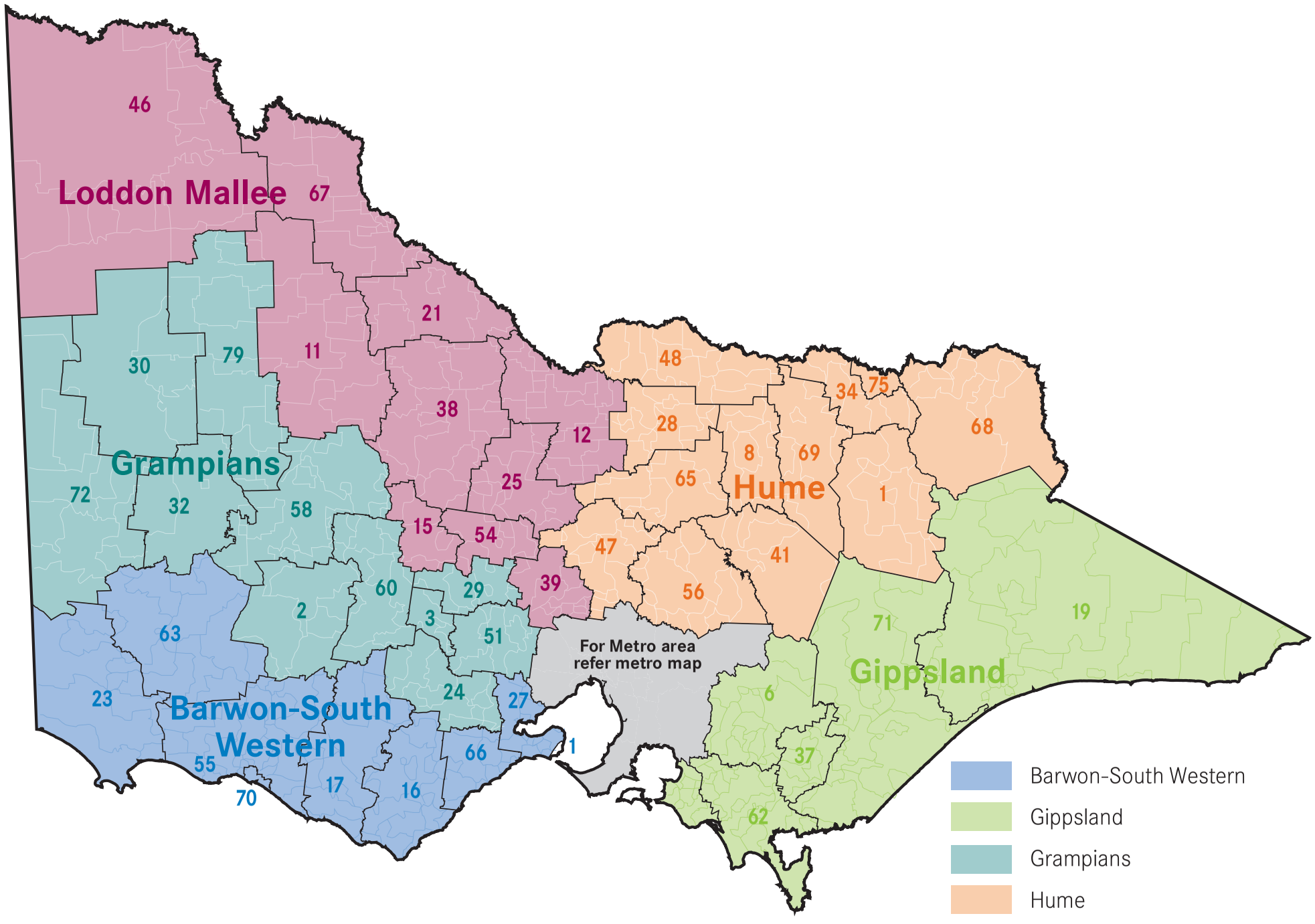
Region	LGA ID Number*	LGA Name
North and West Metropolitan	4	Banyule
	10	Brimbank
	18	Darebin
	31	Hobsons Bay
	33	Hume
	42	Maribyrnong
	44	Melbourne
	45	Melton
	50	Moonee Valley
	52	Moreland
	57	Nillumbik
	74	Whittlesea
	76	Wyndham
	77	Yarra

Region	LGA ID Number*	LGA Name
Southern Metropolitan	7	Bayside
	13	Cardinia
	14	Casey
	20	Frankston
	22	Glen Eira
	26	Greater Dandenong
	35	Kingston
	53	Mornington Peninsula
	59	Port Phillip
	64	Stonnington

Region	LGA ID Number*	LGA Name
Eastern Metropolitan	9	Boroondara
	36	Knox
	40	Manningham
	43	Maroondah
	49	Monash
	73	Whitehorse
	78	Yarra Ranges

* LGA ID is based on the alphabetical order of local government area names
See table 1.2.

Figure 1.2: Rural LGAs by Department of Health regions



Region	LGA ID Number*	LGA Name
Barwon-South Western	16	Colac Otway
	17	Corangamite
	23	Glenelg
	27	Greater Geelong
	55	Moyne
	61	Queenscliffe
	63	Southern Grampians
	66	Surf Coast
	70	Warrnambool

Region	LGA ID Number*	LGA Name
Grampians	2	Ararat
	3	Ballarat
	24	Golden Plains
	29	Hepburn
	30	Hindmarsh
	32	Horsham
	51	Moorabool
	58	Northern Grampians
	60	Pyrenees
	72	West Wimmera
	79	Yarriambiack

Region	LGA ID Number*	LGA Name
Loddon Mallee	11	Buloke
	12	Campaspe
	15	Central Goldfields
	21	Gannawarra
	25	Greater Bendigo
	38	Loddon
	39	Macedon Ranges
	46	Mildura
	54	Mount Alexander
	67	Swan Hill

Region	LGA ID Number*	LGA Name
Hume	1	Alpine
	8	Benalla
	28	Greater Shepparton
	34	Indigo
	41	Mansfield
	47	Mitchell
	48	Moira
	56	Murrindindi
	65	Strathbogie
	68	Towong
	69	Wangaratta
	75	Wodonga

Region	LGA ID Number*	LGA Name
Gippsland	5	Bass Coast
	6	Baw Baw
	19	East Gippsland
	37	Latrobe
	62	South Gippsland
	71	Wellington

* LGA ID is based on the alphabetical order of local government area names See table 1.2.

Table 1.2: Local government area names & Department of Health regions

Region	Local government area name*	LGA ID No.
Hume	Alpine (S)	1
Grampians	Ararat (RC)	2
Grampians	Ballarat (C)	3
North and West Metropolitan	Banyule (C)	4
Gippsland	Bass Coast (S)	5
Gippsland	Baw Baw (S)	6
Southern Metropolitan	Bayside (C)	7
Hume	Benalla (RC)	8
Eastern Metropolitan	Boroondara (C)	9
North and West Metropolitan	Brimbank (C)	10
Loddon Mallee	Buloke (S)	11
Loddon Mallee	Campaspe (S)	12
Southern Metropolitan	Cardinia (S)	13
Southern Metropolitan	Casey (C)	14
Loddon Mallee	Central Goldfields (S)	15
Barwon–South Western	Colac-Otway (S)	16
Barwon–South Western	Corangamite (S)	17
North and West Metropolitan	Darebin (C)	18
Gippsland	East Gippsland (S)	19
Southern Metropolitan	Frankston (C)	20
Loddon Mallee	Gannawarra (S)	21
Southern Metropolitan	Glen Eira (C)	22
Barwon–South Western	Glenelg (S)	23
Grampians	Golden Plains (S)	24
Loddon Mallee	Greater Bendigo (C)	25
Southern Metropolitan	Greater Dandenong (C)	26
Barwon–South Western	Greater Geelong (C)	27
Hume	Greater Shepparton (C)	28
Grampians	Hepburn (S)	29
Grampians	Hindmarsh (S)	30
North and West Metropolitan	Hobsons Bay (C)	31
Grampians	Horsham (RC)	32
North and West Metropolitan	Hume (C)	33
Hume	Indigo (S)	34
Southern Metropolitan	Kingston (C)	35
Eastern Metropolitan	Knox (C)	36
Gippsland	Latrobe (C)	37
Loddon Mallee	Loddon (S)	38
Loddon Mallee	Macedon Ranges (S)	39
Eastern Metropolitan	Manningham (C)	40
Hume	Mansfield (S)	41
North and West Metropolitan	Maribyrnong (C)	42
Eastern Metropolitan	Maroondah (C)	43
North and West Metropolitan	Melbourne (C)	44
North and West Metropolitan	Melton (S)	45
Loddon Mallee	Mildura (RC)	46
Hume	Mitchell (S)	47
Hume	Moira (S)	48
Eastern Metropolitan	Monash (C)	49
North and West Metropolitan	Moonee Valley (C)	50
Grampians	Moorabool (S)	51
North and West Metropolitan	Moreland (C)	52
Southern Metropolitan	Mornington Peninsula (S)	53
Loddon Mallee	Mount Alexander (S)	54
Barwon–South Western	Moyne (S)	55
Hume	Murrindindi (S)	56
North and West Metropolitan	Nillumbik (S)	57
Grampians	Northern Grampians (S)	58
Southern Metropolitan	Port Phillip (C)	59
Grampians	Pyrenees (S)	60
Barwon–South Western	Queenscliffe (B)	61
Gippsland	Southern Grampians (S)	62
Barwon–South Western	South Gippsland (S)	63
Southern Metropolitan	Stonnington (C)	64
Hume	Strathbogie (S)	65
Barwon–South Western	Surf Coast (S)	66
Loddon Mallee	Swan Hill (RC)	67
Hume	Towong (S)	68
Hume	Wangaratta (RC)	69
Barwon–South Western	Warrnambool (C)	70
Gippsland	Wellington (S)	71
Grampians	West Wimmera (S)	72
Eastern Metropolitan	Whitehorse (C)	73
North and West Metropolitan	Whittlesea (C)	74
Hume	Wodonga (RC)	75
North and West Metropolitan	Wyndham (C)	76
North and West Metropolitan	Yarra (C)	77
Eastern Metropolitan	Yarra Ranges (S)	78
Grampians	Yarriambiack (S)	79

* Metropolitan and rural LGAs/regions are identified by colour as follows: metropolitan / rural.

1. Methods

Alpine Ararat Ballarat Banyule Bass Coast Baw Baw Bayside Benalla Boroondara Brimbank Buloke Campaspe Cardinia Casey Central Goldfields Colac-Otway Corangamite Darebin East Gippsland Frankston Gannawarra Glen Eira Glenelg Golden Plains Greater Bendigo Greater Dandenong Greater Geelong Greater Shepparton Hepburn Hindmarsh Hobsons Bay Horsham Hume Indigo Kingston Knox Latrobe Loddon Macedon Ranges Manningham Mansfield Maribyrnong Maroondah Melbourne Melton Mildura Mitchell Moira Monash Moonee Valley Moorabool Moreland Mornington Peninsula Mount Alexander Moyne Murrindindi Nillumbik Northern Grampians Port Phillip Pyrenees Queenscliffe South Gippsland Southern Grampians Stonnington Strathbogie Surf Coast Swan Hill Towong Wangaratta Warrnambool Wellington West Wimmera Whitehorse Whittlesea Wodonga Wyndham Yarra Yarra Ranges Yarriambiack Alpine Ararat Ballarat Banyule Bass Coast Baw Baw Bayside Benalla Boroondara Brimbank Buloke Campaspe Cardinia Casey Central Goldfields Colac-Otway Corangamite Darebin East Gippsland Frankston Gannawarra Glen Eira Glenelg Golden Plains Greater Bendigo Greater Dandenong Greater Geelong Greater Shepparton Hepburn Hindmarsh Hobsons Bay Horsham Hume Indigo Kingston Knox Latrobe Loddon Macedon Ranges Manningham Mansfield Maribyrnong Maroondah Melbourne Melton Mildura Mitchell Moira Monash Moonee Valley Moorabool Moreland Mornington Peninsula Mount Alexander Moyne Murrindindi Nillumbik Northern Grampians Port Phillip Pyrenees Queenscliffe South Gippsland Southern Grampians Stonnington Strathbogie Surf Coast Swan Hill Towong Wangaratta Warrnambool Wellington West Wimmera Whitehorse Whittlesea Wodonga Wyndham Yarra Yarra Ranges Yarriambiack Alpine Ararat Ballarat Banyule Bass Coast Baw Baw Bayside Benalla Boroondara Brimbank Buloke Campaspe Cardinia Casey Central Goldfields Colac-Otway Corangamite Darebin East Gippsland Frankston Gannawarra Glen Eira Glenelg Golden Plains Greater Bendigo Greater Dandenong Greater Geelong Greater Shepparton Hepburn Hindmarsh Hobsons Bay Horsham Hume Indigo Kingston Knox Latrobe Loddon Macedon Ranges Manningham Mansfield Maribyrnong Maroondah Melbourne Melton Mildura Mitchell Moira Monash Moonee Valley Moorabool Moreland Mornington Peninsula Mount Alexander Moyne Murrindindi Nillumbik Northern Grampians Port Phillip Pyrenees Queenscliffe South Gippsland Southern Grampians Stonnington Strathbogie Surf Coast Swan Hill Towong Wangaratta Warrnambool Wellington West Wimmera Whitehorse Whittlesea Wodonga Wyndham Yarra Yarra Ranges Yarriambiack Alpine Ararat Ballarat Banyule Bass Coast Baw Baw Bayside Benalla Boroondara Brimbank Buloke Campaspe Cardinia Casey Central Goldfields Colac-Otway Corangamite Darebin East Gippsland Frankston Gannawarra Glen Eira Glenelg Golden Plains Greater Bendigo Greater Dandenong Greater Geelong Greater Shepparton Hepburn Hindmarsh Hobsons Bay Horsham Hume Indigo Kingston Knox Latrobe Loddon Macedon Ranges Manningham Mansfield Maribyrnong Maroondah Melbourne Melton Mildura Mitchell Moira

1. Methods

1.1 Background

Population health surveys based on computer-assisted telephone interviews (CATI) are used to collect key population health surveillance data because they provide time series data, use collection procedures that are acceptable to respondents, use an adequate sample size, use current technology and provide high quality data (especially through greater supervision of interviewers, computer data entry and question sequencing). Further, they allow for data collection that is timely, cost-effective (especially in rural and metropolitan areas) and adaptable to changing and emerging information needs. CATI surveys also fill strategic information gaps–that is, they can be used to gather information not available from other sources–and provide data for further analysis and interpretation.

1.2 Method

The Victorian Population Health Survey 2008 followed a method developed over several years to collect relevant, timely and valid health information for policy, planning and decision making. The survey team administered CATI on a representative sample of persons aged 18 years and over who resided in private dwellings in Victoria. The Department of Health Human Research Ethics Committee approved the survey method and questionnaire content.

For the first time in 2008, the VPHS was undertaken at the local government area (LGA) level. All previous surveys in the series were undertaken at the state-wide level.

The department outsourced the fieldwork data collection to a market research organisation, which department staff supervised. All data were self-reported and stored directly in the CATI system.

1.3 Stratification

There are five rural and three metropolitan Department of Health regions in Victoria that are comprised of 79 LGAs. The survey sample was stratified by LGA in 2008, with a target sample of 426 interviews per LGA. The total sample achieved was 34,168 completed interviews, including 808 (2.4 per cent) in languages other than English.

1.4 Sampling frame

The department generated an electronic listing of Victorian six-digit telephone exchange prefixes and localities to form the basis of the sampling frame. All eligible prefixes were allocated to each of the 79 LGA sampling areas, using locality and postcode information.

1.4.1 Sample generation

Random digit dialling (RDD) was used to generate a sample of telephone numbers that formed the household sample for CATI. All residential households with land-line telephone connections were considered in-scope for the survey. A telephonic mode of survey delivery excludes various population groups, such as people who are homeless or itinerant, people in hospitals or institutions, the frail and aged, and people with disabilities who cannot participate in an interview.

The department appended randomly generated suffixes to current eligible six-digit telephone number prefixes. The numbers were then ‘washed’ against current electronic business listings to remove known business numbers.

1.5 Data collection

Almost two-thirds of all completed interviews were achieved within the first three calls. This proportion is consistent with national experience on similar surveys.

1.6 Call routine

The interviewers made up to six call attempts to establish contact with a household and up to another nine call attempts to complete an interview where required.

Call attempts were spread over different times of the day and different days of the week, and were controlled by a customised call algorithm in the survey management system. Except for engaged numbers at the first call attempt, a non-contact in any specific time block was automatically scheduled for call back in a different time block as per the call back routine. A scripted message was left at the first and second calls to an answering machine, encouraging respondents to contact the 1800 number. After establishing contact, interviewers could make calls, by appointment, outside the time block hours.

After contacting a household, an interviewer would select for interview the person aged 18 years and over with the most recent birthday.

1.7 Interviewing in languages other than English

Interviews were conducted in eight community languages. As for previous surveys in the series, the department provided translated survey questionnaires in Italian, Greek, Mandarin, Cantonese, Vietnamese and Arabic. Turkish and Serbo-Croatian were added for the VPHS 2008, with a view to achieving a more representative sample in those LGAs with a relatively high proportion of speakers of these languages.

CATI interviewers were recruited to undertake the interviews in these other languages as required.

1.8 Fieldwork period

The average interview length was 22 minutes and interviewing was conducted between 24 September and 16 December 2008. This followed two pilot tests of the questionnaire earlier in September 2008 and the modification of the questionnaire.

1.9 Participation

The participation rate, defined as the proportion of households where contact was made and an interview was then completed, was 64.9 per cent. The participation rate was similar in the metropolitan and rural LGAs (64.9%). However, there was some variation in the final participation rate by LGA, ranging from 56.4–73.1 per cent.

1.10 Weighting

The survey data was weighted to reflect:

(i) The probability of selection of the respondent within the household. Although a single respondent was randomly selected from within a household, the size of any household can vary upwards from one person. To account for this variation, the project team treated each respondent as representing the whole household, so his or her weight factor included a multiplier of the number of persons in the household. Further, a household may have more than one telephone line (that is, land lines used primarily for contact with the household), which would increase that household's probability of selection over those households with only one telephone line. To ensure the probability of contacting any household was the same, the project team divided the weight factor by the number of telephone lines connected to the household.

The formula for the selection weight (sw) component:

$$sw = nah/npl$$

where:

nah = the number of adults aged 18 years or over in the household

npl = the number of telephone lines in the household.

(ii) The age/sex/geographic distribution of the population. The project team applied a population benchmark (pbmark) component to ensure the adjusted sample distribution matched the population distribution for the combined cross-cells of age group and sex by LGA. The categories used for each of the variables were:

- *Age group:* 18–24, 25–34, 35–44, 45–54, 55–64 and 65 years or over
- *Sex:* male, female
- *Geography:* 79 LGAs

The *pbmark* component was calculated by dividing the population of each cross-cell by the sum of the selection weight components for all the respondents in the sample within that cross-cell. For each cross-cell, the formula for this component was:

$$pbmark_i = Ni/\sum swij$$

where:

i = the i^{th} cross-cell

j = the j^{th} person in the cross-cell

N_i = the population of the i^{th} cross-cell

$\sum sw_{ij}$ = the sum of selection weights for all respondents (1 to j) in the i^{th} cross-cell.

Calculating the person weight to be applied

The project team assigned respondent records a weight factor (*pwt*) by multiplying the selection weight (*sw*) value by the population benchmark value (*pbmark*):

$$pwtij = swij * pbmarki$$

where:

i = the i^{th} cross-cell

j = the j^{th} person in the cross-cell.

1.11 Statistical analysis

The survey data was analysed using the Stata statistical software package (StatCorp LP, College Station Texas).

Crude rates

A crude rate is an estimate of a proportion of a population that experiences a specific event over a specified period. It is calculated by dividing the number of events recorded for a given period by the number at risk of the event in the population. Crude rates (percentages) have been presented wherever estimates have been broken down by age group (age-specific rates).

Age standardisation

The percentages presented in this report have been standardised, or adjusted for age. They are based on the direct method of standardization. This method adjusts for effects of differences in the age composition of different populations (eg LGAs) and allows for comparison between these populations. The direct age standardized percentages presented are based upon the weighted sum of age-specific (five-year age group) rates in the population. The weights that have been used in the calculation (the 'standard' population) are population ratios for five-year age groups derived from the estimated resident mid-year 2006 Victorian population.

Standard error

The standard error is a measure of the variation in an estimate, produced by sampling a population. The standard error can be used to calculate confidence intervals and relative standard errors, providing the likely range of the true value of an estimate and an indication of the reliability of an estimate.

Confidence intervals (95% CI)

A confidence interval is a computed interval with a given probability (for example, 95%) that a true value of a variable, such as a percentage, is contained within the interval. So, the confidence interval is the likely range of the true value for a percentage. Throughout the report, 95% confidence intervals have been included in tables and graphs.

$$95\% \text{ confidence interval} = \text{point estimate} \pm \text{standard error} \times 1.96$$

Statistical significance

The only trends and patterns in the data that are discussed in the report are statistically significant trends and patterns. Statistical significance provides an indication of how likely a result is due to chance. With the exception of time trends, significant differences between estimates were deemed to exist where confidence intervals for percentages did not overlap.

Ordinary least squares linear regression on the logarithms of age standardized percentages, was used to test for trends over time. If the 95 per cent confidence interval for the regression coefficient did not include the value 0, the trend was considered to be statistically significant.

The term 'significance' is used to denote statistical significance. It is not used to describe clinical significance, the relative importance of a particular finding, or the actual magnitude of difference between two estimates.

Relative standard error (RSE)

A relative standard error (RSE) provides an indication of the reliability of an estimate. Estimates with RSEs less than 25 per cent are generally regarded as 'reliable' for general use. The percentages presented in tables and graphs in this report have RSEs less than 25 per cent, unless otherwise stated. Rates that have an RSE between 25 and 50 per cent have been marked with an asterisk (*) and should be interpreted with caution. For the purposes of this report, percentages with RSEs over 50 per cent were not considered reliable estimates and have not been presented. A double asterisk (**) has been included in tables and graphs where the percentage would otherwise appear, indicating the relevant RSE was greater than 50 per cent.

Relative Standard Error (%) = Standard error/ Point estimate × 100

1.12 Profile of survey respondents

Known population benchmarks for selected data items may be used to assess the representativeness of the sample. Table 1.1 shows the benchmark data and weighted and unweighted estimates obtained from the survey. A comparison between benchmark and survey data indicates the following:

- Females were more likely than males to participate in the survey.
- Adults aged less than 65 years were less likely to participate than adults aged 65 years and over.
- Adults born in Australia were more likely to participate than those born overseas, perhaps as a result of those who do not speak English or any of the languages offered for interview.
- The survey included a lower proportion of employed persons.
- One per cent of respondents identified themselves as being Aboriginal and/or Torres Strait Islander.

Table 1.1: Profile of respondents in the Victorian Population Health Survey, 2008

Selected characteristics	Benchmark data (%)	Survey outcome (%)	Weighted survey outcome (%)	Lower 95% CI	Upper 95% CI
Sex[i]					
Male	49.0	38.0	48.9	48.1	49.8
Female	51.0	62.0	51.1	50.2	51.9
Age group (years)[i]					
18–24	12.9	4.7	12.9	12.2	13.7
25–34	18.4	9.4	18.4	17.6	19.2
35–44	19.4	17.0	19.3	18.7	20.0
45–54	17.8	19.6	17.8	17.2	18.4
55–64	14.1	21.3	14.1	13.7	14.6
65+	17.5	28.0	17.5	17.0	18.0
Marital status[ii]					
Married	50.0	57.4	58.4	57.5	59.2
Widowed	6.0	10.9	4.8	4.6	5.1
Separated/divorced	10.5	11.8	6.8	6.5	7.2
Never married	33.4	12.4	20.7	19.9	21.6
Country of birth[iii]					
Australia	71.3	79.2	71.4	70.6	72.2
Employment status[iv]					
Employed	61.9	51.4	59.9	59.1	60.7
Unemployed	3.3	2.8	3.6	3.3	4.0
Not in the labour force	34.8	45.0	35.7	34.9	36.5
Private health insurance[v]					
Yes	42.8	50.6	54.6	53.8	55.5

i ABS 2007a.

ii ABS 2007b. The 'never married' category is not directly comparable between the census and the *Victorian Population Health Survey 2006* because the survey collected an extra category–'living with a partner'. Benchmark figures apply to persons aged 15 years or over.

iii ABS 2007c. Benchmark figure applies to whole Victorian population (all ages).

iv ABS 2007d. Benchmark figures apply to persons aged 15 years and over.

v PHIAC 2007. Benchmark figure applies to whole Victorian population (all ages).

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